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ICETMCCT 2021 PROCEEDINGS

CONFERENCE PROCEEDINGS

Second International Conference on EMERGING TRENDS IN MATERIALS, COMPUTING AND COMMUNICATION TECHNOLOGIES (ICETMCCT 2021)

Organized by

ANNAI VAILANKANNI COLLEGE OF ENGINEERING
AVK Nagar, Pottalkulam, Kanyakumari District.
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Second International Conference on

Emerging Trends in Materials, Computing and Communication Technologies

(ICETMCCT 2021)

9th and 10th December 2021

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MESSAGE FROM THE CHAIRMAN

AnnaiVailankanni College of Engineering(AVCE) is an institution where students are trained not only to equip themselves with knowledge but also to develop their inbuilt skills. Our aim is to provide education to one and all, especially for the rural community. AVCE always aim at providing quality education: social moral value based and need-based education to the students and at empowering the local community.

This Second International Conference on Emerging Trends in Materials, Computing and Communication Technologies (ICETMCCT 2021)fits with the mission of AVCE to explore the new horizon of innovations from distinguished researchers, scientists, and eminent authors in academia and industries. We believe that researchers andpractitioners, coming together for such conferences can advance the quality ofeducation received by students worldwide.

Dr.D.PETER JESUDHAS,
Chairman,
AnnaiVailankanni College of Engineering,
AVK Nagar, Azhagappapuram Post,
Kanyakumari District-629 401.

MESSAGE FROM THE VICE-CHAIRMAN

It is our great pleasure to announce the "Second International Conference on Emerging Trends in Materials, Computing and Communication Technologies" (ICETMCCT 2021) to be held in AnnaiVailankanni College of Engineering (AVCE), AVK Nagar, Indiaduring 9th and 10th December 2021. ICETMCCT 2021 will explore the new horizon of innovations from distinguished researchers, scientists, and eminent authors in academia and industry working for the advancements in Science, Engineering and Technology from all over the world.

The conference will create a path to establish a research relation for the authors and listeners with opportunities for National and International collaboration and networking among the universities and institutions from India and abroad for promoting research and developing technologies. Authors are solicited to contribute to the conference by submitting articles that illustrate research results, projects, surveying works and industrial experiences that describe significant advances in Materials, Computing and Communication Technologies.

Er.P.PRAVEEN JESUDHAS,
Vice-Chairman,
AnnaiVailankanni College of Engineering,
AVK Nagar, Azhagappapuram Post,
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MESSAGE FROM THE PRINCIPAL

I am extremely glad to announce that the ICETMCCT 2021,AVCE is going to organize the International Conferenceon AdvancesinMaterials,Computing and Communication Technologies during 9th and 10th December 2021.I express my sincere gratitude to Dr.D.PeterJesudhas, Chairman, AVCEwho inspired and guided us all the way in organizing this International conference. I believe strongly that this conference will provide an effective platform for researchers to share their innovative ideas and present their up to date findings in engineering field. On behalf of AVCE, I heartily welcome all the speakers and delegates to this conference.

Dr.A.BENHAM,
Principal,
AnnaiVailankanni College of Engineering,
AVK Nagar, Azhagappapuram Post,
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MESSAGE FROM THE CONVENER

It is my great pleasure to serve as conference convener for the International Conference onAdvances in Materials,Computing andCommunication Technologies (ICETMCCT 2021), organized by the AnnaiVailankanni College of Engineering, AVK Nagar, Kanyakumari District, Tamil Nadu, India.

The theme around Materials,Computing andCommunication Technologies is purposely broad so that we could have an eclectic array of papers rangingover a variety of themes including such topics as innovative research practices, advanced technologies, and more.

I hope during your time at the conference that you take the opportunity to engage with yourpeers to discuss your ideas for research and practice and that you ask questions of thepresenters. There will be plenty of opportunities for collaboration. We will all benefit fromour combined participation at this International Conference.

More information about ICETMCCT 2021 and our programs can be obtained from our website(www.avce.edu.in).

Conference convener ICETMCCT 2021,
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GUARDS ON DUTY (GOD) APP WITH BLUETOOTH ENABLED PANIC BUTTON FOR WOMEN SAFETY

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Abstract

Women endure a lot of sexual harassment these days which is becoming alarming day by day. The situation is extremely serious in developing countries as well as underdeveloped ones. Consequently, it poses a significant challenge to women's empowerment as well as to a country's budgetary growth. In this project, we are advancing a smart device along with an android app that can make women's movement safer. Women can get swift and supreme safety support by pressing the device's emergency switch. If any incident occurs, this device can track the user's location in real-time and send it to the nearby police box and volunteer. The user can also get location of the nearest safe zone by this device as well. The device consists of Arduino nano, Bluetooth, etc. The aggregate of all these elements collectively offers this device to be affordable and easy to navigate.

Keywords—Women safety, Women empowerment, IoT device, Android app, Bluetooth.

ENHANCED ENERGY EFFICIENT ROUTING IN WIRELESS SENSOR NETWORK USING MODIFIED TRUST BASED LEACH PROTOCOL

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Abstract

Wireless sensor network could be a set of freelance transducers with communication infrastructure for recording and observance of different locations. The observance parameters are energy, temperature, humidity, pressure, direction and speed of the node in the WSN. The main challenges of WSN square measure potency, efficiency, quality,responsibility, robustness, privacy and security. Many researchers are addressing these difficult tasks of WSN however not with eachparameter. In this paper, we have projected toreinforce the lifetime of sensor in wireless sensor network that makes it reliable moreover as energy economical using Modified trust based LEACH Protocol. The new cluster technique, responsibilitysuggests that to stop the crashes of cluster head node and potency suggests that to require care concerning election of cluster head. Simulation result clearly suggest that Modified trust based LEACH protocol using Trust have performed well when compared with existing LEACH protocols.

Keywords: Energy Efficiency,Cluster Head Selection, Energy Efficient Clustering, Efficient Routing.

DESIGN AND ANALYSIS OF CHASSIS OF A MODERNIZED ELECTRIC GO-KART

Suvikram Pradhan[1] Deepankar Mahato[2] G. Avinash Sharma[3] Anshuman Nayak[4] Ashesh Nayak[5]

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Abstract

As we are in the era of the technological advancement all the technologies including various industries have come to a greater position. From big bang to black holes the humanity has come a great way along. at ancient times we have the automobiles which run with either human power or with the power of animals (ox).Now we have entered the era of energy and its storage for use and almost 80-85% of automobiles present in market are IC ENGINE powered but as the pollution is concerned we are entering the age of the new concerned automobile vehicles {non-conventional automobiles are those which run on various non- conventional fuels}.So it is one of the major concern that how much the electric vehicles have the advantage over the conventional IC engine or wobblers engine ;stirling engine; boxers ; v engines ; rotary and solenoid engines . Thus this paper is presented for the topic of "DESIGN AND FABRICATION OF E-GOKART" that is one of the miracles of engineering. Here the design CAD model is made using DSS CATIA and analysis was done using ANSYS software's.

Keyword: - GOKART; ANSYS; CATIA; IC ENGINE, SOLIDWORKS,CAM,CAD,CAE.

A LITERATURE REVIEW ON SOFTWARE RISK IN AGILEPROJECTS

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Abstract

Agile Risk Management indicates how risks aremanaged effectively in agile projects. Majority of the frameworks in agile do not have a systematic approach for managing risks since their main focus is towards delivering the product with high quality,whichisaninbuiltelementofagilesoftwaredevelopment. However, there is a need in agile projects to manage the external risks systematically just like the traditional approach. In order to perform this, a clear understanding of agile projects is essential. Thus the scope of the paper is determined to give an insight about the research papers published regarding Agile projects and the way it handlesrisks.

Index Terms—Agile, Software Risk Assessment, Agile Risk, Risk management

ARDUINO BASED RADAR SYSTEM FOR SHORT RANGE APPLICATIONS

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Abstract

RADAR is a detection system that uses radio waves to determine the characteristics of the detected objects such as: range, height, direction, or the speed of objects. This paper, is aimed at designing a radar system that uses an ultrasonic sensor to detect objects. The ultrasonic sensor is used to measure the distance between the radar and any object-based non-contact technology. This system is controlled through Arduino. Arduino UNO board is sufficed to control ultrasonic sensor and also to interface the sensor and display device.Whereas, the movement of the sensor is controlled by using a small servo motor. This radar is controlled using the Arduino Uno board as a microcontroller. The signal received from the sensor is processed using "Processing Development Environment Software". Ultra-sonic sensor is attached to the servo motor it rotates about 180 degree and gives visual representation on the software called processing IDE. Processing IDE gives graphical representation and it also provides angle or position of the object and distance of the object.

Keywords—Radar,Ultrasonic Sensor,Arduino Uno,Servo Motor.

A DECENTRALISED DBSCAN ALGORITHM FOR DYNAMIC CLOUD COMPUTING ENVIRONMENT

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Abstract

Density-based Spatial Clustering of Applications with Noise (abbreviated DBSCAN) is a data mining technique that discovers clusters of diverse forms and is not influenced by noise. Huge data must be examined and processed in the context of Cloud Computing environment, and the typical linear DBSCAN method is challenging to apply successfully to the handling of huge datasets. This work offers a Decentralized DBSCAN method (referred to as D-DBSCAN) that may be used to handle huge datasets in order to make use of the DBSCAN technique. Following procedures are incorporated into the design of the D-DBSCAN algorithm: The dataset is first stored on several datanodes in a distributed fashion, which allows for the handling of large datasets without sacrificing performance. To facilitate parallel processing of large amounts of data, a local Eps-neighbors search is conducted on the storage nodes in the second step. Last but not least, the information supplied by the storage and computing nodes is combined to produce a global Eps-neighbors result.It was determined whether or not the D-DBSCAN method was effective in the experimental section by using a series of simulated datasets of various sizes. In the experiments, it was discovered that the D-DBSCAN method, which is based on decentralized storage and computing, significantly enhances the ability and adaptability of the DBSCAN algorithm while dealing with large amounts of data. To handle large volumes of information in data centres, the D-DBSCAN algorithm may be quickly and simply implemented in cloud-edge computing systems.

LINEAR DISCRIMINANT ANALYSIS ON EEG SIGNAL

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Abstract

BCI seems to grab a highly remarkable post when it comes to research and advance technologies specially in the field of assistance machines and robotics. BCI is none other than Brain Computer Interface. EEG is the most commonly used technique to collect he input for the functionality of the device . As per the spectular characters of the EEG signals, proper extraction of the signals , feature processing , identification of signal features are all very important. In this paper , a detailed description on two commonly used feature extraction techniques called LDA and PCA are been compared with an EEG signal and a simple dataset.

Keywords: Brain Computer Interface, EEG , LDA , PCA

SMART ROOFING SYSTEM FOR DRY PLANT

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Abstract

In agriculture, many products have to be dried in sun. But due to rain it gets wet and the product is spoiled. So farmers are losing their productivity. To save the products from rain we have designed the project called "Smart Roofing System". It helps the farmers by saving theirproductsfromrain.It usesmoistureandthermalsensorthatsensesthe rainandgivesasignal tothemotor.Dependinguponthesignalgiventothemotor,itrotatesforwardandbackward.A shield roofing comes from motor and covers the agriculture product from rain. When the rain stopsandtheatmosphereturntothenormaltemperature, roofreturnbackto the initialposition.

Key words: Agriculture product, Moisture sensor, Thermal Sensor, Motor.

COMPRESSION CHARACTERISTICS OF EGGSHELL POWDER STABILIZED SEDIMENTARY FORMATION

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Abstract

The compressibility of soil can occur due to pressing together (due to applied pressure load) of solid particles and water in the voids, compression and expulsion of air in the voids, expulsion of water in the voids. The additions of additives not only reduce shrink–swell behaviour but also modify other soil properties like shear strength and permeability. An alternative method of soil improvement is by mixing fines with coarse grained soils. The laterite soil was obtained from a borrow pit at Ajegunle along Ilaro-Papalanto road, Yewa South Local Government Area in Ogun State, Nigeria. The borrow site lies within the coordinates 6°53'11.81"N and 3°7'44.88"E.The egg shells were obtained from Obasanjo Farms Nigeria Limited, Ota, Ogun State, Nigeria and grounded to powder. In line with BS 1377 (1990) and other relevant codes of practice, consolidation tests on 1 hour and 24 hours soaked samples were conducted to determine the relevant consolidation parameters and settlement indices. Eggshell powder was substituted in the lateritic soil (sedimentary formation) in range of 0% to 50% with 0% serving as control experiment for both the 1-hour soaked and 24-hour soaked samples. From the results, void ratio reduces as the load application increases for all the samples tested whether 1-hour or 24-hour soaked samples. In all the samples tested, the 50% eggshell powder substitutions have the least void ratios.

Keywords: Compression; Consolidation; Stabilization; Lateritic; Soil; Settlement

EXPANSION CHARACTERISTICS OF EGGSHELL POWDER STABILIZED SEDIMENTARY FORMATION

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Abstract

Laterite soils may consist too much of coarse or fine particles which can cause seepage through dams and hydraulic barriers and in other cases cause swelling in the case of too much fine particles. Attempts to improve their workability, engineering properties and characteristics with modifying or stabilizing agents has shown promising results, although might be accompanied by risk of release of hazardous substances from the stabilizing agents to the groundwater. Eggshell powder was shown to improve the quality of soils by significantly improving their settlement potentials as well as expansion characteristics. Other findings revealed that eggshell powder could be used for improving the physical properties of a cohesionless soils. The laterite soil was obtained from a borrow pit at Ajegunle along Ilaro-Papalanto road, Yewa South Local Government Area in Ogun State, Nigeria. The borrow site lies within the coordinates 6°53'11.81"N and 3°7'44.88"E.The egg shells were obtained from Obasanjo Farms Nigeria Limited, Ota, Ogun State, Nigeria and grounded to powder. In line with BS 1377 (1990) and other relevant codes of practice, consolidation tests on 1 hour and 24 hours soaked samples were conducted to determine the relevant consolidation parameters and settlement indices. Eggshell powder was substituted in the lateritic soil (sedimentary formation) in range of 0% to 50% with 0% serving as control experiment for both the 1-hour soaked and 24-hour soaked samples.

DRAINAGE PATH AND TIME FACTOR OF EGGSHELL POWDER STABILIZED SEDIMENTARY FORMATION

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Abstract

The drainage path of the consolidating layer has to be established by proper borings and sampling. The value of coefficient of volume compressibility has to be determined by a laboratory consolidation test for the range of stress increment that the soil would be subjected to at the site.. The laterite soil was obtained from a borrow pit at Ajegunle along Ilaro-Papalanto road, Yewa South Local Government Area in Ogun State, Nigeria. The borrow site lies within the coordinates 6°53'11.81"N and 3°7'44.88"E. In line with BS 1377 (1990) and other relevant codes of practice, consolidation tests on 1 hour and 24 hours soaked samples were conducted to determine the relevant consolidation parameters and settlement indices. Eggshell powder was substituted in the lateritic soil (sedimentary formation) in range of 0% to 50% with 0% serving as control experiment for both the 1-hour soaked and 24-hour soaked samples. The results of drainage path for 1-hour and 24-hour behave similarly. It initially increased as the percentage eggshell powder substitution increases but later reduced around 30% and 50% eggshell powder substitution. In the case of time factor, for the 1-hour soaked samples, there is no remarkable increase up to around 30% eggshell powder substitution, immediately after 30% substitution, there is remarkable increase in the time factor. Finally, the results of specific gravity of the composite material reduce as the percentage eggshell powder increases.

CONSOLIDATION PARAMETERS OF EGGSHELL POWDER STABILIZED SEDIMENTARY FORMATION

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Abstract

Soil stabilization is usually carried out to increase the soil strength, geotechnical properties and bearing capacity, to prevent the structure subsidence, to increase the safety factor against slope, levees and earth dam sliding, etc. One of the methods to achieve these is by the usage of fillers. The laterite soil was obtained from a borrow pit at Ajegunle along Ilaro-Papalanto road, Yewa South Local Government Area in Ogun State, Nigeria. The borrow site lies within the coordinates 6°53'11.81"N and 3°7'44.88"E.The eggshells were obtained from Obasanjo Farms Nigeria Limited, Ota, Ogun State, Nigeria and grounded to powder. In line with BS 1377 (1990) and other relevant codes of practice, consolidation tests on 1 hour and 24 hours soaked samples were conducted to determine the relevant consolidation parameters and settlement indices. Eggshell powder was substituted in the lateritic soil (sedimentary formation) in range of 0% to 50% with 0% serving as control experiment for both the 1-hour soaked and 24-hour soaked samples. From the results, the coefficient of volume compressibility (Mv), coefficient of permeability (k), Oedometer settlement (Soed) and compression index (Cc) increases as the percentage of eggshell powder substitution in lateritic soil increases for both 1-hour and 24-hour soaked samples while pre-consolidation pressure (Pc) and coefficient of consolidation (Cv) reduces as the percentage of eggshell powder substitution in lateritic soil increases for both 1-hour and 24-hour soaked samples.

WORKABILITY AND STRENGTH CHARACTERISTICS OF RECYCLED WASTE CERAMIC TILES ON CONCRETE

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Abstract

The amount of tiles waste generated is enough to be replaced in concrete as a replacement to coarse aggregate. The use of ceramic tile waste has a positive effect on environment and cost implication. This study investigated the compressive strength of powdery ceramic tiles concrete (PCTC), broken ceramic tiles concrete (BCTC) and crushed fine ceramic tiles concrete (CFCTC), with graded levels 0, 5, 10, 15 and 20%. Wastes tiles generated from construction sites were used to replace cement in the production of 1:2:4 mix concrete, at constant water-cement ratio of 0.5, cast in sets of twelve (12) each in 150mm x 150mm x 150mm moulds. The resulting concrete cubes cured for 7, 14, 21 and 28 days and compressive strength tests were carried out in accordance with BS1881 (1983). The result for PCTC showed that the compressive strength at 28days were 27.06 N/mm^2, 27.42 N/mm^2, 27.42 N/mm^2, 28.77 N/mm^2 and 21.02 N/mm^2 at 0, 5, 10, 15 and 20% substitutions respectively. The results for BCTC were 31.26N/mm^2 28.25N/mm^2, 27.44N/mm^2, 26.88N/mm^2 and 26.33N/mm^2 at 0, 5, 10, 15 and 20% substitutions respectively. The results for CFCTC showed compressive strength of 25 N/mm^2, 27.33 N/mm^2, 25.58 N/mm^2, 22.18 N/mm^2 and 18.26 N/mm^2 for 0, 5, 10, 15 and 20% substitutions respectively. It is evident that ceramic tiles concrete has similar characteristics with conventional concrete up to 15% replacement but that of BCTC has outstanding characteristics better than conventional concrete.

CHARACTERISTICS OF COEFFICIENT OF VOLUME COMPRESSIBILITY OF EGGSHELL POWDER STABILIZED SEDIMENTARY FORMATION

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Abstract

Engineers designing structures must factor consolidation settlement into their design because it is time-dependent. The volume compressibility coefficient is an essential parameter in calculating settlement. Eggshell is an agro-waste therefore its eventual re-use reduces the burden on already stressed solid waste management. One dimensional laboratory consolidation test was conducted on compacted lateritic soils treated with 5% to 50% eggshell powder (ESP), to assess its consolidation properties. Specimens were prepared at optimum moisture content compacted using the British Standard Light compactive effort and soaked for an hour and 24 hours respectively. Results show that the volume compressibility coefficients increases with ESP substitution for low dosage (5% - 15%), medium dosage (20% -30%), and the initial part of high dosage (35% -50%) for both 1-hour and 24-hour soaked experiments. From 40% to 50% ESP substitution, a sudden rise is observed in the volume compressibility coefficients of the 1-hour soaked test while a decrease is noted in the corresponding 24-hour soaked test. This composite material can be found useful in some civil engineering projects, hence, lessen the environmental menace posed by improper disposal of the eggshell.

THE IMPACT OF SOCIAL NETWORKING SITES AMONG HUMAN BEHAVIOUR IN PRESENT CONTEMPORARY

R.Sivasakthi

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Abstract:

Today in rapidly moving world, we can see change in every moment. Therefore life is getting complicated in every phase but the technology has made life very convenient. It is evolving in the world at very fast pace and affecting people from various ways. And social networking site is one of the medium of such technology. Now-a-days it is becoming a popular word among human beings, which is currently available in the various electronic items such as I-Phone, Android, windows phone and computer also. Social networking sites have provided new opportunities to human beings to engage in social interaction on the internet. Human beings use social networking sites, such as twitter, facebook, whatsapp, youtube in online communities, to generate content and to network with other users. The study of social networking sites can also identify the impact among human behavior in present contemporary.In this review article, the author discusses the history, characteristics, risks and impact of human behavior on social networking sites.

Keywords: Social networking sites, human beings and impact.

DESIGN AND IMPLEMENTATION OFREFRIGERATION SYSTEMUSING PHASE CHANGINGMATERIAL (PCM)

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Abstract

Enhancing thermal energy storage plays a crucial role in improving the overall performance of the energy storage system. The utilization of the energy storage system improves energy efficiency and achieves a sustainable future. Thermal Energy Storage (TES) is possible for both heating and cooling applications using different methodologies and technologies. But, focus of this research is cooling application of refrigeration by TES. Various techniques of refrigeration systems used in the area of food preservation, such as domestic refrigerator, food shipment, food storage by vapour compression cycle or refrigeration cycle. The common problem facing in refrigeration is to maintain thermal energy during compressor cut-off or electricity cut-off period. Utilizing latent heat storage system with phase change materials is an efficient way of accumulating and preserving the thermal energy while cut-off. Some of the researchers proved that the coefficient of performance has increased by utilizing PCM. In this paper evaporator is modelled and analysed in ANSYS software under various PCM material is applying. Moreover, advantages of PCM implementation and potential promising applications of PCMs in domestic refrigerators are discussed.

ENERGY SELF-SUFFICIENCY WITH SOLAR AND WIND HYBRIDIZATION

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Abstract

The purpose of this paper is to address rural areas' electricity needs cost effectively and efficiently by utilizing a standalone integrated system of wind turbine and solar module. Based on calculations and simulations, a virtual model is created in Solidworks, and power output is calculated using Matlab Simulink. The hybrid system described in this research is based on solar tracking technology and generates electricity via an affordable wind turbine using HDPE tarpaulin blades. This study applies model-based design thinking to the conceptualization process of a suggested unified package of wind turbine and solar module, which will save space when mounted independently from a conventional hybrid system. The primary goal of this paper is to make power affordable to everyone. Implementing this method will contribute to rural regions achieving greater energy security while also balancing the sustainability, economy, and social justice.

Keywords – Renewable, Energy, Solar, Wind, Turbine, Hybrid, MatlabSimulink

SOLAR PV CHARGING UNIT FOR E-VEHICLES

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Abstract

Over the last two years, the market for electric cars has exploded, and it is expected to continue to do so. This need a substantial household and commercial charging infrastructure. The electric car charging infrastructure that facilitates adoption is primarily reliant on public-private partnerships, including utilities, government agencies, automakers, and the general public. Electric vehicles are shifting energy paradigms for mobility around the world. Many factors contribute to a consideration of fueling with electricity: When to charge, where to charge, how fast can the vehicle charge, and who will charging affect? As more electric vehicles pull power from the grid, utilities will need to add rest the increasing demand drivers will place on the grid. Energy storage and source fromsolarPVsystemsprovidesaneloquentsolutiontopowerprovidersanddriversalike

EXPERIMENTAL STUDY OF MECHANICAL PROPERTIES OF HYBRID NATURAL FIBER COMPOSITE

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Abstract

Experimental study of learning the mechanical behavior of hybrid composites. Samples of several Jute-Kenaf–Epoxy, Jute-coir– Epoxy & Coir-Kenaf-Epoxy hybrids were manufactured using hand layup method. Specimens were cut from the fabricated laminate according to the different experiments for tensile test, Compression test, Bending test, Impact test. After that experiment is perform under (UTM) .Strength were observed and compared based on mechanicalproperties.

Keywords: Jute fiber, Coir fiber, Kenaf fiber, Epoxy resin.

LEAF EXTRACT MEDIATED GREEN SYNTHESIS OF BIOFABRICATED SILVER NANOPARTICLES FROM WEDELIACHINESIS

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Abstract

Green synthetic route of silver nanoparticles (AgNPs) has already been proved to be an advantageous over other physico-chemical approaches due to its simplicity, cost effectiveness, ecofriendly and nontoxicity. The most effectively studied nanoparticles in the current past are those made from the noble metals such as silver, gold and platinum. In this finding, aqueous Wedeliachinensis leaf extract (WLE) mediated synthesis of AgNPs. A greater conversion of silver ions to nanoparticles was achieved by employing a Wedeliachinensis leaf broth. The successful formation of platinum nanoparticles has been confirmed by UV-Vis spectro photometer, Fourier Transform Infrared Spectroscopy (FTIR), X-Ray Diffraction (XRD), X-ray photoelectron spectroscopy (XPS), Energy-dispersive X-ray spectroscopy and Transmission Electron Microscopy (TEM). FTIR studies confirmed the presence of silver nanoparticles which may responsible for reduction of silver ions to silver nanoparticles by plausible mehanism. Most of the characteristic vibrational bands are originated from the water soluble compounds like polyphenols, flavonoids, triterpenoids, wedelolactones etc. present in the Wedelia leaf extract.The XRD pattern revealed the complex crystalline nature of silver nanoparticle. While, TEM image confirms the formation of spherical shape. In this method there is no need to use high pressure, energy, temperature and toxic chemicals in case of chemical and physical

Keywords: Wedeliachinensis, Antioxidant, Antibacterial, Biosynthesis, Silver nanoparticles

RAIN DETECTION SYSTEM USING ARDUINO AND RAIN SENSOR

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Abstract

RAIN SENSOR is a switching device activated by rainfall, there are two main applications for rain sensors ,one is for the automatic irrigation system and another is for the automatic mode of windscreen wipers. This paper, is aimed at designing a rain detection system that uses a rain sensor to detect the rain. The rain sensor is used to detect any rainfall falling on it and then it will sense and perform the required actions. This system is controlled through Arduino. Arduino UNO board is sufficed to control rain sensor and also to interface the sensor. Whereas, the movement of the sensor is controlled by using a rain control module. This module is controlled using the Arduino Uno board as a microcontroller. The signal received from the sensor is processed using "Processing Development Environment Software". Processing IDE gives the output

Keywords—Rain sensor, Arduino Uno, Rain Control Module

RECOVERY OF WASTE HEAT IN IC ENGINE USING TEG TECHNIQUE

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Abstract

Air conditioning is the science of controlling basically three parameters ofhuman comfort like temperature, relative humidity and air quality. Air conditioners,dehumidifiers and evaporative coolers serve the purpose however air conditioneris termed extensive and coolers prove ineffective in humid conditions. In presentsystem, HVAC system isvery efficientand reliable but it has some demerits. Itwas refrigerants like Freon, ammonia, etc, Due to the use of such refrigerantsmaximum output can be obtained but it leads to much harmful to the environment.TоovercomethisfindinganalternativeofconventionalHVACsystem(i.e)Thermoelectric cooling and generator system. The present paper deals with thestudy of thermoelectric air conditioner using TEC module. Thermoelectric coolingsystem has advantages over other conventional cooling devices such as compactsize,lightin weight,lowcost,highstabilityandnomovingparts.in this the waste heat from the IC Engine is utilized. The thermoelectric effect is the direct conversion of heat into electricity where the heat source is directly converted to electricity and cold energy.

Keywords: Air conditioning, Relative Humidity, Refrigerants, Thermoelectric cooling, IC Engine

AUTOMATIC BRAIN TUMOR DETECTION AND CLASSIFICATION ON MRI IMAGES USING CNN

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Abstract

Clinical picture preparing is one of the chief requesting and promising field nowadays. Tumour is a quick uncontrolled development of cell. These Tumours are frequently named Benign, Malignant and Premalignant. At the point when a Tumour is seen as Malignant then the tumour brings about disease. Prior phase of Tumour is utilized to be distinguished physically through perception of picture by Doctors and it requires some investment and now and again gets off base outcomes. Today various sorts of PC added instruments are utilized in clinical field. These instruments give a speedy and exact outcome. Attractive Resonance Imaging (MRI) is the most generally utilized imaging strategy for breaking down inward construction of Human body. The MRI is utilized even in conclusion of most extreme illness of clinical science like Brain Tumours, Injury to Brain, Strokes, Spinal rope wounds. Picture Classifier in Machine

Learning can be utilized to productively recognize disease cells in Brain through Magnetic Resonance Imaging. The Brain Tumour discovery measure comprise of picture handling methods includes four phases: Picture pre-handling, Image division, Feature extraction and Classification. Here we discuss the CNN algorithm for detecting brain tumour.

Key Words: Tumour, MRI, CNN

AUTOMATIC SWITCH-OFF BATTERY CHARGER

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Abstract

This project is titled design and construction of an automatic turn off battery charger. Automatic battery charger presented here is a Ni-Cd battery charger. An Auto turn off battery charger proceeds to charge battery automatically. When the battery is charged it will shut off. Rechargeable batteries store electricity from the grid for later use and can be conveniently recharged when their energy has been drained. The objective of this project is to design and construct an electronic device that will supply electrical energy(charges) to a battery. The designed device consists of a circuit which performs charging and displaying battery charge level by LED during or resting state of charging.

Keywords— Charging, Battery charge, Rechargeable battery.

ARDUINO BASED APPLIANCES MONITORING SYSTEM

Abstract

This monitoring system which is used to monitor the runtime of appliances such as fan, TV, lamp, etc., The millis() function in the Arduino library is used to calculate how many seconds theappliance is in on mode. The relay module is used to control the on/off state of the appliances. The LCD display is used to show the current state of the appliance and total runtime. This monitoring system is used to reduce the usage of the certain appliance to minimize the energy used.

Keywords — Monitoring System, LCD display, Arduino Uno, Relay Module.

A REVIEW ON COATING TECHNOLOGY PROCESSES AND RECENT ADVANCEMENTS

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Abstract

This paper discusses various coating deposition processes in actual practical application with special emphasis on thermal spray coating techniques. The recent advancements made to the coating techniques, which covers the advantages of various processes have also been discussed.

Keywords — coating, thermal, spraying, velocity.

A MODEL FOR PREDICTING FUTURE DEMANDS USING NEURAL NETWORKS WITHATTENTION MECHANISM

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Abstract

Predicting demand for taxis throughout the entire city can assist plan a taxi fleet and reduce the waiting time for clients. In this paper, we present a sequence learning model that predicts future taxi requirements in every region in a town backed by existing demand and other relevant information. Recalling previous information is essential here, as taxi demands in the future connect to knowledge about past acts. For example, a cab to a shopping center can be requested by someone to return home in a matter of hours.One of the simplest sequence

DESIGN AND ANALYSIS OF SIX STROKE ENGINE

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Abstract

Two-stroke and four-stroke engines have ruled for over a hundred years now. The Two Stroke Engine paved the way for the introduction of the Four Stroke Engine. The benefit has been on both fronts: increased mileage as well as reduced emission. As the prices of oil continually increase as also the emissions from millions of vehicles. This demanded the development of a new hybrid engine with increased efficiency and lower emissions.

THERMAL CHARACTERIZATION OF RAMIE – SISAL FIBER REINFORCED HYBRID POLYPROPYLENE COMPOSITES

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Abstract

The effect of natural fiber loading on thermal behavior of Polypropylene based hybrid composites is reported. Four composite systems were considered for investigation: Neat Polypropylene (PP), PP/5 wt. % sisal fiber/5 wt. % Ramie fiber (PP/10), PP/10 wt. % sisal fiber/10 wt. % Ramie fiber (PP/20) and PP/15 wt. % sisal fiber/15 wt. % Ramie fiber (PP/30). These natural hybrid composites were processed and developed using melt mix method with the help of twin screw extruder followed by injection molding. The thermal response of these hybrid composites have been studied using Differential scanning calorimetric studies (DSC) and thermo gravimetric analysis (TGA). The experimentation results through DSC studies showed that the degree of crystallization has been enhanced due to improvement in the enthalpy of melting. Further, it was observed from TGA that the weight loss of composites at higher temperatures has been decreased due to influence of addition of hybrid fibers. This indicates the presence of hybrid fibers restrict the molecular movement thereby resisting the weight loss even at high temperatures. Further, the degradation of these composites has been studied in order to evaluate the thermal behavior. Among the composites studied, PP/30 composites exhibit the appreciable thermal behavior.

Keywords: Polypropylene, Ramie fiber, Thermal, Hybrid composites

A REVIEW ON SINGLE AND DUAL EDGE TRIGGERING FLIP FLOPS FOR LOW POWER CLOCKING SYSTEMS

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Abstract

Flip-flops are basic building blocks used extensively in all kinds of digital system designs. Generally the flip-flops are classified according to their edge triggering capability and circuit topology. This paper reviews a set of flip-flop topologies , based on major edge triggering methodologies such as single and double edge clocking along with set of desirable factors like power, area,speed, robustness, noise stability, number of transistors, supply voltage scalability, glitch probability, process variation, and internal activity with respect to data activity.

Keywords :flipflop , edge triggering , clocking system, power.

PENETRATION TESTING IN ETHICAL HACKING AS A COUNTER MEASURE FOR CYBER ATTACKS

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Abstract

Data breaches in cyber world led to the security measures which led to the network security of organizations. Penetration Testing is one of such major technique which ensures the security of organizations in the network. It focuses on the security loopholes in the network and gives counter measures to overcome the flaws in the security. By utilizing those guidelines, the organizations can eliminate the attack from cybercriminals. In this research paper we deal with how to identify the vulnerabilities in a vulnerable target linux system and perform penetration testing in the system with the legal consent of the owners of the organization. Pen testers create automatic report which displays the list of vulnerabilities along with the screenshots and countermeasures. VAPT Technology is used for ensuring the security of networks in the organization.

Keywords: Ethical Hacking, Vulnerability Assessment, Pen tester, VAPT Technology

DUAL BAND MICROSTRIP PATCH ANTENNA FOR WIRELESS APPLICATIONS

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Abstract

This current age of Science and Technology has developed the wireless communication system that demands for antenna capable to be embedded in portable devices because of their advantageous features like light weight, high gain and high efficient characteristics. Several types of microstrip multiband antennas are being proposed by researchers and the process still goes on. For ease of fabricating mobile handsets, printed planer internal antennas have been designed to be integrated with ground planes and system circuits on the same substrates. Along with the several advantages of microstrip patch antenna it shows some limitataion like narrow bandwidth. Therefore, multiband antennas offers best option to overcome these drawbacks by using several techniques to enhance bandwidth of microstrip patch. This project proposes a compact dual band microstip patch antenna with band pass filters. The designed antenna had 40mm width and 40mm length and is designed using a substrate material FR4 with thickness of 1.6mm. Patch dimensions of 20mm by 15mm is designed at a resonating frequencies 2.4 GHz and 5.1 GHz. Simulation is carried out using CST Studio Suite student edition

Key words: Multiband, light weight, high gain, efficient, planer antenna, substrate, band pass filter, bandwidth, optimized.

ANALYSIS OF BLOCKCHAIN TECHNOLOGY

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Abstract

Blockchain may be a method of revolutionizing business transactions. It absolutely was developed in conjunction with Bitcoin technology. This is an associate degree ASCII text file software package, which suggests that anyone will see what is happening and create changes thereto. distinctive regarding it is that through cryptography, the recordings square measure secure and primarily unalterable. At identical time, any changes created to the ledger square measure distributed globally. because of primarily anyone will participate in and verify the dealings, it is what Blockchain theorizer David Tapscott deems a "platform for trust," and at that, one in all truth, because of it is structured in such the simplest way that fabrication is almost not possible. The unbelievable issue regarding Blockchain technology is its inherent security.

Keywords: Ledger, Cryptography, Bitcoin, Cryptocurrency, P2P Network

MECHANICAL AND METALLOGRAPHIC CHARACTERISTICS OF DIFFUSION BONDEDJOINTS OF AA6061 /AA7075 ALUMINIUM ALLOYS

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Abstract

Diffusion bonding is a solid state joining technique that is particularly well suited for combining dissimilar alloys. It is highly dependent on the process parameters being optimal in order to achieve high-quality bonding. The extent of atomic diffusion, as expressed by the thickness of the interface layer, has also been shown to be significantly related to the mechanical strength of the joints. AA6061/AA7075 aluminium alloys were used in this work, and the shear strength and ram tensile strength of the diffusion bonded joints were measured and analysed. The joint strength rises with increasing interface thickness up to 6 m and declines with increasing thickness owing to the production of brittle intermetallics when the interface thickness is increased further.

Key words:Mechanical strength, Metallographic characteristics

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STEPS TOWARDS SUSTAINABILITY: DESIGN OF LOW-COST POWER GENERATION FROM PLAYGROUND SEE-SAW

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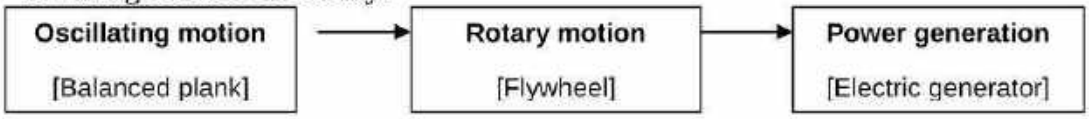
Abstract

Power is defined as the rate at which work is performed. In this planet, electricity is the primary source of energy for emerging countries. Numerous nations are keen to generate electricity using a variety of power plants, including nuclear power plants, steam power plants, and hydraulic power plants. All nations are now focused their efforts on alternate energy sources. In this work, energy is created from waste energy, specifically waste energy generated by see-saws. We can see youngsters playing on the see-saw at the park. A see-saw is a balanced plank or board that is made to move alternately up and down by two people at opposing ends. It is also known as a teeter.

The oscillating motion of the balanced plank is utilized to generate electricity in this instance. The weight pressing on both ends of the balanced plank generates this oscillating motion. By use of a separate arrangement, this oscillating motion is translated to rotational motion. This rotating motion is what generates electricity.



Then the power is stored in a battery and it can be used for some applications

Key words: Alternate Energy, Electricity, See-Saw

EXPERIMENTAL INVESTIGATION OF DIFFUSION BONDED AZ80 MAGNESIUM ALLOY WITH AA7075 ALUMINUM ALLOY

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Abstract

This experiment involved the diffusion bonding of Az80 Magnesium alloy with AA7075 Aluminum alloy dissimilar materials under 10 Mpa for 15 minutes bonding duration at various temperatures. The ideal process parameters for diffusion bonding of Az80 magnesium alloy with AA7075 aluminium alloy dissimilar materials in vacuum have been investigated in order to find the best possible results. Using microstructural analysis, ram tensile testing, and lap shear testing, the bonding quality of the joints was determined and the joints were tested at room temperature. Researchers were able to investigate the microstructure of bonded joints as well as the key factors that impact the diffusion bonding process by employing optical microscopy techniques.

Key words: Diffusion bonding, Magnesium alloy, bonding quality

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HYDROGEN AS AN ALTERNATE FUEL FOR IC ENGINES

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Abstract

A major portion of the world's energy needs is obtained through fossil fuels. Coal provides a dominant portion of the electrical energy production in the world and specially in India. However the future of fossil fuels and particularly coal is clouded by the environmental threat posed by green house gas effect caused by release of green house gases such as CO_2, SO_2, and NO_x. Several alternate technologies are under development for containing green house gas emissions, and one such promising technology is the Hydrogen energy. Hydrogen holds the potential to provide a clean, reliable and economical source of energy for meeting the growing energy needs for India in future.

The present paper is an attempt to review the technological options being pursued for production and storage of hydrogen energy. Also this paper presents the road for key areas of research and development of hydrogen energy in a phased manner.

IOT BASED ACCIDENT DETECTION AND AMBULANCE RESCUESYSTEM

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Abstract

Nowadaystheroadaccidentsinmodernurbanareasareincreasedtouncertainlevel.Thelossofh umanlifeduetoaccidentistobeavoided.Trafficcongestionandtidal flow are major facts that cause delay to ambulance. To bar loss of human lifedue to accidents we introduce a scheme called ITLS (Intelligent Traffic Lightsystem). The main theme behind this scheme is to provide a smooth flow for theemergencyvehicleslikeambulancetoreachthehospitalsintimeandthusminimizingthedelaycause dbytrafficcongestion.Theideabehindthisschemeistoimplement ITLS which would control mechanically the traffic lights in the path ofthe ambulance. The ambulance is controlled by the control unit which furnishesadequate route to the ambulance and also controls the traffic light according to theambulance location and thus reaching the hospital safely. The controller identifiesthe location of the accident spot through the sensor systems in the vehicle whichdetermined the accident and thus the controller walks through the ambulance to thespot. This scheme is fully automated, thus it finds the accident spot, controls thetrafficlights,helpingto reachthehospitalintime.

DESIGN AND ANALYSIS OF SOLAR ASSISTED COMBINED REFRIGERATION SYSTEM

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Abstract

Solar energy is a periodic unsteady heat source. In the utilization of solar energy, direct recovery at about 100°C is feasible and economical. In the solar driven ejector-absorption refrigeration cycle with re-absorption of the strong solution and pressure boost of the weak solution. High COP is obtained by increasing the efficiency of the absorber with the help of Ejectors (liquid - gas) Low pressure refrigerant vapour is injected and pressurized high pressure solution. Flow resistance is minimized. A small solution pump is used, in this system No moving parts, No Lubrication, Low maintenance and simple in operation. Working fluids is based on salt absorbent, low evaporation temperature and reduce the problem of crystallization. Working pairs used in the system is NH3 - H20 (or) NH3 - Lithium Nitrate.

VIBRATION FREE SHEET METAL HOLE PRODUCING ATTACHMENT IN DRILLING MACHINE

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Abstract

"Diamond cuts Diamond', says the adage. This is the philosophical statement. This is the underlying idea that underpins the machining of material from a solid. The use of a punching machine in sheet metal punching is a highly expensive and time-consuming procedure. Instead of utilizing a punching machine to solve the aforementioned difficulty, we are using our vibration-free sheet metal hole generating attachment to do so. The primary focus of this research was to minimize vibrations in the work material. Specifically designed spring and ball attachments are employed to accomplish this task. Using this sheet metal hole creating attachment, you may create holes with precise proportions. Sheet metal hole generating attachment is used to cut arcs in sheet metal, which is accomplished by the use of sheet metal hole creating attachment. Designing and modelling the attachment, as well as identifying the advantages and disadvantages of this drilling method, are the primary goals of this project. Another goal is to increase the machining rate of this machine.

SYMMETRICAL CIRCULAR TOOL PATH CONTROLLER BY SIMPLE LINKAGE

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Abstract

This project deals with the design, analysis and fabrication of symmetrical circular arc tool path controller. The objective of designing this linkage is that it can be used to control the tool or table movement in modern machineries in alternate to the piston cylinder arrangement. By using this mechanism, various types of tool and table motions in the machineries can be obtained. By the conventional piston and cylinder arrangement only linear motion can be achieved. But by using this mechanism angular and elliptical path can be traced. And hence complicated shapes in various profiles can be machined easily and the time required for machining these type of profiles gets reduced and hence the range of application of the machines increases. This can also be used for controlling robotic arms. Hence some complications in robotic arm movement can be avoided. This can be used for further more applications by modifying its components

Key words: Mechanism, Symmetrical Circular arc

OPTIMIZING NUMBER OF ITEMS NEEDED FOR THE DEPARTMENTAL STORE WITH MINIMUM LOSS

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Abstract

This paper evaluate the number of spare items needed to support a departmental store through the end of anticipated items useful life based on characteristics about the population of fielded units, current depot inventory levels and unit reparability. The paper is intended to provide a long range forecasting estimate of the number of spare items that should be procured near-term to support a departmental store with units (n_f); takes as input a time frame of years and ignores any short term shortages that may arise during the time window when units are repaired and restocked to depot inventory. We do not take into account any degradation that may occur with depot inventory units over long periods of time.

A MODULAR DESIGN OF CASCADED MULTILEVEL INVERTER WITH MINIMUM NUMBER OF SWITCHES

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Abstract

Over past two decades, there is a vast enhancement in large solar PV and wind farms which increases the demand for high quality inverter for higher and medium power applications. Multilevel inverter is a power electronic circuit which generates required output voltage from number of dc input voltages. Among the various topologies of multilevel inverter, cascaded MLI has an advantage of having low stress on switches, no capacitor balancing issues with good power quality. The main drawback of cascaded MLI is, it need more number of switches. In order to reduce total harmonic distortion (THD) of the output voltage waveform, number of levels have to be increased, which in turn needs more number of switches. Increase in switches subsequently increases the size, cost, switching losses and in turn reduces the efficiency. In this paper a modular cascaded multilevel inverter topology is proposed which uses minimum number of switches. This in turn also reduces the number of driver circuits. The proposed topology also has an advantage of switching only one MOSFET while going from one level to next. The modular cascaded multilevel inverter topology is validated by the simulation using MATLAB-SIMULINK model for 9-level inverter. The results are compared with the existing topologies.

Keywords: multilevel inverter, total harmonic distortion, minimum number of switches

IOTBASEDAUTOMATICPETFEEDER

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Abstract

Weownpetsfortheircompanionshipgivesusemotionalsupport.Ithelpstoreduceour stress and sense of loneliness. We treat pets as part of our families. We alwayswant to take good care of our pets supplying timely nutritious food. Often time's wemay not be able to supply food timely to our pets. The Internet of Things (IoT)technology can improve quality of life by intelligently connectingphysical devicesthroughinternet.WehereinvestigatetheapplicationofIoTtoautomatetheprocessof pet feeding. We use two feeders one for solid food and one for liquid food. Thedispenser of solid food is controlled by a DC servo motor and that of liquid food iscontrolled by a DC solenoid valve. The motor and solenoid valve will be controlledby ATSAMD21 chip microcontroller. An ublox Wi-Fi module is used along with themicrocontroller to enable the connection of actuators to the internet. A cameramodule is also used so that the owner of the pet can monitor remotely the pet'sactivities. The owner of the pet can control the pet feeders from anywhere in theworld and also can monitor his pets, through any internet enabled device like smartphone.Theprocessofpetfeedingcanalsobeautomatedbytheownerbyconfiguring themicrocontrollerappropriately

COMPUTER-AIDED DETECTION AND DIAGNOSIS OF BREAST CANCER WITH CONVOLUTIONAL NEURAL NETWORK ANALYZING DEEP FEATURES

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Abstract

Breast cancer is the most threatening illness that forms in the breast cells. Self-tests and biopsy help to early diagnosis and thereby improve the survival chances significantly. Machine Learning and convolution neural networks have recently become a popular tools in cancer data classification. Breast cancer classification divides breast cancer into categories like histopathological variety, the grades, the stages, and the expression of proteins and genes. The purpose of this breast cancer classification is to select the best treatment method. This paper explores a breast Computer Aided Design strategy with Convolutional Neural Network (CNN) deep features. First, we propose a technique to detect a mass based Supervised Extreme Learning Machine (S-ELM) clustering. Second, we create a model to bring out specific features in the images. Third, an ELM classifier is to classify benign and malignant breast masses. A novel deep learning (CNN) based framework to automatically address breast mass lesions classification was developed. Extensive experiments demonstrate the accuracy, efficiency and overall improvement of our proposed mass detection and breast cancer classification method.

Index Terms—Lesion detection, Computer-Aided Diagnosis, Deep Learning, Supervised Extreme Learning Machine, breast cancer, convolutional neural networks.

DESIGN AND IMPLEMENTATION OF SNIFFER FOR DETECTION OF MOBILE PHONES

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Abstract

The proposed handy pocket-size mobile transmission detector or sniffer can sense the presence of an activated mobile phone from a distance of one and half-a meters. Hence, it can be used to prevent use of mobile phones in examination halls, confidential rooms, etc. It is also useful for detecting the use of mobile phones for spying and unauthorized video transmission. The circuit can detect the incoming and outgoing calls, SMS and video transmissions even if the mobile phone is kept in the silent mode. The moment the bug detects RF transmission signal from an activated mobile phone, it starts sounding a beep alarm and the LED blinks. The alarm continues until the signal transmission of the signal becomes ceases.

Keywords-- OP-AMP[IC CA3130], LED,RF signal.

POSTCOLONIAL MIND : IN THE PERSPECTIVE OF SRI AUROBINDO

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Abstract

The question of feminism and postcolonialism doesn't seek an answer anywhere else, but in the Consciousness of Supramental beings. Frankly speaking, the human mind itself is not constitutionally capable of visualising the Subtle Conscient being unless it is under the command of the Supreme Consciousness. Sri Aurobindo, a great Yogi and literary giant of the Indian soil has clearly and expressly pointed out the scope for human beings to have oriented mental force for the realisation of the one Divine or one Cosmic force working on the principle of integrality. Although, Sri Aurobindo was a Yogi and his Yogic vision is a blissful blend of Science and poetry on the one hand and yoga and poetry on the other. It is his Yogic consciousness that visualises the Truth in the centre of the being of man. The Truth is being manifested in his epic Savitri in particular and in his other works in general as well. The present paper attempts to explore the tract for the human being as shown by Sri Aurobindo in his Evolutionary theory.

Key Words : Supramental, Supreme Consciousness, Yogic vision, Subtle Conscient, Integrality

SMART ELECTRIC VEHICLE CHARGING THROUGH CLOUD MONITORING AND MANAGEMENT

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Abstract

Smart charging system of electric vehicle using cloud based monitoring and management is demonstrated in this work. xEVs (electric plugin hybrid, battery electric vehicles) Charging Management System is crucial for the dynamic demands of charging infrastructure, namely perspectives from automakers, electricity providers, vehicle owners and charging service providers. Through dedicated interface, the developed system is capable of providing real time information to xEVs users regarding nearest charging station with minimum queuing delay, with minimum charging cost through a secured online accessing mechanism for accessing Sate of the Charge (SOC) of the xEV's

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NFC DIGITAL RECIEPT MANAGEMENT

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Abstract

This paper presents a new approach for receipt systems using NFC smartphones. Current systems use NFC enabled mobile phones either in emulation or peer-to-peer mode for exchanging data. In practice these systems face different barriers regarding realization and interoperability from developers and operators perspective, which prevents them to be widely rolled out. In this paper we propose a solution, where the mobile phone is in reader/writer mode and the billing system (Receipt) using a NFC pad is in emulation mode. The major advantage for this scenario is that it can be implemented very easily by using light-weight protocols, which are compatible to existing NFC mobile phones. This paper provides an overview about the major problems, discusses advantages and disadvantages of the new approach, and finally describes an implementation from a proof of concept realization.This method can help stop the use of receipt paper and also reduce the biggest problem of loosing the receipts.An NFC based electronic innovation to replace paper receipts with digital receipts in retail businesses.Digital receipt gets instantly transferred to the smart phone.An android app in the smart phone allows the user to browse through all the receipts in an orderly manner.The app can save 15,000 acers of forest per year if implemented in just the majority group of countries.While paperless transaction generally refers to a cashless payment system,it is also important to eliminate paper in the form of receipts.

NFC is based on Radio Frequency Identification (RFID) standards,and provides an effective contactless communication up to distance of 4 to 5 centimeters.Given the short distance at which it operates,the potential for signal interference is reduced,making the connection reliable.

INVESTIGATION OFPHOTOVOLTAIC PROPERTIESOF ORGANIC PEROVSKITE SOLAR CELL (OPSCS) USING PBI2/CH3NH3I/TIO2:FTO

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Abstract

In this work we extend our previous work on that type material and already reported. The photoelectric behavior of perovskite $CH_3NH_3PbI_3$-x doped with Cl_x layers developed on TiO_2:FTO using the spin-coating method. Perovskite parameters of the unit cell are calculated by XRD. The developed layer's morphology is shown the irregularity and porosity. In this work the to discover the behavior of developed perovskite layer on TiO_2:FTO and spectral analysis of this. Therefore, the analytic studies of this substance are having a bandgap ~ 1.60 eV and this is shown the order of perfect absorption coefficient and bandgap in the range of 400 nm thin layers. This thin layer help to develop solar material and its devices make highly efficient solar panel.

Keywords: Perovskite Solar Cells (PSCs), Thin layer, Methylammonium Halide, Lead Halide.

IMPACT OF TECHNOLOGY ON COMMUNICATION IN ENGLISH LANGUAGE

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Abstract

Today, the Internet has become a central informational medium that has completely transformed the way we learn, teach, and communicate. Social media offers an online platform that allows users to exchange information and ideas through posts, tweets, and comments, although with word or character count restrictions. Evidently, creativity cannot be curtailed through content length restrainment.

This lead to the emergence of a new genre of short-stories called short-short stories along with the birth of a new English dialect called Text-Speak. The prevalence of social media exchanges shows that technology users have readily accepted these quick social site interactions as a new way of communicating and have also adjusted their writing to match the content restrictions. The phenomenal popularity of short stories that can fit in a tweet or text is an example of how an obstacle can be turned into an opportunity for the unfolding of new innovations. Literary purists and educators, however, are concerned that the attitudes and habits of tech-savvy generation are muddying Standard English as Text-Speak has started to infiltrate students' assignments, blurring the distinction between formal and informal writing at an alarming rate. This paper delineates the impact of technology on daily English writing and literature.

A FRAMEWORK ONDEEP LEARNING FOR DETECTION AND CLASSIFICATION OF LUNG NODULES IN CT IMAGE

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Abstract

Detecting lung nodules from computed tomography (CT) scans has become a difficult and time-consuming task for radiologists in recent years.Computer-aided diagnosis (CAD) programmers have been proposed to further alleviate this burden. In current history, deep learning algorithms have shown promise, outperforming standard models in a range of sectors.In order to increase the accuracy of CAD systems in lung cancer screening utilizing computed tomography, researchers are actively working with various deep learning algorithms. We examine some of the most cutting-edge deep learning techniques and architectures offered as CAD frameworks for lung cancer diagnosis in this research. Based on a list of possible nodules, nodule identification systems identify candidate nodules from a CT scan and categorize them as benign or malignant tumors. The main components of the various techniques are discussed, as well as their efficiency. The accessible CT lung datasets for study are also discussed. The differences between the various approaches are presented as well as analyzed.

DESIGN AND FABRICATION OF HYBRID POWER GENERATER

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Abstract

Nowadays, mostly electricity generation is based on Thermal Power Stations. Thermal Power Stations are consuming more fuel and their availability is decreasing drastically. Due to combustion of fuel, the Exhaust gases from the Thermal Power Plant causes the Ozone as well as pollutes the environment. To overcome the insufficiency of fuel and environmental pollution due to the exhaust emission it is necessary for us to the use the Renewable Energy Sources for a better future. Generally the constructing the Solar or Wind Power Plants requires huge area. This necessitates us to build a Hybrid System using Wind and Solar Energy. We are depending on power from Renewable and Non- Renewable energy sources but mostly on non renewable energy sources. But as far as there is a steep increase in population and leak in availability of fuel it is not safe to depend on Non-Renewable energy resources. Hence, our Hybrid Power Generation System will be one of the solutions for this worldwide energy resource crisis.

Keywords: Thermal Power Stations; Environmental pollution, Solar Energy; Hybrid Power

Generation

FOODCENTRIC E-COMMERCE WEBSITE: FOSTERINGSOCIALSERVICES

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Abstract

In today's fast-changing business environment, it's extremely important to be able to respond to client needs in the most effective and timely manner and to provide a moral support to the society as well.This paper is based on html and CSS, whose aim is to create a responsive website for food and otherproducts delivery, the primary goal of this paperis to obtain a percentage of profit to help disabledperson, RCC, and other social activities. The overall plan is to do a non-profit website and tomake the users/client to take part in the social service.Basic methods used for creating a website is to register the domain name followed by exploring a simple and relatable domain name in the internet. The contents are basically based on food delivery and product selling where the main motto is to obtain a profit percent for social services. Another factor is making the website compact for both portrait and landscape devices and the programs are based on HTML & CSSBy understanding HTML document structure and using CSS selector's one can customize a website with enough images and documents.

Keywords: HTML, CSS, Social Service

A SMART HEALTHCARE SYSTEM FOR THE IDENTIFICATION AND MONITORING OF COVID19 UTILIZING THE INTERNET OF THINGS AND CLOUD COMPUTING

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Abstract:

An automatic COVID-19 detection system based on computed tomography (CT) scan or X-ray pictures is effective, but the construction of a robust system is difficult. In this work, we suggest an intelligent healthcare system that incorporates Internet of Things (IoT) and cloud computing technologies. Real-time tracking of patient status is provided by the intelligent system, which also provides dependable, on-time, and high-quality healthcare services at a reasonable cost. COVID-19 detection tests are carried out with the help of DL in order to determine the feasibility of the proposed system. We evaluate the resilience and efficacy of the proposed system using two publicly available benchmark datasets (Covid-CT Scan dataset). In order to train the suggested system, pictures from 80 percent of the datasets were used. Using these data points, it can be concluded that the suggested system has an accuracy of 98.5 percent, a sensitivity of 97.3 percent, an accuracy of 98.2 percent, and an F1-score of 97.87 percent, among other characteristics. The results of the comparison demonstrate that the suggested system outperforms the already available state-of-the-art

systems. The suggested approach will be beneficial in medical diagnosis research as well as in healthcare systems, according to the authors.

SOFTWARE DEFINED NETWORK PROPOSING SHADOW CONTROLLERS FOR PROTECTING PLANES FROM ATTACKERS

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Abstract

The Moving Target Defense (MTD) research community has gained a significant lot of attention in recent years and is used to build secure networks. By continuously changing the surface of the attack, MTD was able to reduce the asymmetric advantage of the attackers. This research proposes that SMTSC (SDN-based MTD framework using Shadow Controllers) should be utilized as an MTD framework based on SDN technology. Although previous work on SDN-based MTD focused on data plane safety, we utilize MTD to protect the SDN control plane. The suggested method utilizes the concept of shadow controllers to offer dynamism to ensure the safety of an SDN environment in the control plane, as explained in detail below. We have proposed the ideas of Shadow Controllers to minimize the efficacy of recognition attacks against controllers. There are many benefits to our approach that we will explain below. First and foremost, the procedure of MTD is used to offer control aircraft security. The second benefit of the multi-controller approach is that the overall availability of the SDN network is increased. Another important benefit of SMTSC is the reduced computer overhead. The framework suggested is implemented with the assistance of Mininet and the ONOS Controller. The efficacy and overhead of the framework are evaluated by the effort made by the attacker, the amount of money spent by the defense, and the complexity of the network. As a consequence, positive trends were identified for the preservation of the SDN environmental control strategy.

Keywords: Moving Target Defense(MTD), ONOS Controller, SDN network, SMTSC, Shadow Controllers

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IDENTIFICATION OF LUNG NODULES USING ARTIFICIAL NEURAL NETWORK WITH FUZZY C-MEAN ALGORITHM

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Abstract

In many parts of the world, tuberculosis is considered the most serious health issue. It is the deadliest infectious disease in the world, second only to HIV Patients' mortality rates are significant when it is kept untreated and misdiagnosed. The diagnostic approaches are sluggish and difficult to detect. This method contains an automatic way for detecting tuberculosis in order to lessen the disease's severity. The lung region is first extracted using a graph cut segmentation algorithm. We build out a collection of features in this lung region, such as texture, shape, and so on. Using the SVM, it is possible to classify X-rays as normal or pathological. This paper provides a streamlined methodology for lung segmentation problems using fuzzy logic segmentation instead of GC

segmentation. The proposed systematic system for analysing TB segmentation outperforms graph cut segmentation approaches.

STOCK MARKET PREDICTION USING MACHINE LEARNING(ML)ALGORITHMS

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Abstract

Stocks are possibly the most popular financial instrument invented for building wealth and are the centerpiece of any investment portfolio. The advances in trading technology has opened up the markets so that nowadays nearly anybody can own stocks. From last few decades, there seen explosive increase in the average person's interest for stock market. In a financially explosive market, as the stock market, it is important to have a very accurate prediction of a future trend. Because of the financial crisis and recording profits, it is compulsory to have a secure prediction of the values of the stocks. Predicting a non-linear signal requires progressive algorithms of machine learning with help of Artificial Intelligence (AI). In our research, we are going to use Machine Learning Algorithm specially focus on Linear Regression (LR), Three month Moving Average(3MMA), Exponential Smoothing (ES) and Time Series Forecasting using MS Excel as best statistical tool for graph and tabular representation of prediction results. We obtained data from Yahoo Finance for Amazon (AMZN) stock, AAPL stock and GOOGLE stock after implementation LR we successfully predicted stock market trend for next month and also measured accuracyaccording tomeasurements.

DESIGN AND IMPLEMENTATION OF AUTONOMOUS CAR USING RASPBERRY PI

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Abstract

The project aims to build a monocular vision autonomous car prototype using Raspberry Pi as a processing chip. An HD camera along with an ultrasonic sensor is used to provide necessary data from the real world to the car. The car is capable of reaching the given destination safely and intelligently thus avoiding the risk of human errors. Many existing algorithms like lane detection, obstacle detection are combined together to provide the necessary control to the car.

Keywords: Raspberry Pi, Sensor, Lane Detection

ANALYSIS OF AGRICULTURE DATA USING DATA MINING TECHNIQUES: APPLICATION OF BIG DATA

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ABSTRACT

Abstract In agriculture sector where farmers and agribusinesses have to make innumerable decisions every day and intricate complexities involves the various factors infuencing them. An essential issue for agricultural planning intention is the accurate yield estimation for the numerous crops involved in the planning. Data mining techniques are necessary approach for accomplishing practical and efective solutions for this problem. Agriculture has been an obvious target for big data. Environmental conditions, variability in soil, input levels, combinations and commodity prices have made it all the more relevant for farmers to use information and get help to make critical farming decisions. This paper focuses on the analysis of the agriculture data and fnding optimal parameters to maximize the crop production using data mining techniques like PAM, CLARA, DBSCAN and Multiple Linear Regression. Mining the large amount of existing crop, soil and climatic data, and analysing new, non-experimental data optimizes the production and makes agriculture more resilient to climatic change. Keywords: Big Data, PAM, CLARA and DBSCAN

EVENT MANAGEMENT SYSTEM

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Abstract

Event management system is an intranet-based application that concentrates on the arteries of commercial transactions, which is properly established between the various customers and the event management team for conducting the events and maintaining associated transactions. The application acts as a bridge between the customer and the event management team to run the general business transactions of the event management organization for conducting various events, with the use of electronic media. This application helps the commercial people to gain through the accessibility of this business process with a formula of 24 * 7 * 365 day standard. This project is useful for planning how to successfully organize a function. Teamwork is important in order to organize an event and the work allotted to each team member is managed using this software. Event organizer is an application under project management for creating and developing festivals, events, etc. Since big events have a big impact on the country. The project implements all the above features to demonstrate the working of the event management system so that the project will be helpful for The customer to conduct an event in a successful manner. The system is useful as it calculates an exact cost of all the resources required during the event. The user gets all the resources at a single place instead of wandering around for them. This system is effective and saves time and cost for the users. It is User friendly and cost effective and it is customized with the activities related to event management life-cycle. It also provides a new edge to the management industry. The event management system is an online event management system software project that serves the functionality of an event manager. The system allows registered user login and new users are allowed to register on the application. The system helps in the management of events, users and the aspects related to them. This is proposed to be a web application. The project provides most of the basic functionality required for an event type e.g. [Marriage, Dance Show Birthday party, College Festival, etc.], the system then allows the user to select date and time of event, place and the event equipment. All the data is logged in the database and the user is given a receipt number for his booking. The data is then sent to the administrator (website owner) and they may interact with the client as per his requirement.

Keywords: user, intranet, teamwork.

SOLAR POWERED SMARTASSISTANCE FOR IRRIGATIONSYSTEM

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Abstract

Irrigation is an important component of the agricultural system. It is generally reliant on rain, but since the development of the pressured irrigation system, the reliance on rain has lessened day by day. The farmers manually operate the pressured irrigation system. Because a manually controlled device necessitates additional people for supervision, it reduces field efficiency. This irrigation can result in overwatering when plants demand more water during their peak periods, as well as under watering when plants require more water. Water scarcity causes poor crop growth, late blooming, and decreased yields, all of which are serious concerns. Furthermore, excessive irrigation in the root zones causes root zone ill health and vegetation, resulting in additional costs for the farmer, as well as time and water waste. Also, a continuous supply of more than enough water might enhance the salinity of the land. In rural places, however, electrical supply is a big challenge. Farmers do not have a consistent source of electricity for agricultural activities. As a result, this research proposes a novel strategy for solar-powered smart irrigation systems in agricultural management that use a soil moisture sensor. Based on the detected data, the system automatically decides on the appropriate irrigation action and tells the user. The system also concentrated on the usage of solar energy by the sensors during communication. The report addressed the system's functioning mechanism and component specifics.

Keywords: Smart irrigation, solar power, solar pump, moisture sensor, energy crisis, Photovoltaic panel.

OBJECT DETECTION AND TRANSLATION FOR BLIND PEOPLE USING DEEP LEARNING

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Abstract

There are million of people in India alone that are visually impaired. so, it's essential to understand for visually impaired people to recognize a product of their daily use so we made a system to identify products in their everyday routine by this system. There are many papers on this topic that will help a blind person. This paper helps a blind person in their daily use. This system consists of a camera, a speaker and an image processing system. This project tries to detect the object and transform that object into the audio form and inform blind person about those objects. Our system consists of a box which has a portable camera and a system which will process that image. image are captured with a portable camera device with real-time image recognition on existing object detection models. after detecting an object that information is translate into audio

ANALYZING PEOPLE'S EMOTIONS FROM THE FEEDBACK USING ARTIFICIAL INTELLIGENC

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Abstract

Over the past decade, smart city applications have gained significant attention in all fields. However, little attention has been given to perceiving the emotions and perceptions of citizens who have a direct impact on smart city initiatives. We propose the use of publicly available, abundant social media conversations that contain contextual information encompassing citizens' emotions and perceptions which could be considered to provide the means to feel the emotional pulse of a city. This project idea is to create an EI-based framework to detect the emergence of public emotions and negativity in conversations.The framework could be adopted by industry leaders and government officials for smart observation of citizen opinions to improve security, communication, and policymaking

ACCURATE COLOR FILTER ARRAY OBJECTS WITH NOISELESS AND NOISY COLOR IMAGE ACQUSITION

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Abstract

The determination of the positions and orientations of tools in complex manual assembly processes allows an automated monitoring about the fulfillment of the process and a quality control. This contribution presents an optoacoustic indoor localization system based on combined distance and inertial measurements that is able to undertake this positioning task. In doing so, an accurate distance measurement is achieved with ultrasound and infrared. This novel system is able to localize multiple moving objects attached to transmitters simultaneously by measuring the unilateral distances to room fixed receivers and fusing these measurements with inertial navigation system data (acceleration, angular velocity, and magnetic field) in a particle filter (PF). Digital color cameras acquire color images by means of a sensor on which a color filter array (CFA) is overlaid. Practical experiments confirm the superiority of our design, both in noiseless and noisy scenarios. An image histogram is a type of histogram that acts as a graphical representation of the tonal distribution in a digital image. It plots the number of pixels for each tonal value. By looking at the histogram for a specific image a viewer will be able to judge the entire tonal distribution at a glance. Thus, the histogram for a very bright image with few dark areas and/or shadows will have most of its data points on the right side and center of thegraph.

A REVIEW ON CLOUD COMPUTING ISSUES AND CHALLENGES

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ABSTRACT

Cloud Computing (CC) is a specific technology to provide services to the users in an efficient way. Cloud computing is an important technology for successive companies and organizations. It is concerned with accessing online software applications, data storage and processing power. It also saves the cost of services and reduces the financial risk for the end users.Cloud computing is a promising business concept among the fast growing segments of IT industry. Cloud can be utilized as a service of an Internet with high scalability, higher throughput, quality of service and high computing power.Even though cloud has flexibility and availability services still it has its own security and privacy issues during the growth of large service companies. This paper overviewed about the characteristics of cloud computing, Service models, Deployment models, advantages and reviewed the issues in cloud computing.

Keywords: Cloud Computing, Service & Deployment Models, Issues of Cloud Computing

DESIGN AND SIMULATION OF RECTANGULAR MICROSTRIP PATCH ANTENNA USING CST MICROWAVE STUDIO

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Abstract

The Microstrip patch antenna has become very famous and has attracted much attention towards the research because of its light weight, compact, inexpensive and are capable of maintaining high performance over a wide range of frequencies are preferred. In this paper, the rectangular patch is designed with different parameters like return loss, VSWR, directivity and gain are simulated using CST Microwave Studio simulation software. The microstrip patch antenna is designed to increase the bandwidth and return loss. FR-4 with dielectric constant of 4.3 is used as a substrate for the proposed antenna. It shows the return loss of -22dB and 6.948 dBi directivity at the resonating frequency of 2.4 GHz.

Index Terms: Patch antenna,Return loss,Gain,Directivity, CST MWS

DIGITAL MARKETING – PRE & POST PANDEMIC SCENARIO

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Abstract

Digital Marketing is one of the fastest growing aspects all over the world. Nowadays, shopping without using any kind of digital platforms is becoming rare. Especially during this pandemic period all over the world, Most of the people have transformed themselves as the users of digital forms of buying options like E-commerce sites. Digital marketing is now considered as the world's leading form of Marketing technique as it is able to gain a lot of attention than the other forms of marketing techniques. Digital Marketing includes various subordinates under it. In India, Digital Marketing is rising with a quick pace. Most of the Indian companies have already started using Digital Marketing as it helps them a lot by reaching out to an immense amount of Customers. The digital marketplace is undergoing a lot of changes thanks to a lot of innovations and techniques. From E-commerce sites to E-wallets, everything is getting digitalized in this entire World and so it is extremely important for us to gain adequate knowledge about digital marketing. It is important for us to know about the channels of digital marketing, how various companies use them, how the people are attracted by it and also the threats to Digital Marketing.

Key words: Digital Marketing, Channels of digital marketing, Consumer behavior during the pandemic, Threats faced by digital marketing

ARTIFICIAL INTELLIGENCE: ROADMAP FROM AUTOMATION TO DIVINITY

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Abstract

Artificial intelligence is a technology that has taken an increasingly big space. It is a fascinating domain filled with endless possibilities for new avenues, developments, and opens doors for more exciting breakthroughs in the future.It is all around us everywhere in visible and invisible form. It is a pillar of modern technology and is a key component of advanced computing. When we say advanced computing, everything revolves around a technology named 'Artificial Intelligence'. The main objective of this research paperis to share various reflections of this technology and its pathway to future.

Keywords: Artificial Intelligence, Machine Learning, Robotics

A NOVEL SOLUTION FOR BANKING SECTORS TO MAKE SECURE TRANSACTION USING BLOCKCHAIN TECHNOLOGY

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Abstract

The banking industry is very much regulated for all jurisdictions, while banking sector representatives are distinguished by their conservative attitudes. The traditional banking system depends on the centralized servers which bring significant trust issues. The new technique employees the blockchain technology which is a shared and trusted public ledger of economic transactions that are grouped into blocks. The blockchain is an unhackable data storage system. But, the wide dissemination of blockchain in the recent years, the overwhelming popularly of cryptocurrencies have contributed to the fact that management of many banks and financial organizations no longer deny the potential of blockchain technology. Large banks are increasingly conducting tests of decentralized asset technology and implementing blockchain in business processes. Banks continue to invest in a variety of projects and start-ups that are developing blockchainbased solutions. The unique hashes and proof of works thereby reduce the conflicts in the transactions that makes the system as another advantage.

NOVEL DESIGN OF POWER GENERATION USING WINDMILL IN INTEGRATION WITH BIOMASS ENERGY SYSTEM

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Abstract

More than two billion people living in underdeveloped countries, the bulk of whom reside in rural areas, do not have access to electricity. Kerosene and animal dung are used to provide many of the region's energy needs in addition to traditional and non-electric energy sources, such as human and animal muscle power. There has been a rise in recent years in environmental concerns due to fossil fuel consumption and the global warming phenomenon. For these reasons, renewable energy hybrids have been proposed as a possible option. Wind energy is supposed to contribute to the global state of the environment because of its purity. Also, every year, metric tons of residential garbage are collected, mostly being dumped in spread areas. In India, paper and plastic make up the majority of municipal solid waste (MSW), accounting for 80 percent of total MSW. Using anaerobic digestion or direct combustion, waste of municipality can be transformed into power for use. Employing a windmill to power a biomass generator is the topic of this paper. For a wind mill that operates on an intermittent basis, a sufficient number of battery banks are installed. Biomass and windmills are used to generate electricity, and a battery bank can also be employed to store excessive and deficit power.All of the biomass generator's operations can be scheduled to save on costs. As part of this article, a compact wind farm with biomass energy and a battery backup is described. Proficient assessments of a wind-bio energy hybrid power plant with an output of 6 kW are provided. The paper's goal is to determine the feasibility of the system and optimize it.

Keywords*:* Windmill, Biomass, Fossil energy, Hybrid, Energy, Municipal Solid waste

IOT BASED DIGITAL NOTICE BOARD USINGARDUINO

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ABSTRACT

Internet of thing is an entity of the physical or virtual object, whichisabletoidentifiedaswellasintegratedintocommunicationsystem.GrowthofIoTcan be seen extremely fast in our present life. It is acknowledged that by 2020thousandsofbillionsofobjectswillbedeployedglobally.WetrusttofacilitateIoTassoftware-driven,thereforeutilityrequirementsresolvethemodernizationaswellasimprovementtowardsIoT.Primarydomainsidentifiedareenergytransportation,distribution,smarttown,smartcommunication,smartdomestic,atmosphere,supplychain,aswellasfitnesscare.ThisprojectproposethatArduinobasedLCDdisplaywhich we can control from mobile application which uses the Bolt platform. Theinformation from the mobile application is store in the IOT server and it will sendtotheArduinousingwifimodule.ThenArduinocanprojecttheinformationthroughLCD.TheProjectcanbeimplementedinwiderangeofallsectorssuchasEducationalInstitutions,Government andprivateOrganizations,Malls,etc.

A STUDY OF POWER GENERATION MODEL USING PV-BIOMASS HYBRID ENERGY SYSTEMS

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ABSTRACT

Population growth and technological advancements are driving a fast increase in global energy demand. This means that traditional sources of energy, such as diesel or coal-fired power plants and nuclear-powered heat-power stations, dominate the world's energy output. Renewables contributed 19 percent to human energy consumption and 22 percent to generation of electricity in 2012 and 2013, according to REN21's 2014 report. Traditional biomass accounts for 9% of this energy consumption, 4.2 percent for non-biomass heat energy, 3.8 percent for hydroelectricity, and 2% for wind, solar, and geothermal electricity. In some long-term scenarios, a considerable increase in the percentage of renewable technologies is expected. If appropriate laws and technical advancements are enacted, renewable energy sources might satisfy up to 50% of the world's energy demands by the middle of the twenty-first century. It has become more vital for the advancement of civilization in recent years that we use biomass energy to generate electricity. Sustainable development has become a reality due to global warming, resource depletion, and other worldwide issues. Biomass is a key source of renewable energy for electrical power plants. PV (solar)-biomass hybrid technology is studied in this article as an alternative to relying on the grid. For places with modest solar availability but plentiful biomass, this hybrid plant might be a viable alternative. Using sun insolation to limit the usage of biomass can enhance the output of a power plant. The biomass system will be employed when solar thermal energy is insufficient.

Keywords: Conventional sources, Photo voltaic, Biomass, Renewable resources

TWO BODY ABRASIVE WEAR BEHAVIOUR OF GLASS – CARBON HYBRID PA66/PTFE COMPOSITES: EFFECT OF GRIT SIZE

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Abstract

The effect of abrasive grit size on the abrasive wear behavior of Polyamide 66 and Thermoplastic blend based Glass – Carbon Hybrid thermoplastic composites in multipass condition was studied. The blend (PA66/PTFE)(80/20 wt.%), Blend/10 wt.% short glass fiber(SGF), Blend/ 10 wt.% short carbon fiber (SCF) and Blend/ 10 wt.% SGF and 10 wt.% SCF (GC) were the material systems used for investigation. These composites were processed and developed using twin screw extrusion through melt mix method and followed by injection molding. The abrasion wear study with varying abrasive grit size (180, 320, 600 and 1000 SiC Grit) for an abrading load of 10 N at a velocity of 1 m/s through 100 m abrading distance has been carried out as per ASTM G99 method. The study revealed that the effect of 180 grit abrasive was very severe than 1000 grit due to sharp abrasive large sized particles. The volumetric loss of hybrid composites was impaired due to increase in the rank of grit size. The synergistic effect between fibers and matrix played the significant role in enhancing the abrasion wear resistance.. Further, it is proved that wear behavior of composites was independent of grit size at higher order of grit. Fiber debonding, microcutting, microploughing and matrix deformation were observed during morphological study through SEM image

THERMAL CHARACTERIZATION OF RAMIE – SISAL FIBER REINFORCED HYBRID POLYPROPYLENE COMPOSITES

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Abstract

The effect of natural fiber loading on thermal behavior of Polypropylene based hybrid composites is reported. Four composite systems were considered for investigation: Neat Polypropylene (PP), PP/5 wt. % sisal fiber/5 wt. % Ramie fiber (PP/10), PP/10 wt. % sisal fiber/10 wt. % Ramie fiber (PP/20) and PP/15 wt. % sisal fiber/15 wt. % Ramie fiber (PP/30). These natural hybrid composites were processed and developed using melt mix method with the help of twin screw extruder followed by injection molding. The thermal response of these hybrid composites have been studied using Differential scanning calorimetric studies (DSC) and thermo gravimetric analysis (TGA). The experimentation results through DSC studies showed that the degree of crystallization has been enhanced due to improvement in the enthalpy of melting. Further, it was observed from TGA that the weight loss of composites at higher temperatures has been decreased due to influence of addition of hybrid fibers. This indicates the presence of hybrid fibers restrict the molecular movement thereby resisting the weight loss even at high temperatures. Further, the degradation of these composites has been studied in order to evaluate the thermal behavior. Among the composites studied, PP/30 composites exhibit the appreciable thermal behavior.

MRI BASED BRAIN TUMOR DETECTION USING SPEARM ANALGORITHM WITH OPTIMIZED CNNCL ASSIFIER

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Abstract

Medical image processing is the most challenging and emerging fieldnowadays.MagneticResonanceImages(MRI)actasthesourcefor the development of classification system.Theextraction,identificationandsegmentation of infected region from Magnetic Resonance (MR) brain image issignificantconcernbutadrearyandtime-consumingtaskperformedbyradiologists or clinical experts, and the final classification accuracy depends ontheir experience only. To overcome these limitations, it is necessary to usecomputer-aided techniques. To improve the efficiency of classification accuracyandreducetherecognitioncomplexityinvolvesinthemedicalimagesegmentationprocess,we haveproposedSpearmanbasedbraintumorsegmentation.CNNclassifierusedtocomparethetrainedand testdata,fromthiswe can get the classified result for tumor. The experimental results of proposedtechnique have been evaluated and validated for classification performance onmagneticresonancebrainimages,basedonaccuracy,sensitivity,andspecificity.Detection, extraction and classification of tumor from MRI scan images of the brainis done by using MATLAB software.

MODIFICATION OF MECHANICAL BEHAVIOUR OF LONG JUTE –BANANA HYBRID FIBROUS EPOXY COMPOSITES

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Abstract

The mechanical behavior of long Jute and Banana Hybrid fiber reinforced epoxy based composites has been studied. The hybrid fiber reinforcement (8%, 16%, 24%, 32% and 40 wt. %) in equal proportions were varied in LY 556 epoxy Resin. These composites were processed and developed using hand layup technique followed by proper curing. The mechanical behaviour of these natural composites was evaluated through Tensile, Flexural and impact behaviour as per ASTM methods. The results revealed that the tensile strength and flexural strength were significantly enhanced up to 32 wt. % of hybrid fiber reinforcement. But the declining trend has been observed after higher hybrid fiber reinforcement. But the absorption of energy through impact has been improved up to 32 wt. % and negative trend starts after this reinforcement. Improved mechanical behaviour was due to good impregnation of jute and banana fibers during sizing. But at higher percentage of reinforcement, the non – resin zone creates voids which may results to decline the strength of composites. Good adhesion at resin – fiber interface promised the excellent mechanical

behaviour of these epoxy based composites.

BLUETOOTHBASEDHOMEAUTOMATIONSYSTEMUSINGMOBILEPHONE

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Abstract

Electronic devices and appliances have become very common in thisrecent year of technology especially with fast development in smartphones. Inthispaper,thedesignofHomeAutomationSystemcompatiblywithlocalhousingandgoodfeaturesforhomeautomationviaremoteaccessarepresented.BluetoothBasedhomeAutomationSystemusingAndroidand Arduino is design and implemented. In this research work a part of smart hometechnology which using Bluetooth in a mobile device is used, so it will cheapand efficient to use. This paper describe about home automation system whichwould use to enable home lighting, garage door motor, water pumping motorand smoke detection using a smart phone application with Bluetooth wirelesstechnology.Thesystemincludedthreemaincomponents:anArduinomicrocontroller for connecting the appliances, a Bluetooth module for signaltransfer,andasmartphonewiththeAndroidapplicationtocontrolhomeappliances. The idea of paper is to control home appliances toavoidthedangerousofelectricshockandconvenienceofdecrepitandphysicallydisablepeople,whocaneasilyaccessandcontrolthehomeappliances by staying at particular place and access them remotely without thehelp of other people. By using this system, our home automation works smartlybyproviding increased qualityoflife,and comfortsto users.

A SURVEY ON HYBRID METHODS FOR PREDICTIVE MODEL ALGORITHMS OF MACHINE LEARNING ON LOAD FORECASTING

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Abstract

The modern world requires an uninterrupted electricity supply to run on its way. Load forecasting is essential for the power utility companies to provide continuous power to the customers and decision-making on the future power supply. The utility companies can save their economy by minimum-error load prediction. The electricity demand can be predicted using numerous Machine Learning Algorithms. Each Algorithm hasits own merits and demerits. The amalgamation of two or more successful algorithms will serve better with the merged performance of the individual algorithms. In this paper, we make a study of the hybrid-method algorithms, their advantages, and disadvantages.

A DEEP LEARNINGBASED RECURRENT NEURAL NETWORK MODEL USING MIXED OPTIMIZATION STRATEGY

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Abstract

With the proliferation of software systems, its defect prediction seeks a major challenge nowadays.Therefore, the automatic software defect prediction model is required to assists developer for allocating the resources. Even though numerous methods are invented for the identification and fixing of defects still there is lack in accurateprediction model.In order to overcome the existing challenge, a novel Deep Learning based Recurrent Neural network model with the aid of hybrid optimization algorithm is proposed to predict both defect and non-defect data. With this objective, primarily, data pre-processing procedure is carried out using box-cox transform. Then the pre-processed outcomes are subjected towrapper-based feature selection technique. Afterwards, deep RNN is introduced to predict the software defect model and is improved with the help of hybrid optimization procedure, whereas parameters involved in deep RNN is optimally selected. The proposed method also evaluates well-known dataset and the obtained results are compared with existing models.

Index terms: Deep neural network,Software Defect Prediction, Feature selection, Optimization, Accuracy, Training loss.

CHALLENGES AND APPLICATIONS IN DATA SCIENCE - A STUDY

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Abstract

Big data is a collection of data sets that are so huge or complicated that typical data management approaches can't handle them. Data science is a recent IT system focused for capturing, storing and analyzing data for various needs. It is an associate degree knowledge base topic concerned with scientific approaches, procedures, and systems to extract information or insights from data in various formats, both organised and unstructured, similar to data processing.Data science entails much more than just data analysis. In this paper we try to explore the different challenges and applications in area called Data science.

Keywords: Data Science, Tools, Data Science Process, Challenges, Applications

IMPLEMENTATION OF IMPROVED KY-CONVERTER IN 120V DC MICROGRID

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Abstract

An improved step-up KY converter is a combination of a synchronously rectified (SR) boost converter and a coupled inductor. The output current in this step-up KY converter is non-pulsating because of the output inductor in the synchronously rectified boost converter. The voltage gain obtained is more than the typical boost converter as a result of the coupled inductor and has a high transient response due to its buck converter characteristics. The converter used here has a low output voltage ripple when compared to the traditional boost converter and always works on continuous conduction mode (CCM). In this paper, the Step-up KY-converter which is of high gain in the range of 5.6 is implemented with a PI controller for a 120V DC microgrid for rural electrification. The resultsare simulatedusing a Matlab simulation tool for various input DC voltage variations and presented

AN ANDROID BASED CHAT APPLICATION WITH FIREBASE INTEGRATION

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Abstract

This project is entitled as "An Android Based Chat Application with Firebase Integration". In recent years, with the development of mobile communication and Mobile terminal, especially the release of Android smart phone platform has injected new vitality to the mobile space. Android is an open sourcing mobile operating system based on Linux which is a completely open and integrated platform for mobile devices. Firebase is backend platform for building a Web, Android and IOS applications. It offers real time database, different APIs, multiple authentication types and hosting platform. The real time database of firebase provides a real time communication on lawcost and low-power basis. It establish of two-way communication has occurred with the support of the network. Firebase is integrated into Android which is a mainstream Smartphone platform as a mean of mobile communication. Nowadays android becomes the latest technology in the Smartphone's which provides the open sourcing and powerful application API. Thus we design a chatting application based on android with the integration of Firebase, which establishes a connection between smart phones using internet and then messages are exchanged between them.

MECHANICAL AND METALLURGICAL EFFECTS OF CA AND MN ADDITION IN MG-ZN ALLOYS

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Abstract

Magnesium is the lightest material next to aluminium which finds it applications in biomedical, aerospace and defense industries. In the current study the impact of Ca and Mn addition on Mg-4Zn alloys were studied in detail. Improved mechanical properties are achieved by alloying the Mn and Ca with Mg-4Zn alloy. High purity materials are utilized for fabricating the alloys in the required composition. A new alloy Mg-4Zn-xMn/Ca with varied composition is considered for the current investigation. The casted samples were machined as per the ASTM standards. Metallurgical characterization tests such as x-ray diffraction, optical microscopy and scanning electron microscopy equipped with EDX were analyzed on the samples. The mechanical characterization of the samples includes tensile tests and hardness tests. Morphological behavior of as-cast Mg-4Zn was studied with the addition of Ca and Mn.The additions of the elements in Mg-Zn alloys improve its tensile and wear properties. While comparing the obtained results the mechanical properties of Ca alloyed alloy shows better strength than Mn alloys due to the grain refinement.

STUDY OF BITCOIN PRICE PREDICTIONBASED ON SENTIMENTSCORES OFINFLUENCERTWEETSWITHEXPERIMENTALVALIDATION

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Abstract

Bitcoin is one of the most popular globally accepted crypto currencies bringingdisruptivechangesin the economy. One of the major contributors here is social media whichis filled with exponentially growing numbers of news feeds, articles as well as comments,trends and thoughts of influencers. One of such highly popular social media platforms isTwitter[46] which is a popular choice of influencersfor dissemination of their expressions.The market trends show that investors, who are emotionally attached, get inspired with theiropinions on products or services they use. Bitcoin is no exception. So analysis of thesentiments of influencers,investorsand their views is very important in predicting the trendsin price of Bitcoin and its demand. This paper surveys the works in forecasting of stocks andBitcoin in particular with the sentiment scores of Tweets and news feeds, along with thehistorical prices. Gold mines of opinions like Twitter and other social media have attractedresearchersto study publicsentiment.Additionallywe validate our findings with anexperimentalset up . We have applied sentimentanalysis on extracted tweets from Twitterandalso usedthenewsblogsandhistorical-dataofbitcoinpricetovalidateourhypothesis.The Random Forest learning classified is found to be quite fast and accurate in learning ingeneratingtheaccuracyof82.2%in precisionincorrectlyclassifiedinstances.

KeyWords.: Bitcoin,cryptocurrency,sentimentanalysis,sentimentscore

NOXEYE: AN AI BASED THREAT DETECTOR FOR INTELLIGENCE SURVEILLANCE AND ALERT SYSTEM

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Abstract

Safety is vital and surveillance technology required to achieve this is becoming increasingly challenging and complex. Smart enterprises, today, do not require obsolete, analog surveillance systems but new, dynamic automated approaches that provide strong safety and high business value from day one. Surveillance systems are an essential part of securing your home or business. However, the traditional methods of surveillance need a continual human observation though dozens of monitors in real-time. This may result in missing vulnerable situations due to fatigue, lack of concentration, or loss of key information in the surveillance videos. Therefore, an intelligent surveillance system is critically needed to automatically detect security threats in a stream of videos without manual intervention. This project presents NoxEye, a lightweight AI-powered threat detector for intelligent surveillance cameras, which can be deployed on-site at the edge. The goal of NoxEye is to minimize communication delays, which is essential to perform sensitive and mission-critical tasks such as thread detection using surveillance cameras. NoxEye is organized into two parts executing on centralized servers on the cloud, as well as locally on the surveillance cameras. we developed a user-friendly interface on top of both CNN and Faster Region-CNN to allow users to interact with the threat detector system conveniently at the camera and cloud sides. Third, a novel motion detection module is proposed for detecting moving objects in surveillance videos in real-time. The developed module is integrated seamlessly with both the camera and cloud sides.

Keywords: Artificial Intelligence (AI), threat detector, Surveillance Cameras, Deep learning, Faster Region Based Convolutional Neural Networks (RR-CNN), Convolutional Neural Network (CNN), Edge Computing

GLCM BASED CARDIAC FAT SEGMENTATION ON CT IMAGES USING CO-ADAPTIVE NEURO FUZZY INFERENCESYSTEM (CANFIS) CLASSIFIER IN COMPARISON WITH ADAPTIVE NEURO FUZZY INFERENCE SYSTEM(ANFIS) CLASSIFIER

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Abstract

Aim:The main objective of this work is to improve the better accuracy for automatic detectionof cardiac fat segmentation on CTimages. Materials and Methods: The data set of the epicardial and mediastinal fats on non-contrast cardiac CT scans is taken from a publicly available open access dataset . For the cardiac fat segmentation 22 CT images are used for group 1 (CANFIS) and the same images compared with group 2 (ANFIS). From the input images 80% images are trained and 20 %images are used for testing.In this image GLCM features are extracted ground truth image and given as input to Co- Adaptive Neuro Fuzzy Inference System (CANFIS) classifier to find the fat and nonfatimages.and compared with(ANFIS) classifier. SPSS tool is used for statistical data analysis. Result: Co Adaptive Neuro Fuzzy inference System achieved group 1 mean Accuracy(97.44±0.0564), Sensitivity (97.54±0.431), and specificity (97.34±0.299) and compared Adaptive Neuro Fuzzy inference System with Mean Accuracy 96.44±0.056, Sensitivity 96.44±0.64, Specificity 96.39±0.24 .The independent sample T test has been analysed and achieved significance of 0.001 Conclusion: The Co –AdaptiveNeuro Fuzzy Inference System (CANFIS) classifier appears to be better results of accuracy,sensitivity ,specificity compared to Adaptive Neuro Fuzzy Inference System (ANFIS).

COMPARISON OF READING SYSTEM FOR BLIND PEOPLE USING TESSERACT ALGORITHM ANDSTROKE WIDTH ALGORITHM

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Abstract

Aim: The aim of this study is to provide the blind with a reader and predict the canny edge image valuemore accurately using the Tesseract algorithm which influences the audio output. Materials and methods: Canny edge image samples were collected considering the study group as Tesseractalgorithm (N = 80) and control group as stroke width algorithm (N = 80). Canny edge image value was evaluated by using SPSS software for both the groups by using standardprotocol. Results: Comparison of output for canny edge image value was done by anindependent sample T-test using SPSS software. Tesseractalgorithm appears to be statistically significant ($p = 0.00$, $p<0.05$) when compared to the Stroke width algorithm. Conclusion: Novel Tesseract algorithm appears to show better results with high canny edge image value when compared to Stroke width algorithm which can be further used in assistive technology.

COMPARE THE DESIGN AND IMPLEMENTATION OF SMARTPHONE CHARGING CONTROLLERS USING ARDUINO AND RASPBERRY PI

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Abstract

Aim: The main aim of the study is to design an Innovative smartphone charger using arduino for mobile phones. **Materials and methods:** Designing an innovative smartphone charger system using Arduino with 10 samples compared with the conventional power management system using Raspberry pi controller. The alpha is 0.04 and the gpower is 0.8. **Results:** Users set the time that we would like to charge their mobile. Once the time is reached, 5v relay disconnects the power supply to the charger and the significance value is 0.04 P<1. **Conclusion:** The results show that Arduino UNO controller gives significantly better accuracy than Raspberry pi

Keywords: Battery charging, Innovative smartphone charger, Lifetime, Capacity, Arduino Uno, Raspberry Pi.

DESIGN AND IMPLEMENTATION OF WATER QUALITY INNOVATIVE MONITORING SYSTEM USING TEMPERATURE AND TURBIDITY DATA COMPARISON WITH ARDUINO

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Abstract

Aim: The main aim of this research is to monitor the polluted particles present in water and get the notification of pollution present in water through this innovative monitoring method. **Methods and Materials:** The required samples for the analysis are calculated using clinicalc.com. A total of 10 samples were collected from different water quality monitoring by Arduino available in kaggle. These samples were divided into a training dataset of 10 (50%) and a test dataset 10 (50%). Output values were calculated to quantify the performance of the NodeMCU (Node Micro Controller Unit) comparison with Arduino. The alpha is 0.05, beta value is 0.2 and the gpower is 0.8. **Results:** On performing an independent samples T-test on thetwo groups considered. The temperature should be between 28 to 44 centigrade and the turbidity value is less than 4 ntu (Nephelometric Turbidity Unit). The NodeMCU gets better results than Arduino. Finally NodeMCU appears significantly better than Arduino. The statistical significance value is 0.001 ($p<0.05$), standard error rate is given as 0.05 and algorithm power is given as 0.80 respectively. **Conclusion:** The experimental results show that the NodeMCU gives better water quality monitoring determination than the Arduino.

PERFORMANCE ANALYSIS OF THE CONDUCTIVITY OF PURE AND DOPEDSTANNOUS OXIDE THIN FILMS USING A LOW COST TECHNIQUE

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Abstract

Aim :The aim of this project is to improve the conductivity of pure stannous oxide byintroducing nickel and cobalt as dopants and the process is carried out with an innovative low cost processing technique. Materials and method: Pure Stannous oxide thin films, Nickel doped and Cobalt doped stannous oxide thin films were prepared by the dip coating technique on glass microslides. The thin films are implemented by a low cost technique and the resistance of pure Stannous oxide and doped Stannous oxide samples were measured with change in frequency. The sample size of pure stannous oxide was 201 and the sample size of nickel doped, cobalt doped stannous oxide was 201 each. The total sample size of doped and undoped samples were619. This was calculated using the clincalc calculator by having the pretest power as 80 %. Results and discussion: The resistance of pure Stannous oxide is reduced by doping with Cobalt and Nickel. For a frequency of 5 KHz, the resistance of pure Stannous oxide is -1244 ohm and is reduced to -1214 ohm for nickel doped stannous oxide and -1211.5 ohm for Cobalt doped stannous oxide. Conclusion: The results of the study shows that Cobalt doped stannous oxide thin film appears to produce the most consistent result and pure Stannous oxide thin film appears to produce the most variable result which is also evident in SPSS result.

Keywords: Stannous oxide, Cobalt, Nickel, resistance, Thin film, Doping, Innovative low cost technique, Nanotechnology

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INNOVATIVE MEASUREMENT OF BLOOD GLYCEMIC LEVEL FROM SALIVA FOR DIABETIC PATIENTS USINGTHERMAL IMAGE TECHNIQUE AND ANALYZING THROUGH FRACTIONAL WAVELET TRANSFORM COMPARED WITH INVASIVE MEASUREMENT OF BLOOD GLUCOSE USING GLUCOMETER

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Abstract

Aim: In this paper, the Blood Glycemic level (BG) is measured using saliva as a sample throughFractional Wavelet Transform (FRWT) based on thermal properties and compared with an invasive method. Materials and Methods: Thermal image of saliva is captured with a thermal camera for 10 subjects(5-Diabetes,5-Non Diabetes) and BG is measured through FWT in image processing. Results: In this proposed work, it is observed that non-invasive linear regression has a higher accuracy of 90% than invasive linear regression, which has an accuracy of 86.8 percent and significance (<0.01) which has been calculated using the SPSS tool. Conclusion: Within thelimitations of this study, BG measurement using saliva through FRWT has a higher significance than an invasive technique.

SIMULATION AND CAPACITANCE-VOLTAGE CHARACTERISTICS OF A CIRCULAR MEMS ACTUATOR USING DIELECTRIC OXIDES TIO2 NANOSTRUCTURES COMPARED WITH CONVENTIONAL SIO2

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Abstract

Aim- The paper presents the simulation and comparison of capacitance voltage characteristics ofcircular MEMS actuators using SiO2 and TiO2 nanostructures as dielectric material. Materialsand methods- The two groups considered for the present study use a sample size of 150 each. SiO2 and TiO2 are used as dielectric materials for the circular MEMS actuator of thickness ranging between 50 and 200nm. Results- The capacitance voltage characteristics below pull in voltage and post pull in voltage of both the actuators are obtained and tabulated. The CV characteristics graph is plotted and compared statistically. The TiO2 nanostructured dielectric layer based MEMS actuator provides mean for capacitance at below pull in state = 1.30261E-10 F and capacitance at post pull in state = 2.99155E-10 F, SiO2 based MEMS actuator provides mean for capacitance below pull in state = 3.66040E-12 F and capacitance post pull in state = 5.93854E-12 F with significance value of less than 0.05. The sample size for the two MEMS actuator structures have been calculated and a total of 300 samples collected. Conclusion- It is observed that TiO2 dielectric material based MEMS actuator has significantly greater capacitance than SiO2.

Keywords: Nanoscale actuator, novel high-k dielectric material, SiO2, TiO2 nanostructures, circular MEMS actuator, MEMS technology, capacitance - voltage characteristics; SPSS; pull-in voltage_

DESIGN AND ANALYSIS OF SURFACE CURRENT DISTRIBUTION FOR WITH AND WITHOUT SLOT CIRCULAR PATCHCORRELATION AT 2.4 GHZ

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Abstract

Aim: The surface current distribution of circular patch antenna with slot and without slot creations are analyzed by varying the sweep frequency ranging from 1GHz to 3GHz. **Materialand methods:** The resonance frequency of with slot antenna (2.4GHz) was compared with without slot creation (2.4GHz) by varying the sweep frequency ranging from 1GHz to 3GHz in the High-frequency structure simulator environment. **Results:** The current orientation is varied without slot linear polarization (LP) and with slot circular polarization (CP) at a stable frequency of 2.4GHz. **Conclusion:** Within the limits of this study, the proposed antenna attained linear, LHCP surface current orientation without and with a slot at a constant frequency. The results are verified using the HFSS simulation modeling.

COMPARATIVE ASSESSMENT OF MATERIAL REMOVAL RATE IN CARBON FIBRE REINFORCED ALUMINIUM FOAM EPOXY NOVEL COMPOSITE MIXED WITH DRIED DATES POWDER MACHINED BY ABRASIVE WATERJET ANDDRILLING PROCESS

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Abstract

Aim: This research work is about comparing the material removal rate (MRR) obtained fromabrasive waterjet and drilling processes. Materials and Method: The material used for this work is carbon fiber reinforced aluminium foam epoxy composite filled with dried dates powder. Abrasive waterjet is set as an experimental group and the drilling process is a control group. Totally 40 samples were machined by using selected parameters for an abrasive waterjet and drilling. Results: The mean material removal rate obtained for the drilling process is 13.3260 g/min, whereas it is 8.5690 g/min for the abrasive waterjet with the significant value is 0.008 ($P<0.05$). Conclusion: Within the limits of this study, experimental results show that the MRR is high when the carbon fibre reinforced aluminium foam composite filled with dried dates powder are machined by using a drilling process as compared with abrasive waterjet.

DESIGN OF INTRUSION DETECTION SYSTEM FOR WIRELESS ADHOCNETWORK IN THE DETECTION OF DOS ATTACK USING PRINCIPAL COMPONENT ANALYSIS METHOD COMPARING WITH AN K-NN IDS

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Abstract

Aim: The aim of the study is to design an intrusion detection system for wireless ad hoc networkto detect Denial of Service attack using principal component analysis method and to compare its performance with an intrusion detection system which is designed using K-NN algorithm. Materials and Methods: To design and test the IDS model CIC-IDS 2017 dataset was taken. This dataset contains 79 features. These intrusion detection systems were designed and tested inmachine learning. Total 19 samples were taken for each group to analyse with SPSS. The significance $p<0.05$ shows the performance of IDS. Results: The experimental results show that design of intrusion detection system using principal component analysis method is having the accuracy 77%, detection rate 73% and the false positive rate is 0.75%. Intrusion detection system which is designed using the K-NN algorithm has accuracy 99%, detection rate 72% and false positive rate 0.03%. Conclusion: The intrusion detection system which is designed by the K-NN algorithm appears to perform significantly better than the IDS using principal component analysis.

TENTATIVE FUNCTION AND STRUCTURE PREDICTION OF PUTATIVE GENES IN THE WHOLE GENOME OF SOLVENTOGENICCLOSTRIDIUM PHYTOFERMENTANSATCC700394 FOR THE BETTERELUCIDATION OF CELLULAR METABOLISM

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Abstract

Aim: This study involves the prediction of the function and structure of putative genes in the genome of Clostridium phytofermentansfor the better elucidation of cellular metabolism. Materials and methods: C. phytofermentansbacterial strain was used in this study. About 50 hypothetical genes were retrieved from the whole-genome of C. phytofermentans. KEGG, Pfam, UniProt, InterPro, ScanProsite, SMART, ProtParam, SignalP 4.0, TargetP 2.0, NCBI blast, HHpred, CPH modelling, PSIpred were the bioinformatic tools used in this study. Results: Out of the 50 hypothetical genes, 2 genes were predicted. The function was analyzed for Cphy_0055and Cphy_0085 and they showed an e value of 0.096, and 7.3e-19. Conclusion: Based on thebioinformatics online tools tentative function and structure for Cphy_0055 and Cphy_0085were predicted. The functions were found to be similar to virulence-associated functions, andhydrolase for Cphy_0055 and Cphy_0085 respectively.

Keywords: Clostridium phytofermentans, genome, putative genes, novel gene function, biofuel, Bioinformatics approach

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BANDWIDTH ENHANCEMENT OFMICROSTRIP PATCH ANTENNA USING TWO RADIATING ELEMENTS

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Abstract

Aim: The main objective of this project is to enhance the Bandwidth of microstrip patch antennaby using two radiating elements on the patch in comparison with the single radiating element.Materials and Methods: The microstrip patch antenna with the two radiating elements is used with a sample size of 10 in comparison with a single radiating element of another group with sample size 10. Results: By using Altair Feko simulation software, the proposed antenna parameters such as Bandwidth and Gain are obtained. The results are Gain=9dB,Bandwidth=294.5MHz for the patch having two radiating elements , Bandwidth=250.4 MHz for the patch of single radiating element. Attained Significance accuracy ratio p(<0.05). Conclusion:The bandwidth appears to be enhanced (17%) by inserting one more radiating element on the rectangular patch from 250.4MHz to 294.5MHz.

Keywords: Novel E-shaped Patch, Radiating elements, Telemetry, Directivity, Radar, FR4, Bandwidth, Gain, Substrate, S-band, FEKO,Antenna Design

ANALYSING THE CHANGES IN TEXTURE OF LUNG IN CT IMAGES DUE TO COVID-19 USING LOCAL DIRECTIONAL TEXTURE PATTERN IN COMPARISON WITH LOCALDIRECTIONAL NUMBER PATTERN

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Abstract

Aim: The aim of this analysis is to analyze the quantity of textural variations of lung CT scan images and extraction of features despite incidents of COVID-19. **Methods**: Essential input images for this analysis are acquired from a public domain database called Github.org. In this analysis, the comparison between Local Directional Texture Pattern (LDTP) and Local Directional Number Pattern (LDNP) to analyze the texture deformation of CT lung scans iscarried out. Classification of normal and COVID subjects is carried out using Logistic Regression classifier. **Results and Discussion:** In COVID subjects textural variation is more despite tissue annihilation and in normal subjects textural variation is less due to the gentle surface of the lung. Feature values acquired using LDN are observed to be statistically significant ($p<0.05$) compared to LDTP values. LDN has obtained precision (0.891), F1-score (0.871), Recall (0.876), AUC (0.933), Classification Accuracy (0.876) are calculated using logistic regression classifier. Higher values of LDN of normal indicates that in COVID subjects there will be structural and intensity information loss despite the presence of COVID. LDN is tough against illumination, noise, time lapse variations. **Conclusion:** The extracted textural features are able to confine the significant difference in the normal and COVID CT scan images.

Keywords: COVID, Local Directional Number Pattern (LDN), Local directional Texture Pattern (LDTP), Texture Analysis, Texture variations, Medical Image Processing, Novel Descriptor, Texture Deformation.

COMPARISON OF LOCAL BINARY PATTERN WITH GRADIENT DIRECTIONAL PATTERN AND GRADIENT LOCAL TERNARY PATTERN FEATURES IN DIFFERENTIATING NORMAL AND COVID SUBJECTS

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Abstract

Aim: The aim of this analysis is to estimate the texture deformation in lung CT images caused by COVID 19. **Materials and Methods**: For this analysis, a total of 176 sample sizes are obtained based on the given parameters. The input images are gathered from Github.org. This analysis comes in for the comparison between Local Binary Pattern and Gradient Descriptor Pattern and Gradient Local Ternary Pattern to analyze the textural changes in Computed Tomography(CT) lung Scans. To classify acquired characteristics, a K-NN and NN classifier are used. **Results:**The feature values obtained using Gradient local ternary pattern are found to be statistically significant($p<0.05$) compared to Local binary pattern and Gradient directional pattern. The significant values of Gradient local ternary pattern are GLTP86, GLTP70, GLTP82with mean values of normal(0.26, 0.19, 0.16) and COVID (0.12, 0.21, 0.13). GLTP acquired Area under curve(0.960), classification accuracy (0.838), F1-score(0.831), precision(0.848), and recall(0.838) are obtained using K-NN classifier. The most significant feature value of LBP and GDP are L11andG94which shows significant ability in differentiating normal(9.46) and COVID(0.38) of LBP and normal(10.80) and COVID(5.86) of GDP. As a result of the low LBP and GDP values, information in the CT images would be lost. **Conclusion:** The extracted textural features are consistent in demonstrating a substantial difference between normal and COVID CT scan images.

Keywords: COVID, Gradient Directional Pattern, Gradient Local Ternary Pattern, Local Binary Pattern, Medical Image Analysis, Novel directional descriptor,Texture Analysis.

MEASUREMENT OF BLOOD GLYCEMIC LEVEL FROM SALIVA FOR DIABETIC PERSONS USING MICROSCOPIC IMAGE TECHNIQUE AND ANALYSING THROUGH EMPIRICAL WAVELET TRANSFORM COMPARED WITH INVASIVE MEASUREMENT OF BLOOD GLUCOSE USING GLUCOMETER

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Abstract

Aim: The Blood Glycemiclevel(BG) is measured from saliva using Non-invasive techniquethrough Empirical wavelet transform(EWT).Materials and methods: A microscope image is a photograph or digital image that displays a magnified image of an object taken by a microscope. In this paper, a microscope image of saliva for 10 subjects(diabetic-5, non-diabetic-5) captured to measure the BG through Empirical Wavelet Transform.Results:In this proposed work, it is observed that linear regression of non-invasive measurement has higher accuracy of 90% than invasive measurement with 86.8% accuracy and significance ($p<0.01$) through SPSS tool. Conclusion:Within the limitations of this study, BG measurement using saliva through EWT has a higher significance than an invasive technique.

GROWTH ANALYSIS OF E.COLI WHEN SUBJECTED TO ACIDIC (2-4) AND BASIC (8-10) PH BYMEASURING OPTICAL DENSITY FOR 2 DAYS

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Abstract

Aim: Growth analysis of *E.coli* isolated from water when subjected to acidic (2, 3, 4) and basic (8, 9, 10) pH by measuring the optical density for 2 days. Materials And Methods: Organisms were isolated (1 Group and 36 samples per group by keeping threshold 0.05% and G power 80% coincidence interval 95% and enrollment ratio as 1) by the serial dilution method and characterizing through biochemical and morphological studies which revealed GDW3 as *E.coli*.To check the pH effect on bacterial growth, selected isolates were incubated in liquid media for a wide range of pH (2 to 10) for 2 days keeping bacterial growth at 7 as control. Results: In this analysis, bacterial growth was recorded in both low and high pH. Compared to control for acidic pH (2-4) approximately 95% of growth reduction was detected upon 24 hrs of incubation however for basic pH the growth reduction was minimal and it ranges only between 3-7%. For 48 hours of incubation though there is a very small increase of bacterial growth was observed in every pH (3-10%) but for pH 4 a drastic growth reduction of 85% was recorded. On the contrary pH, 10 showed similar output compared to control. The results were found statisticallysignificant $p<0.001$ Conclusion: *E. coli* GDW3 can grow both inacidic and basic pH. Under acidic condition pH (2-4) though 95% bacterial growth was reduced initially but was increasedup to 10% upon enhancement of incubation time. For basic pH (8-10) initial growth was reduced below 3% and maximized to 7% upon prolonged incubation.

MEASUREMENT OF GLUCOSE LEVEL FROM RESIDUAL MAGNETIC PROPERTIES OF SALIVA FOR DIABETIC PATIENTS USING SPLINE WAVELET TRANSFORM COMPARED WITH INVASIVE MEASUREMENT OF BLOOD GLUCOSE USING GLUCOMETER

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Abstract

Aim: In this paper, our aim is to measure Blood Glycemic (BG) level from saliva through SplineWavelet Transform (SWT) and compared with invasive technique of measuring BG level usingAccu Check Glucometer. Materials and Methods: Magnetic properties are used to measure BG level for 10 subjects (5-diabetic, 5- non-diabetic) through SWT algorithm and then analyzed. Then the difference of BG levels of invasive method and non invasive method are compared and accuracy obtained. Results: It is observed that non-invasive method of linear regression hashigher accuracy of (95.20%) than invasive method accuracy of (92.40%) and significance ($p<0.01$) through the SPSS tool. Conclusion: Within the limitations of this study, BG measurement using saliva through SWT has a higher significance than an invasive technique.

TENTATIVE FUNCTION AND STRUCTURE PREDICTION OF PUTATIVE GENES IN THE WHOLE GENOME OF LIGNINOLYTICBREVIBACILLUS BREVIS DSM6472 FOR THE BETTER ELUCIDATION OF CELLULAR METABOLISM.

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Abstract

Aim: This study involves the prediction of the structure and function of putative genes in the genome of pathogenic and ligninolytic bacteria Brevibacillus brevis, for the elucidation of its cellular metabolism.Materials and Methods: A total number of 50 hypothetical genes were collected from the genome of the bacteria B.brevis. Bioinformatics online tools were used in this study to analyze the protein sequences anddomains. The tools used include KEGG, PDB, SMART, Scan Prosite, InterPro, ProtParam, NCBIBLAST,HHpred, CPH(Copenhagen)modeling, and PSIpred. Results: Out of 50 hypothetical genes 3 genes were predicted. The function was analyzed for BBR47_00480, BBR47_00880, BBR47_01400 and they showed E-values of 2.1e-41,1.2e-13,1.2e-16 respectively.Conclusion: Based on the bioinformatics online tools tentative function and structure were predicted for BBR47_00480, BBR47_00880,BBR47_01400, and the functions were found to be hydrolase protein, a motor protein, cell adhesion promoter respectively. The validation was done for the gene BBR47_00480 by HHpred and CPH modeler. HHpred showed similarity to penicillin-binding proteins in Staphylococcus aureus from gram-positive bacteria and CPH protein modeler showed similarity to penicillin-binding proteins in gram-positive bacteria Streptococcus pneumoniae.

TENTATIVE FUNCTION PREDICTION OF PUTATIVE GENES IN THE WHOLE GENOME OF SOLVENTOGENICCLOSTRIDIUM CELLULOLYTICUMATCC35319 FOR THE BETTER ELUCIDATION OF CELLULAR METABOLISMS

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Abstract

Aim: This study involves the prediction of the function and structure of putative genes in the genome ofClostridium cellulolyticumfor the better elucidation of cellular metabolism. Materials and methods;One bacterial strain was used in this study. About 50 hypothetical genes were retrieved from the wholegenomeof C. cellulolyticum. KEGG, Pfam, Uniprot, InterPro, ScanProsite, SMART, ProtParam, SignalP4.0, TargetP 2.0, NCBI blast, HHpred, CPH modelling, PSIpred were the bioinformatics tools used in this study. Results: Out of the 5o hypothetical genes, 3 genes were predicted. The function was analysed for CCEL_0109, CCEL_0167 and CCEl_0629 and they showed an e value of 1.3e-28, 6e-115 and 0.00066Conclusion: Based on the bioinformatics online tools the tentative structure and function forCCEL_0109, CCEL_0167 and CCEl_0629 were predicted. The functions were found to be hydrolase protein, lyase and transport protein for CCEL_0109, CCEL_0167 and CCEl_0629 respectively. The validation done for the gene CCEL_0109 showed similarity to hydrolase protein from gram-positive bacteria which was predicted by HHpred and CPH modellers.

Keywords: Clostridia, genome, hypothetical genes, novel gene function, biofuels, Bioinformatics Approach

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TENTATIVE FUNCTION AND STRUCTURE PREDICTION OF PUTATIVE GENES IN THE WHOLE GENOME OF GUT BACTERIA RUMINOCOCCUSCHAMPANELLENSISDSM18848 FOR THE BETTER ELUCIDATION OF CELLULAR METABOLISM

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Abstract

Aim: The study aimed to predict the structure and function of a putative gene in the wholegenome of gut bacteria Ruminococcuschampanellensisfor the better elucidation of metabolic pathways. **Materials and Methods:** About 50 hypothetical genes were collected from R.champanellensisto predict hypothetical proteins with various bioinformatics tools like Pfam, ScanProsite, SMART, ProtParam, Interpro, Uniprot, NCBI-blast, HHpred, CPH modelling, PSIpred. **Results**: function of RUM_05490 was predicted by Evalue(0.000021). **Conclusion**: based on bioinformatics tools, tentative function and structure for RUM_05490 were predicted. The function was found to be similar to structural protein.

ACCURACY IMPROVEMENT IN DISEASE IDENTIFICATION OF APPLE LEAF USING KNNALGORITHM COMPARED WITH FUZZY ALGORITHM

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Abstract:

The aim of this work is to calculate the accuracy in the identification of apple leaf disease using K-Nearest Neighbour (K-NN) Compared with Fuzzy logic framework. Materials and Methods: The data set contains 20 images collected from the seedbuzz website and these images are used for training and testing the predictive model in MATLAB. Statistical analysis is done using SPSS software. The sample size of two groups is calculated using the G power tool with pretest power of 0.8. Results: The proposed system using K-NN achieved better mean accuracy of 94.770.304 and the sensitivity of 89.12 ± 0.496 followed by Fuzzy mode produces 93.01 0.464 accuracy and the sensitivity of 86.99 1.047. The significance value for accuracy is 0.098 and for sensitivity 0.0613 which are obtained from statistical analysis in SPSS. Conclusion: The outcome of the study shows that the K-NN based model appears to be the better results in enhancing the accuracy of disease identification in apple leaves.

MORPHOLOGICAL STUDY OF LACTOCOCCUSBY GRAM STAINING TO DETERMINE SHAPE AND SIZE

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Abstract

Aim: To study morphology of Lactococcusby gram staining and to determine its shape and size. **Materials and Methods:** Novel Lactic acid bacteria isolated from the milk sources were checked for the gram staining property. Greezefree slides with a drop of liquid culture of selected isolate from milk sources were placed under laminar air flow for air drying and heat fixation. Upon which bacterial morphology was checked through gram staining and viewed under a compound microscope with different magnification levels. 2 groups with 20 samples per groupwere analysed by keeping threshold 0.05 and G power 80% coincidence interval 95% and enrolment ratio as 1. **Result:** Selected isolates were found gram positive, rod shaped and purple in colour. They were all classified as Lactobacillus and Lactococcus. Variations of organisms were found significant ($p<0.001$) in raw milk compared to milk powder however no significant difference was recorded in bacterial shape and size analysis between the groups ($p>0.05$). **Conclusion:** The Lactococcuscount was found higher than Lactobacillus in both the sources however milk powder was found a good source of Lactococcusthan raw milk which was given significant bacterial population variation ($p<0.001$) compared to milk powder. Based on gramstaining the isolates are Lactobacillus and Lactococcuswith size ranging <1µm - 2 µm.

Keywords: Antimicrobial Therapy, Novel Lactic Acid Bacteria, Probiotics, Biofilm, Food Fermentation.

CONVOLUTIONAL NEURAL NETWORK BASED VGG19 FOR FRUITS DETECTION ANDCLASSIFICATION COMPARED WITH VGG16 ALGORITHM

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Abstract

Aim: Deep learning algorithms are rapidly being used in the agriculture field due to its promising results in every domain. The main aim of this work is to evaluate the accuracy of the VGG19 model in the detection and classification of different fruits. Materials and methods: A total 2996 images of various fruits that are collected from kaggle are used in which 70% of them are used as training data and 30% are used as testing data. This model was implemented using python software and the statistical analysis is done using the SPSS statistical tool. The sample size is evaluated using G-power to be 1498 images in each group with 80% of power. Results:The proposed CNN VGG19 model produced accuracy of 92.3057 ± 3.59 and followed by 81.7186 ± 8.38 with the VGG16 algorithm with the significance value of 0.053. Conclusion: In this research it is found that the proposed VGG19 algorithm appears to be better results of accuracy than compared to the existing VGG16 model.

Keywords: Innovative Detection, Convolutional Neural Network (CNN), VGG16, VGG19, Deep Learning, Accuracy.

PERFORMANCE EVALUATION OF DESIGNED CUFF-LESS DEVICE WITH COMMERCIALSMARTWATCH FOR EFFICIENT HEART RATE MONITORING IN NORMAL INDIVIDUALS FOR 2 CARDIO REGIMES

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Abstract

Aim: The aim of the study was to have a convenient and reliable heart rate monitor which couldwork efficiently for different cardio exercises. The designed cuffless device was compared withcommercial smartwatch for 2 cardio regimes (skipping and walking). Materials and Methods: The subjects under study were divided firstly in 2 main, group 1 for BPM data from smartwatch and group 2 from cuff-less device. Each group had 20 normal individuals under study. TheG power was kept to be 80% with 0.05 alpha. Based on the cardio regimes the 20 individuals ineach group were further divided as BPM reading for skipping and walking respectively. Hence atotal of 4 groups were under study. Results: The ANOVA results between the BPM recordedusing smartwatch and cuffless device was statistically insignificant. The one way ANOVA, Pvalue was 0.933 (P>0.05 one way ANOVA). Conclusion: Henceforth we would like to concludethat the designed cuff less device using BME280 is an equally efficient heart rate monitor ascompared to any commercial smartwatch available in the market (one way ANOVA (P>0.05),insignificant).

Keywords: Real time, Performance Evaluation, Designed cuff-less device, Innovative heart rate monitoring approach, Wearable Technology.

MATLAB BASED SIZE REDUCTION OF JOINT PHOTOGRAPHIC EXPERTS GROUP IMAGE USING SHEARLET AND WAVELET PACKET TRANSFORM FOR CT IMAGES WITH POTENTIAL STORAGE APPLICATIONS.

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Abstract

Aim: The aim of this project was to compress the Computed tomography (CT) scan imagesusing wavelet packet transform and shearlet transform. These two transforms were compared forthe better compression ratio to eventually help in storage of large hospital data files in a small storage memory space. **Materials and methods**: 30 images were used in Wavelet packet and 30 in Shearlet transform for compression. Compression ratios were calculated. The significance of the data were analysed using SPSS software. **Results:** There was statistical significance between the wavelet packet and shearlet transform based compression ratio data (P<0.05, independent sample t- test). **Conclusion:** Wavelet packet transform appears to produce the most inconsistent results with higher standard deviation (4.98) when compared with shearlet transform which appears to produce lower results with lower standard deviation (0.48).

Keywords: Wavelet packet transform, Shearlet transform, Novel compression of CT image, Artificial Intelligence.

A SURVEY-BASED STUDY ON PRE AND POST COVID-19 ACADEMIC AND PSYCHOLOGICAL EXPERIENCES OF COLLEGE STUDENTS USING STATISTICAL DESIGN IN URBAN AREAS OF CHENNAI

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Abstract

Aim: The aim of our study was to analyse the COVID-19 impact on college students in Chennairegion. Their mental health status and impact of online learning during pandemic time were studied exclusively. **Material and Methods:** An online survey was conducted among college students from four zones of Chennai region. The survey consisted of 500 Pre COVID and 500 Post COVID respondents. The G power of the sample was kept to be 80% in this study. **Results:**Most of the COVID-19 lockdown responses were found to be statistically significant with a positive correlation between the two groups under study (P<0.005, Chi square, Correlation). **Conclusion:** About 57% of college students in Chennai had felt that they were under a greatermeasure on depression and stress. Most of the students had an access to digital of some kind be it laptops or smartphones for study in this region and felt at ease with assessment procedure too.

Keywords: Novel survey study, Psychological distress, Pre and Post COVID-19 experience, College students, Medical informatics.

JOINT PHOTOGRAPHIC EXPERTS GROUP IMAGE CONSIZING USING SHEARLET AND WAVELET TRANSFORM FOR COMPUTED TOMOGRAPHIC IMAGES AS A BETTER STORAGE ALTERNATIVE.

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Abstract

Aim: The aim of this paper is to compress the computed tomography (CT) scan images using wavelet and shearlet transform and compare the compression ratios to find a better transform among them for the target application. **Materials and Methods:** The sample size of each group was 30 and the total sample size was 60. Compression ratios (CR) were generated for images based on the transform used for size reduction**. Results**: Wavelet based CR appeared to be of higher mean (6.6146) when compared to shearlet (4.02). Hence wavelet transform seems to be a better transform for compressing CT scan images. **Conclusion**: We observed that wavelet transform seems to have a better compression ratio compared to shearlet transform ($P<0.001$, independent sample t-test).

Keywords: Shearlet, Wavelet, Novel image compression technique, CT scan images, Artificial Intelligence.

JPEG IMAGE SIZE REDUCTION FOR ENDOSCOPIC IMAGES USING DISCRETE COSINE AND SHEARLETTRANSFORM WITH POTENTIAL HOSPITAL DATA STORAGE APPLICATIONS.

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Abstract

Aim: The aim of this study was to compare Shearlet transform and Discrete cosine transform forEndoscopic image compression and decide a better transform among them for the same. **Materials and methods**: Sample images (Endoscopic images) were collected- 30 (Shearlet) and 30 (DCT) for compression. The G power was optimized to 80% with enrollment ratio of 1. By comparing the original and compressed image size compression ratio was calculated. With thehelp of SPSS software, significance between the data was calculated. **Result:** There was a statistical insignificance between shearlet and DCT based compression ratio ($P=0.457$) ($P>0.05$ Independent sample t test). **Conclusion:** DCT based compression ratio was seen to be higher (2.88) than that of shearlet transform (2.26). Hence, it discloses that DCT appears to have a better compression ratio even though the data seemed to be insignificant.

Keywords: DCT, Shearlet, Novel image compression technique, Endoscopic images, Artificial Intelligence

EVALUATION OF THE EFFECTIVENESS OF HONEY AS A POTENT ANTIMICROBIAL AGENT SELECTIVE FOR PATHOGENIC BACTERIA THROUGH AGAR DIFFUSION METHOD

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Abstract

Aim: Determining the effect of a natural compound extracted from honey to check its antimicrobial efficacy i.e bactericidal and bacteriostatic effect on pathogenic organisms. **Materials and Methods:** Novel Bioactive component extracted from honey and its effectivity were determined by measuring the zone of clearance (mm) through the agar diffusion method (1group and 20 samples per group by keeping threshold 0.05 and G power 80%, coincidence interval 95%, and enrollment ratio as 1) using kanamycin (30) as a control for a different time 24 Hrs, 48 Hrs, and 72 Hrs at 37°C. **Results:** Promising results were found in the *Staphylococcusaureus* (P<0.001) zone of clearance and no significance was detected for *E.coli* and *Pseudomonas*. Compared to 10% compound application where 9% bacterial growth was recorded the addition of 100% compound approximately inhibits 99% bacterial growth. For *S.aureus*honey was found really effective. **Conclusion:** Novel bioactive compound from honey was found very effectively only on pathogenic staphylococci and can be used as a naturalcomponent with antimicrobial efficacy in the field of medicine.

Keywords: Antimicrobial, Bactericidal, Bacteriostatic, Novel Bioactive Compound, MIC, Medicine.

DIABETES MELLITUS (DM) DETECTION USING ENSEMBLE CLASSIFIER AND ARTIFICIAL NEURALNETWORK (ANN) ALGORITHM FOR ACCURACY, SPECIFICITY AND SENSITIVITY IMPROVEMENT

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Abstract

Aim : The main aim of this work is to calculate the Accuracy, Specificity and Sensitivity using the novel approaches of Ensemble Classifier and Artificial Neural Network (ANN) based models for detecting Diabetes Mellitus. **Materials and Methods:** The dataset used is the PIMA Indian diabetes dataset taken from National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). This dataset consists of health records of 768 patients. The estimated sample size using G-power is 768 records belonging to each group with 80% of power and 0.05 TypeI/II Error rate (Alpha). These records are used for training (80%) and testing (20%) the predictive model in Python and the statistical analysis is done using SPSS software. The Ensemble classifier model is used and compared with the Artificial Neural Network based model. **Results**: The predictive model using the ANN algorithm shows the high Accuracy of 88.4310±4.34344, Specificity of 84.0880±3.89770 and Sensitivity of 73.3613±4.91611 than Ensemble Classifier based model with Accuracy of 80.3640±8.07691, Specificity of 61.5160±8.66817 and Sensitivity of 32.2280±11.34664 with the significance value of 0.05. **Conclusion:** The outcome of the study confirms that the Artificial Neural Network (ANN) based model provides more promising results in detection of Diabetes Mellitus than Ensemble classifier based models.

SKIN CANCER DETECTION USING DEEP LEARNING SQUEEZENET AND INCEPTION RESNET V2 CNN ARCHITECTURE BASED ON DERMAL CELL IMAGES CLASSIFICATION

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Abstract

Aim: The main aim of this work is to measure the accuracy for classifying dermal cell imagesusing Inception Resnet V2 CNN and Squeezenet CNN algorithm. **Materials and Methods:** The skin images the dataset collected from International skin images collaboration (ISIC) . In this research work 1200 images are used out of which (80%) are trained and (20%) are used for testing for the detection of skin cancer. 1200 images are used for group 1 (Inception Resnet V2) in comparison with Squeezenet and the statistical analysis done using SPSS software. The sample size of two groups is calculated using G power with pretest power of 0.8. **Results:** The Inception Resnet V2 using CNN shows better results in mean accuracy of 93.12 ± 0.111 followed by Squeezenet CNN produces an accuracy of 90.22 ± 0.177 with the significant valueof 0.329. **Conclusion:** It is concluded that based on the execution analysis, the Inception ResnetV2 appears to be high accuracy compared with Squeezenet CNN algorithm.

Keywords: Innovative detection, Convolutional Neural Network, Inception Resnet V2 CNN, Squeezenet CNN, Deep learning, Accuracy

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INNOVATIVE COMPARISON ON PERFORMANCE OF PCD INSERT AND UNCOATED INSERT IN CNC GREEN MACHINING OF MARTENSITIC AND PRECIPITATION HARDENING STEEL GRADE 420 FOR MAXIMIZING MATERIAL REMOVAL RATE

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Abstract

Aim: This research deals with maximizing the material removal rate (MRR) and increasesproductivity in Automobile industries by comparing the Polycrystalline diamond (PCD) insert and uncoated insert in the CNC turning process. **Materials and methods**: Martensitic and precipitation hardening steel grade 420 was used as a specimen in this study. Experimental group in this study was PCD insert and the control group was uncoated cemented carbide insert. Cutting speed , feed rate, depth of cut were the main parameters involved in this study. 27 samples were required for machining both groups. **Results :** The results show that the mean MRR for the specimen that is machined with PCD insert is 0.083026 g/s and with uncoated insert is 0.049504 g/s. 0.003($p<0.05$) was obtained as the significance value between two inserts. **Conclusion:** Within the limits of this study, the observation from this research work is that MRR is higher when the work piece is machined with PCD insert than with uncoated insert.

FIBONACCI TRANSFORM BASED SATELLITE IMAGE SCRAMBLING AND RECONSTRUCTIONTECHNIQUE WITH IMPROVED SSIM PARAMETER FOR INCREASING THE ROBUSTNESS OF DIGITAL WATERMARKING ALGORITHMS IN COMPARISON WITH RANDOM SHUFFLING METHOD

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Abstract

Aim: Digital watermarking is the method of altering a piece of data in order to incorporate datarelatedinformation. In some cases, the watermarks may be visible so unauthorized persons can easily access the data. In order to protect the information from being copied and used without authorization, a unique technique is proposed. **Materials and Methods:** In this research a Fibonacci transform based image scrambling technique is proposed to enhance the security by applying scrambling algorithm to watermark before embedding them with input images. The proposed work is compared with another scrambling technique called Random Shuffling method and the sample size for each group is 30. **Results:** The performance of image scrambling algorithm is measured using Structural similarity index measure (SSIM) and Universal index quality measure (UIQI) parameters. Low values of SSIM and UIQI indicates better scrambling. Fibonacci transform provides mean SSIM values of 15.8723%, mean UIQI of 66.8050% and Random shuffling method provides mean SSIM values of 23.0210% and UIQI of 76.2750%. **Conclusion:** Based on experimental results and statistical analysis using Independent sample Ttest, the Fibonacci transform based image scrambling method performs significantly better than Random Shuffling method with SSIM (P=0.007) and UIQI (P=0.008).

Keywords: Innovative image scrambling, Digital watermarking, Fibonacci transform, Random shuffling method, Artificial Intelligence

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BRAIN TUMOR DETECTION IN MRI IMAGES USING MORPHOLOGICAL WATERSHED SEGMENTATION METHOD TO IMPROVE ACCURACY IN COMPARISON WITH THRESHOLD BASED SEGMENTATION METHOD

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Abstract

Aim:Image segmentation is a method of processing digital images by using a series of algorithms to segment a portion of the image that contains enough information to match the input images.The aim of this study was to use image segmentation algorithms to improve brain tumour detection in MRI images. Materials and Methods:The use of a morphological watershed transform for segmenting brain tumour affected regions in mri images is suggested in this study. The proposed work is compared to threshold dependent segmentation, another image segmentation technique, with a sample size of 30 for each group. Result: The performance of the image segmentation algorithm is measured using (SSIM) and universal index quality measure (UIQI) parameters . High values of SSIM and UIQI indicates better segmentation. Watershedtransform provides mean SSIM values of 12.1814, mean of UIQI 61.3080 and threshold transform provides mean SSIM values of 8.8774, mean of UIQI 59.426. Conclusion: Accordinto experimental results and statistical analysis using independent sample T-test, the watershed transform performs significantly better than the threshold-based transform with SSIM (0.1) and UIQI(0.5).

ARNOLD TRANSFORM BASED SATELLITE IMAGE SCRAMBLING AND RECONSTRUCTION TECHNIQUE WITHIMPROVED SSIM PARAMETER FOR INCREASING THE ROBUSTNESS OF DIGITAL WATERMARKING ALGORITHMS INCOMPARISON WITH RANDOM SHUFFLING METHOD

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Abstract

Aim: Digital watermarking is a technology which is used to alter the data by adding the secret information into the host media to protect the copyrights of the information. The system receives the data and embeds the watermark to it by using the embedding algorithm,to secure this data a new transform based watermark algorithm is proposed.**Materials and methods:** In this research Arnold transform based image scrambling method developed and compared with random shuffling method and 30 is the sample size of each group. All Satellite images are collected from standard Satellite database **Results:**The execution of image scrambling algorithm is calculated usingStructural Similarity Index Medium(SSIM) and Universal index quality measure(UIQI) parameters. Low values of SSIM and UIQI represent the higher scrambling. Arnold transformprovides mean SSIM value of 49.0487% and UIQI is 81.6797%, Random shuffling provides mean SSIM value is 35.1587% and UIQI is 68.2633%. **Conclusion**: Based on the experimental and the statistical analysis by using the independent sample T test, the Arnold transform based image scrambling method performs significantly better than the Random shuffling method with SSIM(P=0.40) and UIQI (P=0.00).

DESIGN AND DEVELOPMENT OF CONTRAST-LIMITED ADAPTIVE HISTOGRAM EQUALIZATION TECHNIQUE FORENHANCING CT IMAGES BY IMPROVING SSIM, UIQI PARAMETERS IN COMPARISON WITH MEDIANFILTERING

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Abstract

Aim:Image enhancement is used to enhance and sharpen image features in order to produce a more detailed, or less noisy output image.In order to enhance the quality of CT images histogram based image enhancement technique is developed in this work. **Materials and Methods:** In this research, a contrast limited adaptive histogram equalization (CLAHE) based image enhancement technique is proposed and developed for CT images and the proposed work is compared withanother image enhancement technique called median filtering method.Input medical images (N=30) of both group were downloaded from standard medical database.Theenrollment ratio is obtained as 1 with 95% confidence interval and a threshold value 0.05 .**Results:**Theperformance of image enhancement is measured using two parameters namely structural similarity index measure (SSIM) and universal image quality index(UIQI). These parameters are calculated and evaluated to assess the proposed methods efficacy. High values of SSIM and UIQI indicate better enhancement.Contrast limited adaptive histogram equalization (CLAHE) provides mean SSIM values of 0.6503(%), mean UIQI of 86.3497% and median filtering method provides mean SSIM values of 0.5254(%) and mean UIQI of 81.3473%. **Conclusion:** Based on the experiments results from MATLAB software and from independent sample T test results of IBMSPSS software, the contrast limited adaptive histogram equalization(CLAHE) based image enhancement technique significantly performed better than the median filtering(MF) based image enhancement technique with PSNR(P=0.091) and UIQI(P=0.070).

Keywords: Innovative Contrast limited adaptive histogram equalization(CLAHE), Medianfiltering(MF), Structural similarity index measure, Universal image quality index measure,Artificial intelligence.

DEVELOPMENT OF WAVELET PACKET TRANSFORM BASED IMAGE FUSION TECHNIQUE WITH IMPROVED SSIMON PAN AND HYPERSPECTRAL IMAGES FOR QUALITY ENHANCEMENT IN COMPARISON WITH WAVELET TRANSFORM BASED IMAGE FUSION TECHNIQUE.

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Abstract

Aim: Image fusion is the process of merging two or more images into a single image with the characteristics of both input images.Image fusion is used to enhance the quality of input images. This research work focuses on to use transform domain methods to design image fusion algorithms.**Materials and methods:** In this work, wavelet packet transform based image fusiontechnique is proposed and developed to improve the quality of image.The proposed work iscompared with wavelet transform based image fusion technique using structural similarity indexmeasures (SSIM) and universal image quality index (UIQI) values and sample size for eachgroup is 30.The enrolment ratio is obtained as 1 with threshold value 0.05 and 95% confidence interval.**Results:**The performance of image fusion is measured by using two parameters namelystructural similarity index measures (SSIM) and universal image quality index (UIQI). Highvalues of SSIM and UIQI indicate better performance of image fusion techniques. Wavelet packet transform provides mean SSIM-1 of 17.1437 %.mean SSIM-2 of 17.7810 %. mean UIQI of 78.9833 % and wavelet transform provides mean SSIM-1 of 11.5937 %,mean SSIM-2 of9.9557 % ,mean UIQI of 56.3563 %.**Conclusion:**Basedon the experiments results from MATLAB software and from statistical analysis using IBM-SPSS software, it is concluded that the wavelet packet transform based image fusion technique provides better results than wavelet transform based image fusion technique with SSIM 1**(**P=0.192**)**,SSIM 2**(**P=0.064**)** and UIQI**(**P=0.000**)**.

Keywords: Wavelet transform, Structural similarity index measures, Universal image quality index, wavelet packet transform, Innovative Image fusion,Artificial intelligence.

COMPARISON OF VI CHARACTERISTICS BETWEEN MOSFET AND BIOFET BY VARYING CHANNEL LENGTH

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Abstract

Aim: The project aims to improve the drain characteristics of a novel device BIOFET (BioField Effect Transistor) and MOSFET (Metal oxide semiconductor field effect transistor) by varying the Channel length. **Materials and Methods:** The MOSFET and BIOFET was chosenas a group having 20 samples each respectively. The drain characteristics were simulated byvarying the Channel length of a MOSFET and BIOFET using a DFT tool. **Result:** The analysiswas found that BIOFET (mean - 1.556) is better compared to MOSFET (mean -0.064).**Conclusion:** The Independent T test was done which reveals that the MOSFET was found to bestatistically insignificant (p=1.52) compared with BIOFET.

Keywords: Novel device BIOFET, MOSFET, Drain current, Nanomaterials, Nanotechnology

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DEVELOPMENT OF WAVELET TRANSFORM BASED IMAGE FUSION TECHNIQUE WITH IMPROVED SSIM ON HYPERSPECTRAL AND PAN IMAGES IN COMPARISON WITH DISCRETE COSINE TRANSFORM BASED IMAGE FUSION TECHNIQUE

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Abstract

Aim: Image fusion is the process of extracting meaningful visual information from two or moreimages and combining them to form one fused image. Image fusion is important within many different image processing fields from remote sensing to medical applications.As a result, the resulting fused image would be better suited to human and machine perception as well as image processing tasks. **Materials and Methods:** The sample size for each group is 30.The quality of images are improved and developed in this work by using wavelet transform and also image fusion technique was proposed.The comparison of proposed work is done with Discrete cosine transform based image fusion technique using structural similarity index(SSIM) and universal image quality index(UIQI).The threshold value is set to 0.05 and the confidence interval as 95%. **Results:**The presentation of image fusion of each algorithms are estimated by using parameters structural similarity index(SSIM) university index quality measure(UIQI).The better image fusion is obtained through the indication of high values of SSIM and UIQI.Discrete wavelet transform provides mean value of SSIM (17.1397dB),mean value of UIQI (0.8548 %) and discrete cosine transform provides the mean value of SSIM (16.5230 dB),mean value of UIQI (0.5560%) .The insignificant values of SSIM 1 (P=0.260), SSIM 2(P=0.020), UIQI (P=0.001).**Conclusion**:Based on the experimental results,it is observed that the discrete wavelet transform based image fusion method performs better discrete cosine transform

IMPLEMENTATION OF K NEAREST NEIGHBOUR ALGORITHM TO MINIMIZE THE FALSE DETECTION RATE OF EPILEPSY USING NOVEL CLASSIFICATION APPROACH IN COMPARISON WITH ARTIFICIAL NEURAL NETWORKALGORITHM

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Abstract

Aim: This paper describes an novel classification approach of EEG signals for the detection ofepileptic seizures using K-Nearest Neighbour and Artificial Neural Networks. **Materials &Methods:** The total of 1372 samples are collected from the UCI repository which contain 15attributes. The epilepsy detection is carried out with the help of two groups where group 1 is KNearest Neighbour and group 2 is Artificial Neural Networks. **Results:** K Nearest NeighbourAchieved 97% respectively compared to 88% by Artificial Neural Networks. The obtainedsignificant value is ($p<0.05$). **Conclusion:** We can conclude that K- Nearest Neighbor hassignificantly greater accuracy when compared with the Artificial Neural Networks.

KEYWORDS: Machine Learning, Novel classification, Artificial Neural Networks, Electroencephalogram, Genetic Epilepsy, K Nearest Neighbour.

DESIGN AND ANALYSIS OF AN NOVEL NARROWBAND MICROSTRIP RECTANGULAR PATCH ANTENNA BY VARYING THE FR4 SUBSTRATE HEIGHT FOR EFFICIENT RETURN LOSS IN COMPARISON WITH CIRCULAR PATCH ANTENNA

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Abstract

Aim: The aim of study is to design and analyse the novel narrowband rectangular microtrippatch antenna by varying FR4 substrate height for efficient return loss and it is compared with circular patch antenna. **Materials and Methods:** The design of the antenna is done in the simulation software called Computer Simulated Technology. Rectangular patch antenna and circular patch were considered as group 1 and group 2. The required parameters for the designing the antenna are FR4 substrate height and dielectric constant. For the rectangular patch antenna FR4 Substrate height is increased from 1.6mm to 2.5mm and for circular patch antenna the FR4 height is taken as 3.2mm. **Results:** The return loss of antenna is improved by varying the FR4 substrate height from -45.14dB to -28.25dB and compared with the circular patch antenna of return loss -30.86dB. The obtained significant value for return loss of narrowband is ($p<0.05$). **Conclusion:** In this study, rectangular patch antenna return loss is significantly higher than the circular patch antenna which was simulated using Computer Simulated Technology software.

EXTRACTION OF IRIS FEATURES USING GREY LEVEL CO-OCCURRENCE MATRIX METHOD WITH IMPROVED FAR AND FRR FOR IRIS AUTHENTICATION IN COMPARISON WITH PRINCIPAL COMPONENT ANALYSIS

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Abstract

Aim: The accuracy of the iris authentication system can be improved by including more featuresfrom Iris videos or images.This research aimed at developing Iris authentication systems using different feature extraction methods and ANN classifiers. **Materials And Methods:** In thisresearch a grey-level co-occurrence matrix(GLCM) based feature extraction technique isproposed to improve the performance of the iris authentication system.The proposed work iscompared with another feature extraction technique called Principal component analysis(PCA)and the sample size for each group is 30.**Results:**The Artificial neural network (ANN) is used foriris detection and the performance of iris authentication is measured using two parametersnamely False acceptance rate (FAR) and False rejection rate (FRR).Grey-level co-occurrencematrix(GLCM) provides mean FAR (0.1743) and FRR (86.86) and PCA provides mean FAR(0.0154)and FRR (76.33).**Conclusion:**Based on the experimental results and statistical analysisusing independent sample T test, the Grey-level co-occurrence matrix(GLCM) method based Irisauthentication significantly performs better than Principal component analysis(PCA) methodwith FAR(P=0.005) and FRR(P=0.001).

STUDY ON OPTIMUM MOISTURE CONTENT AND MAXIMUM DRY DENSITY OF SOIL AND COIR PITH COMPOSITE AS AN ECO-FRIENDLY CONSTRUCTION MATERIAL CONSTRUCTION MATERIAL

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Abstract

Aim: The aim of the study is to find the Optimum Moisture Content (OMC) Maximum DryDensity (MDD) of sandy clay soil and Coir Pith reinforced Sandy clay soil. **Materials andMethods:** In the present study, we have determined the OMC & MDD of the sandy clay soil and fiber reinforced sandy clay soil (10% Coir pith). A total of 36 samples, 18 sandy clay soil samples and 18 coir pith reinforced sandy clay soil were tested **Results:** Independent Sample Tteston sandy clay soil and coir pith reinforced sandy clay soil and the obtained significance is0.001 ($p<0.05$). It also reveals that the OMC of the coir pith is decreased and MDD is increased when compared with the sandy clay soil. **Conclusion:** Thus, we have identified that addition of coir pith to sandy clay soil will decrease the OMC and increase MDD.

Keywords: Coir Fiber, Sandy Clay Soil, Coir Pith Reinforced Sandy Clay Soil, Standard Proctor Test, Optimum Moisture Content, Maximum Dry Density, Eco-Friendly Material

GROWTH ANALYSIS OF BACTERIA WHEN SUBJECTED TO AMMONIUM SALTS AMMONIUM PERSULPHATE, AMMONIUM SULFATE, AMMONIUM FERROUS SULFATE AS NITROGEN SOURCES BY MEASURING OPTICAL DENSITY

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Abstract

Aim: Growth analysis of bacteria when subjected to Ammonium salts (Ammonium Persulfate,Ammonium Sulfate, Ammonium Ferrous Sulfate) as a nitrogen source by measuring optical density **Materials and Methods:** In Luria Bertani Broth (LB) of pH 7.0 effect of nitrogen source on bacterial growth was monitored for two days by adding with 1.5% of Ammonium Persulphate, Ammonium Sulfate, Ammonium Ferrous Sulfatesalts separately and inoculated with *E.coli*, *Bacillus*, and *Pseudomonas*. 3 groups with 120 samples per group was analyzed by keeping the threshold 0.05 and G power 80%. coincidence interval 95% and enrollment ratio is 1. **Result**: Comparing various nitrogen sources on bacterial growth at different times, Ammonium ferrous sulfate elevates the growth up to 22 fold in *Bacillus*, however for Ammonium Sulfate it ranges between 11 - 12 fold. On the contrary Ammonium persulfate can only increase the growth up to 8 fold. Bacterial growth was found affected upon the addition of nitrogenous sources externally ($p<0.001$). **Conclusion:** Growth of *Bacillus* was found maximum with Ammonium Ferrous Sulfate and for *E.coli* maxima was achieved with Ammonium Sulphate. Therefore the correlation between bacterial growth(mean) with the organism (mean) indicated Ammonium Sulphate a potent nitrogen source to enhance bacterial growth upon prolonged incubation.

Keywords: Bacterial growth, *E.coli*, *Bacillus*, *Pseudomonas*, Novel Extracellular protease, Nitrogen source, 16s rDNA sequencing, Optical density, Bacterial fermentation.

DESIGN AND DEVELOPMENT OF DECORRELATION STRETCH TECHNIQUE FOR ENHANCING THE QUALITY OF FOREST IMAGES WITH IMPROVED PSNR AND UIQI IN COMPARISON WITH WIENER FILTER

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Abstract

Aim: Image enhancement is the method of improving the quality and information content of an image and it sharpens image features such as edges, boundaries to make graphic display helpful for display and analysis. Enhancement techniques start adjusting the quality of image for human viewing. **Materials and Methods:** Image enhancement using Decorrelation stretch technique is proposed in this study and this method is compared with Wiener filtering which is also based on spatial operations. **Results:** The quality enhanced image is measured using Peak signal to noise ratio (PSNR) and Universal image quality index measure (UIQI). High PSNR and UIQI indicates a better enhanced image. The parameters of PSNR (db.) and UIQI are having higher values than the parameters of Wiener filtering. The mean PSNR value of Decorrelation stretch technique is 38.8783 db and mean PSNR of Wiener filtering is 38.3640 db. The mean UIQI value of Decorrelation is 0.4582 and the mean UIQI of Wiener filtering is 0.4865.

DEVELOPMENT OF SHEARLET TRANSFORM BASED IMAGE FUSION TECHNIQUE WITH IMPROVED SSIM ON HYPERSPECTRAL AND PAN IMAGES IN COMPARISON WITH WAVELET TRANSFORM BASED IMAGE FUSION TECHNIQUE

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Abstract

Aim: Image fusion is the process of merging details from two or more images of the same scene taken at the same time or at different times to create more accurate images than the individual images might provide on their own.Pixel-based methods, decision-based methods, and featurebasedmethods are used in image fusion.**Materials and Methods:** In this work, shearlettransform based image fusion technique is proposed and developed.This proposed work is compared with wavelet transform based image fusion technique using SSIM and UIQI Values and the sample size for each group is 30.For sample size calculation threshold value is set to 0.05, confidence interval is 95%, power value is 80% and enrollment ratio is 1.**Results:** The performance of image fusion is measured using two parameters namely Structural Similarity Index Measures (SSIM) and Universal Image Quality Index Measure (UIQI). High values of SSIM and UIQI indicates the better performance of image fusion algorithms. Shearlet transform provides mean SSIM values of 39.6000(dB),mean UIQI of 72.2567(%) and wavelet transform method provides mean SSIM values of 1.5090(dB),mean UIQI of 11.5283(%).

ASSESSMENT OF LAKE WATER QUALITY PARAMETERS IN COMPARISON WITH IRRIGATION WATER QUALITY STANDARDS AT SRIPERUMBUDUR REGION, INDIA.

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Abstract

Aim: The major objective of this work is to assess the variation of water quality parameters over the large, agricultural lakes in Sriperumbudur area. The primary water quality parametersinvolved in this analysis are Electrical Conductivity, pH, Total Dissolved Solids, PhenolphthaleinAlkalinity and Total Alkalinity. Lakes are major upholders of freshwater that supports theenvironment and its existence. It is evident that many inland water bodies are becoming obsolete with no steps taken towards its protection. **Materials and Methods:** The water quality parameters were collected from 20 different sampling stations over the Mevalurkuppamlake in Sriperumbudur located in South India. The selection of the stations were based on theGeographical Information System (GIS) which is widely recognized in water quality monitoring in conjunction with various chemical parameters. **Results:** The results of this analysis report the variation of Lake water quality and the irrigation water quality in the village of Kundrathur. The potential application and management methods for promoting the concept of sustainable water resource management.

IMPLEMENTATION OF WEARABLE MICRO-STRIP PATCH ANTENNA USING LEATHER TEXTILE SUBSTRATE AT 3.65GHZ FOR DIRECTIVITY IMPROVEMENT COMPARED TO COTTON TEXTILE SUBSTRATE ANTENNA.

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Abstract

Aim: A wearable textile antenna using leather and cotton textile substrate at a frequency of 3.65GHz is presented in this paper for analysing the directivity performance. Frequency bands of 3.3GHz to 4.2 GHz are used in initial 5G wireless implementation. To improve the directivity performance of wearable antennas in these bands, good dielectric textile substrate (such as leather textile) is needed. **Materials and Methods:** Two groups, Leather textile substrate and cotton textile substrate antennas with inset feeding techniques are simulated with 10 samples. Each group is simulated with 8 iterations. Micro-strip patch antenna patch length , width, height, dielectric constant of the substrate and resonance frequency are used for directivity performance analysis. **Results:** Through simulation it is observed that the directivity performance of leathertextile substrate antenna is 8.83 db with maximum mean directivity of 8.51db and cotton textile substrate antenna is 8.77 db with maximum mean directivity of 8.21 db. **Conclusion:** Leather textile substrate antenna appears to be better in achieving directivity performance compared to cotton textile substrate antenna.

Keywords: Microstrip Patch Antenna, Directivity, Novel Leather Textile Substrate, Dielectric Constant. 5G Wireless System

PIXEL BASED BRAIN TUMOR ANALYSIS THROUGH MACHINE LEARNING USING LINEAR REGRESSION COMPARING WITH IMAGE PROCESSING BASED GRADE CLASSIFICATION

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Abstract

Aim: In this paper, our aim is to classify the brain tumour grades innovatively through machinelearning using linear regression.**Materials& Methods:** Machine learning using linear regression and image pre-processing algorithms are implemented to detect grade classification of tumours. Twenty samples are taken as a sample size with p=0.8 and has been used to improve detection rate in terms of accuracy and sensitivity.**Result:** The linear regression algorithm has achieved 93% of accuracy and 0.154 standard deviation while image pre-processing has achieved 90% of accuracy, significance <0.01 and also 0.092 standard deviation. **Conclusion**: Within the limitations of study, linear regression algorithms have higher significance than image processing for the selected data.

GAIN IMPROVEMENT & RETURN LOSS REDUCTION OF MICROSTRIP PATCH ANTENNA AT 6.45GHZ USING MULTI SLOTTED PATCH FOR MOBILE APPLICATIONS IN COMPARISON WITH COAXIAL PROBE FEED

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Abstract

Aim: The main objective of this project is to design a rectangular-shaped microstrip patchantenna with microstrip line feed at a frequency of 6.45GHz to improve the Gain and Return Loss of Antenna by using Multi Slotted Patch for Mobile Applications. **Materials & Methods:**Microstrip patch antenna with Multi Slotted Patch using microstrip line feed and Multi slotted patch Antenna with Coaxial probe feed technique is used with a sample size of 20 by keeping alpha error is 0.05, Threshold by 0.05, 95% confidence interval, pre-test power 80%. **Results:**By using HFSS Simulation Software Gain and Return Loss of Microstrip patch antenna appearsto be improved and noted in comparison with Coaxial probe feed antenna with the multi slotted patch. The Simulation Results obtained for the designed antenna are Gain is 6.662dB and Return loss is -18.33dB. Attained significance accuracy ratio p(<0.05) for Gain and return loss in SPSS Statistical Analysis. **Conclusion:** Performance parameters of Microstrip Patch Antenna with Multi Slotted Patch using microstrip line feed appears to be improved when compared with Multi slotted patch antenna with coaxial probe feed. From the results, the proposed antenna can be used for Mobile Applications.

KEYWORDS: Microstrip line Feed, Novel Multi-Slotted Patch, Gain, Return loss, mobile antenna, Antenna Design.

AN ENHANCE APPROACH BASED ON PREPROCESSING STRATEGIES IN LYMPHOMA'S IMAGE CLASSIFICATION

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Abstract

The body's disease-fighting system is the lymphatic system. The lymph nodes, spleen, thymus gland, and bone marrow are all part of it. Hodgkin's lymphoma and Non-lymphoma Hodgkin's are the two most common kinds of lymphoma. The treatment for this lymphoma is determined by its stage. Early detection aids in lowering and avoiding the death rate associated with lymphoma. There are numerous medical aids available to help people live longer and avoid death. There are a variety of medical diagnosis procedures used to provide treatment for this problem. The computing algorithm is crucial in assisting clinicians in the diagnosis of lymphoma. The goal of this study is to diagnose lymphoma illness using MRI data. In this work, pre-processing techniques are used to reduce noise in the Lymphoma image, allowing it to progress to the next phase. Filtering techniques are used to blur and smooth the image without affecting the pixel values during the preprocessing stage. R channel image and CLAHE are two filtering approaches.The distribution of pixels is determined using histogram distribution for both normal and processing before preprocessing the image, and the results are compared after pre-processing. The outliers in the forms of lymphoma image have been removed in the comparison. The precision of the procedures utilised in this project has demonstrated their efficacy.

Keywords: Digital image pre-processing, R chennal, CLAHE (Contrast limited adaptive histogram equalization) image processing

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STUDY ON IOT BASED INTELLIGENT GAS LEAKAGE DETECTION SYSTEM

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Abstract

Many accidents occur in day to day life like explosion because of LPG (Liquid Petroleum Gas) leakage. Major harm is caused, if gas leakage is not detected early. But now the system can detect the gas leakage using gas sensor (MQ5). This paper proposes various gas leakage detection system with their advantages and disadvantages

Keyword: LPG, MQ5, Android, GPS

ENCODING IP ADDRESS IN NETWORK INTRUSION SYSTEM IN AN IOT SECURITY PERSPECTIVE

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Abstract

The world is now connected by internet with devices which are able to communicate with valuable and confidential data. The information's shared by these devices are stored in the Cloud for usage and processing .For the IOT devices connected with the internet, the Internet Protocol(IP) address helps to identify the devices like computers, mobile phones and so on. When an intruder wants to hack a device, the IP address is the major source to get intruded in to the system. Encoding techniques are used to convert the IP address into the format that can be taken as input for the machine learning algorithms. The work done paper is to determine the best method of encoding IP addresses as a feature in the DoS network attack in EZVIZ and NUGU data by applying the K-Nearest Neighbor machine learning algorithms. The performance metrics Accuracy, Precision, Recall and F1 value obtained from the KNN algorithm is analyzed for identifying the good encoding IP address method for network intrusion detection .The proposed work is concluded with the result Split Encoding is best with high accuracy and also when the K value and the Error rate of Binary, Split and One Hot Encoding is compared split encoding is best.

Keywords : Encoding, Accuracy, Precision ,Recall

AUTOMATED WATERING SYSTEM IN AGRICULTURE USING ANDROID APPLICATION AND FIREBASE CLOUD

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Abstract

Agriculture is the source of living of majority Indians and it also has a countless influence on economy of the country. The objective of our project is to reduce this manual involvement by the farmer by using an automated irrigation system which purpose is to enhance water use for agricultural crops. We introduce automatic watering system (AWS), which is considered as one of the most commonly used and the most beneficial automated systems nowadays, which help people in their daily activities by reducing or completely replacing their effort. This project was made in order to facilitate agricultural farmer in more convenient way. Purpose of this Project is to show how someone can easily make own and cheap automatic plant watering system in just few hours by using the android application with the help of firebase data cloud. In our experiment, we connected all required materials exactly as shown in this paper, in order to test whether our system will work properly or not. There are also many other possibilities like using more than one sensor or solar power supply for experimental purposes, but the fact is however, that, independently of the materials used and the way in which they are connected, this type of automated systems can be very helpful in solving very wide of human-related problems nowadays.

IoT BASED REAL TIME VEHICLE CONTROLLING SYSTEM

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Abstract

The internet of things, or IoT, is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. In IoT things will be considered as real-world objects with unique Ip address. Merging the real-world things by removing gap from real and virtual world objects is necessary to raise the use real world thing. A vehicle control system is a system of devices or set of devices, that manages commands, directs or regulates the behavior of the vehicle to achieve desire results and is responsible for the path tracking and driving safety.

In this project IoT based remote controlled vehicle is implemented using Wi-Fi technology. Blynk android application is used to control this vehicle in forward, backward, left and right directions instead of joystick. Here Blynk android application is used as a transmitting device and inbuilt Wi-Fi module is placed in a car which is used as a receiver. This application will transmit command using Wi-Fi to the car so that it can move in a required direction like moving forward, reverse, turning left, turning right and stop. This application also provides GPS coordinates for updated positions of vehicle after the interval of every 5000 milliseconds. So that the user can easily track their vehicle location via their mobile phone and it is also user friendly

COUNT BASED STEGANOGRAPHY

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Abstract

Steganography is the art of hiding the fact that communication is taking place, by hiding information in other information.Many different carrier file formats can be used, but digital images are the most popular because of their frequency on the internet.For hiding secret information in images, there exists a large variety of steganography techniques some are more complex than others and all of them have respective strong and weak pointsDifferent applications may require absolute invisibility of the secret information, while others require a large secret message to be hidden.This project report intends to give an overview of image steganography, its uses and techniquesIt also attempts to identify the requirements of a good steganography algorithm and briefly reflects on which steganographic techniques are more suitable for which applications. Our Image steganography is mainly focused on security, for that purpose this project include auto delete option based on count.

DESIGN AND FABRICATION OF MICROWIND TURBINE SYSTEM WITHDUALROTOR

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Abstract

With recent surge in fossil fuel prices and demand for cleaner renewable energy sources, wind turbines have become an alternative technology for power generation. This paperdesigning the dual motor micro wind turbine which is the modification of the conventional wind turbine system. The performance can be improved by introducing the double rotor systems. It has the capacity to produce the power twice the power produced by normal conventional system.

DESIGN AND FABRICATION OF PENDULUM BASED WATER PUMPING SYSTEM

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Abstract

New and technically original idea - hand water pump with a pendulum - provides alleviation of work, because it is enough to move the pendulum occasionally with a little finger to pump the water, instead of large swings. Using the minimum of human strength in comparison to present classic hand water pumps enables efficient application in irrigation of smaller lots, for water-wells and extinguishing fires even by old people and children, which was proved by a large number of interested future consumers during the presentations.

ANALYSIS OF LARGE NEGATIVE DISPERSION PCF

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Abstract

The aim of the present investigaion is to design and analyze a Photonic Crystal Fiber with hexagonal structure in the cladding holes. A Numerical Method called Finite Element Method is used and the model has been simulated using COMSOL MULTIPHYSICS. The LND PCF is designed and simulated. Large negative dispersion with low confinement Loss, and Large Effective Area (Aeff) is achieved. It is illustrated that core mode with larger mode effective index versus wavelength can induce larger negative dispersion and large effective area is possible at the same time. This kind of PCFs has characteristics to control the large negative dispersion more easily by changing the refractive index of filled materials in the high-index inclusions.

THERMOELECTRIC WATER COOLINGSYSTEM FOR RESTAURANTS

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Abstract

A water cooling system based on Peltier effect has many benefits as being small in size, portable, noiseless, environmental friendly and economical compared to conventional cooling systems. This thermoelectric water cooler device is the heat energy wasted by the chimney attached to the kitchen in the restaurants to cool ordinary water convert it into cold water for drinking and other cooling purposes. This is through the exhaust Cooling the exposed heat. Then cooling is brought to the conductor and the water is cooled.

DESIGN AND DEVELOPMENT OF PAPER PRODUCTS CUTTING MACHINE USING RATCHET MECHANISM

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Abstract

The design of paper products cutting machine using ratchet mechanism is very useful to cut papers in equal and accurate dimensions. A ratchet mechanism is based on a gear wheel and a pawl that follows as the wheel turns. Ratchet is used in this device as a scheduling mechanism that converts continuous motion into intermediate motion. Due to the intermittent motion, the paper is moved between the time intervals of cutting periods. Then the paper cutting is achieved by the crank and lever mechanism. The cutter will be back to its original position by the spring effect. This machine is also used to cut the various kind of paper products, plastic, thin film, leather, slice of nonferrous metal etc. This system can be applicable in paper products cutting industry and proves how it can be a low cost solution in the production practices

REMODELING A 60 CC BIKE TO 80CC OFF ROAD

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Abstract

Designing and fabricating a mini bike is not an easy one. We designed a mini race bike with 69.7cc engine and with given dimensional specifications. We used 16 inches wheel with normal drum brake. Our chassis design is different from other commercial and race bike chassis. And we used normal rear suspension with dual springs instead of mono suspension which is most commonly used in race bikes. Our specialty is competing in 80cc racing with 70 cc engine. We reduced weight of our vehicle to compete with 80cc engines.

DESIGN AND DEVELOPMENT OF ELECTRIC VEHICLES

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Abstract

Electric vehicles (EVs) are a promising technology for achieving a sustainable transport sector in the future, due to their very low to zero carbon emissions, low noise, high efficiency, and flexibility in grid operation and integration. This chapter includes an overview of electric vehicle technologies as well as associated energy storage systems and charging mechanisms. Different types of electric-drive vehicles are presented. These include battery electric vehicles, plug-in hybrid electric vehicles, hybrid electric vehicles and fuel cell electric vehicles. The topologies for each category and the enabling technologies are discussed. Various power train configurations, new battery technologies, and different charger converter topologies are introduced. Electrifying transportation not only facilitates a clean energy transition, but also enables the diversification of transportation's sector fuel mix and addresses energy security concerns. In addition, this can be also seen as a viable solution, in order to alleviate issues associated with climate change. Furthermore, charging standards and mechanisms and relative impacts to the grid from charging vehicles are also presented.

UNDERWATER ROBOT-AN ENHANCED TOOL FOR DEEP WATER EXPLORATION AND RETRIEVAL OF OBJECTS

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Abstract

Autonomous underwater robots are gaining spotlight among the researchers for deep sea exploration, since their use can be effective in several applications. Underwater manipulation tasks are highly required ocean development, freshwater preservation, rescue activities, and maintenance of infrastructures such as dams because these tasks are too severe for divers. Our aim was to develop a remotely operated underwater vehicle(ROV) whose key advantages are cost efficiency, simple construction and design, and possibility of commercial production. Underwater robotics is an emerging science, which has become more popular with evolving technology. There are many applications of underwater robotics such as scientific exploration, military use, survey applications and also for people who go for fishing or any other activities. Besides the capability of swimming, our robot also has a video camera and an electromagnet arm to perform underwater tasks such as construction, salvage, rescue and repair. They are also helpful in collecting items that are deeply submerged inside the sea, used by the military and scientists mostly.

BUTTON OPERATED PNEUMATIC GEAR CHANGING SYSTEM FORDISABLED PERSON

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Abstract

The Project mainly aims in designing a system the gear pedals in two wheelers are manually operated by foot. Sometimes the operations can be stressful. In the era of automation various projects are being undertaken to reduce human efforts. This project help to reduce the manual efforts required to operate a two-wheeler. By operating the foot gear pedals with the help of pneumatic pistons this can be achieved. This project includes solenoids and pneumatic pistons which helps the driver of the two-wheeler to change gears. Automation part includes the relays and programmable logic controllers which controls the operation of the gears using buttons. So, the conventional Gear changing system of a two-wheeler is changed into pneumatic button operated gear changing system for disabled people.

TOWARDS THE FUTURE SUSTAINABLE TRANSPORTATION: SMART VEHICLES

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Abstract

Global CO2 emissions from transportation account for 18 percent of total global CO2 emissions (as of 2019). Sustainability in transportation is essential for consumers and enterprises to achieve the United Nations Sustainable Development Goals of increased energy efficiency and lower greenhouse gas emissions, respectively. In order to reach these objectives, a new vehicle class known as smart cars has recently been created, which has the potential to reduce CO2 emissions by up to 43 percent when compared to diesel vehicles. However, in order to maximise these cars in a sustainable manner, supporting infrastructure is necessary. Among the topics covered in the paper are autonomous navigation, increased driver assistance, vehicle health monitoring, battery management systems, vehicle power electronics, and electric power drive systems. By delving into the specifics of each component, our research will provide an eclectic image of the smart automobile system. From a technological aspect, this analysis aids in the understanding of the role played by this technology inside each of the categorizations.

DESIGN AND FABRICATION OF MULTI METAL WORKING MACHINE

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Abstract

This paper discuss about the Design and Fabrication of all in one metal Working Machine. metal working is anything that performing any operation on metal in any way for some useful work. This multipurpose metal working machine has ability to perform four operations such has Saw machines, Shaper Machines, Planer Machine and Grinding Machine on a single machine. All the four tools driven by single motor. The belt drives are used can be engaged and disengaged whenever necessary. In this competitive world people are very passionate for their home interior design and some people they create themselves metal products. In order to produce interior design models are using separate machines for conducting particular operations so which leads to more cost, material handling is more. In order to avoid these problems this concept is developed. Hence, using this is all about Saw machines, Shaper Machines, Planer Machine and Grinding Machine machines in a single platform to reduce the investment cost and floor area and made work easy.

A REVIEW ON REMOVAL OF POLLUTANT FROM TEXTILE DYE WASTEWATER BY OXIDATION – COAGULATION PROCESS

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Abstract

Textile wastewater containing dyes are difficult to treat by conventional biological processes as most of the dyes are non-biodegradable and are toxic to the micro-organisms. These dyes are heavily loaded with pollutants, turbidity, BOD, COD and are highly concentrated in salts and color. A significant improvement in effluent quality is required prior to discharging into the water bodies. Therefore, there is a great need for the development of a suitable, inexpensive and rapid wastewater treatment techniques and reuse or conservation methods in the present century. The project aims to reduce the organic and inorganic pollutants present in the dyes by using oxidation and coagulation process and to measure the physical parameters such as pH, BOD, COD. It shows the comparative study of the parameters of the wastewater before and after the processes. The oxidation process breaks the complex structure of the dye and makes it more amenable to bio-degradation. The ferric sulphate was chosen as effective coagulant for colour removal as it required lowest coagulant dose, minimum settled sludge volume and maximum decolourization. The compare experimental results show that coagulation process successfully achieved very good removal efficiency.

KeyWords: TURBIDITY, BOD, COD, COAGULANT, EFFICIENCY

ANALYZATION OF AN UNDECAYED INVENTORY MODEL WITH CONSTANT PRODUCTION RATE AND OBTAINING THE OPTIMAL VALUES

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Abstract

Mathematical optimization is important in operations research because it helps to solve linear and nonlinear programming issues. Engineering design, multicriteria decision making, operations, and supply chain management can benefit from optimization methodologies. The ideal order quantity for minimizing the total cost function is investigated in this research using an inventory model. The cost function is made up of various components, the most important of which are the ordering and carrying costs. The economic order quantity (EOQ) model aids management in lowering ordering expenses. The local extremum of the cost function is obtained using the Hessian matrix in this article, and the optimal order quantity is determined using a fuzzy technique. The numerical study demonstrates the differences between crisp and fuzzy optimum values.

ANALYSIS OF FUZZY QUEUES WITH PREEMPTIVE PRIORITY DISCIPLINE USING α– CUTS

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Abstract

This article provides an effective method to analysis the performance measures of preemptive fuzzy priority queues .In this paper we study the models with different service times across difference classes. Priority queueing models have a wide range of application in practical situations and are frequently found in computer network system. In this paper, the priority disciplined queueing models are described by using fuzzy set theory. It optimize a fuzzy priority queueing models (preemptive, non-preemptive priority) in which the arrival rate, service rate are fuzzy numbers. The performance measures of priority queueing system and it's based on the α – cuts representation of fuzzy sets in a standard interval analysis. Since, the preemptive priority queues with certain data have more use and have broader range applications.

Keywords: Fuzzy subset theory, Queueing theory , preemptive priority discipline, α – cuts ,fuzzy system models, Numerical examples.

A NOVEL MOBILE APPLICATION USING ULTRASONIC SENSOR FOR BLIND NAVIGATION

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Abstract

Blind Navigation is a process by which navigating the output destination which is opted by the blind; to travel safely by providing safety alarms and commands Here we present an Android Application and the objective of this project is to guide blind people with voice navigated GPS using an Android Phone. This app is an innovative and cost effective guide system for blind people. For blind and visually impaired people is quite impossible to be autonomous in the contemporary world, in which we are completely surrounded by information, but only visual information. When looking for a product in shop, or ordering at the restaurant, or when they want to listen to the music on a CD, blind person encounter the visual brrier of the written language, which only the help of anotherperson can solve. Inthis paper the authors describe a new system based on android technology and desingned for typing to solve this situation of impossibility of information that afflicts blind people.

ATTENDANCE SYSTEM USING FACE RECOGONITATION

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Abstract

Face recognition systems are part of facial image processing applications and heir significance as a research area are increasing recently. Implementations of system are crime prevention, video surveillance, person verification, and similar security activities. The face recognition system implementation will be part of human oidrobot project at Atılım University. The goal is reached by face detection and recognition methods. Knowledge-Based faced etection methods are used to find, locate and extract faces in acquired images. Implemented methods ares kin color and facial features. Neural network is used for face recognition. RGB color space isused to specify skin color values, and segmentation decreases searching time of face images. Facial components on face candidates are appeared with implementation of LoG filter.

STRUCTURAL BEHAVIOUR OF REINFORCED CONCRETE BEAM WITH HOLLOW NEUTRAL AXIS

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Abstract

The primary component in any structure is concrete, that exist in buildings and bridges. Nowadays research efforts are continuously looking for new, better and efficient construction material and method. In present situation, a serious problems faced by construction industry is acute shortage of raw materials. We have responsibility to reduce the effect of the application of concrete materials to environmental impact.

The objective of the investigation is to develop a Reinforced Concrete Beam with hollow neutral axis which may replace the position of reinforced concrete beam in near future. In normal beam (simply supported) two zones generally arise i.e., compression zone at top and tension zone at bottom. The stress acting at the neutral zone is zero. However, in RC beams strength of concrete lying in and near the neutral axis is not fully utilized. So this un-utilized concrete is removed by replacing with any hollow material. The material incorporated in the beam are PVC pipe, circular GI pipe, square GI pipe and rectangular GI pipe. The flexural test is carried out for all the beams after 28 days of curing. The test results were studied and compared with conventional solid beam.

Key words: Hollow neutral axis, PVC pipe, Circular GI pipe, Square GI pipe, Rectangular GI pipe, Flexural test.

STRESS-STRAIN BEHAVIOUR OF RC BEAMS BY REPLACING STEEL BARS BY GI PIPES AND GFRP RODS

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Abstract

This project deals with the study of the behavior of RC beams under stress and strain. The main aim is to determine the stress-strain behavior of RC beams by GI pipes and GFRP as reinforcement instead of using steel reinforcement. GFRP is used for economical purpose. GI pipes have better corrosion resistant property as it will resist corrosion. Beams of cross section (150x200) mm of span 1500mm were casted. The beams are cured for about 28 days. Among them, one beam is casted using steel reinforcement, one beam is of partial steel and GI pipe reinforcement, one beam is of fully GI pipe reinforcement, one beam is of partial steel and GFRP rods and one beam is of fully GFRP rods. The beams are tested in loading frame after curing. Finally, the stress-strain behavior of RC beams can be determined.

Key words: GI pipes, GFRProds

STRENGTHENING OF RC BEAMS BY USING NANOSILICA GEL AND CARBON FIBRE SHEET

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Abstract

This project deals with the strengthening of RC beams. The main aim is to improve the ductility of the beams using NanoSilica Gel and Carbon Fibre Sheet. Nano Silica Gel has better sealing property as it can fill minute pores. Carbon Fibre Sheet is used for economical purpose. Rectangular beams of cross section (150x200) mm of span 1500mm were casted. Curing is done for 28 days. After curing, the beams are tested in loading frame. Cracks will occur during testing. After testing, one beam is taken as control beam, certain beams are wrapped using Carbon Fibre Sheet and certain beams are coated with Nano Silica Gel. Again the beams are tested in loading frame. Finally, comparison has made between the beams wrapped using Carbon fibre Sheet and the beam coated with Nano silica Gel.

Key words: Nano Silica Gel, Carbon Fibre Sheet.

BEHAVIOUR OF REINFORCED CONCRETE BEAM WITH DUCT OPENINGS IN THE FLEXURAL ZONE STRENGTHENED BY STEEL PLATES

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Abstract

Requirement of openings for the beam :

Conventional passage of pipes and ducts for water supply system, sewage , electrical cables and so on.

Purpose of strengthening:

Provision of duct openings reduces stiffness and load carrying capacity of the beam. The strengthening technique is required for preventing local cracks and increasing the strength.

The main objective of the project is to investigate the load carrying capacity of beams strengthened with duct openings by steel plates. Here an attempt is made to compare unstrengthened beams and beams having different shapes of openings strengthened by steel plates with conventional solid beam.

FABRICATION AND MECHANICAL CHARATERISATION OF ALUMINIUM SURFACE COMPOSITES USING FRICTION STIR PROCESSING

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Abstract

The production, characterization of Aluminum and Silica composites using Friction Stir Process (FSP) will be described in their work. Aluminum matrix composites are one of the advanced engineering materials due to outstanding combination of high strength and improved wear resistance. FSP is a novel solid state processing to fabricate surface composite. FSP was used to create a relatively homogeneous microstructure in the Aluminum-Silicon oxide alloy. The homogenized microstructure significantly improved the strength of the alloy. In this work, the macro structural and microstructural of the fabricated Al composite will be analyzed. In additionally, the micro hardness of the fabricated Al composite also to be evaluated.

DESIGN AND FABRICATION OF HEAVY DUTY JACK

Prabhu J, Abinesh Antony A, Manikandan L, Manoji P and Vijay Prakash A

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Abstract

The main purpose of this project is used to design and fabrication of steering operated heavy duty jack. Lifting machine is a mechanical device used to lift or otherwise exert a force on an object too heavy to deal with by hand. A common example is the workshop screw jack, which is used to fix the end of a work piece by a system of ratchets, gears, and screws. Lifting machine vices are used for leveling or positioning heavy equipment, or for supporting structures. In this project we are doing the jack with rack and pinion mechanism arrangement with steering wheel.

AN INVESTIGATION OF THE MECHANICAL PROPERTIES OF MATERIALS AT VERY HIGH RATES OF LOADING

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Abstract

A method of determining the stress-strain relation of materials when stresses are applied for times of the order of 20 microseconds is described. The apparatus employed was a modification of the Hopkinson pressure bar, and detonators were used to produce large transient stresses. Thin specimens of rubbers, plastics and metals were investigated and the compressions produced were as high as 20% with the softer materials. It was found that whilst Perspex recovered almost as soon as the stress was removed, rubbers and polythene showed delayed recovery, and copper and lead showed irrecoverable flow. The phenomenon of delayed recovery is discussed in terms of the theory of mechanical relaxation and memory effects in the material.

THE MECHANICAL PROPERTIES OF MATERIALS WITH INTERCONNECTED CRACKS

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Abstract

This paper studies the effect on the overall properties of a cracked solid of the existence of connections between otherwise isolated cracks and of small-scale porosity within the 'solid' material. The intention is to provide effective medium models for the calculation of elastic wave propagation with wavelengths greater than the dimensions of the cracks. The method follows that of earlier papers in which the overall elastic properties are directly related to parameters governing the microstructure, such as crack number density and the mean radius and spacing distance of the cracks. Expressions derived by the method of smoothing are evaluated to second order in the number density of cracks, thereby incorporating crack–crack interactions through both the strain field in the solid and the flow field of fluids in the pores.

DETECTING MALICIOUS URLS USING MACHINE LEARNING

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Abstract

Malicious URLs have always been a serious threat to the vast users worldwide who use various web services such as online banking, social networking, shopping etc. As the malware industries grow, so do the various means of infecting these web services has tremendously increased in these recent years. Web services act as a platform where a lot of people interact with the external sources to perform daily tasks and so on. Hence detecting a malicious URL is very important as hackers can implant any malware in the Web Pages to get the users information to perform several illegal activities such as stealing money or personal information of the users. Over the last few years these internet illegitimate activities have been a great threat to all the users who use various web services. In our project, we propose multiple algorithms for online malicious URL detection based on machine learning. The proposed approach classifies the URLs and thereby shows a proper analysis with sufficient accuracy to detect if the entered URL is malicious or benign.

THE INCREASING LEVEL OF SIGNIFICANCE OF SOCIAL ISSUES, CSR, AND CUSTOMER PERCEIVED VALUE IN MARKETING STRATEGIES

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Abstract

The relevance and significance of Social issues, Corporate Social Responsibility (CSR), and Customer perceived value around the world is putting pressure on all industries to be more socially responsible while also developing society as a whole. The new generation of consumers is concerned not only with the product's appearance, quality, and price but also with the company's ethical behavior. In the past, the word "corporate social responsibility" had a completely different connotation, but multinational corporations have completely redefined it today. The impact of social issues, CSR, and customer perceived value on marketing has brought about new ways to position a product and create value. From this study one can understand the importance of the role of social issues, Corporate Social Responsibility and customer's perceived value in influencing the development of novel marketing strategies which ensure sustainable practices in every business operation.

Keywords: Corporate Social Responsibility, Marketing, Customer perceived value, Sustainability

IOT BASED GREEN HOUSE MONITORING USING OPTIMIZATION TECHNIQUES

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Abstract

Academia and business have recently concentrated on developing innovative systems for imaging and exploring inaccessible and established spaces. These networks, which are made up of sensor nodes and relay nodes borne by robots for knowledge sensing and networking, may conduct precise and real-time inspections, including in harsh environments. A realistic route tracking and localization scheme based on infrared (IR) for industrial robotics is introduced. The robot determines its location using Kalman-algorithm that combines robot odometer with data of signals from a few references RFID tags placed along the road. In such networks, sensor node localization is crucial since the findings can be used not just for locating and pinpointing leakage, but also for maneuvering mobile sensor nodes in a channel with a complicated setup. The proposed scheme will achieve high path tracking precision due to the IR sensor's high longevity. Without having to retrofit the robot with a high-end encoder, the built scheme is combined with multi-purpose robotic controller and boosts their robot's performance.

Keywords: Principal Component Analysis, RFID,Wireless Sensor Networks and Zigbee

QUALITY OF WORK LIFE AMONG EMPLOYEES IN METROPOLITAN TRANSPORT CORPORATION LIMITED- CHENNAI

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Abstract

Quality of work life (QWL) has assumed increasingly interest and importance in all the countries of the world. It is very significant in the contest of commitment to work, motivation and job performance. Quality of working life offered through the management or organization. Thus quality of working is a concern not only to improve life at work, but also life outside work. The factors affecting QWL are Industrial effectiveness, human resource development, Organizational effectiveness, Work restructure, Job enrichment, socio- technical systems, working humanization, Group –Work concepts, labour management, Co- operation, Working together, workers involvement, workers Participation and Co-operative workstructures. The research finds out the quality of work life among Employees of MTC in Chennai. The study involved a survey in which a total of two hundred and fifty one (251) employees drawn from MTC in Chennai were used as subjects. Interview schedule and in-depth interview were the main research techniques adopted for data collection while Univariate percentage distribution, weighted Average and Chi-square techniques gathered via to choose the simple random sampling which has been provided the bases for analysis. Data was collected through questionnaire and analyzed through SPSS. The chi-square analysis shows that there is no significant relationship exists between years of experience and improvement of productivity & overall quality of working life of MTC in Chennai.

Keywords: Job security, Participation, Cooperativeness, Work Structures

IMPACT ON ORGANIZATIONAL CLIMATE METROPOLITAN TRANSPORT CORPORATION LIMITED- CHENNAI

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Abstract

The term organizational climate "it is the distinctive work environment that influences the behaviour of the individuals employed in an organization". It is a set of measurable properties of the work environment perceived directly or indirectly by the people who live and work in the environment and assumed to influence their motivation and behaviour. Organizational climate within an organization refers to how organizational environments are perceived and interpreted by its employees. It is to survive and continue to play a vital role in the promotion of cognitive, affective and practical competence in individuals and ensure the preservation of our cultural values. It is important that the teachers who are responsible for helping the students to acquire the knowledge, skills and practical orientations essential for self as well as for national development, be effectively motivated. This study discusses and analyses various components of organization climate of employees working in MTC- Chennai.

Keywords: Organizational Climate, Employees, Transport Corporation, Environment, Working condition

CHEMICALLY REACTIVE AND UNSTEADY MHD FREE CONVECTION SLIP FLOW PAST A POROUS INCLINED PLATE WITH TEMPERATURE GRADIENT AND RADIATION DEPENDENT HEAT SOURCE IN A ROTATING SYSTEM IN PRESENCE OF DUFOUR EFFECT

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Abstract

In this article, an unsteady free convective mass and heat transfer through a porous medium over an infinite inclined porous plate in a slip-flow regime taking into account of Hall Effect Dufour Effect in a rotating system is examined. The plate is subjected to a suction velocity. The basic governing equations of the problem are transformed into a system of non dimensional differential equations, which are solved analytically by using regular perturbation technique. The outcome of various parameters like magnetic number Grashof number, chemical reactions on the velocity, temperature and concentration profiles are numerically evaluated and discussed with the help of graphs. It is discovered that increase of Grashof and Dufour number show increase primary velocity. But increase in Dufour number decreases the secondary velocity. Increase in magnetic number decrease both primary and secondary velocities. increases in radiation parameter decreases in temperature. Increase of chemical reaction parameter decreases concentration.

Keywords:Hall current, Dufour effect, Chemical reaction, MHD, Porous medium, Rotating, Heat source

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SQUARE SUM PRIME LABELING OF SOME ZERO DIVISOR GRAPHS.

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Abstract

Let G be a graph. Vertices of label from{0,1,2…|V(G)|-1}and assigned to the edge$[f(u)]^2$ $+[f(v)]^2$, where f(u) and f(v) are the end vertices label of uv ∈ E(G). The highest common vertex (gcin) v incidence so that d(v) > 1 is defined as GCD of $[f^*_{sqsp}(vv_i)] = 1$, Where v &v_i is next door andf^*_{sqsp} (vv_i) is edge labeling of the edge vv_i. If the gcin of d(v) > 1 is 1, the labeling satisfies above is called Prime labelling of square sum. The graph G is called Prime labelling of square sum if it obeys is the above labeling. Here, that's what we proved class of The square sum prime graph is zero dividing graphs of the commutative rings.

Keywords: Graphs, square sum, biggest common number of incidences, primary marking, zero divisor graphs.

CUBE DIFFERENCE LABELING FOR SOME ALTERNATE TRIANGULAR SNAKE, CYCLE, STAR RELATED GRAPHS

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Abstract

A p-vertices graph G and q edges should allow a Cube Diversity mark if bijection is available f: Vertex set→ {0,1,2…..p-1}so the featuref*: Edge set⟶Natural numbers by f*(uv) =|[f(u)]^3 – [f(v)]3 for all uv ∈Edge set are all separate. A graph that supports the labelling of cube differences is referred to as a cube difference graph.

Keywords: Triangular snake graph alternate, H graph of path P_n, bistar graph, triangular cube snake graph.

STRONGLY MULTIPLICATIVE LABELING OF SOME CORONA RELATED GRAPHS

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Abstract

A graph G = (V,E) with p vertices and q edges is said to admit strongly multiplicative labeling if there exists a bijection f: V(G) → {1,2…..p} such that the induced functionf*: E(G) ⟶ N given by f*(uv) =f(u)f(v) for every uv ∈E(G) are all distinct. A graph which admits strongly multiplicative labeling is called strongly multiplicative graph. In this paper we provedthat some corona related,cycle and path related graphs are strongly multiplicative.

Keywords: Strongly multiplicative labeling,strongly multiplicativegraph, corona graph, cycle and path.

MATHEMATICAL MODELING OF WANKEL ENGINE IN GNU OCTAVE SOFTWARE

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Abstract

This paper consist of mathematical modeling of the Wankel engine simulated in GNU Octave software. Main purpose of this study is to make an algorithm that can simulate a wankel engine that can estimate performance of engine. For any starting initial condition of engine and based on thermodynamic conditions algorithm predict output result from an engine. Simulation code consists of the construction of an engine which consists of radius, thickness and eccentricity of the engine. These construction parameters can be altered to various sizes according to the needs of the user. Code is capable of deriving various engine performance variables, combustion parameters, and cycle parameters such as pressure, temperature, heat transfer coefficient, work done, etc at any rotor angle according to construction parameters. Code is capable of handling various fuel data and conditions. This model can be used to determine values theoretically with any engine size, fuel, rpm, and running condition. Similar to engine size, the condition of the flame propagation can be altered to practically any value. In case of an actual scenario, needs of initial pressure and temperatures can also able to change

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OCCUPATIONAL STRESS IN EDUCATION SECTOR

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Abstract

Teaching today has not only become more challenging but also more competitive and stressful. They are regarded as the cornerstone of a successful education system. In higher education, teachers are under pressure to increase productivity and efficiency in their workplaces to meet the expectations of the general public, managers and governments and governments, creating pressure between them. It is important to deal with the causes of stress in the workplace because stress in the workplace can lead to personal problems, labor relations and the whole environment. Managing stress in the workplace is an important part of both of them and is a social responsibility of the institution as well. The main purpose of the current paper is to identify the causes that lead to major depression. The second objective is to study the effects of stress and suggest specific measures that can be taken to reduce stress. This research paper is of a descriptive and critical type and is based on key data collected with questions completed by 30 teachers working in engineering colleges. The secondary information includes reference books, journals, research papers and the Internet. The findings of the study show that most teachers have a moderate amount of stress and overwork and insecurity are the main causes of stress in the workplace. It also revealed that the majority of respondents experienced stress and depression and difficulty in balancing work and family life due to stress and most teachers said they were able to cope with stress at work by resting and drinking coffee and playing with their children. It is suggested that administrators should come forward and recommend various activities to reduce teacher stress.

Keywords: Teachers; Depression; Engineering; Results; Intervention

FACIAL EMOTION RECOGNITION USING SPARROW SEARCH OPTIMIZATION TUNED DEEP CONVOLUTIONAL NEURAL NETWORK

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Abstract

Facial emotion recognition (FER) has drawn significant consideration among researchers for its productive application. The primary task of FER lies in distinguishing various emotions, such as joy, disgust from the facial expression of human beings. The conventional methods of FER fail due to various reasons, such as reduced accuracy and poor performance. In this research, an optimized Deep convolutional neural network (Deep-CNN) classifier is introduced, which effectively recognize the emotion in the digital image. Further, the performance of the classifier is enhanced through the process such as feature extraction and artifact removal. The sparrow search optimization algorithm (SSA) is utilized in this research in order to tune the weights of the Deep-CNN, in such a way to enhance the performance of the proposed system of emotion recognition. The performances of the proposed method is validated through the evaluation metrics, such as accuracy, precision, and recall, and are attained to be 95.3333%, 96.3455%, and 96%, respectively. This shows the superiority of the proposed method in effective emotion recognition.

Keywords: Emotion, Facial emotion recognition, digital image, Deep convolutional neural network.

A COMPARATIVE STUDY ON CLASSIFICATION OF DIABETES MELLITUS USING MACHINE LEARNING LGORITHMS

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Abstract

Smart health record along with the Machine learning algorithm has been a boon to themedical practitioners in diagnosing the disease well in advance. Machine learning has been a lifesaving technology especially in the health care sector to leverage the medication quality. Thispaper scrutinizes and collates various machine learning algorithms employed to prognosticateDiabetes Mellitus. The study employs a PIMA dataset containing 768 records and 8 attributes toperceive the best suited algorithm in predicting the disease. By comparing the performance of theclassifier, the XGBoost algorithm outperforms the other algorithms with an accuracy score of89%.

Keywords:DiabetesMellitus,SVM,NaïveBayes,XGBoost,RandomForest,Logisticregression,Decision tree,KNN.

A NOVEL EVALUATION OF E-LEARNING WITH ANENSEMBLE METHOD FOR MULTILABEL CLASSIFICATION

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Abstract

Several people have been interested in using the E-Learning paradigm to improve their knowledge in recent years. Most institutions provide free online courses through a wide range of Learning Management Systems (LMS). Many users are interested in enrolling in courses to improve their skills on various platforms, but only a small percentage of those that join actually complete the courses. As a result, the dropout rate of online courses should be raised (ratio of 10-15%). In this research work, we deploy an ensemble method to discover the important characteristics for their evaluations and find the learners' dropout as early as possible, while also encouraging the users to complete the courses on time. Compare the evaluation of different ensemble method with various metrics such as accuracy, F-score etc., for multilabel classification and their academic performance are measured. In the AdaBoost approach, the minimum error difference between the training and test sets is 0.025.

Keywords: E-Learning, Ensemble method, Dropout Prediction, Performance Measure, Accuracy.

A STUDY ON INFLUENCE OF CUSTOMER'S PREFERENCE AND BRAND REPUTATION THROUGH CORPORATE SOCIAL RESPONSIBILITY – A OVERVIEW ON INDIAN BANKING SECTOR

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Abstract

Banks are institutions that need the utmost trust of the customers. One of the best ways to link society to the company is the effective use of Corporate Social Responsibility. Corporate Social Responsibility is used by banks to change the notion that banks are institutions that are merely concerned with money matters. Banks have another lifeline through Corporate Social Responsibility, another chance to prove to the customers that they are more than just institutions concerned with money. The Indian banking industry has begun to give more importance to Corporate Social Responsibility due to the emphasis on Social responsibility by the Reserve Bank of India. This study focuses on how banks are increasing their brand preference through practicing Corporate Social Responsibility. This study has analyzed that "Actions speak louder than words"; customer preference is strongly influenced by the actions of the banks. Corporate social responsibility enhances the brand image and in turn, creates a strong brand preference in the long run.

Keywords: Corporate Social Responsibility, Banking sector, Customer brand preference, Brand image.

AN ADVANCED HIERARCHICAL VIRTUAL RESOURCE MANAGEMENT MODEL IN CLOUD DATA CENTERS

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Abstract.

Cloud computing is currently one of the most popular technologies on the market. It facilitates the sharing of resources like memory, processors, databases, and numerous application services over the internet. Infrastructure as a service (IaaS), for illustration, allows customers to access cloud resources over the internet. Some Cloud Service Providers claim to be able to deliver such services on-demand, while also serverless computing. The basic goal of the cloud scheduling big challenge is to allocate resources to meet user requirements. The most often used resource scheduling models in cloud computing are the centralized model, hierarchical model, and so on. An Advanced Hierarchical Virtual Resource Management Model is presented in this research for resource allocation efficiency. For the resource allocation strategy, the hierarchical modeling technique maintained a master-slave structure. Cloudsim was used to run the simulation, and the results were received. In comparison to the Hierarchical Model, the new model has improved both response time and makespan, according to the performance analysis.

Keywords: Cloud Computing, Computing Resources, Hierarchical Model, IaaS, CloudSim.

INVESTIGATING AND VALIDATING THE FACTORS INFLUENCING PRESENTEEISMAMONG THE ITEMPLOYEES IN TANJOREDISTRICT

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Abstract

Since employment may be therapeutic to health, attending work when sick should not be considered as an intrinsically bad thing. However, the functional advantages are likely to rely on the health status, and the psychological quality of the labour supplied. The current study employed a workforce survey to evaluate variations in the pattern of presenteeism and absenteeism by health status, the connection of psychosocial work variables with presenteeism compared to absenteeism, and their interaction to predict health. Findings reveal that instead of substituting absenteeism for presenteeism, the two tend to coincide, although the balance vary by health status. Presenteeism is more likely to occur in inferior psychosocial situations, underscoring the significance of ensuring work is structured and handled in ways that are good rather than damaging to health. The findings also underscore the methodological necessity of distinguishing between the act and impact of presenteeism in future study and practise.

Key words: Presenteeism, Peer Support, Work Engagement, Productivity, Structural Equation Modelling

INVESTIGATING THE FACTORS INFLUENCING BUYING BEHAVIOR IN THE PURCHASE OF RESIDENTIAL PROPERTY

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Abstract

Purpose: The major goal of this research is to determine the relative value of numerous variables that property purchasers evaluate while weighing their options. This research also tries to classify these characteristics into factors. Procedure: This is a descriptive study using structured questionnaires as well as a non-disguised or otherwise organised survey. It was used to gather information from either the responders. Financial issues are given the most priority by residential building purchasers when analysing the alternatives, according to the findings of the survey. Six factors might be used to categorise the variables.

Keywords: Factorability, Residential Building Purchasing, Factor Influencing Home Purchasing Decisions

THE INFLUENCE OF GENDER AND POSITION ON OCCUPATIONAL STRESS IN EDUCATORS

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Abstract

Participants should be able to complete their respective responsibilities more effectively and efficiently thanks to the fast advancement of computer technology. Nonetheless, some instructors have encountered a roadblock about their use of digital technology in the classroom. This cognitive concept also demonstrates technostress as a result of their unfavourable beliefs and reluctance to digital technology adoption. The goal of this study is to assess the social cognition theory is true standpoint on the link between individual views of cloud computing adoption, heavy workloads, job insecurity, and perceived stress as evidenced by emotional and behavioral reactions. A sample of 152 technical college instructors from a specified region in Chennai were surveyed. People who have high levels of intellectual confidence in digital technology would have less cognitive dissonance without fear of increased workload or job instability as a result of their lack of technological effectiveness.

Keywords: Heavy workloads; Job uncertainty; Technostress; Perceived benefits; Performance expectancy of usage

ADVANCED DRIVE ASSISTANT SYSTEM FOR ACCIDENT AVOIDANCE AT SPEED LIMIT ZONE USING GPS TECHNOLOGY

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Abstract

Most of mishaps are occurring because of absence of earlier data to the driver. At some point drivers are occupied intrinsically which causes significant mishaps on the roadway speed limit zone particularly universities, schools, emergency clinics, enterprises, and so forth. In this examination article earlier data about speed limit zone are shared to the driver ahead of time to stay away from impacts. This paper proposes an auto wellbeing application utilizing GPS Technology dependent on the technique for variation on the roadway. This framework is designed with a minimal expense in the vehicle to sort out crash aversion ahead of time by appropriate hint to the driver by signal sound and showing text "Go Slow" on the dashboard while crossing as far as possible zone. The proposed ongoing framework is tried and assessed on the parkway suits for constant application. Also, the proposed framework thinks abrupt slowing down prompts mechanical pressure, harm on body, and absence of fuel utilization, awkward to the travelers in the vehicle to give incredible benefit over vehicle security framework.

Keywords: accidents, speed limit zone, GPS Technology, automotive safety application.

CLUSTERING BIG DATA FOR NOVEL HEALTH CARE SYSTEM

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Abstract

In research, the relevance of data science in health care is being explored. It has been proposed that the health-care sector benefit from a Nutrition Prescription System. In the proposed model, the Map Reduce, Enhanced K-Mean clustering technique was used. Actual datasets are represented by rectangular rectangles, which contain the health care centre dataset and frequency dataset generated by the map reduction method. Operations in original data flow are represented by the elliptical boxes. Patients will be able to use this technique to access specific and specialized health care institution. As a consequence, consumers will get better services that are tailored to their specific requirements. Patients would have secure access to planned system because of backup facilities. Because diagnosis has no side effects, the concept of nutrition prescription system is better than that of medicine prescription system. In suggested dietary prescription system, patient selects symptoms. The patient is provided information on his nutritional deficits, requirements and food supply. In addition, the patient is provided additional nutritional data stored in an unstructured dataset. The outcome was derived from the data set. In milliseconds, the report also shows the time spent on traditional and contemporary duties.

Keywords: IOT; Nutrition Prescription System; Data Mining; Health Care; Optimization; Map Reduce.

COST OPTIMIZATION IN CNN FOR BIG DATA OF SHARE PRICE

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Abstract

Optimization of share price in order to evaluate whether to invest in specific share or not is subject of study paper. Optimized value has been utilized to enhance the performance and accuracy when dataset is trained using CNN. Review has been given on big cap, mid cap & small cap fund which are accessible in large, medium and small amount for the purpose of investing. It has been found that share in big cap are more dependable but offers limited return. However share in case of mid cap are considered comparatively more hazardous than big cap yet return may be substantial. The suggested study has given mechanism that will make use of optimization mechanism to filter the data set considering PSO and MVO mechanism. The suggested CNN based training model is claimed high performance system with improved accuracy.

Keywords: Optimization; PSO; MVO; CNN; Share Price.

FORECASTING OF ORIGIN-TO-DESTINATION REQUESTS FOR TAXIS USING DNN ALGORITHM WITH NYU DATABASE

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Abstract

Prediction of taxi requests have lately drawn increased much attention in research owing to its high applicability in massive intelligent transport systems. Most previous methods, on the other hand, focused solely on predicting taxi demand in origin areas, ignoring the analysis of target passengers' special circumstances. We believe it is inefficient to assign cabs to all areas in advance solely based on taxi origin request. This work studies a critical and fascinating task known as the taxi origin-destination demand prediction, whose purpose is to forecast future cab requests across pairs in all areas. Determining the process to collect contextual data effectively in order to learn demand patterns. A novel methodology known as the Deep Neural Network (DNN) with Deep learning-based models is focused in this paper, which outperforms traditional machine learning methods in a variety of classification tasks, including origin and destination views. Extensive tests and analyses on a broad dataset clearly show that our DNN outperforms several other methodologies from literature.

Index Terms— Taxi origin-destination, spatial-temporal modeling, Deep Neural Networks.

BOUNDS ON THE LOCATING - PAIRED – DOUBLE DOMINATION NUMBER OF GRAPHS

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Abstract

In this paper, we continue the study of paired double domination in graphs . A paired – double dominating set of a graph G with no isolated vertex is a double dominating sets of vertices whose induced subgraph has a perfect matching . We consider paired – double dominating sets which are also locating sets, that is distinct vertices of G are dominated by distinct subsets of the paired double dominating set. We investigate the locating paired double domination numbers in path and cycle and we obtain lower and upper bounds on the locating – paired double domination numbers of a graph . In this paper we establish and the locating – paired double domination number of special graphs, including cubic graphs is investigated.

Key words: Double domination number, Paired - double domination number, Locating paired - double domination number.

SENSOR NETWORK AND ENERGY HARVESTING SOLUTIONS TOWARDS WATER QUALITY MONITORING IN DEVELOPING COUNTRIES

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Abstract

Water-borne diseases pose a significant challenge to the sustainability of healthcare in developing countries such as Ethiopia. While wireless sensor networks (WSN) address many environmental and societal issues through various applications, energy harvesting approaches extend the network's life. The paper describes a water quality monitoring system (WQM) using energy-harvesting wireless sensor networks. The paper identifies the considerations and trade-offs of various energy harvesting methods and WSNs solutions for WQM. In addition to presenting a real-time system for monitoring water quality, the paper examines the system's lifetime with a solar energy harvesting circuit. In addition, the paper discusses the problems encountered during system installation in the field. The field test is currently underway, but the prototype that has been implemented and tested shows that the system produces close to accurate values in various scenarios and can operate continuously without power outages. As a result, the energy harvesting technique ensures an indefinite lifetime for an economically viable water quality monitoring WSN.

Keywords: Water quality, Wireless Sensor Networks, Energy harvesting, Ethiopia, Solar Energy, Lifetime.

2-ODD LABELLING OF SOME NEW DISCONNECTED GRAPHS

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Abstract

A graph G is a 2-odd diagram if modular difference of the labels is either an odd in teger or exactly 2 if the vertices of G may be labelled with integers (necessarily distinct) such, for any two adjacent vertices. In this research paper we examine the labeling of new graphs that have been disconnected.

MICROSTRUCTURAL AND OPTICAL CHARACTERISTICS OF SOL-GEL DERIVED TIN OXIDE NANOPARTICLES

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Abstract

This paper discusses the successful preparation of tin oxide nanoparticles in the form of nanopowder using SnCl 2 .2H 2 O and ethanol as precursor material by using the sol-gel method. XRD pattern shows that the prepared nanparticles exhibits polycrystalline nature with tetragonal rutile structure. The average crystallite size was 25.82 nm. FESEM analysis shows agglomeration of particles in the prepared sample with an average particle size of 28.77 nm. EDAX analysis reveals that the prepared tin oxide powder contains tin and oxygen. FTIR analysis exhibits the presence of Sn-O-Sn bond and it confirms the formation of tin oxide in the prepared sample.

CLOUD STORAGE SYSTEM FOR MOBILE CLOUD COMPUTING USING BLOCKCHAIN

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Abstract

In Mobile Cloud Computing (MCC), mobile user stored their data in the remote cloud machine or storage without their personal control. Everyone, including big corporate entities, wants to take advantage of cloud computing without compromising their data security. Therefore, data security and privacy are the major challenges for the data owner and cloud service provider. The controlling of stored data is not in hands of the data owner but before storing data over cloud server storage, it should be properly encrypted so that any unauthorized user does not hack the data. Encryption is a process in which data are scrambled into unreadable contents, i.e. ciphertext with the help of strong encryption keys. And with the help of the same encrypting keys, data can be descrambler easily by the authorized user. The Encryption strength depends on a number of factors such as how keys are generated and which Key Management systems (KMS) are utilized, encryption algorithm implementation, use of hashing algorithm on stored data, and key size also mainly matter. Because of privacy concerns and various laws, the encrypting & decrypting keys can never be stored alongside data in the cloud storage. In this our proposed thesis paper we try to solve problems of data storage on cloud servers by fragmentation of all data into chunks and individual chunks get encrypted separately and using blockchain technology and its advanced security feature secure our uncontrolled data over cloud servers without 100 percent control of cloud service provider as well.

Keywords: Mobile Cloud Computing (MCC) Security, Privacy, Mobile Computation Offloading, Hash algorithm, Distributed Storage Security System, Blockchain

TOURISM-BLOCKCHAIN: SECURE BLOCKCHAIN ENABLED TOURISM BASED ON HTGAN PROOF OF LEARNING

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Abstract

The capability of significantly transforming the Tourism Industry (TI) is possessed by the Block-Chain (BC) technology. BC maintains trust, transparency, security, together with creditability, thus, it addresses tourist requirements by means of adding transactions on a distributed ledger that can't be meddled with. Majority attack, adversarial attack, self-attack, scalability issues, together with high Computation Time (CT) and power are the attacks that the BC has to suffer even though it encompasses the aforesaid benefits. The work developed a TouRISM-BC framework for tackling the prevailing issue. It rendered programmability, immutability, transparency, together with decentralization for customer relationships. Organizational structures as well as processes are enabled and new forms of inter-organizational collaboration are facilitated. Centered upon the proposed LCRnG-ECC, the user data gets encrypted. Highly secure encryption and decryption of user data within lower CT is provided. After that, the work has initiated a Divisive Hierarchical Clustering (DHC) centered tree formation of the hash value for avoiding higher consumption of memory utilization and disposal of trusted nodes. Overbooking of the user as well as irrelevant data is avoided by the DHC. Finally, the work carries out HTGAN centered proof of learning (PoL) for appending the new block to the chain, which lessens the mining cost, high CT, together with power. Most self-centralized attacks are avoided by the developed PoL. The work is extremely secure with lossless transactions weighed against the top-notch methods, which can well be found from the experimental analysis.

PEAK TO AVERAGE POWER RATIO REDUCTION FOR MC FDMA USING COMPANDING

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Abstract

Long Term Evolution uses Multi-Carrier Frequency Division Multiple Access (MCFDMA) instead of Orthogonal Frequency Division Multiple Access (OFDMA) for uplink communication as it has a lowPeak to Average Power Ratio (PAPR) compared to OFDMA. One of the major problems with multicarrier fluctuations is the high PAPR of the transmitted signal. To receive high PAPR, a power amplifier should be used in a specific location that reduces the efficiency of the power amplifier. In this paper, a new PAPR reduction process for MC FDMA signals is proposed based on Discrete Hartley Transform (DHT) and in companding. It is based on smooth air performance to limit PAPR to MC-FDMA uplink systems and the proposed transform does not increase the signal strength and achieves a better Bit Error Rate (BER). A new error function (NERF) is used that provides better performance when the QPSK process is implemented. The simulation effects of MC FDMA compression with companding and without companding are comparable and the proposed procedure achieves a significant reduction in PAPR signal for MC FDMA.

Keywords: MC FDMA, DHT, QPSK, companding

A NOVEL APPROACH FOR PRIVACY PRESERVATION AND SECURITY IN FOG COMPUTING

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Abstract

Cloud based IoT is drawing more attention in recent days because of its potential in day today life. Infrastructures based on Cloud suffer from latency, security and privacy issues so does IoT. Fog computing reduces the necessity of transmitting confidential data to cloud by deploying nodes with computational and storage facility near to end user. Fog-IoT structure overcomes the latency problem and supports real time applications. Fog-IoT increases quality of service but introduces some new security and privacy challenges. The paper discusses the privacy issues introduced by fog nodes, existing privacy preserving mechanisms and some solutions for lightweight privacy preservation.

Index term: IoT, Fog Computing, privacy, security, data aggregation

DETERMINANTS OF CORPORATE SOCIAL RESPONSIBILITY EFFECTIVENESS - AN EMPIRICAL STUDY ON PERSPECTIVES OF WOMEN EMPLOYEES

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Abstract

The present study was focused to explore the inducers and significant predictors of Corporate Social Responsibility (CSR) effectiveness among women employees in Chennai city of Tamil Nadu. The empirical evidences prove that CSR effectiveness was significantly influenced by CSR commitment in organisation and Industrial CSR practices. The result supports that CSR effectiveness is very vital aspect for the engagement of women employees efficiently in various organisation practices and leadership practices. Further, results shows that women are not effectively using technological platforms for social activities in the society. The management are suggested to give responsibility to women are need to represent the governance practices of the any firm and CSR is the one such initiative which helps the management to identify the potential women employees to encourage gender diversity in the top level management of the organisation

ANTECEDENTS OF ACADEMIC ACHIEVEMENT IN ONLINE LEARNING ENVIRONMENT IN AMID OF COVID-19 PANDEMIC: STUDENTS' PERSPECTIVES

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Abstract

The present study aims to understand the role of socio-economic profiles and online educational practices for enhancement in academic achievement of the post-graduate students in higher educational institutions of Chennai city. The researchers have adopted survey method and structured questionnaire was distributed through online survey for 244 post-graduate students. The descriptive and empirical research design was adopted and primary data collected were subjected to data analysis and interpretation through SPSS version 27.0. The result reveals that academic commitment, digital preparedness, online education perspective and online education acceptance have significant and positive influence on academic achievement of post-graduate students in Chennai city. The researchers suggested formulating an effective approach for productivity and efficiency should be increased in every aspect of online education to create a positive impact on the overall teaching and learning practices.

THE PHYSICAL LANDSCAPE AND LIVELIHOOD ACTIVITIES IN THE SARBARIKHAD WATERSHED OF HIMACHAL PRADESH

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Abstract

SarbariKhad Watershed is situated in the north-western side of Kullu District, Himachal Pradesh, India. The total covering area of the watershed is 930.30 sq. kilometer. The study area comprises 13 villages. The area is a hilly area, having large range ofelevationwhich is ranging from 1000 meter to 4500 meter, from valley to mountains. These different type of altitude and aspects result into substantial variant in rainfall, heat, pressure, soil, vegetation and cropping pattern because of elevation, slope, aspect and different climatic circumstances. In the surrounding area major part is drained by SarbariKhad. The main economy of this area is agricultural based and maximum people are involving in horticulture and agriculture activities. Religious tourism and adventurous tourism are secondary source of livelihoods in the nearby SarbariKhad. Population concentration is high in the southern part of the area as compare to northern part of the watershed.

Keywords: Livelihood, Watershed, Physical Landscape, Remote Sensing, Natural Resources

BLOCK CHAIN-BASED SELF-SOVEREIGN IDENTITY FOR COVID-19 MEDICAL PASSPORTS AND IMMUNITY CERTIFICATES

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Abstract

COVID-19 has developed as a highly infectious illness with vast numbers of outbreaks and casualties worldwide. The successful response to this pandemic is vital to the timely and reliable studies, as they help detect and mitigate pathogens (isolate and cure). This paper discusses this problem and contributes to it by implementing a blockchain-based approach involving self-sovereign identity (SSI) and shared storage like IPFS.Oursolution provides COVID-19 test-taker with wireless medical passports (DMP) and immune certificates. Smart contracts based on a Ethereum blockchain retains the unique digital identity for tested users who help the relevant medical authorities respond directly in a fast and trustworthy way. This solution will help significantly in contactless identification to reduce coronaspread.

Index Terms—COVID19, Blockchain, Digital Identity, Digital passports, Ethereum

INTERVAL VALUED PYTHAGOREAN FUZZY NANOSETS

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Abstract

In this article introduced Interval Valued Pythagorean Fuzzy (IVPF) nano generalized closed sets, more specifically, an IVPF nano generalized b-closed set in an IVPF Fuzzy nano topological space. Also consider some IVPF ns-closed, IVPF nα-closed, and IVPFng-closed and some of their properties.

Keywords: IVPF ngb-closed set, IVPF nα-closed set, IVPF ns- closed, IVPF ng-closed, IVPF nano topological spaces.

A COMPARATIVE ANALYSIS OF VARIOUS DETECTION AND CLASSIFICATION MODALITIES FOR ALZHEIMER'S DISEASE DIAGNOSIS

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Abstract

Alzheimer's disease is a very serious neurological disorder. It not only causes dimensioning brain tissues but leads to a memory loss which is almost incurable after a certain stage. Due to this, a huge tally in the number of AD patients and scarcity of proper diagnostic tools, detection and classification is considered to be a challenging area of study. For years, the medical industry has always transpired systematic research and study, proposing alternative methods to detect the presence of Alzheimer's Disease. This provides an opportunity to investigate and learn about this specific neural disease using digital image processing. To understand further, the use of quantitative models based on a widely used specialized softwares, which helps determine the characteristics of iris and landmarking attributed patterns to diagnose the existence of Alzhiemers have been discussed. Here, we also explore various image processing techniques, some of them using a wide range of data bases of brain MRI scans in order to eliminate differences in interindividual brain anatomy. A large amount of research work continues to be in progress for detection and classification of this disease based on brain changes that occur with time. In this paper , we have discussed various detection techniques to identify brain degeneration at an early stage and classification based on various feature extractions and segmentation techniques including landmark based, iridology, fast detection, support vector, transfer learning etc . We have also put forward and compared these several detection and classification mechanisms to understand and analyse in order to opt for a better method that can be helpful so as to achieve desired results with even higher accuracy in the foreseeable future.

Keywords: Alzheimer's Disease, AD diagnosis, Multiple measures, Detection, Classification, ROIs, comparative analysis.

MACHINE LEARNING APPROACHES IN DETECTION OF PARKINSON'S DISEASE USING SPEECH AND GAIT SIGNALS

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Abstract

Parkinson's disease is a neurodegenerative disorder which degrades the quality of life of the affected. Caused due tothe reduction in dopamine production in the body, PD causes speech impairments, gait problems, tremors, fatigue,depression in the patients. Speech impairments include monotonous speech, hoarse or rough voice, slurring, whilegait problems include short steps, hypokinesia, instability in posture amongst others. Even with the advancements inmedicine, there is no cure for PD nor a systematic procedure to detect it. Parkinson's disease is diagnosed by trainedneurologists using extensive and invasive tests which are time consuming and expensive. Therefore, extensiveresearch is being undertaken in developing and training machine learning models to aid the PD detection process sothat PD can be detected as early as possible in patients ensuring quality treatment and better quality of life. Severalmodalities are used as training and testing data for the machine learning models including voice signals, gait signals,eegsignals,handwritingandMRIimages.Inthispaper,literaturereviewhasbeenconductedonresearchundertaken in PD detection focusing on two biomarkers - speech and gait. Gait and Speech abnormalities areamongst the early manifestations of Parkinson's disease, Therefore early detection of PD can be aided by usingfeatures extracted from these signals. Furthermore, they are non-intrusive and painless methods, thus making thefeatureextractionand diagnostic process painlessandlesscomplex.

Keywords: Parkinson's Disease, Signal Processing, Machine Learning, Speech features, Gait, Healthcare, SupportVectorMachine, RandomForest, Feature selectiontechniques

USING VIRTUAL REALITY FOR TOURISM MARKETING : A MEDIATING ROLE OF SELF - PRESENCE

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Abstract

Purpose: Virtual Reality (VR) provides tourism with numerous helpful applications that tourism academics and experts should pay more attention to. The quantity and impact of these applications will undoubtedly rise as VR technology continues to advance. The tourist sectors in which VR may be especially beneficial are the planning and managing, marketing, entertainment, education, accessibility, and preservation.

Design/Methodology/Approach: The study follows a questionnaire adapted from literature review, and hypothesis testing is done using SPSS, and the data has been collected through google forms.

Findings: The purpose of this research is to reveal the technical acceptability for travel planning of virtual reality , and that virtual reality may contribute to making better information about trip choices. Based on the findings described in the data analysis section, people find virtual truth and a fun system for planning their journeys beneficial, and visuals in virtual reality as a valuable instrument that may impact decision-making for individuals.

Originality: This study focuses on Technology Acceptance Model and how it is connected to Virtual Reality. This research is unique in connecting these two variables. Future studies on the themes covered and many ideas for further study will assist the industry.

Keywords: Virtual Reality , Technology , Tourism , Model , Industry

PREDICTION OF BANKRUPTCY FIRMSUSING STATISTICAL MODEL AND MACHINE LEARNING MODEL -A COMPARATIVE STUDY

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Abstract

Indian statistics revealed that approximately more than ten thousand actively working firms in different industry cease their business operations in a very short period of time due to various reasons. The study analyzed a group bankruptcy and non-bankruptcy firms and applied statistical and machine learning tools considering 64 important ratios and compared the results predicted by the statistical model and machine learning model and found that advanced machine learning motels could identify the ratios better that the statistical model.

Key Words: Prediction of Bankruptcy, Statistical Model And Machine Learning Model.

STUDY ON RELIABILITY SCIENCE AND ITS EVALUATION

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Abstract

In this paper we precisely concentrated on the role of reliability in different area and also we discuss the use of reliability in the field of science since science plays an important role in different areas of technology. This is a review paper for the investigation of science in the area of technologies.

MULTIBAND ANTENNA USING SIW TECHNOLOGY FOR WIRELESS COMMUNICATION

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Abstract

A novel slotted antenna based on a SIW cavity is proposed for X-band (2GHz-12GHz) applications in this article. This antenna also includes four pairs of uniform resonator slots positioned on the cavity's bottom wall to increase bandwidth. The gain value is enhanced by keeping the four slots the same size and adjusting the spacing distance between them. Finally, this Cavity Backed slot antenna's bandwidth at 8.45 GHz is 9.45 GHz-10.3 GHz, with a 15% bandwidth, and at 11.45 GHz, the bandwidth is 11.55 GHz-11.85 GHz, with a 20% bandwidth. SIW Cavity Backed Slot antenna is shown on a Rogers RT / Duroid 5880, in which four pairs of slots are etched on a broad wall SIW Cavity with the same dimensions to increase bandwidth while maintaining outstanding radiation performance.

Keywords:- SIW, Duroid, VSWR, Reflection Coefficient, X band and Radiation Pattern

CLUSTER BASED VANET COMMUNICATION FOR RELIABLE DATA TRANSMISSION

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Abstract

A subtype of mobile ad hoc network known as a "vehicular ad hoc network" (VANET) is referred to as a "vehicular ad hoc network" (MANET).VANET has become a research centre for improving automotive vehicles and highway security, traffic reliability, and vehicle and passenger safety are all priorities. Routing packets and information to their destinations in VANETs is a difficult challenge due to their extreme mobility and dynamism. Clustering methods can be used to deal with these issues. Clustering is a technique for grouping vehicles based on predetermined parameters like density, velocity, and location. Clustering is best control strategies for VANETs dynamic topology. Many VANET clustering techniques have their roots in MANETs. VANET nodes, on the other hand, are recognized because of their more mobility and the availability in their environment, close proximity does not mean that their movement patterns are identical. As a result, in order to design a stable clustering structure, VANET clustering techniques should account the speed and velocity of nodes. We present a new clustering algorithm that is appropriate for the VANET environment in this article, for increasing the network cluster's permanence. The distance and velocity are used as parameters in this technique to construct a rather cluster structure that is stable. A method for selecting super cluster heads was also proposed.

FUZZY TRANSLATION AND FUZZY MULTIPLICATION ON BV-ALGEBRAS

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Abstract

In this paper, we introduced the concept of fuzzy translations and fuzzy multiplications on BV-Algebras and discussed some of their properties in detail by using the concepts of fuzzy BV-Ideal and fuzzy BV-subalgebra.

Keywords: Fuzzy α −translation of BV-Algebras, Fuzzy α −multiplication of BV-Algebras, BV-Algebra, Fuzzy BV–Ideal, Fuzzy BV-Sub algebra.

POTENTIAL OF COMMERCIALIZING OF HERITAGE TOURISM IN PUNJAB

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Abstract

Tourism is a multifaceted activity that provides a wonderful experience to the tourists. Today due to the fastest means of transportation and communication the world has shrunk into a Global village" and the age-old saying of "VasudhaivKutumbakam" (the whole earth is a family) can be easily be related to the current world scenario. Tourism brings economic prosperity and social understanding among nations. Tourism provides a thrust to the economy and provides long-term as well as short-term benefits to society. It generates revenue and employment and the multiplier effect of tourism further boosts the entire economy. Tourism not only generates financial benefits but also upgrades human skills. The infrastructure and the development created for tourism are used by all other sectors of the economy. The tourism industry, therefore, has much potential to offer.The cultural heritage of a place is continuously created and recreated by the people from time to time in response to the changing times. It is the cultural heritage of a person which gives him a sense of identity. People belonging to different castes, creeds, or races follow different traditions or practices. This is their intangible heritage. Anything or practice, we wish to preserve and want to pass it on to our next generation is known as heritage. Every person has a personal heritage which he or she keeps or preserves with pride like family pictures, music records, personal objects, souvenirs, a family house, and family traditions. This is the personal heritage that individuals conserve, recognize or preserve with care. Similarly, in a broader sense, every community possesses a collective heritage which it wants to preserve like buildings, parks traditions, skills, collections of objects, etc.

Keywords: Punjab, tourism, heritage, heritage tourism, commercialization.

CRIME INFORMATION COLLECTION SYSTEM USING CHATBOT

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Abstract

Artificial intelligence and Machine learning advancements in stimulation of human knowledge to computers has led to the software based application / program called chatbot. A chatbot acts as a conventional agent which uses natural languages for communicating with operators. The chatbots are aware of self learning algorithms, for example natural language processing (NLP). These software programs are made to help people and have a one-on-one interaction with them (either in text or speech format). The proposed chatbot provides a platform for crime registration and also getting information about various types of crimes. We can find chatbots in the field of entertainment, query clarification, social media, e-commerce sites etc. but rarely can we find chatbots serving the purpose of security and crime related functions. Our proposed system collects various information from the victims so that the authorities could cross-verify the information provided. It gives a stage for people to report about the crimes, getting data about different sorts of violations. It gathers different check archives from the casualties so the specialists could cross-confirm the data given. The chatbot works on the principle of natural language processing algorithm.

OPTIMISING EMERGENCY SERVICES

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Abstract

In today's world, emergency services are essential in saving lives. Year over year road accidents have followed a similar trend that is upward trajectory. This calls for a more robust and faster system that not only provides emergency services like ambulances to the people but also does so in a faster and efficient manner. The goal of this approach is to reduce the time taken by the emergency services for their response to an accident. The response time depends on a lot of factors such as the place of accident, the type of accident, and hospital availability. In this paper, we will use flutter sdk and dart programming language to build a webapp which aims to replace the human operator on the other side of the call and make the whole process of dispatch faster. Flutter sdk was developed by google to create a way of developing apps for all platforms using a single codebase. We developed an app which uses uber map api to get access to its map features such as driver and user location. The user needs to just register on the app and fill out details such as any existing conditions and blood type. The user when in an incident or accident can press the button in the app which will find the nearest ambulance and hospital and inform the first responders about the user's condition. The emergency button in the app can also be triggered using voice.

Keywords: Ambulance Dispatch System, Web Application, Medical emergency, GPS, Emergency Medical Services(EMS).

INTELLIGENT ANIMAL TRACKING SYSTEM USING INTERNET OF THINGS AND MACHINE LEARNING SCHEME

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Abstract

The primary goal of this research is to discover a solution for the primary issue in such scenarios, which is that these creatures are extremely difficult to detect in big wildlife sanctuaries. As a result, we frequently have to rebuild the whole region. A GPS transmitter is used in this project to obtain the location's coordinates. As the human population or human civilization expands, nature creatures or large predators face extinction. However, according to nature's laws, every living species on our planet is significant and plays a critical part in the ecosystem. Additionally, we obtain some medications or helpful substances from certain animals. We have previously recognized this, and as a result, each country has wild animal preserves and conservation areas in which these creatures can roam freely in the forest or jungle, but are closely watched by humans. Additionally, these animal state parks have now become popular destinations in recent years. Numerous endangered or uncommon animals are accessible or maintained in this region. In this proposed approach, we design a new application, which will find the location of the affected animals by using Mobile GPS system. As well as, this system is used to track the animal movements such as it moves normally or else felt down. If the animal movement is abnormal, immediately the notification will pass to the respective user and the location will be easily trapped with the help of our android application.

Index Terms—Animal Tracking, GPS, Global-Positioning-System, Server, Android

IOT ASSISTED RFID BASED TOLL BOOTH HANDING SYSTEM USING SYSTEMATIC SCANNING

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Abstract

The project's primary objective is to manage Electronic-Toll-Collection, an adaption of energetic seeks to reduce delays on toll roads by electronically collecting toll fees. This Toll Plaza Controlling system discusses an automated toll collecting system for toll gates that is based on RFID-enabled smart cards. Nowadays, traffic flows are increasing and toll booths on highways are clogged. This will result in a traffic congestion and a waste of time. As a result, our primary focus is on automating toll collection through the use of sophisticated Smart Card-based RFID technology. A new user may simply register and change their balance using the Graphical User Interface (GUI). Once the Smart Card is used at a Toll Plaza, the appropriate amount is taken from the card. For all intents and purposes, the project's primary objective is to manage Electronic Toll Collection [ETC], an application of energetic seeks to minimize delays on toll roads by electronically collecting toll fees. The primary goal of implementing an RFID-based toll management system is to automate the toll collection process by reducing long queues at toll booths by leveraging the RFID labels installed on the vehicle. Despite this, it can assist in recognizing car robberies and can follow vehicles as they cross faster vehicles. This framework is employed by car owners, according to the chairman of the framework. Other broad areas of interest for drivers include saving money on gasoline and reducing carbon emissions by reducing or eliminating deceleration, delaying time, and boosting speed. This framework primarily assessed the novel work for toll collection at toll gates on roadways using uninvolved RFID technology. By incorporating this anticipate into continuous operation, we may avoid failures, maximize time usage, and keep a strategic distance from lengthy tendencies to the highways. By employing an RFID-based computerized toll collection framework, the vehicle may check for security in real time, save the optimal amount of time for toll collection, and reduce activity congestion at the toll square. The logic of Internet of Things (IoT) is used in this application to communicate between the client end and the server end for data manipulations. As such, the RFID-based toll collection framework is the optimal method for toll collection at the toll square.

Index Terms— RFID Toll, Scanning, Internet of Things, IoT, Radio Frequency, Toll Management

INTERNET OF THINGS BASED SMART CAR PARKING AND RESERVATION HANDLING SYSTEM USING MODIFIED LEARNING SCHEME

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Abstract

The primary goal of this method is to develop a novel parking technology that assists clients in parking the cars efficiently and saves them money and effort. Parking in big cities, especially those with intense traffic, has a direct impact on traffic flow and quality of life. We offer a new parking management mechanism in this platform based on allocation of resources, booking and payment intelligence. The suggested approach solves recentcar-parking issues by ensuring car-parking reservations' at the lowest feasible price and schedule for cars, while simultaneously improving revenue and resource usage for parking management. Additionally, new tenets of practical fair pricing are given. The novel method is based on computer modelling using Machine Learning Programming with the purpose of reducing drivers' total financial expenses and maximizing parking resource use. The system utilizes hardware components such as an IOT module, which enables worldwide monitoring without limits, and a servo motor, which is used to maintain gate opening and shutting strategies. All of this information is shown to the user via an OLED display linked to the efficient approach.

Index Terms—Car Parking, Internet of Things, IoT, Learning Scheme, Parking Reservation

IOT ENABLED SMART VISIBLE LIGHT COMMUNICATION USING LIFI TECHNOLOGY

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Abstract

There are no network medium requirements for this system, and its primary goal is to demonstrate the effectiveness of Visible Light Communication (VLC) through LiFi technology and to conduct the quickest data transfer possible. Powerful and quick, Light Wave Communications are the world's most advanced form of communication. Tsunamis and other natural catastrophes have the potential to do enormous harm to people's lives, particularly those who live near the coast. Once the boat has sailed out to sea, there are no gadgets available for interacting with the people on board. However, only satellite-based gadgets are allowed to communicate, and no fisherman is allowed to use them. To connect the fishermen with the control centre, a new technology is needed. An interface between these two entities, such as LiFi, allows them to successfully communicate through Light Houses and warn fishermen in crisis situations. Visual light communication (VLC) uses LEDs for wireless transmission and replaces conventional lighting with LED illumination based on the ratio. The current inventive world has benefited greatly from the LiFi-based data exchange capability. The speed, accuracy, and innovation of visible light communication technology are unmatched. Classical wireless FM (Frequency Modulated Communications) is being phased out in favour of this technology. Because of VLC, we are able to work more quickly on cutting-edge applications.

Index Terms—LiFi, Visible Light Communication, Internet of Things, IoT, Data Transfer, LED

SMART AND SECURED DATA COMMUNICATION USING MODIFIED AODV PROTOCOL OVER WIRELESS COMMUNICATION NETWORK

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Abstract

The majormotto of this paper isto offer greater performance and high efficiency in the face of one or many black hole attacks while only slightly increasing average throughput and enhance the normalized routing principles compare to the AODV protocol, which already exists. Mobile AdHoc networks suffer from poor Wireless Communications performance due to traffic and security issues. Assailants love this type of wireless transmission because of the continuous dynamic load balancing architecture. The Blackhole attack, for example, has the potential to have a significant impact on the network situation. We need a new approach, dubbed Modified AODV Routing Protocol, to deal with all of these threats and traffic issues. Modified AODV offers the Route Request (RREQ) and Route Response (RREP) facilities together with A* and Floyd-algorithm Warshall's to successfully transfer over the transmission of data between the Source-and-Destination.

Index Terms—Modified AODV, Routing Protocol, Wireless Communication Network, WCN, Security

APPLICATION OF DATA MINING AND MACHINE LEARNING IN FOOD AND AGRICULTURE INDUSTRY TOWARDS PRECISION AGRICULTURE

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Abstract

It is imperative that agricultural productivity keep pace with population growth due to the limited supply of natural resources. The primary goal here is to increase productivity even in the face of adverse environmental conditions. As a result of advances in agricultural technology, precision farming is increasingly being used to increase yields. Machine learning encompasses a wide range of techniques that may be used to learn predictive rules from previous data and develop a model that can anticipate unknown future information. A predictive model may be built using machine learning by analyzing data samples to detect trends and creating decision rules. Smart agriculture is a modern agricultural paradigm that evaluates the farm as a collection of tiny units and identifies irregularities in output and demand for individual units.. It is the ultimate objective of smart agriculture to minimize agricultural costs in order to boost profits. Farming strategies that are cutting-edge are used by smart farmers. A machine learning algorithm's ability to forecast yields makes farming more efficient and effective.

Keywords: Machine Learning, Data Mining, Classification, Predictive Analysis, Precision Agriculture

AN INVESTIGATION OF VARIOUS APPLICATIONS OF MACHINE LEARNING IN FOOD INDUSTRY

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Abstract

With growing world population, food need is growing. There are also fast developing food processing enterprises. Food waste must be reduced, the supply chain optimized and the logistics, food supply and food safety improved by an hour. Machine learning methods help food industries in achieving goals. Machine learning is a unique field of computer science that makes prediction possible by learning from previous available data. Machine learning algorithms helps up to a great extent in classification of previous data available. After this classification, machine learning methods assess future requirements accurately. This article discusses applicability of various machine learning methodologies in different areas related to food industry. These real world applications in food industry are crop selection, supply chain optimization, food logistics, and predicting maintenance in equipments, food delivery, revenue prediction and self service model.

Keywords: Machine Learning, Food Processing, Agriculture, Prediction, Logistics, Classification.

HEART DISEASE CLASSIFICATION USING PCG BY EMPLOYING MODERN STATISTICAL ANALYSIS AND MACHINE LEARNING ALGORITHMS

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Abstract

There has been an alarmingly high mortality rate because of cardiovascular diseases since the past few years and some innovative research has been done by scientists and research scholars all over the world to make the pre emptive detection of these diseases efficient, cheap and accessible to the public. In this paper, we have studied the research and experimentation that has been done on detection and classification of Cardiovascular diseases using Phonocardiogram signals. There are many problems that come with the cheap and democratized process of heart monitoring using Phonocardiogram signals, like environment noise, lung sounds etc. several innovative classification and transformation methods that solved these problems and yielded promising results were found in literature. This paper aims at providing a detailed view on such techniques and optimal classification models which yield comparable results and are computationally cheaper.

DEEP LEARNING-BASED VEHICLES TRACKING IN TRAFFIC WITH IMAGE PROCESSING TECHNIQUES

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Abstract

In recent years, the major part of the Intelligent Transport System (ITS) has been supported by a visual vehicle tracking system (VTS). In the phenomena of vehicle behavior analysis, this visual vehicle tracking system plays a major role. In this study, our main aim is to implement a tool to detect, classify and track the vehicles based on video recordings. This method is achieved by a deep machine learning system with the help of a faster region Conventional Neural Network algorithm. For the classification of captured vehicles,the technique of Deep Machine Learning having connection with Conventional Neural Network is used. During the phenomena of tracking, to detect the vehicles' direction and positions within the video frame Motion vector estimation (MVE) algorithm is used. At last, these algorithms are used to detect vehicles' behavior which is based on the way of implementation, and the rush of vehicles' motion is being utilized to monitor and control the traffic flow. During the implementation of this technique, the result displays that 96.5% of vehicles are identified precisely, 92% are classified, and 95% of detected vehicles has good lanes.

Keywords: vehicle tracking system, Motion Vector Estimation, Deep Machine Learning technique, Conventional Neural Network.

THE TRANSFORMATION OF BUSINESS AND THE SOCIETY WITH THE INFLUENCE OF DATA SCIENCE

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Abstract

An analysis of information system technology and its connections to the economy and society is the focus of this research study. The improvements in digital technology have increased the amount of data that can provide insights critical to the transformation of both enterprises and society. Knowledge workers or researchers are responsible for producing and evaluating essential data gained employment prospects as corporations reshape their operations. A necessary part of this book asserts that data science has had a profound impact on the lives of individuals and corporations alike. As a result of digitalized data science, this study intends to propose a significant research issue to investigate the apparent modifications in society and business models.

AN EFFECTIVE PREDICTION OF LUNG CANCER ON EARLIER STAGES USING ARTIFICIAL INTELLIGENCE ENABLED LEARNING PHASE

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Abstract

Lung cancer becomes one of the serious diseases that lead to life threatening problems in the recent year. Regardless of age and healthy lifestyle the disease occur in any age depends on the health records and behavioral habits since it is a life threatening disease treating the lung cancer in early stages become mandatory. Early lung cancer are predictable bycategorizing the scanned images as tumor or nodule in the initial screening itself.In the proposed work early prediction of lung cancer is done using artificial intelligence models that consist of iterative training phase.The proposed model utilizes Luna 16 dataset. The problem behind the early prediction of lung tumor using CT images found in identifying the smaller pixels that resilient around the tumor area. In case of tumor or nodule prediction the problem occurs at their decision-making scenario whether the segmented area is tumor or nodule. These resilient pixels are corrected at the segmentation process itself.The proposed to study focused on working out the segmentation part and the classification path using artificial intelligence model called DeepStamp Boost Model (DSBM) is utilized.

Keyboard: Deep learning, Machine learning, Lung tumor, early prediction, Artificial intelligence, neural networks.

AUTOMATIC ACCESS CONTROL SOLUTION IN SMART HOMES USING IOT AND AI

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Abstract

The industries current and next to popular technology is an intelligent home automation system that makes life easier and more convenient. Older and disabled persons can benefit from an IoT-based home automation system. Besides IoT technology, this system design also incorporates artificial intelligence (AI) and the Cloud. With this technology, people may acquire an assistant to manage their homes and their requirements according to on the orders they have given them. Remote control through a tablet or smartphone is the primary use of wireless communication technology. Human-machine contact is facilitated by the use of natural language processing (NLP) in this case. Even if a disabled person's command or request differs from a preset, NLP users can still command or control equipment in their own homes through the use of NLP. The Internet of Things (IoT) will aid with household controls such as door monitoring, appliance monitoring, and bed movement tracking. The Cloud will save the input data. All of the home's controls are put in the hands of AI. Voice control is used to perform all IoT operations, and all relevant data is transferred to the Cloud. As a result of using a predictive engine, it is possible to make future predictions. This work can be utilized as a suggestion system for elderly persons and people with physical disabilities who could not complete their job freely and easily.

Keywords: Internet of Things, Artificial Intelligence, Voice Control, Rasberrypi,Natural Language Processing

DETECTING EMOTIONS IN FACE USING DEEP LEARNING TECHNIQUE

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Abstract

Identifying the Emotions of Human from the images are the most challenging research task. When it comes to detecting emotional states, deep learning-based algorithms outperform those that use visual processing. The creation of artificial intelligence (AI) system that can recognize emotions in facial expressions is presented in this research. There are three primary processes in the process of emotion detection: Detecting the faces, Extracting the features, and classification. This Deep learning architecture for emotion recognition from photos was presented in this article using convolutional neural networks (CNNs). The suggested approach is assessed based on the Facial Emotion Recognition Challenge and Japanese Female Facial Emotion dataset. There are 70.14% and 98.65% accuracy rates for the FERC-2013 and JAFFE datasets, respectively, with the suggested model.

A STUDY ON CONSUMER CREDIBILITY TOWARDS SOCIAL MEDIA MARKETING WITH REFERENCE TO CHENNAI CITY

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Abstract

In brand relations, social media play an important part. Therefore, from the very first point of strategic preparation, both businesses began discussing social media. During their browsing, customers who use social media are four times more likely than consumers to spend onpurchases. Social media influence cannot be overlooked by company owners the psychological factors affecting consumer purchasing behaviour, including motivation, understanding, knowledge, values and attitudes.Theopinionsofbuyersofacompanyhaveadramaticimpactonthepurchasinghabits of their goods or services. That is why companies spend so much of their own resources ads, customer care, and everything else to have positive impacts on customer views. The present study is done with the objective of identifying perception of social media users and their credibilitytowardspurchaseofproductthroughsocialmedia.Commonnumberofsocialmedia users are young male with professional qualification. Greater number of users follow social media for purchasing new products, gaining feedback from users, making engage themselves withothersandforentertainmentpurpose.Knowledgeoftheconsumersonsocialmediausage shows the most important aspect in loyalty credibility. It is highly suggested that social media plays an indispensable role in marketing of products. A great benefit has been identified to both the users as well as to the marketer forbest.

ARTIFICIAL INTELLIGENCE AND SUSTAINABILITY PROMOTION THROUGH NATIONAL GOVERNMENT SOCIAL SCHEMES IN INDIA: A STUDY OF SWACHH SURVEKSHAN SURVEY

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Abstract

Social programmes are critical for emerging nations' development, poverty, Health and injustice. However, the functioning of social programmes cannot be enhanced by the use of typical engineering techniques, as these techniques are meant to maximise profits; with social programmes, however, profit maximisation is not the goal; social sustainability is the major objective. Many social programmes are initiated by the Government of India which focuses on achieving the sustainability goals with the consistent support of artificial intelligence. Field research revealed that the functioning of social programmes is viewed more socially sustainable if they fulfil two criteria: efficiency and equity; in other words, if the programme can assist the most vulnerable members of society. This research draws the comparative analysis between the major social initiatives by the Government to map the progress of Swacch Bharat Abhiyan with SwachhSurvekashan Survey which is known to be the world's biggest cleanliness urban survey. Based on Secondary of 2019 and 2020 the research explicit the progress and success of sustainable initiatives through robust Government initiatives like Swachh Bharat Abhiyan. The research explores the highest contributing States in the Government initiatives for inclusive growth of the country. The research has initiated the comparative analysis of 100 cities and 17 States based on 2019 and 2020 secondary data from SwachhSurvekshan Survey to map the progress of Swachh Bharat Abhiyan and contribution of the major and states and cities in achieving the National Sustainability goals.

Keywords: Social Sustainability;SwachhSurvekshan Survey; Social Programmes; Artificial Intelligence; Socialwelfare schemes; clean India.

MACHINE LEARNING IN EDUCATION, FINANCE AND MANAGEMENT: APPLICATIONS AND FUTURE TRENDS

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Abstract

Machine learning is a relatively recent discipline of data mining in which a computer program does not have to be expressly programmed to predict events. Machine learning has the potential to be employed in a variety of areas, including business and finance. These applications include human resource management, enhanced supply chain management and logistics, and improved customer relationship management. Machine learning techniques have the capability to perform prediction on the basis of previously available input data. Higher education institutions' principal purpose is to increase the academic standards of its students. This is a necessary first step in developing a program to assist students who are struggling with their academics. We'll look at how artificial intelligence and machine learning are employed in education and business in this piece. It may be used for everything from forecasting student performance to increasing sales and avoiding fraud.

OUTLIER DETECTION AND FITTING MODELS FOR RAINFALL DATA

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Abstract

Rainfall plays an important role for cultivation and drinking purpose. If rains are high human beings face problems like floods and rains are low human beings again face another problems like droughts. In this paper, annual rainfall data from 1988 to 2017 is used for estimation of outliers using control limits and specification limits. After eliminating outliers for modified data of Rayalaseema, Coastal Andhra Pradesh and Telangana regions, we are fitting general linear model, Holt's linear exponential smoothing model and Brown's linear exponential smoothing model. Best among these three models is estimated using R^2 criteria.

Keywords: outliers, control limits, exponential smoothing models, R^2 criteria.

SECURE AUTHENTICATION PROTOCOL-BASED BLOCKCHAIN IN IOT PLATFORM FOR HEALTH CARE MONITORING USING DKHMAC PROOF OF WORK

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Abstract

Block-Chain (BC) technology cannot restrict the malicious behaviours on crowd sourcing systems because of traceability, decentralization, tamper-proof, etc. However, considering large-scale online services, mainly Health-Care (HC) sectors, most existing BC consensus protocols are not fitting. In addition, they are also prone to replay, secret disclosure, traceability, together with Token reuse attacks. The work developed a Secure Authentication Protocol-based Blockchain (SAPBC) on an IoT platform aimed at Health Care Monitoring (HCM) to avert tampering of the transactions and shun malicious users. For addressing the unfaithful behaviours that often happen in crowd sourcing services, the proposed work integrates trust components with incentive measures. The work is initialized by means of the patient's authentication phase, which encompasses registration with Key Generation (KG) utilizing the Bernoulli number-based Rivest Shamir Adleman (BN-RSA) technique, login, along with verification phases. Authorized access is rendered by the authentication phase via tackling internal attacks. After that, SAPBC processes the work with secure data storage as well as data transfer. Under SAPBC protocol, the Re-Keying Elliptic Curve Cryptography (RK-ECC) encryption technique overcomes the privacy leak of the patient's confidential data caused because of decentralized BC storage and is stored on the cloud rather than BC. Next, the Dual Keyed Hash Message Authentication Code (DKHMAC) mapped it to the BC under the robust protocol. Overall, the SAPBC avoids the lower PDR and maintains higher-security levels for HC data, and has been established to be more confidential when weighed against prevailing methods.

EXPERIMENTAL INVESTIGATION OF ENERGY HARVESTING SYSTEM USING THERMOELECTRIC GENERATOR IN RESIDENTIAL AIR CONDITIONER

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Abstract

In the current scenario, energy degradation is a major problem that is faced everywhere in and around the world. So, a small amount of energy produced from any forms will be turned into a great advantage. This work deals with recovering the waste heat into a useful work from the heat exchanger which is placed in between compressor and condenser of the air conditioning cycle with the help of Thermo-Electric Generator (TEG) using Nano Fluids (NF). Different types of fluids such as water, aluminum oxide NF, magnesium oxide NF were used in converting the heat from the heat exchanger at different conditions with TEG at different positions. Out of all three fluids, Magnesium oxide NF provides promising outputs in terms of voltage from the TEG.

Keywords-air conditioning, waste heat recovery, nanofluids, thermo-electric generator

SIMULATION OF MICROSTRIP PATCH ANTENNA USING MICROSTRIP FED LINE AND COMPARE THE BANDWIDTH PERFORMANCE WITH COAXIAL PROBE FED ON 50 Ω CHARACTERISTIC IMPEDANCE AT 10 GHZ.

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Abstract

AIM: To analyse the bandwidth of microstrip patch antenna using novel microstrip line fed withcoaxial probe fed on 50 Ohm characteristics impedance at 10 GHz. Material and Methods: The RF performances (Return loss, VSWR, Impedance, Gain, Bandwidth) of microstrip line fed (n=19) with coaxial probe fed (n=19) on 50 Ohm characteristic impedance at the frequency range of 10 GHz. Result: A microstrip line fed has significantly higher bandwidth performance (Bandwidth: 523 MHz) than coaxial probe fed (Bandwidth: 462 MHz). The optimized dimensions for microstrip line fed was 17 x 20 x 1.6 mm3 and coaxial probe fed are 10 x 9 x 0.32mm3. Attained significant RF performance of $p<0.05$. Conclusion: The microstrip line fed antenna is reported to have better bandwidth performance than coaxial probe fed antenna.

COMPARISON OF LOCAL MONOTONIC PATTERN AND LOCAL TRANSITIONAL PATTERN TEXTURE FEATURE USING CT IMAGES FOR IDENTIFICATION OF COVID-19

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Abstract

The aim of this analysis was to estimate texture deformation of lung CT images due toCOVID-19. The required input images for the study were collected from github.org with a sample size of 176 images which was used for the analysis. To analyze the changes in texture of CT image, Local Monotonic Pattern (LMP) and Local Transitional Pattern (LTRP) were compared. Features are subjected to classification using K-NN and Neural Network (NN) classifiers. In this analysis, it was observed that the texture deformation was high in normal subjects due to loss of tissue, whereas the texture deformation is less in normal subjects. Local transitional pattern acquired Area Under Curve (AUC) (93%), F1-score (81%), Precision (82%), Recall (81%) and Classification Accuracy (CA) (81%) were obtained using K-NN classifier. Sum entropy is (0.453) in normal subjects and (0.523) in COVID subjects, higher mean value in COVID subjects indicates loss of image information as the mean value is higher in COVID subjects there will be loss of image information. The extracted featurevalues obtained using LTRP were statistically significant ($p<0.05$) compared to Local monotonic pattern feature values. LMP contains significant values ($p>0.05$) as a result there will be information loss in CT images. In this analysis, it was found that Local transitional pattern novel

texture features with an accuracy of (81%) performed better in comparison with the Local monotonic pattern features with an accuracy of (64%) for the detection of COVID-19.

PERFORMANCE EVALUATION OF WATERSHED SEGMENTATION ALGORITHM FORBRAIN DISEASE DETECTION COMPARED WITH THRESHOLD SEGMENTATION

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Abstract

Aim : The main aim of brain tumor segmentation is to classify whether the brain image is segmented properly into regions based on the presence of tumor. With reference to the predefined criteria, segmentation, partitions the image into mutually exclusive regions which are spatially contiguous and homogeneous pixels. Image is enhanced with a median filter and is processed for segmentation. Materials and methods: Dataset consisting 120 different MRI images has been collected from the dataset available in Github. These sample size of 40 images are tested based on tumor area. Watershed segmentation and Threshold segmentation are used in the segmentation process of brain tumors. Results: From the experimental analysis it is observed that watershed segmentation for brain MRI images gives an accuracy of 97% while thresholding segmentation gives an accuracy of 95% .Conclusion: In this study, it is found that the watershed segmentation appears to perform better when compared to threshold segmentation by preserving edges without blurring.

Keywords: MRI, Brain tumor, segmentation, Watershed segmentation, thresholding segmentation, Artificial intelligence, Novel Segmentation, morphological operation.

ENHANCEMENT OF DIRECTICITY USING NOVEL RECTANGULAR PATCH ANTENNA WITH DUAL FREQUENCY (NRPA) AND COMPARING WITH CIRCULAR PATCH ANTENNA

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Abstract

Aim: Microstrip patch antennas are widely used in the areas of wireless communication due toits low profile and low volume. But still it has research issues like low directivity, and narrow bandwidth. The objective of this work is to design the novel rectangular patch antenna for improving the gain and directivity. In this work, it presents the comparison of directivity and gain between rectangular patch and circular patch Antennas. Materials & Methods: Novelrectangular patch antenna (NRPA) and circular patch antenna (CPA) are designed by using Ansoft HFSS software and by taking the dataset of 40 samples with pretest power of 80%. The directivity of CPA is 3.52dB and Novel RPA is 5.23dB. The gain of CPA is 1.89dB and Novel RPA is 5.15dB. Results: By performing an independent sample T-test for both the groups, it shows that the mean gain and directivity of the proposed design is 2.8317 and 2.8395 respectively. The mean gain and directivity for CPA is 0.8886 and 2.0567 respectively. The significance value for directivity is 0.008 ($p<0.05$).

Conclusion: From this work, it is analyzedthat Novel RPA design appears to have 59% higher directivity and 73% peak gain with comparison of CPA design.

COMPARISON OF POWER GENERATION FROM RESTAURANT WASTEWATER TREATMENT IN MICROBIAL FUEL CELL USING CARBON FELT ELECTRODE WITH CARBON PAPER ELECTRODE

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Abstract

Aim: The major aim of this study is to compare the power generation of carbon felt electrode and carbon paper electrode operated Microbial fuel cells (MFC) using restaurant wastewater. Materials and methods: Restaurant wastewater samples were collected from MFC with carbon felt electrode (N=13) and carbon paper electrode (N=13) operated for 10 days (G power 80%). Voltage was measured using a multimeter and current, power, power density was calculated from it for both groups. Results: The Power generation was found to be high in MFC operated with carbon felt electrode (410 mW/m2) due to its active surface area, strong conductivity, and good biocompatibility compared to carbon paper electrode (121 mW/m2). The independent sample T-test was done which showed that the power generation of MFC operated with carbon felt electrode ($p<0.001$) found to be significantly higher compared with MFC operated with carbon paper electrode. Conclusion: The study shows that carbon felt electrode operated MFC is able to achieve higher power generation compared to carbon paper electrode.

Keywords: Restaurant wastewater, Microbial fuel cell, Carbon felt, Carbon paper, Power generation, Novel power source, Green energy.

CLASSIFICATION OF BENIGN AND MALIGNANT MASSES USING J48 AND KNN CLASSIFIERS FOR THE POTENTIAL AND DIAGNOSTIC APPLICATIONS.

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Abstract

Aim: The aim of this study is to classify the benign and malignant masses using J48 and K-Nearest Neighbors (KNN) classifiers. Materials and Methods: Breast Image Report and Data System (BI-RADS) with benign (n=27) and malignant (n=27) masses are collected from the UCI machine learning repository for the proposed study. The data set contains 6 attributes which are considered as inputs to the classifiers such as J48 and KNN. The classification of benign and malignant masses are done by using the Waikato Environment for Knowledge Analysis (WEKA), a data mining tool. The statistical analysis is performed using the Statistical Package for Social Sciences (SPSS) software. Results: The J48 classifier ($p=.000$) is found to be more significant than KNN classifier with the classification accuracy rate as 81.48%. Conclusion: The J48 has achieved more accuracy than the K-Nearest Neighbors (KNN) classifier for classifying the benign and malignant masses.

Keywords: Benign mass, Malignant mass, Innovative k-nearest neighbor machine learning algorithm, J48 machine learning algorithm, Data mining tool, Artificial intelligence.

CLASSIFICATION OF NORMAL AND NODULE LUNG IMAGES FROM LIDC-IDRI DATASETS USING K-NN AND LOGISTIC CLASSIFIERS

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Abstract:

Aim: The aim of our study is to classify the lung nodule patients and healthy using k nearest neighbour (KNN) and logistic machine learning algorithms. Materials and methods:Theproposed study used the KNN and logistic machine learning algorithms to classify the lung nodule images using LIDC-IDRI dataset with normal (n=166) and abnormal (n=166) lung images which are collected from kaggle. We also used matlab software to extract the features from the lung nodule images and healthy lung images The classification of diseased and healthy subjects were performed using WEKA 3.8.5, a data mining tool. The statistical analysis was performed using IBM SPSS software version 21. Result: The statistical significant difference ($p<0.01$) was observed between two groups (KNN and Logistic). Conclusion: The classifier has been trained, tested and validated using 10-fold cross-validation in WEKA software , the KNN classifier has achieved a higher classification accuracy rate (98.49%) than Logistic classifier (79.81%).

Keywords: Artificial Intelligence, Lung nodules, Innovative k-nearest neighbour, Logistic Regression, Machine learning algorithms.

ACCURACY MEASUREMENT IN PREDICTION OF LUNG CANCER USING CONVOLUTIONAL NEURAL NETWORK (CNN) INCEPTION V3 AND VGG19

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Abstract:

Aim: The main aim is to measure and compare the accuracy of lung cancer prediction using theVGG19 and Inception V3 model. Materials and Methods: The performance was analysed on 989 CT images with 80% (G power). The dataset related to this work is collected from the Iraq-Oncology Teaching Hospital/National Center for Cancer Diseases (IQ-OTH/NCCD). Convolution Neural Network (CNN) based Inception V3 and VGG19 methods used for prediction of lung cancer. The statistical analysis was done using the SPSS tool. Using G power (80%) the sample size of the two groups is 1978 (989×2) CT scan images. Results: The proposed model CNN Inceptionv3 produced improved accuracy of 0.8634±0.05468 than the CNN-VGG19 with the significance value

of 0.0145. Conclusion: It would be prudent that the proposed CNN- Inception V3 model produced high accuracy (%) compared with CNN-VGG-19 model.

DESIGN OF NOVEL MICROSTRIP SLOTTED PATCH ANTENNA (NMSPA) TO IMPROVE THE DIRECTIVITY FORMOBILE APPLICATION AND COMPARING WITH RECTANGULAR MICROSTRIP PATCH ANTENNA

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Abstract:

Antenna is a transducer which plays a significant role in wireless modern communication.The major drawback of microstrip antennas is low gain whichis a product of directivity and efficiency. The objective of this work is to design a novel microstrip slotted patch antenna NMSPA with enhanced directivity at operating frequency of 5GHz. It has been simulated overteflon material using Altair Feko software. NMSPA is designed to improve the directivity and gain when compared with Rectangular Microstrip Patch antenna(RMPA). Their results were analysed by SPSS software with the help of 40 samples whose significance value is less than 0.05 and pretest power of 80%. From the feko simulation result, NMSPA has a peak gain of 8.58dB and directivity of 8.81dB. RMPA has a peak gain of 6.31dB and directivity of 6.31dB. Proposed antenna appears to have better gain and directivity as compared to RMPA.

IN SILICO ANALYSIS OF REGULATORY ELEMENTS OF HEAVY METAL INDUCIBLE PROMOTERS TO IMPROVE PLANTRESILIENCE IN PANICUM A POTENTIAL BIOENERGY CROP

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Abstract

The study involves prediction of transcription factor binding sites (TFBS) on upstreamsequences of heavy metal responsive genes in panicum to understand the possible gene regulation and transcriptional control involved in heavy metal resistance towards improving plant resilience. In this study the model monocot plant and a non-food bioenergy crop panicum was chosen. The TFBS were predicted for 5 heavy metal responsive genes for transcription factors (TFs) belonging to NAC and WRKY family using bioinformatics tools TSSP and PlantPAN3.0. Results Promoters were predicted on all upstream sequences selected that had LDF (linear discriminative function) threshold value above 0.02 for TATA box at a given position. All the predicted transcription factor binding sequences for NAC, WRKY TFs on the putative promoters had position weight matrix scores above 0.95. The sequences falling within these threshold values could represent possible TFBs for NAC and WRKY TFs on the predicted promoters for the heavy metal responsive genes. Motifs corresponding to the NAC transcription factor matrix ID 382 were located in the upstream sequences of 4 heavy metal responsive genes and not located in the gene NRT1.1 and the WRKY transcription factor binding motifs corresponding to the transcription matrix ID 445 were

located in the upstream sequences of 4 heavy metal responsive genes and not located in the gene NRT1.1 in the current study.

DEBLURRING OF IMAGES USING NOVEL ARTIFICIAL NEURAL NETWORK (ANN) ALGORITHM TO ENHANCE THE ACCURACY AND COMPARING WITH RICHARDSON-LUCY DECONVOLUTION ALGORITHM (RLD)

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Abstract

Aim - Machine learning techniques are used in the area of digital image processing due to itsimpressive results in deconvolution of blurred images. The objective of this study is to evaluate the performance of the Novel ANN algorithm in deblurring of images by comparing it with the RLD algorithm. Materials and Methods - Novel Artificial Neural Network (ANN) and Richardson-Lucy Deconvolution (RLD) algorithms were implemented to deblur the input images upto 256 pixels range. These algorithms were implemented to enhance the accuracy rate of deblurred images using MATLAB Software. Sample size was calculated from clincalc.com with previous literature and it was analyzed by collecting the dataset of 20 samples with 80% ofpretest power. Results - From the MATLAB simulation result, Novel ANN achieves image deblurring rate with 93.08% accuracy and RLD method achieves image deblurring rate with 80.10% accuracy. The significance value obtained as 0.002 ($P < 0.05$). Conclusion - Novel ANN classifier appears to have better accuracy compared to RLD Classifier.

Keywords : Digital Image Processing, Blur classification, Point Spread Function, Deblurring, Novel ANN Algorithm, RLD Algorithm.

COMPARISON OF V-I CHARACTERISTICS BETWEEN MOSFET AND CNTFET BY VARYING THE CARBON NANOTUBE LENGTH

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Abstract:

Aim: The project aims to improve the drain characteristics of a novel CNTFET (carbonnanotube field effect transistor) by varying the carbon nanotube length. Materials and Methods: The CNTFET and MOSFET was chosen as a group having 20 samples each respectively. The drain characteristics were simulated by varying the carbon nanotube length of a CNTFET and channel length of a MOSFET by using the DFT tool. Reducing the channel length in an innovative method will lead to reducing the size of the device. Result: The Independent T test was done which reveals that the CNTFET ($P = 0.152$) was found to be statistically insignificant compared with

MOSFET. Conclusion: The analysis we found that CNTFET(mean - 0.00007692) has better drain characteristics compared to MOSFET (mean -0.00002249).

Keywords: Novel Carbon nanotube field effect transistor, Metal oxide field effect transistor,

IMPLEMENTATION OF TEXTILE ANTENNA USING JEANS SUBSTRATE AT 2.4 GHZ FOR DIRECTIVITYIMPROVEMENT COMPARING WITH PAPER SUBSTRATE ANTENNA

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Abstract

Aim: The aim of this study is to design a Microstrip Patch Textile antenna using Jeanssubstrate (Dielectric constant - 1.7) at 2.4GHz and it is compared with Paper substrate antenna (Dielectric constant - 3.6). Materials and Methods: The Rectangular microstrip patch antenna which uses Jeans substrate with the thickness of 1.6mm (Group1) and 1.4mm (Group 2) and the Paper substrate Antenna with the thickness 1.4mm (Group3) and 1.6mm(Group 4) are designed and simulated with HFSS software. For each group 10 samples are taken for the analysis. If significance $p<0.05$, then it indicates that the performance of the Antenna is good. The antenna directivity analysis is done for 2 GHz to 2.8 GHz. Results: TheExperimental results shows that the jean substrate antenna which is designed at 2.4GHz is having the directivity of 2.31dB. The Rectangular Microstrip patch antenna which is designed using Paper Substrate having directivity of 2.2dB at 2.4GHz. Conclusion: The microstrip patch antenna which is designed using jeans substrate is having significantly better performance when compared to the microstrip patch antenna using Paper substrate while considering its directivity parameter.

Keywords: Jeans Substrate, Rectangular Microstrip Patch Antenna, HFSS Software, Miniaturization, Textile Antenna, Paper Substrate, Flexibility, Directivity, Antenna Design, Innovative Wearable Antenna.

NOVEL FEATURE EXTRACTION TECHNIQUE FOR BLOOD VESSEL SEGMENTATION OF DIABETIC RETINOPATHYUSING GMM IN COMPARISON WITH ACCURACY OF SVM CLASSIFIER

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Abstract:

Aim- The main aim of this work is to present a novel feature extraction technique for bloodvessel segmentation of diabetic retinopathy using unconstrained images with better accuracy. Materials & Methods- Two different machine learning algorithms Gaussian mixture Model (GMM) and Support Vector Machine (SVM) are implemented to segment an input image in the trained dataset consisting of two groups each consist of 20 images totally 40 unconstrained images. Samples obtained using clincalc analysis with G Power 80%. Results- By training these two datasets in a MATLAB software GMM obtained 96% accuracy which is better compared to SVM classifier.

Attained significant accuracy in statistical SPSS IBM tool is (P=0.007). Conclusion - For the given unconstrained images, GMM has obtained better accuracy compared to SVM classifiers.
Keywords: Machine Learning, Novel feature extraction, Gaussian Mixture Model, Support

SMART FACE DETECTION AND RECOGNITION IN OCCLUDED IMAGES USING GOOGLENET CNN IN COMPARISON WITH ACCURACY OF SVM

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Abstract

Aim: Main objective is to recognize faces in occluded noisy images using googlenetconvolutional neural network(GCNN) and Support Vector Machine (SVM). Materials and methods: 10 samples of four different faces, totally 40 samples are collected in clincalc with 0.05 threshold, confidence 95%, 80% pretest power and enrollment ratio 1 and trained using GCNN and SVM in MATLAB software. Results: GCNN has achieved 99% accuracy whereSVM achieves 82% accuracy in trained dataset attained significant value 0.000 Conclusion: From this experiment results, GCNN performance is better compared to SVM.

Keywords: Novel detection, Face detection, Face recognition, GCNN, SVM, Data Augmentation.

SIMULATION OF CARBON NANOTUBE FIELD EFFECT TRANSISTOR BY VARYINGCARBON NANOTUBE LENGTH TO EXPLORE ITS ELECTRICAL PROPERTY ANDCOMPARE IT WITH STANDARD MOSFET

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Abstract:

Aim: The current and voltage characteristics of CNTFET and MOSFET are simulated byvarying their channel length ranging from 50nm to 130nm. Materials and Methods: The electrical conductance of CNTFET (N = 240) was compared with MOSFET (N = 240) byvarying channel length ranging from 50nm to 130nm in the NanoHUB© tool simulationenvironment. Results: CNTFET has significantly higher conductance (13.7505 x10-06 mho) ($p<0.05$) than MOSFET (5.894 x10-06 mho). The optimal channel length for maximum conductivity was 50nm for both CNTFET and MOSFET. Conclusion: Within the limits of this study, CNTFET with the channel length of 50nm offers the best conductivity.

Keywords: Carbon Nanotube Field Effect Transistor (CNTFET), channel length, drain current, conductance, Novel Transistor, Nanotechnology

COMPARATIVE ANALYSIS OF RETURN LOSS AND GAIN OF GRAPHENE BASED MICROSTRIP PATCH ANTENNA WITH CNT BASED MICROSTRIP PATCH ANTENNA

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Abstract :

Aim: Graphene based microstrip patch antenna and CNT based microstrip patch antenna usingFR4 dielectric substrate were designed at frequency range (5GHz to 6.5GHz) in order to optimize gain and return loss. Materials and methods: Return loss and gain of Graphene based microstrip patch antenna using FR4 dielectric substrate (N=16) were compared with CNT based microstrip patch antenna using FR4 dielectric substrate (N=16) using Ansoft HFSS simulation tool. Results:Graphene based microstrip patch antenna using FR4 dielectric substrate has significantly higher gain(2.20 dB) and less return loss (-12.823 dB) ($p<0.05$) than CNT based microstrip patch antenna using FR4 dielectric substrate with less gain(1.57 dB) and high return loss(-11.80 dB). Optimal frequency for maximum gain and less return loss of Graphene based microstrip patch antenna and CNT based microstrip patch using FR4 dielectric substrate was 5.0 GHz and 5.4 GHz respectively. Conclusion:Within this limits of study graphene basedmicrostrip patch antenna using FR4 dielectric substrate of frequency 5 GHz offer high gain and less return loss.

Keywords : Graphene, CNT, Nanotechnology, Novel material, Microstrip patch Antenna, Wireless Antenna

SIMULATION AND COMPARISON OF CURRENT VOLTAGE CHARACTERISTICS OF PLANAR BIOSENSOR AND EXTENDED GATE FET BIOSENSOR BY VARYING OXIDE THICKNESS TO GET BETTER SENSITIVITY

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Abstract:

Aim:The current voltage characteristics of planar biosensor and extended gate FET biosensor aresimulated by varying the oxide thickness ranging from 1cm to 7cm. Materials and Methods:The electrical conductance of planar biosensor (N=520) was compared with extended gate FET biosensor (N=520) by varying oxide thickness ranging from 1cm to 7cm in the NanoHub tool simulation environment. Results: Planar biosensor has significantly higher conductance (72.98423 mho) than extended gate FET biosensor(29.69323 mho). The optimal oxide thickness for maximum conductivity was 7cm for planar biosensor and 7cm for extended gate FET biosensor. Conclusion: Within the limits of the study, planar biosensor with oxide thickness at 7cm offers the best conductivity.

Keywords: Planar biosensor, Extended gate FET biosensor, NanoHub Simulation tool,hybridized and unhybridized voltage, Novel transistor, Nanotechnology, Advanced biosensor,

PERFORMANCE COMPARISON OF PCD INSERT AND UNCOATED INSERT IN NOVEL CNC GREEN MACHINING OF LDX2101 DUPLEX STAINLESS STEEL FOR MAXIMIZING MATERIAL REMOVAL RATE

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Abstract

Aim: This experimental work aims to maximise the material removal rate (MRR) by comparingpolycrystalline diamond (PCD) insert and uncoated (cemented carbide) insert during CNC turning of LDX 2101 duplex stainless steel. Material and Methods: In this work, PCD insert was taken as experimental group and uncoated insert was taken as control group. Machining parameters were cutting speed, feed and depth of cut. The total number of groups were two and the total sample size was 54. 27 samples for both PCD insert and uncoated insert were used for conducting experiments. Results: The obtained mean MRR value for PCD insert is 0.079000 g/sand for uncoated insert is 0.032778 g/s. The significant difference between the two inserts is0.016 ($p<0.05$). Conclusion: Within the limits of this work, MRR for LDX 2101 is higher when machined with PCD insert and lower when machined with uncoated insert.

Keywords: Green Machining, PCD insert, Uncoated insert, CNC turning, Material removal rate,LDX 2101 duplex stainless steel, Novel machining.

FUNCTIONAL ANNOTATION OF HYPOTHETICAL PROTEIN USING BIOINFORMATIC TOOLS IN PARABURKHOLDERIA SP., A POTENTIAL PLANT ENDOPHYTE

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Abstract

Aim This study involves the function prediction of hypothetical proteins found in the genomeParaburkholderia sp.,. Materials and Methods About 20 hypothetical proteins were screened for domains of unknown functions. Eight DUFs were selected for the study. The function was predicted based on cellular localization and homology structure modelling using bioinformatics tools Signal P, Target P, HHPred and CPHpred. The hypothetical genes containing domains with unknown function (DUF) from the genome of plant endophytic bacterial strain Paraburkholderia sp., were chosen. Results Out of 8 DUF genes selected for the study protein structure was predicted for the domain of unknown function DUF 3422. The localization and presence of signal peptide were predicted for all the DUFs. The homology model predicted was selected based on the Z-score (7.7) and E-value (5.9). Conclusion The predicted structure was found to be similar to a membrane protein involved in metal transport.

Keywords Paraburkholderia sp., Hypothetical proteins, Bioinformatic Prediction tools, Novel functions, Genetic engineering.

IN SILICO ANALYSIS OF REGULATORY ELEMENTS OF DROUGHT STRESS INDUCIBLE PROMOTERS TO IMPROVE PLANT RESILIENCE IN PANICUM SP., A POTENTIAL BIOENERGY CROP

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Abstract

The study involves prediction of transcription factor binding sites on upstream sequences ofdrought stress responsive genes in panicum to understand the possible gene regulation and control involved in drought stress resistance towards improving plant resilience In this study the model monocot plant and a non-food bioenergy crop panicum was chosen. The TFBS (transcription factor binding site) were predicted for 5 drought stress responsive genes for TFs (transcription factors) belonging to NAC, AP2; ERF, WRKY, MADF and ALPHA-AMYLASE family using bioinformatic tools TSSP and PlantPAN3.0. Results promoters were predicted on the upstream sequences selected and had LDF (lineardiscriminative function) threshold value above 0.02 for TATA box at a given position. All the predicted Transcription factor binding sequences for NAC, AP2;ERF, WRKY, MADF and ALPHA-AMYLASE TFs on the putative promoters had position weight matrix scores above 0.95. The sequences falling within these threshold values could represent possible TFBS for NAC TFs on the predicted promoters for the drought stress responsive genes From the promoter regulatory element predictions it was observed that ALPHA-AMYLASE transcription factor binding motifs corresponding to the transcription factor matrix ID 282 was predicted in the upstream sequence of listed drought stress responsive genes in the current study.

CREDIT CARD FRAUD DETECTION USING SUPPORT VECTOR MACHINE ALGORITHM IN COMPARISON WITH VARIOUS MACHINE LEARNING ALGORITHMS TO MEASURE ACCURACY, SENSITIVITY, SPECIFICITY, PRECISION AND F-SCORE

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Abstract

Aim: The credit card fraud detection issue is one of the growing issues for many financialinstitutions. In this study, performance of Support Vector Machine (SVM) is compared with algorithms to predict credit card frauds. Naive Bayes, logistic regression, decision tree, and ANN are the algorithms compared with the SVM algorithm for predicting credit card frauds. Materials and Methods: A total of 2,84,807 samples are split into testing and training samples. Training has been done with [n=2,27,845(80%)] samples and testing has been done with [n=56,962(20%)] samples (g power: 0.8). The credit card fraud detection dataset consists of 492 fraud samples out of 2,84,807 samples. To quantify the performance of algorithms, metrics such as accuracy, sensitivity, specificity, precision, and f-score are estimated. Results: The detection accuracies of SVM, Naive

Bayes, logistic regression, decision tree, and ANN algorithms are 99.32%, 90.93%, 95.35%, 94.81%, and 94.81% respectively. The SVM algorithm achieved an f-score of 99.33% ($p<0.05$). Conclusion:

IMPLEMENTATION OF AN NOVEL FACE RECOGNITION SYSTEM TO MINIMIZE THE FALSE IDENTIFICATIONRATE USING OUTSU'S THRESHOLD SEGMENTATION IN COMPARISON WITH SOBEL EDGE DETECTION

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Abstract

Aim: The aim of this research is to develop the Novel Face Recognition for identifying thehuman face using the threshold segmentation technique in comparison with the edge detection technique. Materials and methods: The total of 48 samples were taken to form a dataset and analysed using two groups. Group 1 represents the Otsu's Threshold Segmentation and group 2 represents the Sobel Edge Detection. In that 28 images with different facial positions and 20 images with different facial expressions. Results: The outu's threshold segmentation has achieved the accuracy of 81.4% respectively compared to 63.9% by sobel edge detection and the significance achieved is ($p<0.05$). Conclusion: In this study it is concluded that the outu's threshold segmentation has a significantly ($p<0.05$) greater accuracy when compared with sobel edge detection.

DETERMINATION OF BACTERICIDAL EFFECT OF PIPER BETEL LEAF EXTRACT ON BACTERIA BYFILTER PAPER DISC METHOD TO CHECK ANTIMICROBIAL EFFICACY

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Abstract

Aim: Effect of a natural compound extracted from Piper Betel leaf by determiningbactericidal and or bacteriostatic effect to check antimicrobial efficacy on the pathogenic microorganisms. Materials and Methods: Bioactive compound extracted in different solvents i.e distilled water, ethanol, and methanol, and its effectivity was determined by measuring the zone of clearance (1 group and 96 samples per group by keeping threshold 0.05 and G power 80%, coincidence interval 95%, and enrollment ratio as 1) by agar diffusion method using kanamycin (30) as a control for the different time period (24 Hrs,48Hrs and 72Hrs) at 37°C. Results: Promising results were found for the zone of clearance in Escherichia.coli with a significance of about $P<0.001$ in the ethanol extract after 72 hours of incubation. Compared to 10% extract application where growth of S.aureus was reduced to 4%, addition of 100% crude inhibits bacterial growth up to 95% approximately. For S.aureus and E.coli though ethanol extract was found effective however no significant effect was observed for inhibiting Pseudomonas. Conclusion: Novel bioactive compound extracted from Piper Betel leaf was found effective against pathogens and can be used as a natural component with antimicrobial efficacy in the field of medicine.

Keywords: Antimicrobial, Bactericidal, Bacteriostatic, Novel Bioactive Compound, MIC, Medicine.

PERFORMANCE ANALYSIS OF AN INTRUSION DETECTION SYSTEM FOR WIRELESS ADHOC NETWORK IN THEDETECTION OF DOS ATTACK USING K-MEANS CLUSTER AND K-NN ALGORITHM

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Abstract

Aim: The aim of the study is to design an intrusion detection system (IDS) for wireless adhoc network to detect Denial of Service attack using K-Means cluster and to compare its performance with an intrusion detection system which is designed using K-NN algorithm. Materials and Methods: To design an IDS model CIC-IDS 2017 dataset was taken. K- Means cluster (Group1) is used to classify the normal and abnormal nodes. This IDS performance is compared with (Group2) IDS which is designed using the K-NN algorithm. For the analysis with the SPSS tool, 19 samples were takenfor each group. The performance of the IDS is measured by using accuracy, detection rate and false positive rate. The significance $p<0.05$ shows the performance of the IDS (Detection Rate significance is 0.06). Results: The experimental results show that the IDS which is designed using the K-Meanscluster has reached the accuracy 86%, detection rate 75% and the false positive rate is 0.09%. The IDSwhich is designed using the K-NN algorithm has accuracy 99%, detection rate 72% and false positive rate 0.03%. Conclusion: IDS which uses the K-NN algorithm appears to perform significantly better than the IDS which is designed using the K-Meanscluster in the detection of DOS attack.

ANALYSIS OF NOVEL MULTI-RESOLUTION IMAGE FUSION OF CT AND MRI IMAGES USING PYRAMIDMETHOD IN COMPARISON WITH DWT METHOD

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Abstract

Aim:The medical Image fusion is the process of combining relevant information from a setimages into a single image in which the fused image contains more information than any of the input images . This paper presents a comparative study of two different medical image fusion algorithms such as PYRAMID method and DWT method along with its performance analysis. Here a novel Multi-Resolution Image Fusion using CT and MRI was done. Materials and Methods: To perform image fusion, PYRAMIDAL method and DWT method were applied to 9 sample pairs with (256x256) of Magnetic Resonance Images (MRI) and Computed Tomography (CT) images taken from NLST and MIDAS Database respectively. Result: Determination of the SNR and Correlation of fused image was successfully done.The SNR and Correlation of fused image with source images in pyramid method was 11.84 and 1 and using DWT method it was found to be 22.37 and 0.945respectively.The results obtained were considered to be error-free since it was having the significant power of 0.002 with pre-test power of 95% in SPSS Statistical analysis.Conclusion: For

the given samples, the DWT Method was found to be efficient compared to the PYRAMID method in performing medical image fusion.

COMPARATIVE STUDY ON OPTIMUM MOISTURE CONTENT AND MAXIMUM DRY DENSITY OF SANDY CLAY SOIL WITH GLASS FIBER REINFORCED SANDY CLAY SOIL FOR SUSTAINABLE CONSTRUCTION

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Abstract

Aim: The aim of the study is to improve the compaction properties of the sandy clay soil byadding glass fiber and we compared the optimum moisture content and maximum dry density of the sandy clay soil and glass fiber reinforced sandy clay soil to provide an innovative road construction material. Materials and Methods: In the present study, we have determined the optimum moisture content and maximum dry density of the sandy clay soil and glass fiber reinforced sandy clay soil (1.5% glass fiber). A total of 36 samples (18 sandy clay soils samples and 18 glass fiber reinforced sandy clay soil) were tested. Results: Independent Sample T-test on sandy clay soil and glass fiber reinforced sandy clay soil. The obtained significance for OMD is 0.001 ($p<0.05$) and for MDD, it is $p = 0.156$ ($p > 0.05$), respectively. The mean MDD value of glass fiber reinforced sandy clay soil is increased by 1.41 kg/m3 when compared with the sandy clay soil. The mean OMC value of sandy clay soil is increased by 6.17 % when compared with glass fiber reinforced sandy clay soil. Conclusion: Thus, we have identified that there is an increase of maximum dry density of the soil by adding glass fiber.

Keywords: Glass Fiber, Sandy Clay Soil, Glass Fiber Reinforced Sandy Clay Soil, Standard Proctor Test, Optimum Moisture Content, Maximum Dry Density, Sustainable Construction, novel road construction material

NOVEL CLASSIFICATION AND RECOGNITION OF HUMAN IRIS IN AN UNCONTROLLED ENVIRONMENT USING CNN IN COMPARISON WITH ACCURACY OF KNN CLASSIFIER.

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Abstract :

Aim: The main aim of this study is to compare the recognition of human iris using twodifferent machine learning algorithms in an uncontrolled environment image dataset. Materials and Methods: Images taken from MMU iris dataset,Convolutional neural network model(CNN) and K-nearest neighbours model algorithms are performed to recognise the iris in uncontrolled environment image with 50 samples per group using clincalc analysis with alpha value 0.05 and pretest power 80%. Results: MATLAB simulation result shows that CNN achieved 96% accuracy and KNN attained 76% accuracy recognising the iris. Attained significant accuracy ($p<0.05$) in SPSS statistical analysis. Conclusion: For the given images, proposed CNN shows better accuracy than KNN classifier in iris recognition tasks.

Keywords: Machine Learning, Human Iris Recognition, Radical Segmentation, Novel

AN APPROACH FOR RUNTIME ANALYSIS OF 128 BITS INNOVATIVE ADVANCED ENCRYPTION STANDARD ALGORITHM OVER TRIPLE DES ALGORITHM USING VHDL

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Abstract

AIM**:** The aim of the work is to analyze the runtime of Advanced Encryption Standard(AES) algorithm by comparing it with Triple Data Encryption Standard (TDES). MATERIALS &METHODS**:** Advanced Encryption Standard (AES) and Triple Data Encryption Standard (TDES) algorithms are implemented to determine the runtime dataset with a sample set of 58, the significance of the data is calculated using SPSS. RESULTS**:**From the data collected from SPSS, there is an insignificance in the independent sample data between the comparison of AES encryption (p=0.657) with TDES encryption (p=0.908) and AES decryption (P=0.931) with TDES decryption (P=0.656). CONCLUSION**:** From this analysis, it is observed that AES encryption processes 128 bits and it provides better runtime and efficiency when compared to TDES.

Keywords: Innovative Advanced Encryption Standard,Triple Data Encryption Standard, Runtime, Cryptography

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IMPLEMENTATION OF TEXTILE ANTENNA USING JEANS SUBSTRATE AT 2.4 GHZ FOR RETURN LOSSIMPROVEMENT COMPARING WITH PAPER SUBSTRATE ANTENNA

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Abstract

Aim : The aim of study is to design a Microstrip Patch Textile antenna using Jeans substrate (Dielectric constant is 1.7) to obtain the Return loss and it is compared with Paper substrate antenna (Dielectric constant is 3.6) which was designed at 2.4GHz. **Materials andMethods :**The Rectangular microstrip patch antenna which uses Jeans substrate with the thickness as 1.6mm (Group1) and with the thickness 1.4mm (Group 2) and patch antenna which uses Paper substrate with thickness 1.4mm (Group3) and with the thickness 1.6mm (Group 4) are designed and simulated with HFSS. For each group 10 samples are taken forthe analysis using SPSS. The significance p<0.05, indicates that the antenna performance is good. **Results :**The Experimental results show that the Jean substrate antenna (1.6 mm) which is designed at 2.4GHz is having the Return loss of -0.0338dB and (1.4 mm) is having

Return loss of -0.006dB. The Rectangular Microstrip patch antenna which is designed using Paper Substrate (1.6 mm) having Return loss of -0.0756dB and paper substrate (1.4 mm) is having Return loss of -0.037dB at 2.4GHz. **Conclusion :**The microstrip patch antenna which is designed using jeans substrate is having significantly better performance when compared to the microstrip patch antenna using Paper substrate while considering its Return loss parameter.

IMPACT OF AN UNANTICIPATED SHIFT FROM CONVENTIONAL LEARNING SYSTEM INTO THE E-LEARNING SYSTEM UPON STAKEHOLDERS IN EDUCATION AND LEARNING PRACTICES CAUSED BY COVID-19 PANDEMIC

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ABSTRACT

Governments and stakeholders are working together to eliminate and mitigate the enormous and tremendous outcomes of the COVID-19 Pandemic. Most schools in states, cities anddistricts need to improve their productivity to focus on students' studies, learning, and training sessions. Thus, preventing the learning disaster from converting a generational catastrophe necessitates critical acts from all sectors. Apart from maintaining or improving the students' outcomes, the education system and policymakers are pressured continuously to reduce the cost of quality education. The present paper focuses on and guides policymakers and educational administrators in becoming informed consumers of online learning and its potential impact on academic productivity. To alleviate the possibly shocking consequences of the Pandemic, stakeholders and governments are invigorated to make some changes in the policy replies, such as the strategy for re-opening schools by suppressing the virus's transmission build robust education systems for unbiassed and justifiable development. Finally, the policymakers and the government must reimagine the education system and accelerate change in the teaching pattern and learning system.

Keywords: COVID-19, Education, Face-to-Face Learning, Digital Learning, Online Learning, Pandemic.

IMPROVE THE EFFICACY AGAINST GRAM NEGATIVE CLINICAL PATHOGENS

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Abstract

Aim: The major aim of this study is the characterization of tea tree oil using DLS and to improveits efficacy against gram negative bacteria. **Materials and methods:** Tea tree oilnanoemulsionpreparation was done by the standard protocol. Tea tree oil nanoemulsion (N=21) and controlantibiotics (Gentamicin) and zone of inhibition was observed for the well and disc diffusion asper the procedure. Characterization of tea tree oil nanoemulsion using DLS and SEM for dropletsize and particle size distribution. **Results:** Independent sample T test was done which revealed that nano formulated tea tree oil showed comparatively good results against *E.coli* with respectto the control antibiotics. The zone of inhibition in well diffusion was found to be 15 ±2mm forTT oil nanoemulsion and 15mm for essential tea tree oil respectively (P>0.005). Average particlesize distribution was achieved at 81 nm and with average particle size of tea tree oilnanoemulsion was 169 nm. Scanning electron microscopic image of tea tree oil nanoemulsionwith average droplet size of 92±2nm. **Conclusion:** Nano formulated tea tree oil showed betterresults for droplet size and particle size and good zone of inhibition.

Keywords: Novel nano formulation, Antibacterial activity, Characterization, DLS, SEMNanotechnology

MORPHOLOGICAL CHARACTERISATION OF COMBINED CASTOR AND GINGELLY OIL NANOEMULSIONSUSING DLS, SEM AND FTIR FOR IN VITRO TOXICOLOGICAL STUDIES

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Abstract

Aim: castor and gingelly oil are combinedly nanoformulated, characterised to observe it's toxicological effects. Materials and methods: Morphological characterisation of the nanoemulsion was done to check their properties and stability by using DLS, SEM and FTIR techniques. In vitro toxicology studies had been carried out in Zebrafish for 5 days under ideal conditions. Clincalc.com was used to calculate the number of samples per group (N=21). The tested nanoformulation is then compared with non-formulated oil for checking the effectiveness of the nanoformulated oil. Results: The results of DLS, SEM and FTIR provided the size of the particle, morphological features of the nanodroplets and their functional groups respectively.Achieved 100 percent size distribution with average particle size of 166nm. Nanoformulated essential oil with mean diameter of 122 ± 2nm. FTIR results showed functional groups present in the nanoformulation. The prepared sample is then tested for its toxic effects in Zebrafish. 70% survival in the test group and 30% survival in the control group were observed by in vitro toxicology study. The SPSS tool was used to get the significance ($P<0.001$). Conclusion: Toxicological effects in nanoformulated oil appear to have less toxicity than the non formulated oil.

Keywords: Novel nanoformulation, Toxicity, Characterisation, Zebrafish, Nanotechnology.

AN EFFECTUAL UNDERWATER IMAGE ENHANCEMENT USING DEEP LEARNING ALGORITHM COMPARING THE ACCURACY WITH K-NN CLASSIFIER

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Abstract

Aim - This work presents a comparative analysis of an effectual underwater image enhancement using two different algorithms to detect and recognise the blur images with high accuracy. Materials and Methods - Deep learning algorithms and K-NN classifiers are implemented to recognize the subset deep blue images with 40 samples calculated using clincalc with alpha value 0.05 and pretest power 80 %. Results - From the MATLAB simulation results, deep learning achieves recognition rate with 96 % accuracy and KNN achieves 85 % accuracy, attaining a significant accuracy ratio ($p=0.001$) in statistical analysis. Conclusion - For the given dataset, Deep learning algorithms provide better accuracy compared to KNN classifiers.

Keywords: Underwater Image enhancement, Deep learning, KNN Classifier, Radicalclassification, Novel feature extraction.

PARTICLE SWARM OPTIMIZATION AND COMPARE WITH PARTICLE SWARM OPTIMIZATION ALGORITHM USING MATLAB.

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Abstract

Aim: The research work is to perform tongue-based leukemia detection analysis with twodifferent algorithms to identify the tumor cell from leukemia tongue images with high accuracyand high clarity image. Materials and Methods:To determine the accuracy between the twooptimization algorithms, simulation was performed using MATLAB software. In accordancewith this, two sample groups were selected. the study group, which included a Discrete ParticleSwarm Optimization (N = 10), and the control group, which included a Particle SwarmOptimization (N = 10). The independent sample T test was used to determine the accuracy between the two algorithms. Result: Finally, the MATLAB simulation result shows that DPSOachieves a high accuracy rate with (93%) over PSO (79%). Attained significant accuracy rate (p= 0.268) in SPSS statistical analysis. Conclusion: From this study leukemia tongue images ofDPSO have higher accuracy than the PSO algorithm.

Keywords: Novel Discrete Particle Swarm Optimization, Particle Swarm Optimization,Leukemia, Image Processing, Accuracy, Artificial Intelligent

ENHANCEMENT ON IZOD IMPACT STRENGTH OF BFRP EPOXY COMPOSITE ADDITION NOVEL MWCNT PARTICLES BY HAND LAYUP METHOD

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Abstract

Aim: This study aims to enhance and evaluate Izod the impact strength of basalt fiber epoxycomposite (BFRP) by the addition of multi-wall carbon nanotube filler and respectivelycompared with the plain BFRP epoxy composite. **Materials and Methods:** The Plain basaltfiber epoxy composite was taken as a control group (N=20) and the basalt fiber epoxy compositewith a 4% volume fraction of multiwall carbon nanotube fillers was taken as an experimentalgroup (N=20). The BFRP Composite laminates were fabricated using the hand lay-up methodand Izod impact testing was performed as per the ASTM D256 standard. **Results:** The resultsdemonstrated that better impact strength was achieved in BFRP epoxy composite with 4%volume fraction of multiwall carbon nanotubes than the plain BFRP epoxy composite due to the ,uniform distribution of impact load. From the SPSS analysis, a significant difference of 0.04($p<0.05$) between BFRP with plain and NC filler composite was found. **Conclusion:** Within thisstudy's limits, the BFRP epoxy composite with a 4% volume fraction of multi-wall carbonnanotube filler exhibited significant improvement in Izod impact strength.

Keywords: Impact Strength, Novel MWCNT, Basalt, Epoxy, Hardener, Composites, Flexural,Stiffness, Static Fracture, Dynamic fracture, Hand layup technique.

COMPARISON OF ROUNDNESS IN DRILLING OF SIP WALL REINFORCED BY USING ALUMINUM SHEETS IN COMPARISON WITH PLAIN EXPANDED POLYSTYRENE (EPS) FOAM

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Abstract

Aim: The objective of this study is to evaluate the roundness error during the drilling of thepolystyrene foam-based SIP panel reinforced with aluminum sheets and glass fiber incomparison with plain polystyrene foam. Material and Methods: The main objective of thisstudy is to fabricate an innovative SIP material i.e. structural insulated panel using plainpolystyrene foam reinforced with glass fiber and aluminum sheets. In this study, the entire workis separated into two groups, namely the control group and the experimental group. The plainpolystyrene foam is taken as the control group and the aluminum sheets with glass fiberreinforced with polystyrene foam are taken as the experimental group. This work consists of 20samples as the experimental group and 20 samples as the control group hence it consists of atotal sample of 40. The drilling operation is done employing a CNC drilling machine. Thestatistical analysis is carried out employing SPSS software of version 21 is being used. Results:It is observed that the overall damage that is caused to the aluminum reinforced structuralinsulated panel as a result of drilling operation is comparatively less than the plain polystyrenefoam almost 60% better than the plain polystyrene foam. Conclusion: Within the limits of thestudy aluminum reinforced SIP wall panel shows a significant improvement with minimalroundness error than plain polystyrene foam, hence these panels can be used as a replacement forroofing, door panel, and also for structural partition.

AN EXPERIMENTAL INVESTIGATION TO COMPARE THE IMPACT STRENGTH OF A NOVEL SNAKE GRASS FIBER/AQUILARIA AGALLOCHA FILLER REINFORCED EPOXY COMPOSITE WITH SNAKE GRASS FIBER REINFORCED EPOXY COMPOSITE

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ABSTRACT

Aim: To study the impact strength of Snake grass fiber / aquilaria agallocha filler reinforcedepoxy composite and compare with Snake grass fiber reinforced epoxy composite. Materialsand Methods: Snake grass fibre and a novel aquilaria agallocha filler with 20% , 30% volumefraction epoxy composite formed as an experimental group (N=40). Snake grass fiber epoxycomposite with no addition of fillers was taken as a control group (N=20). Hand lay-up methodwas used to fabricate composite samples. Results: Impact testing was done for 20% and 30%volume fraction novel aquilaria agallocha filler epoxy composite and composite with no filler.The maximum impact strength of Snake grass fiber reinforced epoxy composite was observedas 2.30 J/mm and for 20% , 30 % volume fraction of filler reinforced composite as 2.80 J/mm,2.90 J/mm with statistically significant values ($p=0.000$; $p<0.05$). Conclusion: Within thelimitations of this study, Snake grass fibre with 30% volume fraction of aquilaria agallocha novelfiller composite exhibited slight improvement in impact strength than that of 20% volumefraction of filler reinforced composite and Snake grass fiber epoxy composite.

ANALYSIS OF PATIENT HEALTH CARE UNIT USING ARDUINO AND COMPARING WITH CONVENTIONAL SYSTEM BY MITIGATION OF RISK FACTOR OF PULSE DROP

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Abstract

Aim: In this paper, our aim is to reduce sensors and measure pulse and temperature to monitorin rapid speed. Materials and methods: A total of 25 samples are collected from one person byusing Sensors. These samples are divided into training dataset (n=70%) and testdataset(n=30%).Time period values are calculated to quantify the performance of the Arduinobased system. Result: By using Arduino to monitor specific functions like pulse andtemperature in 30 sec i.e quicker than previous conventional system which takes at least 1minute. Conclusion: Arduino uno reduces measuring time by reducing more number of sensorswhen compared with conventional systems which have more sensors that take more time tomonitor.

Keywords: Monitoring, Pulse Rate Measurement, Novel Health Monitoring System, BodyTemperature, Arduino uno,Bio Signal Processing.

COMPARISON OF HSS AND TICN COATED WC TOOL IN CNC GREEN MACHINING OF NOVEL MATERIAL AA7022 WITH TIC REINFORCEMENT COMPOSITE TO IMPROVE MATERIAL REMOVAL RATE

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Abstract

Aim:The aim of this study is to improve the material removal rate in Novel Aluminium alloy7022 with TiC reinforced Composite and compare HSS and TiCN coated WC tools, the tools which are used in machining of the composite.Material and Methods:Fabrication of aluminium alloy 7022 with TiC reinforcement, the composite is machined under CNC machine with HSS and TiAlN coated WC tool. The composite is cut into samples of dimensions of 50x50x8 mm, and machining is carried out in 2 groups with 16 samples in each group, 32 in total and the pretest power is 80%. The composite is machined under various parameters: speed, feed and depth of cut in CNC machine for different samples for green manufacturing (dry machining). The machining is carried out with the two tools HSS and TiCN coated WC tool to obtain improved MRR of the composite. Result: From the independent samples t-test results the most productive tool is determined, TiCN coated WC tool gives increased MRR. From the independent T-test, the significance value between groups is $p<0.05$. Conclusion: Within thelimitation of this study, the composites machined under TiCN coated WC tool escalates thematerial removal rate when compared to conventional HSS tool.

Keywords: Light Weight Material, Novel Material, Aluminium alloy 7022, Titanium Carbide,Material removal rate, High Speed Steel, TiCN coated WC tool, CNC, Green machining, GreenManufacturing.

IMPROVEMENT OF IMPACT STRENGTH OF KEVLAR FIBER LAMINATECOMPOSITE BY ADDING CARBON NANOTUBES FILLER - A NOVEL TECHNIQUE

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Abstract

Aim: The main objective of this study is to increase the impact strength of the kevlar fibers with filler in addition to epoxy and hardener composites in comparison with kevlar fibers without fillers. Materials and Methods: The present is based on evaluation of impact strength for kevlar fiber with 3% volume fraction of Carbon nanotubes as filler (N=20) and Kevlar Fiber without filler(N=20). Kevlar fiber is reinforcement material, Epoxy LY556 and hardener EY951 are matrix materials. Results and Discussion: The impact strength of kevlar fiber with 3% volume fraction of carbon nanotubes as filler appears to be improved. There is a statistical significant difference of ($p<0.05$) between fiber with and without filler. Conclusion: Within the limits of this project Kevlar fiber reinforced composite with Carbon nanotubes of 3% volumefraction appears to exhibit high impact strength when compared with plain kevlar fibercomposite without filler it appears to be improved significantly.

Keywords: Kevlar fiber, Carbon nanotubes, Epoxy, Hardener, Novel Hot air oven chamber,impact Strength.

CLASSIFICATION AND INNOVATIVE DETECTION OF BONE TUMOR USING SUPPORT VECTOR MACHINE CLASSIFIER AND COMPARISON WITH ARTIFICIAL NEURAL NETWORK CLASSIFIER

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Abstract

Aim: Machine learning algorithms are widely used in medical analysis due to its great results indetection and prediction of disease. The main aim of this work is to detect the bone tumor in thehuman body and to evaluate the performance of SVM classifier in identification of bone tumorby comparing it with ANN classifier. Materials and Methods: Support Vector Machine (SVM)and Artificial Neural Network (ANN) classifiers are implemented to recognise bone MR imagedataset with 20 samples. Results: From the MATLAB simulation result, SVM achievesrecognition rate with 95.77% and ANN achieves recognition rate with 93% and also attainedsignificance ratio (<0.05) in statistical analysis. Conclusion: In this study it is found that theSVM algorithm performed better than the ANN algorithm in bone tumor detection of the datasetsconsidered.

Keywords: Innovative Detection of Bone Tumor, Support Vector Machine classifier, ArtificialNeural Network Classifier, Machine learning algorithm.

AN EFFECTUAL BLOOD VESSEL SEGMENTATION AND CLASSIFICATION OF DIABETIC RETINOPATHY USING GAUSSIAN MIXTURE MODEL IN COMPARISON WITH ACCURACY OF SVM CLASSIFIER.

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Abstract

Aim- The aim of this work is to find an efficient hybrid method for blood vessel radicalsegmentation and novel classification of diabetic retinopathy in noise images. **Materials &Methods**- Gaussian Mixture Model (GMM) algorithm and Support Vector Machine (SVM)classifier are implemented to segment and classify the blood vessels of diabetic retinopathy innoise images dataset with 40 samples (20 samples per each group) and samples obtained usingclinclac analysis with G power 80%. **Result-** From the MATLAB simulation results and SPSSstatistical analysis, GMM classified the image with higher accuracy compared SVM classifiersattained significance accuracy ($p<0.05$). **Conclusion**- GMM algorithm provides higher accuracycompared to SVM classifier in segmentation and classification.

Keywords: Machine learning, Novel classification, Radical Segmentation, GMM, SVM

SOCIAL MEDIA AS A WATCHDOG TO MONITOR GOOD GOVERNANCE OF BUSINESSES

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Abstract

Good governance refers to the process used by an organisation to produce a result and meetsociety's needs. It is based on the idea of effective utilisation of resources and the concept ofhigher efficiency. It also includes the sustainable use of resources and environmental protection.Social media has become an essential tool that acts as a watchdog and gathers information fromvarious business organisations to provide necessary information to the public. It is generallyobserved that millions of people use social media to gain knowledge and present their points ofview. In such situations, social media acts as a watchdog where every individual can put therequired information about an organisation to be made aware. It has been observed that aperson that finds a negative point or a drawback about business operations tends to post it onsocial media as a threat to make improvements.

Keywords: Good Governance of Business, Social Media, Watchdog, Social Media and Business.

AN ENHANCED ROAD TRAFFIC MANAGEMENT SYSTEM FOR MAXIMIZING THE NETWORK COVERAGE AREA IN VANET USING EFFICIENT VELOCITY BASED CLUSTER HEAD AND GATEWAY IN ICPB COMPARISON WITH CPB PROTOCOL

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Abstract

Aim: The aim of study is to maximize network coverage area in vehicular ad-hoc networks (VANETs) for information broadcast by using Improved Cluster-based ProbabilisticBroadcasting (ICPB) and compared with Cluster-based Probabilistic Broadcasting (CPB)Materials and Methods: In this research Cluster-based routing in VANET is proposed tomaximize the network coverage area of VANET by cluster-based routing scheme.The samplesize of each group is 20 (n=20) are collected by varying number of rounds and vehicle densityper km and time and it was calculated by calculator.net with pre-test power of 80% of the pretestpower (g-power). Results: Simulation results shows that ICPB protocol has performedbetter than CPB protocol in terms of decreased transmission delay by 8.34% decreased networkcongestion by 2.73% and increased information coverage area 4.4% increased throughput3.1%,increased packet delivery ratio 5.5% respectively.The sample T- test shows that ICPBprotocol is statistically insignificant ($p>0.05$) in terms of packet delivery ratio,Network coveragearea delay, throughput, Network congestion Conclusion: Depending on the experimental resultsand independent statistical T-test shows that proposed ICPB protocol has achieved higherperformance when compared to CPB protocol

Keywords: VANET, Broadcast storm, 802 IIP ,Cluster, Gateway, routing, cluster head, NovelNode velocity.

COMBINED FORMULATION OF EFFECTIVE ANTIBACTERIALS EXTRACTED FROM CAULERPA SPECIES USING CHLOROFORM AND PETROLEUM ETHER AGAINST MULTIDRUG-RESISTANT CLINICAL ISOLATES BY CELL VIABILITY ASSAYS

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Abstract

Aim: This study estimates the antibacterial activity of chloroform, petroleum ether extracts of green seaweed *Caulerpa racemosa* and to evaluate cell viability assay by combining both extracts of seaweed (*C.racemosa*). Materials and methods: The seaweed has been collected and it was subjected for filter extraction using chloroform and petroleum ether solvents (N=15). Antibacterial activities were assessed and cell viability assay was performed against multidrug resistance clinical isolates. Results: The combined extract of seaweed (*C.racemosa*) showed a higher amount of antibacterial activity against *Pseudomonas aeruginosa* and zone of inhibition was found to be (13.375➖}1.2 mm) in well diffusion ($P<0.005$). Conclusion:Antibacterialactivities of seaweed (*C.racemosa*) using different solvents was determined and its cell viabilityassay was also studied.

Keywords: Novel compound detection, Antibacterial activity, cell viability assay, multidrugresistance, Nanotechnology.

COMPARATIVE ASSESSMENT OF LEMON OIL AND ALOE VERA INGREDIENTS AND ITS ANTIMICROBIAL EFFICACY AGAINST THE STREPTOCOCCUS AND PSEUDOMONAS PATHOGENS

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Abstract

Aim: The major aim of this study is to compare the antimicrobial efficacy of nanoformulated lemon oil and aloe vera against the streptococcus and pseudomonas pathogens. Materialsand Methods: Lemon oil and aloe vera nanoemulsion (N=12) was prepared according to the standard protocol. Zone of inhibition was observed with disc diffusion. Nanoformulated lemon oil and aloe vera were tested and antibiotics kept as control (Ciproplaxin). In Vitro efficacy of lemon oil and aloe vera nanoemulsion was performed. Results: Independent sample T test was done for nanoformulated lemon oil and aloe vera showed comparatively significant results against the streptococcus and pseudomonas pathogens. Zone of inhibition was observed by well and disc diffusion. Nanoformulated lemon oil and aloe vera appears to have the MIC of 30µl and attained significance was($p<0.05$). Conclusion: Nanoformulated lemon oil and aloe vera appear to have significant zone of inhibition against *Streptococcus*and*Pseudomonas* pathogens.

IDENTIFICATION OF BIOACTIVE COMPOUNDS FROM BLACK PEPPER AND TURMERIC EXTRACTS AND THEIR ANTIOXIDANT, ANTIBACTERIAL ACTIVITY STRUCTURAL CONFIRMATION BY GC-MS AND FTIR FOR FEED FORMULATION

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Abstract

Aim: In this research the study evaluates the identification of bioactive compounds, antioxidant and antimicrobial activities of black pepper and turmeric extract for structural confirmation by GC-MS and FT-IR. Material and methods: Black pepper and turmeric were purchased from the local market and dried then pulverized into fine powder. The antioxidant activities were assessed by standard protocol and zone of inhibition was observed for well and disc diffusion against E.coli as per the procedure. Identification of bioactive compounds are confirmed by GC-MS and FT-R. Result: Independent sample T test was done which revealed that the nanoformulated blackpepper and turmeric extract appeared to have higher amount of flavonoids (158.5±10.5) mgGAE/g, polyphenols (93.67±6.07) mgGAE/g. ($P<0.005$). The nanoformulated extract showed comparatively good results against E.coli with respect to control antibiotics. The nanoformulated extract showed the effective antibacterial and found to be the highest zone of inhibition of 12±1mm for ethanol based extract and 14±1mm for antibiotic respectively. Conclusion: Antioxidant activities and antibacterial activity of nanoformulated blackpepper and turmeric extract was determined.and presence of bioactive compounds was analysed and confirmed byGC-MS and FT-IR.

DETECTION OF DEMENTIA DISEASE USING ARTIFICIAL NEURAL NETWORK CLASSIFIER AND COMPARING WITH DECISION TREE CLASSIFIER

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Abstract

Aim: Machine learning algorithms are widely used in medical analysis due to its great results in detection and prediction of disease. The main aim of this work is to detect dementia and to evaluate the performance of ANN classifiers in detection of dementia by comparing it with D TREE classifier. This work presents a comparative analysis of Dementia using ANN classifiers to detect dementia with high accuracy and in less run time. Materials and methods: Artificial neural network (ANN) and D TREE classifiers are implemented to detect dementia using 40 MRI brain data sets. Results :From the MATLAB simulation result, the ANN classifier achieves accuracy and detection rate of 92.2 % and D TREE achieves detection rate with 74.73% accuracy. Attained significant accuracy ratio (<0.005) in statistical analysis. Conclusion: In this study it is found that the ANN algorithm performed better than the D TREE algorithm in dementia detection of the data sets considered.

Keywords: Artificial Neural network, Decision tree classifier, Innovative Dementia Detectionmethods, Machine Learning.

ANALYSIS AND EVALUATION OF PROBIOTIC (BIFIDOBACTERIUM) BASED FEED SUPPLEMENTS TO IMPROVE THE GROWTH AND IMMUNE RELATED RESPONSES OF COMMON CARP

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Abstract

Aim: The common carp is fed with encapsulated feed to improve the immunological parameter and growth parameter. It is used to develop disease resistance. Materials and Methods: The study uses encapsulated feed and the immunological parameter is tested against commercial feed. The growth kinetics are evaluated against bacteria. Sample size calculation was done by clinicalc.com. The sample size was (N=44 per group). Results: The immunological parameter Haemoglobin and Lysozyme is analysed by paired sample T test and it appears to be significant (P<0.001). The Haematocrit is tested in an independent sample T test and it is found to be significant (P<0.001). The CFU tested without probiotics shows partial significance in (dil_10). The growth kinetics analysis of bacteria were determined with decrease in the increasing concentration. Conclusion: The encapsulated feed was better than the commercial feed. The feedis effective to develop disease resistance and improve immunological parameters.

Keywords: Common carp; Disease resistance; Bifidobacterium; Immunological parameter;Novel feed formulation; Growth parameter; Aquaculture; Nanotechnology

TENTATIVE FUNCTION PREDICTION OF PUTATIVE GENES IN THE WHOLE GENOME OF SOLVENTOGENIC CLOSTRIDIUM PERFRINGENS ATCC13124 FOR THE BETTER ELUCIDATION OF CELLULAR METABOLISM

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Abstract

Aim: This study involves the prediction of the function and structure of the putative genes in the genome of *Clostridium perfringens* for the better elucidation of cellular metabolism. Materialsand Methods: One bacterial strain was used in this study. About 50 hypothetical genes were retrieved from the whole-genome of *C. perfringens*. KEGG, Pfam, UniProt, InterPro, ScanProsite, SMART, ProtParam, SignalP 4.0, TargetP 2.0, NCBI blast, HHpred, CPH modelling, PSIpred were the bioinformatic tools used in this study. Results: Out of 50 hypothetical genes, 5 genes were predicted. The function was analysed for *CPE0027*, *CPE0040*,*CPE0055*, *CPE0116*,*and CPE0140* and they showed e value of 2.5e-38, 0.026, 2.2e-22, 1.3e-7and 3.3e-29 Conclusion: Based on the bioinformatics online tools tentative function and structure for *CPE0027, CPE0040, CPE0055, CPE0116,* and *CPE0140* were predicted. The functions were found to be similar to DNA binding protein, protein involved in DNA replication, protein involved in gene regulation and cell cycle, and hydrolase enzyme respectively. The prediction for the gene *CPE0140* by HHpred and CPH modeller showed similarity to hydrolase protein from gram-positive bacteria.

TENTATIVE FUNCTION AND STRUCTURE PREDICTION OF PUTATIVE GENES IN THE WHOLE GENOME OF LIGNINOLYTIC BREVIBACILLUS FORMOSUS DSM9885 FOR THE BETTER ELUCIDATION OF CELLULAR METABOLISM.

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Abstract:

Aim: This study involves the prediction of the structure and function of putative genes in the genome of pathogenic and ligninolytic bacteria *Brevibacillus formosus,* for the better elucidation of its cellular metabolism. Materials and Methods: A total number of 50 hypothetical genes were collected from the genome of the bacteria *B. formosus*. Bioinformatics online tools were used in this study to analyze the protein sequences and domains. The tools used include KEGG, PDB, SMART, Scan Prosite, InterPro, ProtParam, NCBI-BLAST, HHpred, CPH(Copenhagen)modeling, and PSIpred. Results: Out of 50 hypothetical genes 2 genes were predicted. The function was analyzed for *BP422_00430* and *BP422_02395* and they showed E-values of 6e-7 and 1.6e-11 respectively. Conclusion: Based on the bioinformatics online tools, tentative function and structure were predicted for *BP422_00430*and*BP422_02395* and the functions were found to be isomerase protein and hydrolase protein respectively.The validation was done for the gene *BP422_02395* which showed similarity to protein phosphate inEscherichia virus Lambda (bacteria) which was predicted by CPH and HHpred results showed similarityto phosphatase domain of *C. thermocellum* (Bacteria).

IMPACT OF AN UNANTICIPATED SHIFT FROM CONVENTIONAL LEARNING SYSTEM INTO THE E-LEARNING SYSTEM UPON STAKEHOLDERS IN EDUCATION AND LEARNING PRACTICES CAUSED BY COVID-19 PANDEMIC

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Abstract

Governments and stakeholders are working together to eliminate and mitigate the enormousand tremendous outcomes of the COVID-19 Pandemic. Most schools in states, cities anddistricts need to improve their productivity to focus on students' studies, learning, andtraining sessions. Thus, preventing the learning disaster from converting a generationalcatastrophe necessitates critical acts from all sectors. Apart from maintaining or improvingthe students' outcomes, the education system and policymakers are pressured continuously toreduce the cost of quality education. The present paper focuses on and guides policymakersand educational administrators in becoming informed consumers of online learning and itspotential impact on academic productivity. To alleviate the possibly shocking consequences ofthe Pandemic, stakeholders and governments are invigorated to make some changes in thepolicy replies, such as the strategy for re-opening schools by suppressing the virus'stransmission build robust education systems for unbiassed and justifiable development.Finally, the policymakers and the government must reimagine the education system andchange in the teaching pattern and learning system.

Keywords: COVID-19, Education, Face-to-Face Learning, Digital Learning, OnlineLearning, Pandemic.

SOCIAL MEDIA AS A WATCHDOG TO MONITOR GOOD GOVERNANCE OF BUSINESSES

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Abstract

Good governance refers to the process used by an organisation to produce a result and meetsociety's needs. It is based on the idea of effective utilisation of resources and the concept ofhigher efficiency. It also includes the sustainable use of resources and environmental protection.Social media has become an essential tool that acts as a watchdog and gathers information fromvarious business organisations to provide necessary information to the public. It is generallyobserved that millions of people use social media to gain knowledge and present their points ofview. In such situations, social media acts as a watchdog where every individual can put therequired information about an organisation to be made aware. It has been observed that aperson that finds a negative point or a drawback about business operations tends to post it onsocial media as a threat to make improvements.

Keywords: Good Governance of Business, Social Media, Watchdog, Social Media and Business.

INVESTIGATION OFPHOTOVOLTAIC PROPERTIESOF ORGANIC PEROVSKITE SOLAR CELL (OPSCS) USING PBI2/CH3NH3I/TIO2:FTO

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Abstract

In this work we extend our previous work on that type material and already reported. The photoelectric behavior of perovskite $CH_3NH_3PbI_3$-x doped with Cl_x layers developed on TiO_2:FTO using the spin-coating method. Perovskite parameters of the unit cell are calculated by XRD. The developed layer's morphology is shown the irregularity and porosity. In this work the to discover the behavior of developed perovskite layer on TiO_2:FTO and spectral analysis of this. Therefore, the analytic studies of this substance are having a bandgap ~ 1.60 eV and this is shown the order of perfect absorption coefficient and bandgap in the range of 400 nm thin layers. This thin layer help to develop solar material and its devices make highly efficient solar panel.

Keywords: Perovskite Solar Cells (PSCs), Thin layer, Methylammonium Halide, Lead Halide.

A STUDY ON EFFECTS OF GST ON FARMERS AND AGRICULTURAL SECTOR: AN EMPIRICAL ANALYSIS IN INDIA

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ABSTRACT

After years of discussion, debate and arguments GST finally got implemented in India. GST is a tax collected on manufacture, sales and consumption of goods and services at a National level. Implementation of GST impacted every sector of the Indian Economy, especially the agricultural sector and the people whose livelihood are dependent of the sector. Agricultural sector holds approximately 16% of the total GDP of India and around 60% of population is employed by the Agricultural sector.Agri inputs are most important for agriculture and their supply on time is very important for increasing crop productivity. These includes products like pesticides, fertilizers etc. The change in tax regime has resulted in changes in price structure of products used in agriculture, inputs, imports and exports and manufacturer and dealer margin. It has relieved farmers to some extent but also put them into mild pressure which we will see.

KEYWORDS: Tax, Indirect tax, Goods and Service Tax, GST, Farmers and Agricultural Sector.

DEVELOPING A FRAMEWORK FOR ROUGH GRAPHS

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Abstract

Literature review is one of the essential steps in research process which will conceptualize our research progress both quantitative and qualitative way. This paper illustrates the survey about the concepts of Rough sets in the domain of Graphs. Rough set Theory and Graph theory are two major disciplines in computational mathematics. This paper exhibits the exposition to unification process of these two major theories and existing as well as ongoingworks in these domains are well explained.

DEEP LEARNING INTEGRATION TO INJECT INTELLIGENCE IN NETWORK ROUTING MECHANISM

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Abstract

While traditional machine learning algorithms are linear, deep learning algorithms are stacked in a hierarchy of increasing complexity and abstraction. Intelligent Routing (or Skills-based Routing), is a technology contact centers use to gather customer inquiries through voice, digital, or social channels, and then applies rules to route it to the agent best fit to resolve the issue. Research aims to inject intelligence in network routing mechanism using deep learning. Research work is working on routing mechanism to reduce the problems of previous researches. Proposed work increases the speed of routing, and less time consumption.Proposed work is based on deep learning technology for intelligent routing mechanism. The weight of a node route is determined in the first phase by taking into account these parameters. Rewards and penalties are assigned to each node based on its route once it has successfully sent data.Six scenarios and ten associated nodes were used in the route selection simulation. Nodes 1, 2, 3, 4, and 5 form a network in this architecture. This opportunistic network has nodes 6, 7, 8, 9, and 10.Black and blue nodes in the opportunistic network are shown in simulations, respectively. Using the node route table, a node's connectivity is discovered.The system has become sophisticated enough to make decisions thanks to the usage of neural fuzzy logic. The optimization approaches choose the shortest route to pick a network for a real-world application while taking into account the best solution. The sensing mechanism, as well as animal and crop scouting mechanisms have all been examined in this study. The information would be sent in the form of analogue signals via the various sensor nodes that are linked to the Neuro fuzzy controller.

COLORING OF SPECIAL TYPES OF HYPERGRAPHS

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Abstract

The concept of matching and coloring are the main problems in Combinatorics. Coloring of graphs and hypergraphs are well studied problems. In many cases, bipartite graphs provide simple solutions to graph problems than non bipartite graphs. In this paper we study about colorings in special types of hypergraphs.

Key words: Hypergraph, partially ordered hypergraph, totally ordered hypergraph, Interval hypergraph

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IMPACT OF ARTIFICIAL INTELLIGENCE ON EMPLOYEES PERFORMANCE IN INFORMATION TECHNOLOGY SECTOR

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Abstract

The focus of research is to propose smart approach to evaluate the performance of employees in IT sector. The research made use of artificial intelligence in order to fulfill the objectives. The different attributes that are influencing performance of employees are technical skill, salary, training, working environment, supervision, time schedule. A survey has been conducted where the ranking has been made considering votes of different employees in IT Company. Their person views are obtained considering influencing factors. The data set has been filtered using optimization mechanism and machine learning mechanism has been applied to train the network in order to predict the employee performance considering influencing factors. However there have been several existing researches but those research works have considered limited influencing factor. Moreover there is lack of machine learning approach that could provide suitable solution to build a mechanism that would be capable to design smart model considering influencing factors.

Keywords: IT sector, training, Artificial intelligence, Machine learning, Accuracy, Optimization.

MACHINE LEARNING APPROACH TO ENHANCE PERFORMANCE OF SUSPICIOUS ACTIVITY DETECTION SYSTEM

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Abstract

Deep learning algorithms are a subset of the machine learning algorithms, which aim at finding several layers of distributed representations. Recently, many deep learning methods have been suggested to tackle conventional artificial intelligence issues. Machine learning is an important component of artificial intelligence, which is used to build algorithms based on the data trends and historical connections between data. Machine learning is utilized in many areas such as bioinformatics, intrusion detection, Information retrieval, game playing, marketing, virus detection, picture de-convolution and so on. Image processing and deep learning methods are linked to machine learning system to identify the fire, unauthentic vehicle and person in this study. More over gadgets such as AC, LED and other electronic equipment have been controlled in suggested system. The suggested model is offering scalable machine learning based solution to control electrical equipment remotely gives protection against fire and un authentic person. The purpose of deep learning is to build intelligent trained network that should be competent to track fire and unauthentic items in organization. The aim of study is to consider research connected to machine learning, deep learning and image processing and analyzing the limits of earlier works. Proposed work includes linked machine learning model to collect the signal and forecast and detect on the basis of trained neural network. The presentation of prediction on web page linked to web interface has been created. Simulation guarantees the improvement of performance of model using user specified trained neural network and conducts the comparative analysis of performance. Capturing is made frame by frame in form of picture and captured information are preprocessed to minimize size of graphics then the pattern in frame is identified using deep learning method. Here pre-trained set is utilized to track recurrence of specific event. The combination of deep learning and machine learning is intended to offer effective and dependable security system for organization to avoid loss from fire and entrance of unauthorized people. Moreover the machine learning system is also controlling the status of devices via web interface.

Keywords: IOT, Deep Learning, Image Processing, MATLAB, PHP, Machine Learning.

SECURITY ENHANCEMENT OF BIG DATA IN CLOUD APPLICATION USING BLOCK-CHAIN

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Abstract

Organizations are inundated on a daily basis with vast, difficult-to-manage volumes of structured and unstructured data, which is known as "big data." Analysis of large amounts of data may provide useful information that can be used to improve decision-making and boost employee morale. This kind of data storage makes it almost hard to change, hack, or otherwise deceive. Every computer in a block-chain network has a copy of the block-transaction chain's log, which is called a "block-chain." In previous researches it has been observed that security of big data is a major issue. Block chain has been found suitable mechanism to deal with such issues. Block-chain has also been considered a service in the context of cloud computing, termed Block-chain as a Service (BaaS). By using virtual storage nodes, block-chain technology may create whole new cloud storage services that are very resistant to data tampering.The proposed research has focused on the enhancement of security of big data from SQL injection attack that is transferred over cloud application. Research is making use of block chain technology in order to resolve the issue of security. The major objective of research is to propose block chain based security model for big data that should be more secure and efficient in case of SQL injection attack. Research work has proposed modified algorithm enhances the security of big data in cloud application against SQL injection, cross script.

Keywords: Big data, Security issues, Cloud application, Block chain, BaaS, SQL injection, Man in middle, Cross script.

SEVERITY DIAGNOSIS OF DIABETIC RETINOPATHY USING TRANSFER LEARNING WITH GOOGLENET CONVOLUTION NEURAL NETWORK ARCHITECTURE

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Abstract

Diabetes, a widespread disease found in nearly everyone of the persons in working age group. Diabetes is a reason for cluster of disease. One such disease that affects the human vision is the Diabetic Retinopathy (DR). Current advancement in the medical science can only control it and cannot be cured. Screening the retina periodically for DR by ophthalmologists is difficult and costlier. Hence it has to be automatically detected at its earlier stage. Most researchers use deep learning as tool for earlier detection of DR. In this research paper, we used the modified GoogLeNet Convolution Neural Network architecture as a transfer learning technique. With publicly available kaggle dataset for our research, we achieved accuracy of 94%.

Keywords: Diabetic Retinopathy Detection; Transfer Learning; Modified GoogLeNet Architecture

VISION BASED OBSTACLE DETECTION SYSTEM FOR MICRO AERIAL VEHICLES

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Abstract

This paper proposes an integrated vision based obstacle detection algorithmbased on Background subtraction technique, optical flow, Grey Level Co-occurrence Matrix features, Color Histogram Features and Hu Moments for Micro Aerial vehicles (MAVs). Raspberry Pi 3 camera module is mounted on the MAV to acquire the image frames with obstacles. Obstacle detection algorithm is developed using Python programming language. In the feature extraction phase, Haralick Features, Color Histogram Features and Hu Moments Features were extracted from thetraining image frames. The extracted features are used to train the SVM classifier. In the testing phase, trained object recognition model is used to detect the object in the test image frame. Support vector machines with various kernels such as the linear kernel (LSVM), Gaussian kernel SVM (GSVM), Sigmoid kernel SVM (SSVM) and Polynomial kernel SVM (PSVM) have been employed. Experimental results demonstrate that the SVM with gaussian kernel-basedyields the highest accuracy for the classification of object class and non-object class from the testing images. Finally, dynamic obstacles are detected by using the Optical Flow Lukas Kanadetracking method

ACCURACY ENHANCEMENT DURING SUSPICIOUS OBJECT DETECTION USING MACHINE LEARNING IN IOT ENVIRONMENT

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Abstract

The term "Internet of Things" refers to gadgets that are primarily focused on communication and computing. IoT refers to the interconnection of physical things. Vehicles, structures, and electronics are examples of these things. It may also take into account the network that allows devices to communicate with one another. To collect the signal, researchers used an IoT model. On the other hand, prediction and detection were done using a trained neural network. Before performing a training operation, image processing allows for the capture and preparation of graphical information. On the basis of a trained neural network, the proposed work has an integrated IoT model to capture the signal (Fire, Humans, Vehicles, etc.) and forecast and detect it. This work enables prediction to be shown on a web page linked to a web interface. Previous studies have limitations in terms of time consumption and accuracy. It was discovered that a lot more work needed to be done on the performance and accuracy factors in order to make the IoT system more dependable. Furthermore, prior studies only provided restricted solutions. As a result, work that is capable of delivering excellent solutions is still required. By combining image processing and neural networks in an IoT system, the suggested study provides the optimum answer. The usage of neural networks has made the system smarter, while image processing has improved the system's performance. The usage of IoT, on the other hand, has made the system scalable and adaptable. The neural network's prediction and detection, with the help of image processing, may be shown on a distant site through a web interface. The suggested study is designed to offer a scalable, adaptable, and effective solution for detecting suspicious behaviours in organizations, such as the existence of a fire, an unauthentic vehicle or person, and so on. The suggested work is designed to make the most of limited resources while also performing operations more precisely and efficiently.

Keywords: IoT; Camera Surveillance; Deep Learning; Image processing

A DISTINCTIVE CROSS-CHAIN TRADING PLATFORM BASED ON BLOCK CHAIN TECHNOLOGY

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Abstract

Block chain is the one of the best secured distributed database design, a significant number of cryptocurrencies and financial trading markets using digital assets have also been introduced over time. Despite the fluctuation in the exchange rate, block chains and its cryptocurrencies have no remarkable change overall. They still follow the old-traditional trading mechanism, which exchanges between cryptocurrencies and at currencies. Although few projects are emerging to enlarge a block chain's trading usage, i.e., cross-chain liquidity, it still limits itself on swapping one type of crypto-coin with another type. Beyond supporting swapping coins, the block chain could be applied and extended to become a trade-payment network that connects multiple solitary block chain-based platforms. In this work, we propose a heuristic cross-chain trading system that leverages the block chain technology to build a fair and border-less trading network across multiple decentralized block chains by taking advantage of smart contracts and ERC-20 protocol.

AN EARLY CARDIOVASCULAR PREDICTION IOT FRAMEWORK USING MACHINE LEARNING CLASSIFICATION ALGORITHMS

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Abstract

Cardiovascular disease is a major cause of death universally, for all age groups. Detection and prevention of heart disease at an early stage can save many lives. Latest advances in online healthcare can be used for IoT and sensing applications. IoT devices and cloud computing techniques are used to manage the massive amount of data in healthcare sector. Nowadays, Machine Learning in healthcare is being widely used for data analysis and accurate predictions. It is being applied successfully in identification and diagnosis of diseases. Thus, in our research work we have used an IoT based framework for the early prediction of Cardiovascular Disease with the help of Machine Learning classification algorithms. In this research work, we propose to create an application that can predict the potential for heart disease, given basic symptoms such as age, gender, heart rate, ECG, chest pain, blood pressure, cholesterol, blood sugar. The method will use various models trained using machine learning algorithms such as the SVM (Support Vector Machine), the Naïve Bayes classifier and the Decision Tree. The accuracy of the method will be measured and distinguished in order to select the best model for estimating heart disease.

AN EFFICIENT PRIVACY PRESERVING MECHANISM FOR HEALTH CARE SYSTEM USING BLOCK CHAIN ANDINTERNET OF THINGS

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Abstract:

The healthcare system has key security and privacy requirements when considered like an enterprise, such as safeguarding patients' medical records from unwanted access, protected drug tracking, secure connection with transportation such as ambulances, and secure and smart e-health surveillance. With suitable security measures, block chain has brought novel concepts in security and safety of medical data, and it may reconcile the discrepancy among sharing data and confidentiality. We combine the strengths of both block chain and cloud computing in this research to provide a confidentiality method for block chain and IoT. This strategy incorporates IoT and delivers IoT services to block chain nodes; in the meantime, it gathers, examines, operates, and preserves in the identity validation for health information. interaction and addresses the inadequate computing capabilities of some block chain nodes in order to confirm data validity and feasibility. The proposed approach is efficient, as demonstrated by the simulation experiment. It can preserve and verify the integrity of medical data while also addressing issues such as high computer complexity, data exchange, and privacy protection.

Keywords: Block chain, Healthcare system, IoT, security, privacy and storage.

ANALYZING THE CULTURAL COMPATIBILITY ON ADOPTION OF ORGANIC FOOD PRODUCT IN VIRUDHUNAGAR DISTRICT

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Abstract

Organic food, a rapidly developing market in India, appears to be extremely adaptable in urban areas. In semi-urban and rural locations, the same is quite new. Cultural compatibility is a major factor in the market adoption of new products. In the dimensions of Individualism, uncertainty avoidance, Power distance, and Masculinity, nearly 18 indices have been developed. To assess the instruments' reliability, a reliability test, a KMO test, and a factor analysis were performed to find the components with the highest loading, which were then utilized to create a path model. AGFI, GFI, RMSEA, and CMIN are all within permissible limits. AVE and Composite reliability are also identified to validate the model. It interpret that the dimensions of power distance, uncertainty avoidance, individualism and masculinity has shown the significant relationship with the cultural compatibility on the adoption of organic food product in the Virudhunagar District.

Keywords: Power Distance, Uncertainty Avoidance, Masculinity, Individualism, Cultural Compatibility

INVESTIGATING THE IMPACT OF SOCIAL MEDIA AS A TOOL FOR E-LEARNING IN THE DIGITAL ERA

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Abstract

Digital Era has been considered as the era of latest IT technology where internet services are frequently used in order to provide e-learning solutions. It has been observed that modern digital era is influenced by frequent use of social-medias which is imparting information to users. In present scenario, it is evident that social media is playing massive role in imparting education. One can easily get the required information by applying simple commands. Social media such as Facebook, WhatsApp, Twitter, YouTube channel have been frequently used by students and professionals on regular bases. These platforms are acting as good tool for academic and professional learning also. The process of electronic learning has been accelerated by making use of such platforms. Present paper is investigating the impact of social media as tool for e-learning in digital era. Research has considered existing relevant research of e-learning along with challenges during usage of such system. The major issues of using social media as e-learning tool are lack of reliability and authenticity. Moreover due to open platform it becomes easy for people present their views on particular topic. But it becomes difficult to understand due to conflicting theories presented by professional of different fields.

TECHNIQUES FOR FORECASTING OVARIAN CANCER USING DEEP LEARNING NEURAL NETWORK

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Abstract

Women in eastern, western, middle and southern Africa, cervical cancer was the greatest cause of cancer-related death. The high occurrence of cervical cancer is due to a lack of understanding of social economic factors leads to failing in screening and preventive options.The current study focuses on numerous techniques for predicting cervical cancer. Existing approaches explored the severity of the diseases in various stages. The identification of cervical cancer and its cells classifications such as ordinary, precancerous, and malignant can be done through Pap smear test, and by visual assessment using acidic corrosive are the most well-known evaluating component for the cervical sore. However, the accuracy of the spotting and sectioning of the cervical region is critical, become success only by applying different techniques. Cervical cancers should be detected early in order to minimise the death rate due to this disease. Because of human error, the hand-operating screening technique results in high percentage of false-positive rate. Computer-aided diagnostic approaches based on deep learning have been widely developed to segment and categorise cervical cytology pictures automatically.

PSYCHOLOGICAL IMPLICATION AND IMPACT OF RACISM IN CHILDRENWITH REFERENCE TO THE INVINCIBLE SUMMER OF JUNIPER JONES

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Abstract

The research articlereconnoitersthe juvenilediscriminationin terms of racism in The Invincible Summer of Juniper Jones by Daven McQueen. Juvenile racism states the fierceness and subjugationconfronted by the marginalgroup of children by other clusters. The impact of juvenile dissociative attitude among the piers is materialized due to associative learning, where the minorities are deliberated with undesirablefootings right from their infantile. Consistently, youngstersacquaintadverseconfrontations with other clutch and constructiveconfrontations with theiridentifiableclutch. Daven McQueen emphases on the life of a biracial-child, Ethan, he frays a lot due to his complexion. Associative Learning and the behavioral psychology and its impact among the Whites lead to racism and it distressesBlack children's psycheimmeasurably. The study investigates the foiblephase of Ethan, has become the victim of two White kids Noah O'Neil and Samuel Hillraised by their parentson racial pride. The aim of the article is to reconnoiter how racism affects a toddler's mindset. The theory of social psychology and behavior psychology has been implied in relation to youngsters' mental health and racial disparity.

Keywords: Social Psychology, Behavior Psychology, Juvenile Racism, Dissociative Attitude Racial Disparity, Associative learning.

ENHANCEMENT OF DIFFUSER COOLING EFFICIENCY USING NANOFLUIDS

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Abstract

High altitude test facilities are established in Mahendragiri for testing upper stage rocket engines. Typical HAT facility consists of Vacuum system, diffuser system, cooling system and ejector system. Gaseous Nitrogen (GN2) is used as active gas for ejector system which is stored in high pressure cylinders. Ejector system is used in the HAT facility to maintain a vacuum inside the test chamber and reducing exhaust backflow into the test chamber. The performance of the ejectors depends on mass flow rate of primary fluid and the secondary fluid. If the exhaust mass from the rocket engine is higher, then it requires high amount of driving fluid (gaseous nitrogen) to maintain a vacuum inside the test chamber. If the exhaust mass from the rocket engine is reduced, then the requirement of driving fluid also be reduced. Cryogenic engine plume contains 98% of water molecules, which can be condensed to reduce the ejector load. In our project, exhaust mass from the engine is reduced by using the Nano fluid based cooling system. Exhaust mass temperature also be reduced from 450K to 380K to optimize the ejector performance.

SECURE SMART CITY DEVELOPMENT USING BLOCK CHAIN TECHNOLOGY

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Abstract

A Smart City is based on Information and Communication Technology which aims to improve the quality of life in urban areas by the managing the natural resources and utilities in an efficient way. The main objectives of smart city include sustainability, energy efficiency, and a green environment. To make the smart city concept a reality, some major challenges such as air quality, energy efficiency, urban mobility, safety and security have been identified.However,data privacy and securityare one of the majorresearch challenges faced by the smart city. Smart city is constructed based on the concept of Internet of Things (IoT) that includes wide range of sensors and actuators. As smart city is implemented over the Internet, cyber-attacks are possible. Blockchain, a distributed ledger provides an advancedviewpoint on how smart cities can be organized and a more transparent economic model for resource management. This study analyses how blockchain technology-based security services can contribute to the development of smart cities and proposes a Secure Smart City based on Self-Sovereign Identity (SSI) authentication model.It also summaries the areas in which this technology can be used. The results can be a source for the development of secure smart city using the blockchain as a platform for communications and transactions in the public sector.

Keywords: Blockchain, Smart City, SSI, IoT.

DESIGN AND FABRICATION OF BOREWELL RESCUE ROBOT

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Abstract

Bore well accidents are common due to uncovered openings of bore well. It is very difficult and risky to rescue the trapped children. A small delay in the rescue can cost the child his or her life. Lifting the child out of the narrow hole of the bore well is not easy. The child who has suffered the trauma of the fall is confined to a small area where with the passage of time, the supply of oxygen reduces. The main objective of this project is to design and construct a portable robot which is cost effective, quick in action and accurate. This robot is also capable of performing lifesaving action like supplying oxygen.The Bore well Rescue Robot is capable of moving inside the well and performs operations according to the user commands. The proposed model is designed to provide the child with two level of safety achieved by using robotic arms at the top and safety airbag at the bottom. This arrangement ensures that the child does not slip further deep during the rescue operation. The robot is operated through manually or through personal computer according to the observations made continuously using CCTV camera.

AUTOMATIC FUEL THEFT PREVENTION SYSTEM

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Abstract

Carrying out project work requires knowledge and skill that we learned our three year studies and outcome of our knowledge is our project design and fabrication of anti-theft fuel system for two wheelers We could practically understand more technical information about the project successfully genuinely this project helped us to get skill and self-confidence and we are fully confident that we can solve any problem which implicate any further or notification for the improvement of this project. The safety of vehicles fuel is extremely essential for public so this project came to our notice due to the alarming rate at which vehicles fuel are being stolen in our country and with this design our vehicle.

RENEWABLE ENERGY FROM SEA WAVES

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Abstract

The renewable energy is nowadays in growing interest for the developing countries. Sea waves are an important source to produce clean energy. In India, the application of wave and tidal energy is not yet developed.This project deals with the designing and modification of sea wave power system. This project deals with the designing and modification of Sea Wave PowerSystem. The aim of this project work is to design and fabricate a high-efficiency system that harvests the sea wave energy to produce electrical power. The renewableenergy is now a day's growing interest for developing countries. Sea waves are animportant source to produce clean energy. This system benefits from the transversemotion of waves and convert it into electrical power. The proposed sea wave power system consists of a flat plate to which a pulley wheel is directly connected by a shaft. This plate arrangement is used to generate the rotary motion. There is a belt arrangement is made to transmit power from pulley to DC motor. Through the DC motor power is generate and saved in the battery.

A STUDY OF ALGAN/GAN AND ALGAAS/GAAS BASED HIGH ELECTRON MOBILITY TRANSISTORS (HEMTS) FOR RF AND HIGH POWER APPLICATIONS

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Abstract

In recent days, High Electron Mobility Transistors are used in different types of communication systems, power devices and bio-sensor applications. The most of the HEMTs Structures based on Gallium Nitrate (GaN) and Gallium arsenide (GaAs), these two devices based on III–V semiconductors materials. The AlGaN/GaN and AlGaAs/GaAs HEMTs exhibits unsettled 2-Dimension Electron Gas (2-DEG) Properties in hetero-structures. This paper highlights the rapid process in the improvement of various structures of GaN and GaAs HEMTs over the past 4 decades, the uses of RF and high power applications in terahertz (THz) frequency. The study paper features the basic related concept of HEMT based on working principle, various structures, and breakdown electric effect also 2D and 3D different analytical model equations for HEMT

DESIGN AND ANALYSIS OF GO-KART CHASSIS

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Abstract

This work aims to design the Go-Kart chassis by keeping in mind therules imposed by Go–Kart Design Challenge 2017. Theoretical calculations areto be carried out which have to be realize through several analyses. Theseresults during front impact analysis, the chassis should meet the required factorof safety. In order to enhance factor of safety the computer aided design modelwas altered marginally such that it meets the safety requirements. An innovativemethod of design optimization has been discussed, without significant increasein the overall kerb weight of the chassis. The design and fabrication of go kartmany people are trying to build with in a cost of 1lakh and we had also taken upthe challenge to make a go-kart within a budget of 70K.This is a dream forwhich we are working with a hope of making it true. So it is sure that thisproject will have a high demand in the industry.

Keywords: Go-Kart chassis, Front impact analysis, Computer aided design model, Design and fabrication.

DESIGN AND ANALYSIS OF CHASSIS OF OFF ROAD BUGGY

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Abstract

Now a days off road buggyhave become anew source of entertainmentfortheyouths.Thedurabilityofthechasisisaveryimportantthingstoconsider. This objective of this project work is to designing a chasis for an offroad buggy and optimizing it accompanied with a number of iterations. Theiterations are used to reduce the stress concentration regions by providing anumber of loads. The chasis keeping the constraint that the the weight of theframe should be as less as possible. The reduction of gross weight of the vehicleleads to better fuel economy. To check whether the chasis comply with thesafety standards different tests including frontal, rear and side impacts test havebeen performed under chassis. Software used to accomplish the task is creo forCAD modelling and ANSYS for analysing the buggy chassis and has beenanalysed using finite analysis by applying the different boundary condition. Thesimulation done in 1-D analysis. The chassis has been designed considering theAISI 1080 Steel and Carbon fiber considering five cases such as front impact,side impact, rear impact, drop test and roll over test to ensure safety of theoperator to survive theimpact scenario. Themain significance of these studiesis to analyse off road buggy chassis from safety point of view of an operator.The plan of work for the project was divided into five major stages. Initially weprepared the design and then this was tested for driver space by building amock-up model. Then it was followed by refinement in design. Simultaneouslythemountingpointsforthevariousassembliesasperthedesign.

SMART TRASH – A STEP FOR CLEAN INDIA

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Abstract

Waste management is one of the primary problem that the world faces irrespective of the case of developed or developing country. The key issue in the waste management is that the garbage bin at public places gets overflowed well in advance before the commencement of the next cleaning process. It in turn leads to various hazards such as bad odor & ugliness to that place which may be the root cause for spread of various diseases. To avoid all such hazardous scenario and maintain public cleanliness and health our work is mounted on a smart garbage system. The main idea of proposed work is to develop a smart intelligent garbage alert system for a proper garbage management. A smart alert system is designed for garbage clearance by giving an alert signal to the municipal web server for instant cleaning of dustbin with proper verification based on level of garbage filling. This process is aided by the ultrasonic sensor which is interfaced with Arduino UNO to check the level of garbage filled in the garbage bin and sends the alert to the municipal web server once if garbage is 90% filled via IoT. Once the alert is received, Municipal Corporation takes initiative to clean the same. After cleaning the garbage bin, municipal web server gets updated about the garbage bin been cleaned. This system provides information regarding status of how waste collection is being done and followed up by the municipality authority.

Keyword- Waste Management, Garbage, Clean

OPTIMIZATION OF BIODISEL FROM CUSTARD APPLE OIL

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Abstract

Now a day's increasing in prices and depletion of fossil fuels, creates very necessary to find out an alternative fuel (biodiesel) from non-edible oil seeds. This paper deals with the transesterification of custard apple seed oil by means of methanol in presence of Potassium hydroxide catalyst at less than 65˚C.The viscosity of biodiesel produced from custard apple seed oil is nearer to that of the commercially available diesel. The custard apple seed oil is characterized by GC (gas chromatography) analysis and the important properties of biodiesel such as density, flash point, cloud point, pour point and kinematic viscosity, ash content, carbon residue are found out and compared with that of ASTM-biodiesel standards and commercially available diesel. The study encourages the production of biodiesel from Custard Apple seed (Annona squamosa) Oil and value addition of custard apple fruit. Key words: biodiesel, custard apple seed oil, transesterification

REMODELING 60CC BIKE TO 80CC OFF ROAD BIKE

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Abstract

The necessity of metakaolin in steel fibre reinforced concrete to enhance the strength properties of concrete. In the present day construction industry needs of finding effective materials forin creasing the strength of concrete structures. Hence an attempt has been made in the present experimental investigations to study the effect of addition of steel fibre at a dosage of 1.5% of the total weight of concrete as fibres. Metakaolin was used at 8% of the total weight of cement as metakaolin, and the addition of steel fibres at 1.5% and 8% of metakaolin. Experiment alinvestigation was done using M40 mix and tests were carried out as per recommended procedures by relevant codes. The results were compared with control concrete it was observed that concrete blocks incorporated with steel fibre increased its compressive strength by 8.91%and tensile strength by 26.94%. Metakaolin and steel fiber blocks exhibited an increase in flexural strength of concrete in 58.28%

VIRTUAL QUEUE FOR PUBLIC DISTRIBUTION SYSTEM USING DEEP Q LEARNING BASED SLOT PREDICTION

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Abstract

Public Distribution system (PDS) is an Indian food security system. It is established by the Government of india under Ministry of consumer Affairs, Food, and public Distribution and managed jointly with state governments in India. Fair price shop does not open every day, nor do they keep regular hours. Even on the days that the fair price shop is open, ration card holder have to stand in long queues. But due to delay in supply all citizens needs to come to the fair price shop and ask them whether they are providing the items today. As social distancing was not followed at several fair price shop during the first phase of public distribution, the civil supplies Department has issued paper token to the beneficiaries, mentioning the date for them to avail food grains and relief fund. A virtual queuing is one of the most modernized and technologically advanced solution to deal with the wait time and other queue management problems. Reinforcement learning has gone through an enormous evolution in the past ten years. It's practical applicability has been demonstrated through several use cases in various fields from robotics to process automation. In this project the physical queuing system is changed to slot allocation on specific time using deep Q – learning Algorithm. In our approach, people are asked to join a virtual queue, in order to avoid crouds in roads or long waiting queues. SMS notifications is send to customer giving prior date and time for the collection of products on stipulated time for every card holder, saves time by logging online and views products details. If the card holder missed the first slot allocation, gives another chance to get the ptoducts by providing re- slot allocation for the next purchase of products, in case not able to deliver products on first slot. Proper and well planning of data information.

CHILD SAFETY MONITORING SYSTEM BASED ON IOT

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Abstract

The overall percentage of child abusements filed nowadays in the world is about 80%, out of which 74% are girl children and the rest are boys. For every 40 seconds, a child goes missing in this world. Children are the backbone of one's nation, if the future of children was affected, it would impact the entire growth of that nation. Due to the abusements, the emotional and mental stability of the children gets affected which in turn ruins their career and future. These innocent children are not responsible for what happens to them. So, parents are responsible for taking care of their own children. But, due to economic condition and aims to focus on their child's future and career, parents are forced to crave for money. Hence, it becomes difficult to cling on to their children all the time. In our system, we provide an environment where this problem can be resolved in an efficient manner. It makes parents to easily monitor their children in real time just like staying beside them as well as focusing on their own career without any manual intervention.

Keyword-Children , Abusement

FACE BIOMETRIC AUTHENTICATION SYSTEM FOR ATM USING DEEP LEARNING

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Abstract

Automated Teller Machines also known as ATM's are widely used nowadays by each and everyone. There is an urgent need for improving security in banking region. Due to tremendous increase in the number of criminals and their activities, the ATM has become insecure. ATM systems today use no more than an access card and PIN for identity verification. The recent progress in biometric identification techniques, including finger printing, retina scanning, and facial recognition has made a great effort to rescue the unsafe situation at the ATM. This project proposes an automatic teller machine security model that would combine a physical access card and electronic facial recognition using Deep Convolutional Neural Network. If this technology becomes widely used, faces would be protected as well as their accounts.Face Verification Link will be generated and sent to user to verify the identity of unauthorized user through some dedicated artificial intelligent agents, for remote certification. However, it obvious that man's biometric features cannot be replicated, this proposal will go a long way to solve the problem of Account safety making it possible for the actual account owner alone have access to his accounts.

Keywords: Deep Learning, Convolutional Neural Network, Face Detection, Face Recognition, ATM.

BLOCKCLOUD:VIRTUAL ASSISTANT MIMIC MODEL FOR CLOUD DATA SECURITY BASED ON BLOCKCHAIN

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Abstract

Cloud storage service has shown its great power and wide popularity which provides fundamental support for rapid development of cloud computing. However, due to management negligence and malicious attack, there still lie enormous security incidents that lead to quantities of sensitive data leakage at cloud storage layers. Once data is stored in the cloud, a client's sovereignty over its data is lost, leaving the data vulnerable to many security threats.From the perspective of protecting cloud data confidentiality, this paper proposed a model Virtual Assistant that combines cloud computing with blockchain that assures data integrity for all homomorphic encryption schemes.To establish a secure CSP platform apart from encrypting data homomorphically, there is a need for a robust, tamperproof, and verifiable security architecture.Virtual Assistant will be hired to store and perform computations on client data. Each VA will have to periodically compute a master hash value of their database to be stored on a private blockchain.A client can compare these master hash values to detect if data tampering has occurred.This distributed verification system fulfils the requirements of confidentiality (HE will be used for encryption), and integrity because data modifications by the CSPs can be detected by comparing master hash values stored on the blockchain.

Key Words:BlockChain,Cloud Computing,Data Integrity,Homomorphic Encryption

QUALITY ANALYSIS OF FRUITS, VEGETABLES AND FISH

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Abstract

The study was conducted aimed to detection of formalin and quality assessment like colour, flavour, texture and general appearance determination of fruits, vegetables and fish available in southern districts in Bangladesh. The result obtained from the study indicate absence of formalin but now a day other chemical like calcium carbide, oxytocin are added for artificial ripening of immature fruits and vegetables, moreover farmer added hydrogen peroxide, dichlorvos etc. in water during fish cultivation. Unlike formalin those chemicals also pose a serious threat for human health. The quality of fish is more inferior to fruits and vegetables. This research strengthens the idea that overall quality of those foods of different supply chain was destitute and varieties of chemicals are being use instead of formalin to preserve food.

PERFORMANCE ANALYSIS IN EDM USING TIB2-CU ELECTRODE ON INCONEL ALLOY

Prasanna Kumar N, Rahul R, Jegadeesh A,Dr. Madhankumar P

Abstract

In this inquiry, a green compact powder metallurgy electrode was developed from titanium diboride (TiB2) and copper powder. Tool making process like Mixing of powder, compaction, Sintering & finish product. The process of mixing the powder using blending process, Compaction is performed using dies machined to close tolerance. Dies are made of cemented carbide, die/tool steel; pressed using hydraulic or mechanical presses. Sintering is performed in a controlled atmosphere to bond atoms metallurgically; Bonding occurs by diffusion of atoms; The powder tool electrode adapts to the surface of inconel material. The input quantities(parameters) like peak current, pulse on time and flushing pressure were assumed to analyse the surface properties. Testing was designed by centre composite design. Surface roughness has been categorized as an output dependent variable.

Keywords: EDM- Electrical Discharge Machining, SR- Surface Roughness, Powder metallurgy, Blending, Compaction, Sintering

FUTURISTIC FACE RECOGNITION BASED NON-VACCINATION POPULATION FINDER AND ALERT SYSTEM

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Abstract

Vaccinations are an important and effective cornerstone of preventive medical care with significant health benefits. Vaccination is crucial to limit the pandemic spread of SARS-CoV-2/COVID-19. The government has started vaccination to prevent the continuous spread of corona infection in IndiaTherefore, besides the development and supply of vaccines, it is essential that sufficient individuals are willing to get vaccinated, but concerning proportions of populations worldwide show vaccine hesitancy.However, it soon became clear that to end the pandemic, we would have to address another ubiquitous problem: the widespread hesitancy toward or downright rejection of vaccination.To achieve population immunity first we have to find the non-vaccinated population to this end, this project proposed an Aadhaar-based facial recognition system is used to find non vaccination citizen and alert them using Artificial Intelligence. Deep learningin the form of Convolutional Neural Networks (CNNs) to perform the face recognition and seems to be an adequate method to carry outface recognition due to its high accuracy.A CNN is a type of Deep Neural Network (DNN) that is optimized for complex tasks such as image processing, which is required for facial recognition. CNNs consist of multiple layers of connected neurons: there is an input layer, an output layer, and multiple layers between these two.In the context of the coronavirus disease (COVID-19) pandemic, A face recognition-based person's current vaccination status to protect against COVID-19 can then be used for continuity of care or as proof of vaccination for purposes other than health care. This project provides COVID-19 vaccination status using their face and attest that an individual has received a vaccine or not and alert them to get vaccinated.

DIABETIC RETINOPATHY DETECTION USING FUNDUS IMAGES IN MACHINE LEARNING

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Abstract

Diabetic retinopathy is a disease which occurs in the eye due to diabetes, this disease may lead to cause the blindness. So, the early detection of diabetic retinopathy is very essential to prevent the further spread of the disease and rescue the patient from loss of vision. The main purpose of this paper is to detect the disease automatically and classify them according to their severity which will be more helpful to follow up the treatment to avoid the further damages in the eye retina. The study of this paper proposes a deep neural method for feature extraction and detection and also for classification of diabetic retinopathy according to its severity Support Vector Machine(SVM) is used. The input features for the SVM in classification part is taken from the last Connected layer of CNN which contains High level features. This method will help to reduce the computation time which is required by the CNN Classification with fine tuning. The given method is trained by using the 900 images and tested the method by using 300 images which are taken from Kaggle dataset. This proposed gives 95.68% accuracy in classification and it will give the great support to the Ophthalmologists to detect the diabetic retinopathy as early as possible which can help the person with diabetic retinopathy to recovery faster.

LUNG CANCER CLASSIFICATION AND DETECTION USING DEEP LEARNING TECHNIQUES

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ABSTRACT

In Today's world, there are number of deaths recorded causing Lung cancer. The main reason of lung cancer is measured due to consumption of tobacco and its products like cigarettes etc. Lung diseases are indeed the lung-affecting diseases which impair the respiratory mechanism. Early detection can enhance survival chances amid humans. If the condition is diagnosed in time, the average survival rates for people with lung cancer rise from 14 to 49 percent. Hence lung cancer detection system to detect whether tumor is present or not in nodes of the lungs in CT-scan(Computed tomography) image, a thorough diagnosis includes multiple imaging approaches to support each other. It is the most effective method of lung nodule detection for its ability to form three-dimensional (3D) images. A deep neural network for detecting lung cancer from CT images is developed and evaluated. For the classification of the lung image as normal or malignant, with some pretrained deep networks such as CNN, ResNet and Random forest was used. A dataset of 201 lung images is used in which 85% of the images are used for training and 15% of the images are used for testing and classification

EXPERIMENTAL INVESTIGATION OF FLEXURAL PROPERTIES ON WS PARTICLE REINFORCED BRONZE MATRIX COMPOSITE

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Abstract

Bronze is an alloy mainly composed of Copper and Tin. Bronze plays a vital role in industrial applications due to its excellent properties such as high strength, wear, and corrosion resistance. In addition to bronze, a small amount of phosphorus improves the hardness and strength of the material. When the bronze matrix is combined with the reinforcement phase it enhances the property of the resultant material. The improvement of these properties replaces the conventional material with composite material. In this present study, the reinforcement of tungsten disulfide (WS_2) particles is incorporated in phosphor bronze to investigate the flexural property of the material. The composite material is fabricated using the stir casting method and the WS_2 particle is included as 4%,6%, and 8% into the metal matrix material. The scanning electron microscope is used to examine the microstructure of the composite and to analyze the presence of WS_2 particles. The results of this investigation show the improved mechanical property of the composite which can be recommended to replace the conventional material in high flexural property requirement applications.

POWER GENERATION FROM TREAD MILL TO CHARGE MOBILE PHONES

Sahithram S, Santhosh K, Sandeepan M, Dr. Rameshkumar T

Abstract:

The modern challenge faced with the global energy situation is the growing energy demand and the strong dependence on unsustainable fossil fuels. Human power generation, which uses metabolized human energy to generate electrical power, could potentially address both these challenges. The treadmill, one of the most popular exercise machines, presently consumes large amounts of energy while dissipating a majority as heat. The purpose of design and develop a human powered treadmill generator and determine its power generation potential. The developed treadmill was based on a manual flatbed treadmill using an electromagnetic dynamo generator coupled to a front axle flywheel. A heavy duty rechargeable battery pack was used to store the generated energy and additional components to measure the generated power were included. The scope of this system focuses upon a method of generating electrical energy from the application of specially designed treadmill with the provision of specially designed washing machine, which will work when a human runs over a treadmill for exercise which is an integral part of modern society life.

Keywords: Increasing demand,Situation,Fossil fuels, Treadmill ,Human power,Rechargeble battery ,Dynamo.

DESIGN AND ANALYSIS OF CONNECTING ROD IN AUTOMOBILE APPLICATION

Sasi Kumar.M ; Sathish.S; Surya.S, Dr. Rameshkumar T

Abstract

Connecting rod is one of the engine's key components which connect the piston to the crankshaft and converts the piston's reciprocating motion into the crankshaft's rotation. Connecting rod must be sufficiently strong to withstand the thrust from the piston during the combustion process. During its lifespan, it faces a lot of tensile and compressive loads. The objective of this paper is to modify the connecting rod design and changing the material of connecting rod for weight reduction possibilities. Model of the connecting rod is designed with the help of SOLID WORKS and analysis was performed by using ANSYS

Keyword: solidworks, materialtypes , analysis, stress and ansys

CHARACTERIZATION AND IN VITRO CYTOTOXICITY EVALUATION OF EGG SHELL AND SEASHELL DERIVED NANO-HYDROXYAPATITE PLA COMPOSITE

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Abstract

Numerous materials have been utilized for bone deformity fix, yet there are no great and completely endorsed inserts. Among the materials, high-thickness Polylatic acid (PLA) - based composites can be utilized as embed, due to their high mechanical properties (E-modulus, strength, and hardness) and great organic properties (no harmfulness and biocompatibility). Since PLA is a sort of polyester that is produced using aged plant starch from corn, cassava, maize, sugarcane or sugar beet mash (The sugar in these sustainable materials are aged and transformed into lactic acid, when is then made into polylactic acid, or PLA).It is highly biocompatible with the human body and is also biodegradable and bio absorbable. That's why PLA is used in this experiment. Hydroxyapatite (HA) is a natural mineral type of calcium apatite that shows great biocompatibility and is a excellent contender for bone fix and replacement. Recently hydroxyapatite (nHA) [Ca10 (PO4)6(OH) 2] has been presented as a bone unite material in medical applications because of its comparable compound piece as that of bone. The nha derived from eggshell and seashell along with PLA is used in this experiment. The calcium inadequate nHA mineral stage which is found in the egg shell and sea shell are the major mineral component of bone, nHA is highly biocompatible, osteoconductive, and forms strong bonds with native bone.In this experiment the specimen is created by blending the nha derived from eggshell and seashell with PLA with the help of 3d printer. Then the Characterization studies are to be conducted in the specimen produced to identify and quantify the significant source of variation, and measure the material's structure and properties. And biocompatibility test are also to be conducted. Egg shell and sea shell derived Nano-hydroxyapatite PLA composite will have a great biocompatibility and mechanical properties.This research work opens up a new opportunity for utilization of an eggshell and seashell particulates as filler filled with PLA matrix

ANTENNA DESIGN FOR UNDERWATER COMMUNICATION

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Abstract

Research in the field of underwater communication generates an impulsive interest worldwide. We extensively use different technologies in daily life. This curiosity helps us to reach the underwater exploration and find new ideas and techniques to various problems. Some known technologies that are used in underwater communication like coast line protection and surveillance, oceanographic data collection etc. The conception of designing an antenna for underwater communication extends its contribution in aquatic animal attraction and repulsion. In water, EM waves propagate four times the velocity faster than the acoustic waves. The water parameters like salinity, conductivity, and permittivity are taken in account to choose the type of electric field generator. Dipole antenna is used in the proposed work as electric field generator due to its simple design, flexible and used for wide range of communication including underwater communication. Consequently this idea has been ruminated in varied frequencies where the result is optimal. Based on the mathematical calculations and contemplations for conductivity and permittivity of medium, underwater antenna is developed for usage in aqueous environment.

Key words: Underwater communication, antenna, conductivity, aqueous environment, frequency.

ENHANCEMENT OF DIFFUSER COOLING EFFICIENCY USING NANOFLUIDS

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Abstract

High altitude test facilities are established in Mahendragiri for testing upper stage rocket engines. Typical HAT facility consists of Vacuum system, diffuser system, cooling system and ejector system. Gaseous Nitrogen (GN2) is used as active gas for ejector system which is stored in high pressure cylinders. Ejector system is used in the HAT facility to maintain a vacuum inside the test chamber and reducing exhaust backflow into the test chamber. The performance of the ejectors depends on mass flow rate of primary fluid and the secondary fluid. If the exhaust mass from the rocket engine is higher, then it requires high amount of driving fluid (gaseous nitrogen) to maintain a vacuum inside the test chamber. If the exhaust mass from the rocket engine is reduced, then the requirement of driving fluid also be reduced. Cryogenic engine plume contains 98% of water molecules, which can be condensed to reduce the ejector load. In our project, exhaust mass from the engine is reduced by using the Nano fluid based cooling system. Exhaust mass temperature also be reduced from 450K to 380K to optimize the ejector performance.

INVESTIGATION ON THE PERFORMANCE OF EDM USING CRB2 CU ELECTRODE IN EN31 STEEL

Sethumadan S, Ritheesh Madhavan G, Ravi, Dr. Madhankumar P

Abstract

Generally Electrical Discharge Machining (EDM) is used in making dies in precision industries. In recent days EDM is used to modify the machined surface using powder metallurgy green compact electrode. In this paper an attempt has been made to fabricate copper-chromium di boride (Cu-CrB2) electrode to modify the surface of EN31 steel. Copper is well known for its electrical conductivity and chromium di boride having higher melting point than copper. The composite electrode was prepared by powder metallurgy technique by mixing various percentages of copper and chromium di boride powder. Sintering is performed in a controlled atmosphere to bond atoms metallurgically; Bonding occurs by diffusion of atoms. Testing was designed by centre composite design. Chromium di boride percentage, pulse current and pulse on time were selected as process parameters. Material Removal Rate (MRR) and Surface Roughness (SR) were selected as output response.

Keywords:: EDM- Electrical Discharge Machining, SR- Surface Roughness, MTR-Material Removal Rate, Powder metallurgy, Blending, Hydraulic pressing.

A SECURE ROUTING SCHEME TO MITIGATE ATTACK IN WIRELESS AD-HOC SENSOR NETWORK

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Abstract-

Due to the unnoticed and hostile use ofwireless sensors, networks are vulnerable to carousel and stretch attacks, which can cause service rejection. In addition, the attackers can inject fake data into thenetwork through compromised nodes. This causes the base station (BS) to make incorrect decisions and affects the lifespan of the network. To address these issues Base Station Controlled SecureRouting Protocol (BSCSRP) was introduced. The proposed work aims to detect the anti-nodes from safe nodes by a trust-based mechanism that secures thenetwork from false data injection as well as provides an efficient route that is freefrom carousal and stretch attack. Theperformance of BSCSRP is evaluated bycomparing its performance with existingAF-TNS, BTEM, RSA and ERF methods.

Keywords: False data injection, Carousal attack,Stretchattack,Malicious nodes, Trust mechanism, Secure route.

DESIGN ANALYSIS AND COMPARATIVE MECHANICAL PROPERTIES OF AL- METAL MATRIXS.I. ENGINE CONNECTING ROD

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Abstract

MMCs are made by dispersing a reinforcing material into a metal matrix. They are prepared by powder metallurgy and casting, although several technical challenges exist with casting technology. Achieving a homogeneous distribution of reinforcement within the matrix is one such challenge, and this affects directly on the properties and quality of composite. In this work a composite is developed by adding Boron carbide & Aluminium oxide with Aluminum metal (1100) by mass ratio 10%. The composite has to be prepared by crucible casting technique. It is proposed to use this material for power transmitting elements such as connecting rod which are subjected to continuous loading. From the investigation the mechanical property of Al1100 metal matrix were analyzed finally found Boron carbide reinforcement enhanced the good tensile and compressive strength. Impact strength is good in pure 1100 and followed by Aluminina oxide. Boron carbide shows superior tensile and compressive strength compared than Alumina oxide metal matrix. But impact strength is more at Alumina oxide. Impact is strength is obtained at without metal matrix of Al1100.

AN INVESTIGATION JOINING EFFICIENCY AND OPTIMIZATION OF UHMWPE PLATE BY FRICTION STIR WELDING PROCESS USING THREADED PIN

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Abstract

The use of polymeric materials has grown widely in various sectors such as packaging, building, electronic, automotive, and aerospace industries. Particularly, UHMWPEhas wide engineering applications and is used in large quantities in automotive oil pans, gears, slides, cams, bearings, fluid reservoirs, and the sports industry. Friction Stir Welding (FSW) is a solid-state process in joining thermoplastic materials. In this investigation, FSW process has to be applied to join a UHMWPEplate of 8 mm thickness with specially designed threaded tool pin profile. The research will be applied Taguchi Method on UHMWPEspecimen of dimensions 100 × 100 × 8 mm, which have following parameters: various RPM, Feed and Axial Load. The main objective of the experimental of factors affecting to mechanical property of UHMWPEwith FSW at different welding parameters and it has to be followed by L4 arrays. In this research work threaded tool profile was used. Friction sir welded polymer plates visually inspected sample fourth was good weld appearance. Highest tensile strength obtained with parameter 1200 rpm, 20 mm/min and 8KN of axial force which is 6.36 N/mm2. During the investigation found hardness strength low value obtained with parameter 1200 rpm, 15 mm/min and 10KN of axial force has the lowest Hardness strength which is 27 HRL. No angle distortion found at third and fourth test plates.

DESIGN ANALYSIS AND COMPARATIVE MECHANICAL PROPERTIES OF AL- METAL MATRIXS.I. ENGINE CONNECTING ROD

M. Arun Jeyakumar[1] , Dineshkumar[2] , Vasanth[2], Muthu vijayan[2],

[1], Assistant Professor, [2],UG Student, Department of Mechanical Engineering ,Annai Vailankanni college of Engineering

Abstract

MMCs are made by dispersing a reinforcing material into a metal matrix. They are prepared by powder metallurgy and casting, although several technical challenges exist with casting technology. Achieving a homogeneous distribution of reinforcement within the matrix is one such challenge, and this affects directly on the properties and quality of composite. In this work a composite is developed by adding Boron carbide & Aluminium oxide with Aluminum metal (1100) by mass ratio 10%. The composite has to be prepared by crucible casting technique. It is proposed to use this material for power transmitting elements such as connecting rod which are subjected to continuous loading. From the investigation the mechanical property of Al1100 metal matrix were analyzed finally found Boron carbide reinforcement enhanced the good tensile and compressive strength. Impact strength is good in pure 1100 and followed by Aluminina oxide. Boron carbide shows superior tensile and compressive strength compared than Alumina oxide metal matrix. But impact strength is more at Alumina oxide. Impact is strength is obtained at without metal matrix of Al1100.

STUDENT ATTENDANCE MARKING VIASESSION OTPUSING A ANDROID DEVICE

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Abstract

We have seen Throughout the years the manual attendance management has been implemented across a large portion of education organizations. This procedure is not just tedious yet in addition some of the time consuming and also bringing inefficient results while marking in the attendance. To overcome this issue of manual attendance. we have proposed an android based application for Attendance Management System, which can be executed on any Android device integrated with OTP. In this framework there are 3 Main clients; Admin reliable to add the subjects, teachers and class. the second teacher who will take the attendance and the third Student who can check him/her as present and see their past attendance records. The strategy goes thusly, the educator chooses the class for attendance an OTP is created which will prop up for 60 seconds, the OTP ought to be entered in the Student's application and imprint him/her as present, when the OTP is lapsed the instructor can make the essential changes in the participation sheet. In This application, PostgreSQL as a Database and Java Struts is used as back-end design and HTML, CSS and JavaScript are used as frontend tools.

EXPERIMENTAL INVESTIGATION OF COPPER TUBE INSERTED BUILDING ROOF FOR COOLING

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Abstract

Roof-top cooling systems have been developed andimplemented to reduce the heat gain through roofs so thatconventional cooling systems can be reduced in size oreliminated. Currently, roof-spray systems are achieving greatereffectiveness due to the availability of direct digital controls.The objective of this project is to develop a new model of theheat transfer through a roof with copper and aluminium tubeenclosed at the top for circulating the coolant. The coolantmay be used as water or some specific type. Cooling roof thatpredict the heat transfer based on existing weather data androof heat transfer characteristics. The heat transfer rate ofexistingroofing system is compared with this proposed modelby analyzing the obtained output heat transfer rate. This mayyield moderately good predictions of heat transfer through theroof experimental results for the roof top cooling condition.

NORMALIZATION OF DUPLICATE RECORDS FROM MULTIPLE SOURCES

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Abstract

Data consolidaton is a challenging issue in data integraton. The usefulness of dataincreases when it is linked and fused with other data from numerous (Web) sources. Thepromise of Big Data hinges upon addressing several big data integraton challenges, such asrecord linkage at scale,real-tme data fusion,and integratng Deep Web. Although much workhas been conducted on these problems, there is limited work on creatng a uniform,standardrecord from a group of records corresponding to the same real-world entty. We refer to thistask as record normalizaton. Such a record representaton, coined normalized record, isimportant for both front-end and back-end applicatons..n this paper,we formalize the recordnormalizaton problem, present in-depth analysis of normalizaton granularity levels (e.g.,record, feld, and value-component) and of normalizaton forms (e.g., typical versus complete).We propose a comprehensive framework for computng the normalized record. Theproposed framework includes a suit of record normalizaton methods, from naïve ones,which use only the informaton gathered from records themselves, to complex strategies, which globally mine a group of duplicate records before selectng a value for an atribute of anormalized record. We conducted extensive empirical studies with all the proposed methods.We indicate the weakness and strengths of each of them and recommend the ones to be usedin practce.

Key words: Record normalizaton,data quality,data fusion,web data integraton,deep web.

END-TO-END MOBILE APP

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Abstract

Loving the probe with network measurement intelligence into user end systems and controlling the testing procedures and displaying resting results by a web browser, this end-to-end measuring system can measure performance and troubleshoot malfunctions of IP network conveniently and rapidly, in which the network measurement policy system is used to change testing conditions and add testing functions easier. The performance metrics was introduced and the architecture of the intelligent agents-based measuring system was and proposed its implementation technique was discussed

GREEN AWARE RESOURCE PROVISIONING MODEL FOR DEEP LEARNING ENVIRONMENT

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Abstract

An increasing number of enterprises have adopted cloud computing to manage their important business applications in distributed green cloud (DGC) systems for lowresponse time and high cost-effectiveness in recent years. Task scheduling and resource allocation in DGCs have gained more attention in both academia and industry as they are costly to manage because of high energy consumption. Many factors in DGCs, e.g., prices of power grid, and the amount of green energy express strong spatial variations. The dramatic increase of arriving tasks brings a big challenge to minimize the energy cost of a DGC provider in a market where above factors all possess spatial variations. This work adopts a G/G/1 queuing system to analyze the performance of servers in DGCs. Based on it, a single-objective constrained optimization problem is formulated and solved by a proposed simulated-annealing-based bees algorithm (SBA) to find SBA can minimize the energy cost of a DGC provider by optimally allocating tasks of heterogeneous applications among multiple DGCs, and specifying the running speed of each server and the number of powered-on servers in each GC while strictly meeting response time limits of tasks of all applications. Realistic databased experimental results prove that SBA achieves lower energy cost than several benchmark scheduling methods do.

Key Word: Green aware, Deep learning environment

VEGETABLES AND FRUITS WASTE MANAGEMENT

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Abstract:

The fruit and vegetable sector generates large amounts of waste. In industrialized countries, **fruit and vegetable waste** (FVW) is mainly generated before reaching consumers, due to programmed overproduction and unfulfillment of retailer quality standards. FVW poses environmental problems due to its high biodegradability, represents a loss of valuable biomass and an economic cost for companies. Different reduction, reuse and recycle strategies to tackle FVW have been proposed.

This review paper summarizes these strategies, underlying their main advantages and pitfalls. In particular, **fresh-cut salad** waste was considered as a particularly challenging FVW, due to its low concentration of nutrients (e.g. polyphenols, pigments, fiber).

DESIGN OF MOLTEN METAL TRANSFER SYSTEM USING MONORAIL

Dr Sasikumar C[1], Dhyaneshwar S[2], Balamurali M[3], Dinesh R[4]

Abstract

Alternatives to conventional casting process in foundries is an essential to stand in a competitive world as it gives the solution to time management and safety of workers from hazardous situations. This paper presents the labour and time effective processwhich is designed for the manual foundry process. In this paper the design and implementation of the monorail system is described. To transfer the ladle containing molten metal from furnace to every respective mould boxes, a Monorail transfer system is designed. The trolley carries the ladle and slides through the monorail structure supported by the beam structure. The computer design is described and verified using computer modelling software. A comparative study of the design is described in this paper.

Keywords: Monorail, I-beam, trolley, ladle, Mechanical system, Automation, Modelling

ANALYSIS AND DESIGN OF A G+2 RESIDENTIAL BUILDING

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Abstract

Structural design is an investigation method of examining the strength and stability of the building. The essential aim in structural analysis and design is to construct a structure capable of overcoming all applied loads without failure during it's intended life and also it should be economically feasible. The process of structural design involves various stages such as computation of loads, member design, detailing and many more. The code refers for this project are NBC, IS 456-2000. The concrete mix used in this project is M25. The conventional method of structural design and analysis leads to lot of complications and tedious calculations, which are time consuming. Nowadays design and analysis done in efficient manner, fast software's are used. Computer aided design and analyses of residential building by using AUTO CADD, STAAD PRO & Sketch up which includes- Generating 2D plan, Structural framing plan, Analysis of structure, 3D Design of structure. Our project purpose is to give a complete experience in the field of design and to gain the knowledge in a practical way. Strict confirms to loading standards recommended in this code, it hoped, will ensure the structural safety of the buildings, which are being designed.

DESIGN AND ANALYSIS OF CONNECTING ROD USING MATRIXCOMPOSITE

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Abstract

The aim of the project is design and analysis of connecting rod using hybrid metal matrix composite. This project describes design and fabrication of Connecting rod. In the present work, it is proposed to substitute the steel connecting rod with aluminium metal matrix composite connecting rod to reduce the weight and noise.

The introduction of metal metal matrix composites was made it possible to reduce the weight of connecting rod without any reduction on load carrying capacity and strength. Since, the aluminium metal matrix composite has more elastic strain energy storage capacity and high strength to weight ratio as compared with those of steel. A new design method for aluminium metal matrix composite connecting rod has been proposed in the current project. This paper describes design and fabrication of Connecting rod. In the present work, it is proposed to substitute the steel connecting rod with aluminium metal matrix composite connecting rod to reduce the weight and noise. The new metal matrix composite, containing 90% aluminium & 10 % zinc).The casted connecting rod will be tensile and hardness tested to find its character

DNA DIGITAL DATA STORAGE

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Abstract

A revolutionary Storage which can store all data produced in the world can be store in the size of a swimming pool and it stays upto a Billon year's. Problems which currently data storage devices are facing: Infrastructure, cost, Security, Scale. Many scientists believe that an alternative solution lies in the molecule that contains our genetic information: DNA, which evolved to store massive quantities of information at very high density. The molecule inside cells that contains the genetic information responsible for the development and function of an organism. Company's which currently using this technology, TWIST Bio science,Thermo Fisher Scientific, Microsoft. Conclusively, DNA digital data storage will be the only hope for storing data in the near future. It will revolutionize the digital technology for sure.

SMART STICK FOR ELDERS SAFETY

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Abstract

Visually impaired people find difficulties detecting obstacles in front of them, during walking in the street, which makes it dangerous. The smart stick comes as a proposed solution to enable them to identify the world around. In this paper we propose a solution, represented in a smart stick with infrared sensor to detect stair-cases and pair of ultrasonic sensor to detect any other obstacles in front of the user, within a range of four meters. Moreover, another sensor is placed at the bottom of the stick for the sake of avoiding puddles. Speech warning messages and the vibration motor are activated when any obstacle is detected. This proposedsystem uses the microcontroller 18F46K80 embedded system, vibration motor and ISD1932 flash memory. The stick is capable of detecting all obstacles in the range 4 meter during 39 ms and gives a suitable respect message empowering blind to move twice his normal speed because she/he feels safe. The smart stick is of low cost, fast response, low power consumption, light weight and ability to fold.

Keywords: Infrared Sensor, Ultrasonic Sensor, Electronic Travel Aids (ETAs), Visually impaired, Blind Navigation

A CONTROLLED FRAMEWORK FOR RELIABLE MULTICAST ROUTING PROTOCOL IN MOBILE AD HOC NETWORK

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Abstract

Portable Ad-hoc Network (MANETs) assume a vital part in crisis interchanges where system needs to be built briefly and rapidly. Since the hubs move haphazardly, steering conventions must be very viable and dependable to ensure fruitful parcel conveyance. In view of the information conveyance structure, the majority of the current multicast steering conventions can be arranged into two organizers: treebased and lattice based. We watch that tree based ones have high sending effectiveness and low utilizations of transfer speed, and they may have poor power in light of the fact that one and only connection exists between two hubs. As a tree based multicast steering convention, MAODV(Multicast Ad hoc On-interest Vector) demonstrates a great execution in lightweight specially appointed systems. As the heap of system expands, QoS (Quality of Service) is corrupted clearly. We dissect the effect of system load on MAODV convention, and propose an advanced convention MAODV-BB (Multicast Ad hoc On-interest Vector withBackup Branches), which enhances strength of the MAODV convention by joining focal points of the tree structure and the lattice structure.Scientific investigation and reproduction results both exhibit that the MAODV-BB convention enhances the system execution over traditional MAODV in substantial burden specially appointed systems

RESEARCH ON DETECTION OF BRAIN TUMOR WITH THE ALGORITHM OF CLASSICAL IMAGE SEGMENTATION, IN ACCORDANCE TO ANY AMBIENT TEMPERATURE

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Abstract

Magnetic Resonance Imaging (MRI) can generate brain images without tissue damage or skull artifacts, providing important discriminant information for clinicians in the study of brain tumors and other brain diseases. In this paper, we survey the field of brain tumor MRI images segmentation. Firstly, we present the commonly used databases. Then, we summarize multi-modal brain tumor MRI image segmentation methods, which are divided into three categories: conventional segmentation methods, segmentation methods based on classical machine learning methods, and segmentation methods based on deep learning methods. The principles, structures, advantages and disadvantages of typical algorithms in each method are summarized. Finally, we analyze the challenges, and suggest a prospect for future development trends. Brain tumors can grow in cerebral vessels, nerves, brain appendages and other intracranial tissues, which seriously threaten the life and health of patients. MRI plays an important role in the diagnosis and treatment of brain tumorsIn MRI, images of different modes can be obtained according to the difference of transverse relaxation time and longitudinal relaxation time, and images of different modes

GPS AND GSM BASED ADVANCED VEHICLE MONITORING AND INFORMATION SYSTEM

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Abstract

GPS and GSM Based Advanced Vehicle Monitoring and Information System. This paper presents an insight into a cost effective advanced vehicle system which is used for monitoring and information purpose without third par-ties' involvement using GPS (Global Positioning System) and GSM (Global System for Mobile Communications). The proposed system monitors the geographical position and speed of the vehicle through GPS module and sends its information to the owner on his mobile phone as a short message (SMS) through GSM module at his request or after a predefined time period. The system is composed of a GPS module, a microcontroller and a GSM module. Additionally , the system also consists of certain salient features that include accident identification via Inertia sensor, date and time via RTC (Real Time Clock), parking system via Ultrasonic sonar sensors (measurement of the distance between vehicle and obstacles for automatic parking) and data logging in SD card by which we can determine the path of vehicle and visualize the movement at Google maps.

DIGITAL STOPWATCH

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Abstract

Stopwatches find use as time keeping devices in many fields, namely sports. Stopwatches may be analog or digital. Digital stopwatches are much more common the analog version owing to their higher accuracy and ease of use. Here we have tried to realize a digital stopwatch of reasonable accuracy and reliability.This particular stopwatch can count up to 9 minutes and 59.9 seconds .It is accurate up to one tenth of a second. The circuit is relatively simple and easy to realize .The heart of the circuit is an a stable mv followed by counter and decoder stages. The circuit us explained extensively in the following pages.The circuit operates on 5-v dc supply. It uses a seven segment LED display of common anode type to show time.

ANALYSING AND BLOCKING FAKE NEWS IN TWITTER

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Abstract

We propose a collaborative multi-Trends sentiment classification approach to train sentiment classifiers for multiple tweets simultaneously. In our approach, the sentiment information in different tweets is shared to train more accurate and robust sentiment classifiers for each Trends when labeled data is scarce. Specifically, we decompose the sentiment classifier of each Trends into two components, a global one and a Trends-specific one. Numerous consumer reviews of topics are now available on the Internet. Automatically identifies the important aspects of topics from online consumer reviews. The important product aspects are identified based on two observations. With the aim of categorizing trends early on. This would allow to provide a filtered subset of trends to end users. We analyze and experiment with a set of straightforward language-independent features based on the social spread of trends to categorize them into the introduced typology.

The global model can capture the general sentiment knowledge and is shared by various tweets. The Trends-specific Greedy & Dynamic Blocking Algorithms like DRIMUX model can capture the specific sentiment expressions in each Trend. In addition, we extract Trends-specific sentiment knowledge from both labelled and unlabelled samples in each Trend and use it to enhance the learning of Trends-specific sentiment classifiers. Besides, we incorporate the similarities between tweets into our approach as regularization over the Trends-specific sentiment classifiers to encourage the sharing of sentiment information between similar tweets.

Two kinds of Trends similarity measures are explored, one based on textual content and the other one based on sentiment expressions. Moreover, we introduce two efficient algorithms to solve the model of our approach. Experimental results on benchmark datasets show that our approach can effectively improve the performance of multi-Trends sentiment classification and significantly outperform baseline methods.

DESIGN AND ANALYSIS OF DC-AC HYBRIDMICROGRIDWITHOPTIMALCONTROL STRATEGY

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Abstract

In modern power systems, hybrid microgrid has been grasping more and more attention with the new innovations in renewable energy and power electronic technologies. In order to facilitate the connections for various AC and DC renewable energy sources and loads, a hybrid microgrid is used. In this paper a AC/DC hybrid microgrid with DC and AC renewable energy sources is proposed. Here pulse width modulation (PWM) technique is used to enhance and balance the power flow between sources and loads and between AC and DC grids. In this paper the design and analysis of a hybrid microgrid with advanced power flow enhancement capability is carried out. A simulation study of the proposed system has been carried out using MATLAB/Simulink, and the results are presented. Also a case study of EV charging station fed by the hybrid microgrid is analysed.

AIRCRAFT STRUCTURES

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Abstract

The aircraft structure is an important part where the structure of an aircraft depends on the optimum requirement of the customer and the environments in which it will be going to fly for the major time.New developments in material science and its technologies find their best implementation areas in aircraft and space vehicles.Today's aircraft industry is demanding high support from its raw material suppliers. On one hand, they expect low cost materials for current aircraft versions while on the other hand, new approaches and advanced materials are desired to face the challenges of next century mass air transportation.They are developed and built by light, durable and affordable materials through highly disciplined design, development,test and certification as well as manufacturing processes. In the development of next generation aircrafts, important features considered are the lighter, stiffer and stronger, less fatigue sensitive and more damage tolerant of materials for airframes and engines.In aerospace applications, materials with high strength to weight ratios along with properties such as excellent corrosion resistance, light weight, creep resistance and high thermal strength are needed. Also cost parameters need to be considered without compromising with quality. This paper contains the basic information regarding the components of an aircraft and the basic concept of its design. In accordance with the properties required, aluminium, titanium, magnesium, nickel and their alloys are mostly used in aerospace industries for making most of its sub components. In this paper, a detailed review has been presented on Aluminium based alloy used in making aircraft structures and components.

SECURE SMART CITY DEVELOPMENT USING BLOCK CHAIN TECHNOLOGY

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Abstract

Smart City is based on Information and Communication Technology which aims to improve the quality of life in urban areas by the managing the natural resources and utilities in an efficient way. The main objectives of smart city include sustainability, energy efficiency, and a green environment. To make the smart city concept a reality, some major challenges such as air quality, energy efficiency, urban mobility, safety and security have been identified.However,data privacy and securityare one of the majorresearch challenges faced by the smart city. Smart city is constructed based on the concept of Internet of Things (IoT) that includes wide range of sensors and actuators. As smart city is implemented over the Internet, cyber-attacks are possible. Blockchain, a distributed ledger provides an advancedviewpoint on how smart cities can be organized and a more transparent economic model for resource management. This study analyses how blockchain technology-based security services can contribute to the development of smart cities and proposes a Secure Smart City based on Self-Sovereign Identity (SSI) authentication model.It also summaries the areas in which this technology can be used. The results can be a source for the development of secure smart city using the blockchain as a platform for communications and transactions in the public sector.

A STUDY ON THERMO-PHYSICAL AND LUBRICATING PROPERTIES OF CARBON QUANTUM DOTS-SAE40 OIL NANOFLUIDS

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Abstract

In numerous machinery applications, gear boxes run continuously and their interacting surfaces leads to morphological changes in gear tooth which are reduced by using lubricants. Further, friction in gear trains dissipates energy and cause wear, leading to waste of energy and damage/reduce the functional life span to gear boxes. Nowadays, one of the vital manners of the improvement of resistance to friction and wear of gears pairs is focused on the improvement of lubricating properties of gear lubricant oils by homogeneously dispersing nanomaterials using ultrasonic agitation. These oils based nanomaterials dispersions are referred as nanofluids and their advantages are better dispersion stability compared to macro/micro particle suspension. This proposal is aimed to develop different concentration of Carbon quantum dots-SAE40 oil nanofluids and estimate their thermo-physical and lubricating properties for high temperature gearbox applications. The dispersion stability of nanofluids can be estimated by sedimentation test and thermo-stability is determined by Thermo Gravimetric Analysis (TGA) and Differential Scanning Calorimetric (DSC) techniques.

A REVIEW ON THE THERMO-PHYSICAL AND LUBRICATING PROPERTIES OF NANOFLUIDS

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Abstract

Lubrication is an art that has been practiced for thousands of years from the early days of human civilization. The utilization of lubricating oil in India is of the order of 1.8 million tonnes and is growing at around 5.2% annually. The performance of such huge quantity of lubricants at high temperatures directly affects global energy consumption, wear and tear of machine and vehicle components. For this reason, enhancing the thermo-physical and lubricating properties of lubricants is imperative which are mainly employed to reduce friction and wear of relatively moving/sliding parts of various machine elements. Recently, the homogeneous dispersion of multifunctional nano metals and metal oxides additives has been a well-known practice to enhance the thermo-physical and tribological properties of lubricants.

SWARM INTELLIGENCE AND INTERNET OF EVERYTHING OPTIMIZATION SOLUTIONS

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Abstract

Communication among physical objects is recently gaining a lot of attention due to a wide range of usage. The interconnection of everything, such as vehicles, drones, and home appliances, etc. is very common nowadays. With the growth of the Internet of Everything (IoE), data gathering, energy efficiency, task scheduling, and security are becoming interesting research domains for community experts. These dynamic and real-time issues need to be supervised by some intelligent mechanism that not only provides resolution but also examines the problem in a very structured manner. Such complex engineering optimization problems can be efficiently addressed by nature-inspired heuristic optimizations. This paper highlights a few of the major issues that are coherently dealt with in the literature using Artificial Bee Colony (ABC) optimization and its variants. The IoE is further categorized in the Internet of Things (IoT), Internet of Vehicles (IoV), and Internet of Drones (IoD) to present uncomplicated and distinct employment of ABC expansion. Finally, the paper presents recent research directions in the field of IoE and allied domains.

COMPUTATIONAL ANALYSIS OF EFFICIENT TRANSIENT MULTI-RELAXATION-TIME LBM FOR BOUNDED DOMAINS

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Abstract

The mesoscopic approach of MRT-LBM for solving various transient incompressible viscous fluid flow problems is studied. The multi-relaxation-time lattice Boltzmann method (MRT-LBM) is an alternative method and application to unsteady fluid flow problems is scarce. The MRT-LBM is used to solve three flow problems, namely, single lid-driven cavity flow, double lid-driven cavity with parallel wall motion and the double lid-driven cavity with antiparallel wall motion. The present MRT-LBM efficiently captures both steady and transient-state solutions of two-dimensional viscous fluid flow problems. Detailed results produced by the MRT-LBM scheme for all the three test cases are provided and compared with established numerical results. The close agreement of the results bears testimony to the validity of this approach. It is concluded that, the MRT-LBM scheme is likely to be very useful for the computation of transient viscous flows involving free shear layers.

Keywords: lattice Boltzmann method, single-relaxation-time, multi-relaxation-time, lid-driven cavity, D2Q9 model.

A REVIEW ON THE EFFECTS OF FoMO ON THE YOUNG GENERATION

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Abstract

Lately, new types of online designated advertising have become progressively engaging over customary promoting. Numerous advertisers settle on retargeted ads to contact their crowds with customized content. Retargeted ads are frequently shown after the beneficiary demonstrates interest in an item by, say, visiting the item page. For this situation, the ads' adequacy might be increased by the match of the introduced proposing to the shopper's very own personal advantage. Some retargeted commercials endeavor to additional augmentation the adequacy with messages that expansion the dread of passing up a great opportunity **(Fear of Missing Out)** FoMO. Not very many studies inspect FoMO in customer conduct, with most writing over the previous decade zeroing in fundamentally on FoMO as a web-based media and web dependence peculiarity. This review expands the comprehension of FoMO among youngsters because of openness to retargeted ads and promotions that intensify shortage or direness. Youngsters are known to be more helpless to promoting impact and consequently, could be most conceivably defenseless in this publicizing point of view.

This study notices four topics identified with fear, lost freedoms, retargeted commercials, shortage, and criticalness

Keywords: FoMO, Young generation, Priority and shortage

IMPACT OF LABOUR WELFARE MEASURES ON EMPLOYEE SATISFACTION IN LEATHER GOODS MANUFACTURING INDUSTRY WITH SPECIAL REFERENCE TO VELLORE DISTRICT

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Abstract

The Indian leather Goods manufacturing industry the largest industry in India accounting for above 20%of the total industrial production. Labor welfare it is an essential variable of enterprises relations because it measures one of the key contributors to know the level of fulfillment, inspiration profitability of the representative in the association. The labor welfare facility helps to persuade and hold representatives. The majority of welfare facilities are matters of sanitation and hygienic which is not given dissatisfaction among specialists are inspired by giving welfare measures. The labor welfare covers condition of well being, happiness, satisfaction, protection and advancement of HR. The study aims to find out the various labor welfare facilities to know the significant influence on the employee's satisfaction level. To assess rapport between labor welfare measures and employee satisfaction. The study used primary and secondary data collection method. The study based on descriptive research design is used for the existing problem in the organization. From this survey, the leather manufacturing industry is giving good labor welfare facilities to their employees. The study reveals that most of the labour welfare facilities are satisfactory at Leather goods manufacturing industry in Vellore District.

Keywords: Employee Welfare, Satisfaction, Facilities.

VARIOUSWELFAREMEASURESANDQUALITY OF WORK LIFE AMONG THE SELECTED INDUSTRIAL UNITS IN SIPCOT SPECIAL REFERENCE TO CHENNAI.

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Abstract

This study examines the relation between employees perceived Quality of Work Life (QWL) withlifedomains using spillover theory. For this study the subjects were employees from selected industries at Chennai (SIPCOT). The QWL was measured using need satisfaction variables.The questionnaire wasdeveloped as to capture the needed information of the study variables. The sample size for this study was 227.The questionnaire was administered and reliability test wasused to validate it. The regression analysis wasdone to find the level of influence on the dependent variables. The results showed that the employees who sensing higher level of QWLwere sensing high level of job satisfaction, life satisfaction and general well-being. Fulfilling the needs of the employees by the organization can achieve higher level of QWL and organizational commitment from the employees.

AN ENHANCE APPROACH BASED ON PREPROCESSING STRATEGIES IN LYMPHOMA'S IMAGE CLASSIFICATION

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Abstract

The body's disease-fighting system is the lymphatic system. The lymph nodes, spleen, thymus gland and bone marrow are all part of it. Hodgkin's lymphoma and Non-lymphoma Hodgkin's are the two most common kinds of lymphoma. The treatment for this lymphoma is determined by its stage. Early detection aids in lowering and avoiding the death rate associated with lymphoma. There are numerous medical aids available to help people live longer and avoid death. There are a variety of medical diagnosis procedures used to provide treatment for this problem. The computing algorithm is crucial in assisting clinicians in the diagnosis of lymphoma. The goal of this study is to diagnose lymphoma illness using MRI data. In this work, pre-processing techniques are used to reduce noise in the Lymphoma image, allowing it to progress to the next phase. Filtering techniques are used to blur and smooth the image without affecting the pixel values during the preprocessing stage. R channel image and CLAHE are two filtering approaches. The distribution of pixels is determined using histogram distribution for both normal and processing before preprocessing the image and the results are compared after pre-processing. The outliers in the forms of lymphoma image have been removed in the comparison. The precision of the procedures utilised in this project has demonstrated their efficacy.

A NOVEL APPROACH OF DEMAND SIDE MANAGEMENT IN SMART GRID

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Abstract

Demand Side Management(DSM) in smart grid approach utilizing and proper energy management of electrical vehicles, home appliances for distribution energy storage method by game algorithm select relevant size of storage units for balancing cost while using it. It is a complex problem to reach quality of energy management. By applying optimize with an efficient algorithm only it is to achieve to minimize costs. The objective of our paper is to optimize of minimize energy consumption, minimize costs and maximize energy efficiency with an efficient approach solving by game algorithm(gm). In this paper we proposed a cost function for the purpose of billing as well as cost generation for beneficial of end users for beneficial to easy way of payment.

Keywords – Demand Side Management (DSM), Game Algorithm, Smart Grid, Renewable Energy, Cost

EFFECTIVE ONLINE TOOLS FOR VIRTUAL CLASSROOM AND ITS IMPORTANCE - AN OVERVIEW

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Abstract

A virtual classroom is an online learning environment in which students and teachers collaborate using technological equipment provided by software. A virtual classroom transmits real-time teachings while also providing the same collaboration tools and level of involvement as a traditional classroom. Virtual classroom software allows students who are unable to attend in-person classes to participate. Teachers can interact with students and interact with instructional materials, view presentations and videos, and take tests in real time using the virtual classroom environment. Virtual class rooms may come as an integrated part of a Learning management system (LMS) or integrate with one.

Keywords: Virtual classroom, Tools, Graphics, PPT, Screen sharing, Online quizzes, live streaming, LMS.

CARDIOVASCULAR DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES

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Abstract

Now a days,healthcare plays a vital purpose in serving humanity. We should focus on health that aims at ensuring the highest attainable level of well-being. Furthermore, their equitable division centered on people's needs, disease prevention to treatment, restoration, and palliative care. Similarly, Congenital heart disease (CHD) are a pestilence. As we observe, coronary heart ailment is now. The globe's largest cause of demise, and approximately 7.2 million people die each year. Studies have been conducted in India specifically that showcased that CHD prevalence has risen from 1% to 9% -10% in urban populations and from 1% to 4% -6 percent focusing communities in the countryside over the last 60 years. The prevalence ranges were calculated additionally strict (clinical Q waves) criterion from 1% to 2% in the countryside communities and whence 2% to 4% in urban populations.

The smoking, diabetes, hypertension, and psychological stress are the most important risk factors for heart disease, physical inactivity and dyslipidemias, abdominal obesity, and an unhealthy diet. To date, Heart disease prognosis in real time helped make decisions about the patients, which resulted in alowering their dangers. A new study provides a strategy for predicting whether patients will be successful [1]. have heart disease or not by using entered symptoms in the web form and giving an awareness of heart disease and some valuable tips on heart disease. We have declared the *target* variable. The *target* variable is supposed to be zero if there's no heart disease and one if there is heart disease. Similarly, correlating all attributes using algorithms we could identify. Henceforth, it is essential as we expect that our model will be useful in predicting whether cardiovascular disease will produce or not in order to detect cardiovascular disease early and appropriately [2].

Keywords-Healthcare, Cardiac Disease, Epidemic, Healthcare Analytics, Sudden Cardiac Death, Global Health

HEALTH RESOURCE OFPERCEIVED STRESSAND HEALTH CHARACTERISTICSOF COVID-19 PATIENTS

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Abstract

COVID-19 patients suffer from stress and health problems because of corona virus the characteristics of their work and their contact with patients and others. Because stress can affect emotion, it's possible that pressure explains why people react differently to mental health issues. The main goal of this survey is to learn about COVID-19 patients' perceived stress and health. In order to achieve this goal, a representative questionnaire-based survey was launched in and around Chennai with a sample of 400 COVI-19 patients. Using statistical methods, some interesting results were discovered. Perceived stress is confirmed among corona virus patients in and around Chennai, according to the findings. Finally, the findings and outcomes of this study might be useful for administration in the social contact between COVI-19 patients and their family, friends, and coworkers.

Keywords:Perceived stress, COVID-19 Patients

MULTI-TIERAUTHENTICATIONOFUSERACCESS INCLOUDSTORAGE–ASURVEY

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Abstract

The hugeissuesthat emerge when useraccess the cloud for gaining the servicesare the security and privacy preservation. So a way should have been discovered to keepuptheinformationsecurelyandforestallingunlawfulusers their housetheauthoritative data. This can be utilized with the assistance of a viable authenticationtechnique. However, picking a correct authentication procedure for the right environmentconsistentlyturnsintoaninquirycontinuously.Henceforthinthispaperwerevisitvarious authentication levels in cloud computing and furthermore examine about theissues looked during the exploration. Finally, the solution to overcome the problems isalsosuggested whichwould be utilizedin future study.

A REVIEW OF IMPORTANCE OF BLOCKCHAIN IN IOT SECURITY

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Abstract

Because of its unique ability to revolutionize the financial industry landscape, blockchain technology has gotten a lot of attention in recent years.The well-known breakthrough known as blockchain is increasing popularity. The financial industry is the one that uses the notion the most. It has been used successfully to improve significant process inefficiencies and cost-base concerns. Itfacilitates the authentication and tracking of multistep actions that require confirmation and traceability. It can also be used to administer voting platforms, as well as designations and activities. The ability to provide verifiable verification of official assertions.The Internet of Things (IoT) is seen as a game changer since it involve millions and billions of smart devices equipped with processing, sensing, and actuation capabilities. The incorporation of social networking principles into the internet of things in today's society has given birth to a new concept known as social IoT. The Internet of Things is primarily concerned with the interconnection of various smart gadgets. Due to a lack of fundamental security choices, the entire IoT infrastructure is vulnerable to security and privacy concerns. This study will understand the issues present in Iot and how the issues can be mitigated with the Blockchain concept.

A FRAMEWORK TOMITIGATE SOFTWARE LOOPHOLE VULNERABILITYIN BLOCKCHAIN

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Abstract

Blockchain is a peer to peer based network where only sender and a receiver are involved in a transaction and it removes the involvement of trusted third party so as to make itfast and cheap. The blockchain technology is expanding and pro- grassing day by day and incorporates a truly shinning future in the coming years. The transparency, trust and temper proof characteristicshaveledtonumerousapplicationsofitlikebitcoin, ethereum etc. It may be a successful technology in making the business and organizational activities more secure, proficient and impressive. Although there are tremendous features of this technology but still the security is a big concern over it. In this paper we are going to discuss some major vulnerabilities and their possible solutions provided by the authors on blockchain technology and we will also propose a framework for software loopholeissue to save the network from any kind of pitfalls where it simply keep distanced the untrusted network with the nodes of the blockchain

Index Terms—Blockchain, PeertoPeer, bitcoin, Ethereum, soft- wareloophole

WATER QUALITY MONITORING SYSTEM

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Water quality monitoring in real time faces challenges because of global warminglimitedwaterresources,growingpopulation,etc.Hencethereisneedofdeveloping in better methodologies to monitor the water quality paramerters inreal time. Water pollution is one of the biggest fears for the green globalization.In order to ensure the safe supply of the drinking water the quality need to bemonitor in real time. This paper unfurls the design, implementation and controlof theprogrammedmonitoring system. Therootsof our projectlieon themethodology of IoT. In this paper we present and development of a low cost system for realtime monitoring of the water quality nIoT. Thesystemconsistofseveral sensor is usedto measuring physical and chemical parameters of theWater. The parameter such astemperature, PH, turbidity, flow sensor of the watercan be measured. The measured values from the sensors can be processed by thecore controller. The Arduino model can be used as a core controller. Finally, thesensor data can be viewed on internet using WI-FI system. For best result, theprinciple operation of the automatic gate control arrangement is subjected to dryrunning under various possible circumstances, with proteus as the platform forworking.

SMART MOVABLE ROAD DIVIDER USING ARDUINO

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Abstract

This paper presents Smart Movable Road Divider for controlling the traffic congestion in metropolitan cities and to provide a free path for the ambulance. The work presented in this paper focuses on reducing the latency in traffic and free path for ambulance. The existing Road Dividers consists of equal number of lanes. Usually, in morning and evening peak hours the opposite side of the Road Divider is generally underutilized. To overcome this, Smart Movable Road Divider is implemented where the divider is moved based on the density of the traffic using IR Sensors. If the density of the traffic is high on one side, the divider is moved to the other side. Then the density of traffic is stored in cloud which is possible through IoT. A free path for Ambulance is provided using RF Module by controlling the traffic signal. A Prototype is developed and tested for the Congestion control which also works on safety measures by intimating the drivers about the movement of the Divider.

LIVER DISEASE PREDICTION USING MACHINE LEARNING ALGORITHMS

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ABSTRACT

The liver is the largest organ in the human body. It is responsible for all metabolic functions within the body from the conversion of nutrients within the diet into usable body substances to storing these substances and then supplying them to the cells when required. It is also responsible for the conversion of toxic substances into harmless substances. In recent years, Liver disorders have increased rapidly and it is considered to be a very fatal disease in many countries like - Egypt, India etc. If we can find out liver disease problem in early stages then it becomes very helpful for treatment. In this project, we proposed an efficient and accurate system to diagnosis liver disease and the system is based on machine learning and deep learning techniques.

We know that Machine Learning algorithms can also be used to find hidden information for diagnosis and effective decision making. The main aim is to predict liver disease using different classification algorithms. The algorithms used for this purpose of work is Logistic Regression, Decision tree, K-Nearest Neighbor and Support Vector Machines.

In this project, these classification algorithms classify the patients with liver disease or not. And hence to find that which classification algorithm shows good accuracy is found with Evaluation metrics. Evaluation metrics used to compare the algorithms are F1-score, Log loss, Jaccard. In this Logistic regression shows the highest score. This can be further done with hyper-parameter tuning for better classification results.

Keywords: Machine Learning, image processing, etc.

POWER QUALITY ENHANCEMENT IN WIND FARMS USING SVC

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Abstract

Power Quality is an important parameter in analyzing the behavior of the system for various operating conditions.Induction generator absorbs particular amount of reactive power from the grid during any major disturbance like grid fault, which leads to voltage sag. This voltage sag further leads to interconnection problems. To maintain the system voltage within the allowable range and for effective compensation of reactive power facts device is used.The improvement of dynamic voltage level by using compensating device is analyzed in this paper.During various fault conditions for wind farms are taken and their protection schemes are considered. In this paper the reactive power variation during fault condition for wind farms with wind turbine protections are analyzed and the reactive power is compensated using a facts device. With the compensation of reactive power, the reactive power transmission from the grid to the wind farm can be reduced and the terminal voltage at the wind turbine can be improved. This paper is simulated using MATLAB simulink.

A SURVEY ON IOT SECURITY: APPLICATION AREAS, SECURITY CHALLENGES, PRIVACY PRESERVATION METHODS

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Abstract

Internet of things is ruling today's world. IoT refers to large network of networks which are able to connect smart devices. They are widely used in various applications like Smart City, Public Health, Waste Management etc. The main challenge with IoT architecture is misuse of personal and private information of customers. This paper provides a clear survey on existing privacy preserving approaches which are widely used in cloud computing environment and the shortcomings of applying same approaches in the context of IoT.

Key Words: IoT, Privacy preserving, Cloud Computing

FACE MASK DETECTION FROM IMAGE USING MACHINE LEARNING

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Abstract

Effective strategies to restrain COVID-19 pandemic need high attention to mitigate negatively impacted communal health and global economy, with the brim-full horizon yet to unfold. In the absence of effective antiviral and limited medical resources, many measures are recommended by WHO to control the infection rate and avoid exhausting the limited medical resources. Wearing a mask is among the non-pharmaceutical intervention measures that can be used to cut the primary source of SARS-CoV2 droplets expelled by an infected individual. Regardless of discourse on medical resources and diversities in masks, all countries are mandating coverings over the nose and mouth in public. Public use of wearing a mask has become very common everywhere in the whole world now. From that the most affected and devastating condition is of India due to its extreme population in small area. This paper proposes a method to detect the face mask is put on or not for offices, or any other work place with a lot of people coming to work. Convolutional neural network is used in the proposed work. The model is trained on a real-world dataset and tested with live video streaming with a good accuracy.

Keywords:Face Mask, Image, Machine Learning, Convolution Neural Network (CNN), COVID

FOCUS ON PROPAGATION MODELS IN 5G MILLIMETER-WAVE COMMUNICATIONS FOR LARGE-SCALE MIMO

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Abstract

The millimeter wave (mm-wave) frequency bands of 5G (fifth generation) and their related propagation models are discussed in this article. Engineers often utilize radio propagation models to help them build and implement radio systems. Air interface, beam steering, and MIMO design are explored in this article as potential influences on radio propagation processes in 5G mobile communication systems. MIMO is a very attractive next-generation wireless communication network technology because to the fact that it has the ability to greatly improve spectral efficiency or capacity (SE) and energy efficiency or capacity (EE). The three physical mechanisms that allow a radio signal to propagate are reflection, optical phenomena, and scattering, which results in signal "fading." The term signal deterioration is often used to characterize two kinds of signal degradation, each of which may be defined as a non-additive (meaning that each degradation contributes independently to the overall result) signal disruption inside the wireless channel. Weakening may occur as a consequence of multipath propagation, known as multi-path (induced) weakening, or as a result of shadowing from objects that interfere with radio wave transmission, known as shadow weakening.

Index Terms—Energy efficiency, Millimetre-wave (mm wave), MIMO, spectral efficiency,fifth generation,propagation models.

A REVIEW ON BOTNET DDOS ATTACK DETECTION ON IOT DEVICES USING MACHINE LEARNING

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Abstract

Due to the drastic amount of increase in IOT devices the vulnerability threat against the IOT devices also increases. The Botnet is one of the most important vulnerability threats against IOT devices nowadays. They are the roots for malware, phishing, Distributed Denial of Service Attacks (DDoS), spam. To overcome the problem of DDoS attack, various machine learning methods typically Support Vector Machine (SVM), Artificial Neural Network (ANN), Naïve Bayes (NB), Decision Tree (DT), and Unsupervised Learning (USML) (K-means, X-means, etc.) were proposed. With the drastic increase in usageof Machine Learning in IOT DDoS detection, it will be important to analyze various machine learning algorithms which support DDoS detection on IOT devices. This could help the researchers to choose a suitable machine learning algorithm for DDoS Detection and assist them in future research. This paper performed an analysis on the machine learning methods for Botnet DDoS attack detection.

Keywords— IOT, Machine Learning, DDoS

A REVIEW OF NATURAL FIBRE COMPOSITES

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Abstract

The majority of the research focuses on characterising natural fibres and comparing them to conventional composites in terms of mechanical behaviour and application performance.There are dozens of distinct varieties of natural fibres, each with unique qualities that influence whether or not they are used in various industrial applications. Because of the natural nature of these materials, they have a wide range of qualities that are mostly dependent on the harvesting location and conditions, making it difficult to choose the right fibre for a certain application. This research provides a thorough examination of the qualities of natural fibres utilised as composite material reinforcement.The goal of this work is to map where each type of fibre is positioned in numerous properties by providing a detailed assessment of the qualities of natural fibres used as composite materials reinforcement. A overview of recently published studies on emerging forms of fibres is also included.A future trend analysis of natural fibre applications, as well as the necessary developments to widen their applications, is also provided and explored.

Keywords:naturalfibres;greencomposites, industrial applications

HOTSPOT VULNERABILITIES AND COUNTERMEASURES: A SURVEY

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Abstract

Public WiFi access points or hotspots are an easy and free means of data communication. However, that comes at the cost of uncalled for security threats and privacy breaches, in the form of different types of cyber-attacks. The primary reason of these attacks is the absence of a robust security mechanism in the public hotspots. In this paper we have done a survey of the different attacks that are prevalent in public hotspots and have done a detailed classification for them. All the attacks in public hotspots can be put under twobroad heads – Denial of Service (DoS) attack and Man-in-the-Middle (MITM) attack. All the different cyber-attacks done through public hotspots falls under either of these two heads. Moreover, we have also given the different countermeasures against these attacks, as proposed by different researchers.

Keywords: Public hotspot, Man-in-the-Middle Attack, Denial of Service Attack, Vulnerabilities and Countermeasures.

Modelling and Control of Bidirectional DC-DC converter fed drive for Electric vehicle system

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ABSTRACT:

Batteries are the primary energy-storage devices in ground vehicles. Now days battery fed electric drives are commonly being used for electric vehicles applications, due to various advantages, such as: nearly zero emission, guaranteed load levelling, good transient operation and energy recovery during braking operation. To fulfil these requirements converters with bidirectional power flow capabilities are required to connect the accumulator (battery) to the dc link of the motor drive system. During acceleration and normal modes, the power flow is from battery to motor whereas during braking or regenerative mode the kinetic energy of the motor is converted into electrical energy and fed back to battery. The DC-DC converter is required to perform mainly two functions: first to match the battery voltage to the motor rated voltage and second to control the power flow under steady-state and transient conditions, so that the drive performance is as per the requirement. In the present work closed loop operation of bi-directional dc-dc converter feeding a dc motor and its energy recovery due to regenerative braking has been demonstrated. The characteristics of battery operated electric vehicle under different drive condition are also presented. The effectiveness of the system is verified through the simulations using Simulink/ MATLAB.

SMART POWER QUALITY MONITORING USING ARDUINO CONTROLLER

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Abstract:

In recent years, the uses of non- linear power system loads have increased. So accordingly, the harmonic pollution to power line quality is growing. Due to the current technological advances, and the convenience of life and livelihood equipment increasing, this also increases power consumption, so that the frequency changes are quite common. The degree of change varies depending on load characteristics and design of the power supply system. In the power line system operation, when the frequency is lower than the nominal value, the system is under the overloaded condition. If the frequency is higher than the reduction

AI BASED — NAVIGATION SYSTEM FOR BLIND PERSON

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Abstract

Visual impairments people with severe condition are unable to move independently. In this fast moving world, these people are generally left underprivileged. Few methods have been used to help them and provide them with some level of mobility comfort. Conventional methods such as trained dogs or a cane are not reliable enough in providing sufficient information of possible hindrances. Moreover, training and managing dogs is challenging task. There are some guidance systems which use RFID technology. However, this technology cannot be used in an outdoor open area. In this paper, an AI based system titled —Navigation System for Blind. That is third Eye is proposed. In order to support blind and visually impaired people's mobility indoor and outdoor, this work proposes a simple electronic guidance embedded vision system which is configurable and efficient. The system utilizes three types of devices including IR sensor, sonar sensor and camera. A microcontroller processes the reflected signals from all devices in order to classify front obstacle. This system can be fastening to a hat or to a pen-sized hand mini stick. The system provides affordable and reliable solution and also helps the impaired people to be highly self-dependent.

Keywords: IR, RFID, AI, Machine Learning, Natural Language Processing

SPEED DETECTION ON HIGHWAY ROADS

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Abstract

The objective of task is to identifies the speed of the vehicles on the highway roads. although there is maximum speed limit on highway many accidents keep on because of over-speeding of the vehicles. This undertaking depicts the speed discovery for vehicles. This framework mainly comprises of Arduino, two IR sensors,1602A LCD display. The distinguished speed is displayed on the LCD screen and can find over-speeding vehicles easily.

HOME AUTOMATION ELECTRICAL APPLIANCES BY THE SONOROUS PROPERTY

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Abstract

CLAP SWITCH is a switch can switch ON/OFF any electric powered circuit through the sound of the clap. The primary need of the clap to keep energy and moreover useful to physically impaired person. The idea of a clap switch is that Electret microphone picks up the sound of our claps. The primary components like Resistors, Capacitors, LED, Bread board, Arduino UNO, Jumpers, Electret microphone are used. This circuit turns 'ON' light for the primary clap and for subsequent clap it turns 'OFF'.Clap Switch converts sound energy into electric pulses and makes use of those electric pulses as input to the circuit and presents an output on the way to manipulate mild appliances. Switch on and rancid any peripherals in the vehicles set off the safety cameras for the overall reason and the army reason. Totally the gain of clap switch circuit is Energy efficient system, normal cost and reliable circuit, High Accuracy and entire removal of manpower.

The idea of Smart Homes has made our dwelling areas extra interactive and conscious of the wishes of users. Home Automation now no longer simplest facilitates to lessen the complexity of handling all of your electric home equipment inside your private home, however additionally deliver a personalized sense of dwelling as according to the each day recurring of the user. The Home automation idea covers a extensive variety of capability proper from operating your lightings, your private home security, smooth commencing of your storage doors, on the spontaneous availability of coffee as and while you want it and nearly everything that comes throughout your daily activities. The beauty about Home Automation is that brings the complete control of the residence over the tips of the finger and the sensors are clever sufficient to take self choices primarily based totally on any forms of natural occasions and surrounding environment. For e.g. if there may be sufficient rain during the day on your city, the water sprinklers found in your lawn will experience the soil moisture and now no longer sprinkle useless extra quantity of water that day. Also, the clever lighting fixtures inside your property can modify the temperature primarily based totally at the availability of the encircling natural brightness. Clap Switch circuit is a legitimate touchy circuit.It is primarily based totally at the amplifying nature of the transistor, switching nature of transistor, relay as a digital switch. It may be utilized in houses and agencies to turn on things which include lighting fixtures, TVs, or something it's far installation to the clap switch. By clapping, you cause the microphone to activate the sound filter, which in turn sends a signal to the electric switches. Clap twiceand signals are generated, placing off the first outlet.

WATER LEVEL INDICATOR

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Abstract

Water tank overflow is a typical issue which prompts the wastage of water. However there are numerous arrangements we are utilizing straightforward transistor based water level indicator circuit. This straightforward transistor based water level indicator circuit is extremely helpful to demonstrate the water levels in a tank. At whatever point tank gets filled, we get alarms on specific levels. Here we have made four levels we can make cautions for additional levels. We have added three LEDs to show introductory three levels (A, B, C) and one buzzer to demonstrate full level (D). At the point when tanks get filled totally, we get signal sound from buzzer

AUTONOMOUS MACNINE USING IOT TO PREVENT THE ACCIDENTS

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Abstract

An accident system in automobile safety system intended to lessen the seriousness of an accident. Otherwise called pre-crash (or) collision relieving system, it utilizes the ultrasonic sensors to distinguish an imminent crash. When the recognition is done, these systems either give an admonition to the driver when there is an imminent collision. This task utilizes the ultrasonic sensors and Arduino it gives the signal to the driver. Along these lines, the driver will be ready at that position.

AUTOMATED HYDROPONIC CATTLE FEEDING SYSTEM

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Abstract

In the present scenario, the ratio of domestic cattle farming is reduced, as the farmers feel that it is not profitable. Hydroponics is the art of gardening without soil. In the absence of soil, water goes to work providing nutrients, hydration, and oxygen to plant life. Hydroponic production is used to guarantee a constant production of high quantity of green forage throughout the year for livestock feed with suitable prices. Hydroponics fodder can be produced by farmers to feed their dairy animals using low-cost diet in situations, where conventional green fodder cannot be grown successfully. Through this technique the cattle farmers will be in a highly comfortable zone to feed the cattle without any stress.This system fosters rapid growth, stronger yields, and superior quality. When a plant is grown in soil, its roots are perpetually searching for the necessary nutrition to support the plant. If a plant's root system is exposed directly to water and nutrition, the plant does not have to exert any energy in sustaining itself. The energy the roots would have expended acquiring food and water can be redirected into the plant's maturation. As a result, leaf growth flourishes as does the blooming of fruits and flowers.

Keywords: cattle farming, hydroponics, farmer, cloud

NOVEL DETECTION OF TAMPERING IN CCTV IMAGESUSING IMAGE PROCESSING APPROACH

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Abstract

Closed Circuit Tele Vision image tamper detection is an essential process in the field of forensic image processing with the rate of successful detection plays the vital role in the efficient computation of accuracy. The accuracy in identifying the CCTV image tampering is very important for the successful implementation of any proposed methodology.The technological development of tampering grows in an exponential manner in the current era which increases the complexities for detecting the fake images in the CCTV surveillance system. Image processing supports the CCTV image tampering process in an effective way only if it can be dealt with a proper approach with the mixture of mathematical concepts. This paper proposed a novel detection of CCTV image tampering using Image processing approach.In future this paper will be extended with artificial intelligence techniques of implementation through machine learningfor detecting the CCTV image tamper in a combinatorial technical approach.

Index Terms: Fuzzy, Optimality, Pixel, Image, Forensic

FOODCENTRIC E-COMMERCE WEBSITE: FOSTERINGSOCIALSERVICES

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Abstract

In today's fast-changing business environment, it's extremely important to be able to respond to client needs in the most effective and timely manner and to provide a moral support to the society as well.This paper is based on html and CSS, whose aim is to create a responsive website for food and otherproducts delivery, the primary goal of this paperis to obtain a percentage of profit to help disabledperson, RCC, and other social activities. The overall plan is to do a non-profit website and tomake the users/client to take part in the social service.Basic methods used for creating a website is to register the domain name followed by exploring a simple and relatable domain name in the internet. The contents are basically based on food delivery and product selling where the main motto is to obtain a profit percent for social services. Another factor is making the website compact for both portrait and landscape devices and the programs are based on HTML & CSSBy understanding HTML document structure and using CSS selector's one can customize a website with enough images and documents.

Keywords: HTML, CSS, Social Service

EXPERIMENTAL INVESTIGATION OF THERMO PHYSICAL PROPERTIES OF LUBRICATING OIL AND BIO LUBRICATING OIL IN SINGLE CYLINDER FOUR STROKE IC ENGINE

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Abstract

Lubricants are playing most important role to prevent friction and wear due to contact surfaces of relative motion in the machine components (bearings, camshafts, piston, gearbox, lead screw etc). The lubrication oil acts as vital role in internal combustion engine to improve the working life and performance of the engine. This study explains the thermo physical properties which are kinematic viscosity, thermal conductivity, flash point and fire point. In this experiment, the lubricity properties of synthetic oil, mineral oil (20W40) and bio based lubricant (castor) oils are compared. The result shows that thermal conductivity, flash point and fire point properties are improved in bio based oil compare with synthetic and conventional mineral oil. For kinematic viscosity, upto 60°C bio based oil shows enhanced result. This thermo-physical property may turn into stable for four stroke engine oil, especially long drive.

Keywords: IC engine, Lubricating oils, viscosity, temperature and overheating.

ANALYSIS AND DESIGN OF A G+2 RESIDENTIAL BUILDING

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Abstract

Structural design is an investigation method of examining the strength and stability of the building. The essential aim in structural analysis and design is to construct a structure capable of overcoming all applied loads without failure during it's intended life and also it should be economically feasible. The process of structural design involves various stages such as computation of loads, member design, detailing and many more. The code refers for this project are NBC, IS 456-2000. The concrete mix used in this project is M25. The conventional method of structural design and analysis leads to lot of complications and tedious calculations, which are time consuming. Nowadays design and analysis done in efficient manner, fast software's are used. Computer aided design and analyses of residential building by using AUTO CADD, STAAD PRO & Sketch up which includes- Generating 2D plan, Structural framing plan, Analysis of structure, 3D Design of structure. Our project purpose is to give a complete experience in the field of design and to gain the knowledge in a practical way. Strict confirms to loading standards recommended in this code, it hoped, will ensure the structural safety of the buildings, which are being designed.

STOCK MARKET TREND PREDICTIONUSING DEEP LEARNING TECHNIQUE

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Abstract

Stock Market has always been a highly volatile and data driven entity serving as an excellent economic indicator. Predicting the market trend will always remain arduous due to its stochastic nature. The enormous data originated from the exchanges, social media and social networks serves as a treasure of knowledge and accumulated wealth for the financial investors, financial advisors, and researchers. The proposed work focuses to provide an effective and efficient tool for the business intelligence and decision making. LSTM (Long Short-Term Memory) networks is used to improve the prediction techniques for the betterment of maintaining data accuracy.

Keywords: Artificial Neural Network, LSTM, Recurrent Neural Network, Machine Learning.

DISTANCE MESURES OVER IFMSST & ITS APPLICATION

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Abstract

Inthispaper,we propose various distance measures like Hausdorff distance, Hamming Distance and normalised Hamming Distance for Intuitionistic Fuzzy Multi Sets of second type. Further the comparison is made between the measures, and apply the suitable measure in the medical diagnosis.

ENCODING IP ADDRESS IN NETWORK INTRUSION SYSTEM IN AN IOT SECURITY PERSPECTIVE

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Abstract

The universe is now linked through net with gadgets which can be capable of communicate with precious and personal records.The information's shared by means of these gadgets are stored inside the Cloud for utilization and processing .For the Internet of Things (IoT) gadgets related with the net, the Internet Protocol(IP) deal with facilitates to become aware of the gadgets like computers, mobile telephones and so on. When an intruder wants to hack a device, the IP deal with is the predominant supply to get intruded in to the machine. Encoding strategies are used to transform the IP cope with into the layout that may be taken as enter for the system getting to know algorithms. The work performed paper is to decide the first-class approach of encoding IP addresses as a characteristic in the DoS community attack in EZVIZ and NUGU facts by way of applying the K-Nearest Neighbor (KNN)algorithm. The overall performance metrics Accuracy, Precision Recall and F1-score acquired from the KNN algorithm is analyzed for figuring out the good encoding IP cope with approach for community intrusion detection .The proposed paintings is concluded with the result Split Encoding is pleasant with excessive accuracy and also while the K value and the Error charge of Binary, Split and One Hot Encoding is as compared break up encoding is great.

Keywords: Network Intrusion, Internet Protocol, KNN, Split Encoding, IoT.

DISCERNMENT & PROPHECY OF HEART DISEASE USING MACHINE LEARNING

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ABSTRACT

Health care has become a major problem in the world. Disease cases are increasing rapidly among humans, especially among the younger generation. The healthcare sector is one of the leading research areas in the current context with the rapid development of technology and data. The latest technological advances allow for the automatic use of machine learning techniques. In this we uses algorithms namely KNN, Decision Tree, Random Forest, Naive bayes to predict disease. In this paper among those seven algorithms, Neural Networks provided the best accuracy as 98.30% and this program provides results to test model accuracy in predicting diseases. The accuracy of the algorithm is determined by the performance of the data provided. The first algorithm is a Decision Tree, second is a Random Forest and the last one is Naive Bayes. We are going to import Pandas for manipulating the CSV file, Numpy, Sklearn for the algorithms and Tkinter for our GUI stuff.

Keywords : Heart Diseases, KNN, Decision Tree

A STUDY ON CONSUMER BUYING BEHAVIOUR TOWARDS ONLINE SHOPPING DURING COVID 19

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Abstract

Online shopping is very easy shopping methods in busy life and also in pandemic situation. During pandemic situation consumers are more concerned about their health and safety. So online shopping is trending in the digital market. The major aim of this paper is to find out the consumer buying behaviour towards online shopping and the reason why the consumer prefers online shopping. The study is followed out through survey from 150 respondents. This study reveals the overall online shopping experience of the consumers

Keywords: consumer behaviour, online shopping, e-commerce.

DETECTION OF OBSTACLE'S AND ANOMALIES POSITION FOR AUTONOMOUS VEHICLE CONDITION

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Abstract

In recent years, autonomously driving the vehicle in off-road condition has a great attention. Autonomous drive is mostly used in the areas located outside the cities and also in un-surfaced roads or tracks. The aim of this paper is to develop an algorithmfor the detection of objects in two different situations. Detection is performed in two sections. First section involves static object detection with moving background called obstacles detection .The considered different obstacles are lane changes , speed pump and pedestrian crossing .The second section involves the moving object detection with static background called anomalydetection. Theanomaly considered is transient and incident precursors. In both algorithms the object is situated in front of the autonomous vehicle. By detecting the yellow color lines and white strips the speed pump and pedestrian crossing detection is performed. And the traffic anomaly is detected by monitoring the changes in the traffic variables of individual vehicles.

Index terms—Autonomous drive, speed-bump, lane changes, off-road, unsurfacedroad,anomaly ,transient,precursive.

Investigation of Y-Source Inverter for Renewable energy driven application

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Abstract

this paper extends a topology for cascaded multilevel Y source inverter employs of z source inverter unit block with bidirectional switches. The conventional Y source inverter consists of network impedance with multiple indictors and capacitors arranged Y typetopology performs setup and set down values of voltages and current values in load side. The proposed converter holds better concepts through non-linear load and linear loads. The PWM generated to each switches of Y source with almost zero switching losses with controller and other passive network elements with designed values of L and C.Y source inverter reduces harmonic distortion and overcomes limitations of conventional inverters. The proposed multilevel Y source inverter reduces harmonics further and provides a novel topology for power conversion. The competence of proposed converter configuration which produces all odd and even output voltage and power level sources fed to the load with increasing the power efficiency. The performance of proposed converter simulated in MATLAB-SIMULINK and THD analyzed andproved by the simulation results for the 3-level inverter at various levels.

Keywords: YSI, total harmonic distortion, MATLAB, multilevel

MACHINE LEARNING ALGORITHMS FOR PREDICTING DEPRESSION, ANXIETY AND STRESS IN MODERN LIFE

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ABSTRACT

Psychological health concerns such as anxiety, sadness, and stress have become quite frequent among the general public in today's fast-paced environment. Machine learning algorithms were used to predict anxiety, sadness and stress in this study. Data was collected from unemployed and employed persons from various traditions using the Stress, Depression and Anxiety Scale questionnaire. Six separate machine learning algorithms predicted anxiety, depression, and stress on five levels of severity. These are particularly well

adapted to predicting psychological issues due to their high accuracy. The machine learning model is being trained using six algorithms are Naive Bayes, Decision Tree, Support Vector Machine, K Nearest Neighbour, Logistic Regression and Random Forest. The best algorithm that suits our model should be identified and it is done by calculating the accuracy of each model's algorithms. Greater the accuracy, greater the efficiency of the model. As a result, on calculating the accuracy for each model, we found that both Logistic Regression and Support Vector Machine algorithms yields highestaccuracyforAnxiety,KNNalgorithmyieldsthehighestaccuracyfor bothStressandDepression.

Keywords: Random Forest(RF), Decision Tree(DT), Naive Bayes(NB), Support Vector Machine(SVM), Logistic Regression(LR), K Nearest Neighbour(KNN).

Tensile and Flexural Properties of Bagasse Reinforced Epoxy Polymer Composites: Effect of Crosshead Speed

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Abstract

The effect of different cross head speed on the tensile and flexural behavior of sugarcane bagasse reinforced epoxy composites has been studied. The epoxy based composites with 5 wt. % varying reinforcement (5, 10 and15) was developed using hand layup technique. The tensile behavior of these composites has been studied using different cross head speed (5, 25 and 50 mm/min) as per ASTM D3039 method. The flexural behavior of same composites has been reported using different cross head speeds (1, 1.5 and 2 mm/min) as per ASTM D790 method. It is observed from the experimented results that mechanical behavior is a function of cross head speeds. The tensile strength and the flexural strength have been improved with increase in cross head speed. This may due to uniform stress distribution across the matrix – fiber interface and also the compatibility between both matrix and fiber. Further, higher reinforcement of bagasse fiber results in decrease of tensile strength but significant increase in flexural strength of composites. This may be due to generation of voids and non-resin section due to improper impregnation of fiber and matrix. The ductility of composites also followed the same trend as that of strength behavior.

Keywords: Polymer composite, Sugarcane Bagasse, Crosshead Speed, Tensile and Flexural Strength

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"No Way, but to make it Smart" Energy Industry: Integrating Artificial Intelligence

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Abstract

This paper discusses the renewable energy sources and its necessity to fulfil the energy requirement of real world. Renewable energy is one of the booming industries where it represents a highest impact on increasing the economical status, energy needs, and fighting with the natural climate variations. But, due to their inherent intermittency, some of the renewable energy leaders, such as Wind and Solar they can not full fill the huge demand. Also, there is a grow in aggressive objective of greenhouse gas depletion. Furthermore, the money matters of distributed renewable energy plans are coming up with high competition for the risky environment developers. To solve these kinds of solutions and improve the energy distribution for changing climate intelligent energy storage is used. In addition to that, artificial intelligence is enabled for bringing a novel value streams for renewable energy plans. Adding AI to energy storage increases the returns on investment, provide the control and elasticity of varying prices, etc. Hence this paper insists that the integration of Artificial Intelligence into renewable energy industry is more important for enhancing the economic as well as customer satisfaction.

Keywords: Renewable energy system, solar, wind, artificial intelligence, green house, energy storage.

Virtual Reality Hologram Based Food Supply Management System

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Abstract

Virtual reality is considered to be a human-machine interaction and it has a huge variety of applications.In the emergency operations management, toimprove the normalization and automation, a new methodology of activity network technology is presented. Using the active network topology, initially the emergency idea has been built on emergency response events.However this model does not give accurate behaviour, though a virtual path is represented by connecting waypoints of interest in a straight line. This new work diverts food dissemination in different virtual and actual conditions. It is likewise strong for gauging boundary redirection underneath factor conditionsThe conduct of every activity mode is investigated, which gives an extremely useful directive for scientists inside the activity and the board of the food production network.

Static Structural Analysis of Roof Ventilator Turbine Blades using ANSYS

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Abstract

The current study examines the efficiency of roof ventilator turbine blades made of three distinct materials: aluminium, zinc, and high-density polyethylene. (HDPE). This will help the user select the right roof ventilator turbine blade material and understand the turbine blade's load-carrying capacity under varied wind loads. Prior works in the field of this study have been thoroughly reviewed in this study. Roof ventilator turbine blades can be studied using ANSYS software to analyse material variations and wind loads affect their structural performance. The performance of aluminium, zinc, and high-density polyethylene (HDPE) roof ventilator turbine blades is examined and contrasted. Roof ventilator turbine blades with aluminium material show less deformation and the same elastic strain for the applied wind load compared to the other two materials. But, roof ventilator turbine blade with zinc material gives higher Equivalent Von-Misses stress for the applied wind load when compared with other two roof ventilator turbine materials.

Numerical Analysis of Exhaust Gases Characteristics in Three-Way Catalytic Convertor using CFD

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Abstract

Air pollution from automobiles both commercial and passenger vehicles push the research to make changes in catalytic convertor. Most of the commercial vehicles like coal transport and mineral transport trucks relay on diesel fuel. As a result, the emission levels of carbon monoxide (CO), unburned hydrocarbons (HC), and nitrogen oxides (NOx) are taken into account. As a result of incomplete combustion, alcohols, aldehydes, and other partial oxidation products are released into the air. The whole process of this research work is done with the help of CFD approach because it will reduce the material waste and we can optimize according to our desired results. During this project, a numerical study has been carried out on the catalytic converter by varying the coating materials. Magnesium Oxide (MgO) and Platinum with Palladium was selected as coating materials. For comparison purpose, normal catalytic converter without coating was analyzed using CFD software. Different output characteristics of a catalytic converter like, velocity, static temperature and turbulent kinetic energy were compared with each other. Outcomes of the numerical analysis shows that the catalytic converter which is coated with Magnesium Oxide (MgO) particles coated catalytic converter yields the better performance behavior than that of normal, Platinum and Palladium particles coated catalytic converter.

Keywords: Three-way catalytic convertor, nano particles, coating, exhaust gas, CFD.

CHARACTERISATION OF LANTHANUM ADDED MAGNESIUM SILICON ALLOY

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Abstract

The want for stepped forward, gas performance in car and aerospace programs have encouraged the improvement of recent instructions of solid magnesium alloys. A low density of magnesium alloys makes them appealing substances for weight-saving additives withinside the car industry. Currently, the maximum broadly used magnesium alloys incorporate Al as a chief alloying element. However, the utility of commercially to be had Mg-Al-primarily based totally alloys is restricted at improved temperatures because of their negative creep conduct as a result of the grain boundary section Mg17Al12 which softens at temperatures exceeding 120°C. Therefore, enhancing the houses at improved temperatures turns into important trouble for the viable utility of magnesium alloys in warm additives. Magnesium silicon alloys are utilized in regions of excessive temperature. The houses of magnesium alloys are applicable for car and aerospace programs. This alloy slows down the fee of creep (deformation) performs a critical position in a fabric lifetime. Lanthanum is a critical element of mish metallic alloy (approximately 20%). The best-recognized use for this alloy is in "flints" for cigarette lighters. "Rare earth" compounds containing lanthanum are used drastically in carbon lighting fixtures programs, which include studio lighting fixtures and cinema projection. They grow the brightness and deliver an emission spectrum much like sunlight. In this project, a strive is made to rent Lanthanum with Magnesium silicon alloy and the traits are studied with the various variety of compositions.

Keywords – XRD, HLU, SEM, EDS, GFRP

SENSITIVITY ANALYSIS OF COCKPIT TEMPERATURE CONTROL SYSTEM OF AN ADVANCED AIRCRAFT ECS

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Abstract

Cockpit temperature control system requires maintaining the supply air temperature from the Air Cycle Machine (ACM) to havecomfortable condition inside the cockpit. The cockpit supply air temperature is influenced by many factors like bleed air flow & its rate of change, ambient condition and the attitude of the aircraft. In order to effectively design these sub systems, system simulation model has been created in AMESim. After validating the model for various static and dynamic cases in previous work, the model is then studied for sensitivity for various input and external factors. The results of the same are presented in this paper. From this analysis, the performance of ECS is studied and found that the system meets all the flight and environmental operating requirements.

Key words: Aircraft, ECS, Cockpit Temperature, Simulation, Sensitivity

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A Study of Eco-Tourism using New Technology & Ideas to move towards a goal of Zero Carbon Footprints

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ABSTRACT

This paper envisages concerning the visit of consumers or tourists in terms of eco-tourism however they'll get inexperienced product and the way they'll build call whereas getting an eco-friendly product. "Eco-friendly products are welcoming by customers United Nations agency area unit environmentally accountable."The point is to work out that what are the elements which impact the goal and the buy conduct of a purchaser while voyaging. To the extent the objective of this paper is to picture that how much mindfulness among the customers towards the climate and what are the limited time devices and procedures to save the climate.Shoppers have become lot acutely aware and thirsty of buying eco-friendly products. This study is an endeavor to analyze shoppers' perception and get intention towards green products among tourists. Here I might ascertain what impact lies on eco-tourism promoting and the purchase behavior of green products with the goal of zero carbon footprints. Its focus is also on making sure that green practices are reflected on the screen. Technological advancements are the important drivers for eco-tourism looking to reduce their carbon footprint. However, individuals can make a difference by reducing their greenhouse gas

emissions. There are numerous ways of saving energy, for example, protecting your home, setting up sunlightbased chargers, and establishing trees. There are numerous ways of carrying out rehearses that can save the climate. The example of the information has been gathered through optional hotspots for this hypothetical paper and the results are serving the social control implications and government practices that need to be implemented. Industries will use this for future ways and find skills concerning the consumer's intention to shop for green products.

Keywords- Green Technology, Green Promotion, Products, Eco-Tourism, Carbon footprints.

STUDY AND IMPLEMENTATION OF PARTICIPATORY ERGONOMICS INTERVENTION OF MUSCULOSKELETAL DISORDER (MSD) USING RULA IN INDUSTRY

Abstract

For decade's workers who carried heavy loads or maintained static body positions with such loads for extended periods developed musculoskeletal problems. In the past 20 years of research, the connections between specific job tasks and Musculoskeletal Disorders (MSD's) the study of ergonomics have been established. Ergonomics has become a significant contribution to the working environment to achieve or to complete the allotted work on time duration with perfection. As the participation of all workers from higher end to lower end coordination with the planning of intervention can create a suitable means of work in the industry. Some of the operational problems like repetitive work, weight lift, back, neck, shoulder due to continuous sitting and standing may create fatigue, so we need to find some solutions for all these problems.

This paper mainly aims at observing and analyzing the problems faced by workers who are working in the manufacturing industry continuously for longer durations. The workers using awkward postures leads to a few Muscular Skeletal Disorders (MSD's) which is the problem to the working environment? Work-related Musculoskeletal Disorders are main workers' health issues and an economic problem in all fields. Also explain the cost-benefit gives result of organizational level ergonomic workplace-based interventions, To overcome MSD's which is analyzed by using available software such as RULA (Rapid Upper Limb Assessment) explore factors related to the implementation process by creating awareness of ergonomic aspects interventions to lively wood of workers life.

Keywords: MSD (musculoskeletal disorders); OSHA (occupational health and safety association); PE (participatory ergonomics); RULA (Rapid Upper Limb Assessment); WMSD (work-related musculoskeletal disorder

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Discrete Sine Area Equalization PWM Technique based Cascaded Multilevel Inverter topology for harmonic minimization

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Abstract

This paper proposes a new Pulse Width Modulation technique for single phase cascaded H-bridge multilevel inverter for maintaining the output voltage across the load side with reduction in Total Harmonic Distortion (THD). The novelty of this paper is to equalize the area under the multilevel output voltage with that of area under the pure sine wave in discrete time periods. The main objective of this design is to maintain the desired output voltage with minimization of THD at the dynamic load conditions. The comparison between the proposed PWM technique with conventional Optimized Harmonic Stepped Waveform PWM is also shown and the results are proven that the proposed method is comparatively better. Particle Swarm Optimization algorithm is employed for solving the non-linear objective function and finding out the optimal switching angles for the MLM switches. MATLAB software is used to simulate the proposed design. The detailed mathematical modeling on the area equalization techniques with the advantage of using the proposed method than OHSW PWM technique is also presented in this paper.

Keywords: Particle Swarm Optimization algorithm, Objective function, DSAE PWM, OHSW PWM, MATLAB

Botnet Detection in Internet of Things(IoT) by Swarm Intelligence(SI) Algorithm

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ABSTRACT

Internet of Things is well known as IoT is changing human life smarter, comfort that support to communicate and exchange of data by 'things' and 'devices' through Internet. Sensors as well as communication devices are connect, communicate and co-coordinately exchange of data that are nearby surroundings. Internet of Things(IoT) is a next generation of Internet. It is well known as IoT. IoT is a combination of 'things' and 'devices' that are connect, communicate and exchange of data through internet. IoT collect the data from surroundings and send these collected data to Internet for further processing to take decision by end users. Due to tremendous growth of IoT, that makes world smart, economical and comfortable life but it has also added a lot of challenges in dealing with its security and privacy. Botnet cause DDoS attacks to perform various actions like steal

data, edit data content and make this data to unusable finally empower attacker to access the devices and its network connections to put IoT service as un-usable. The Botnet is malware that disrupt the IoT completely and hamper the IoT communication network. For protecting these IoT devices from Botnet is a challenging task and also to detect and solve these Botnet problems by applying efficient software tools or efficient algorithms for effective management of IoT network Swarm Intelligence algorithms are in nature having the characteristics of self learning, self-adaptation as per surroundings and collective behavior to complete a particular task. In this paper by applying swarm intelligence algorithm IMOPSO shows better perform than that of MPOSO, NSGA-II algorithms with respect to evaluation measures like False Alarm Rate(FAR), Detection Rate(DR), G-mean, and AUC of Internet of Things(IoT) to detect Botnet in Internet of Things.

Keywords – Botnet, Internet of Things(IoT), Swarm Intelligence, DDoS, IMOPSO

SUSTAINABILITY PERFORMANCE OF SUGARCANE BAGASSE ASH CONCRETE

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Abstract

Infrastructure building has accelerated tremendously during the last century. Concrete is crucial to this growth since it is used extensively in constructing various structures in everyday life. Among all building materials, concrete is the only one that was purposefully designed and had unique qualities. Due to its longevity and great compressive strength, it is the most used building material in the construction industry. Owing to the rising industrial need for concrete, scientists and researchers are researching alternative binder materials that are environmentally friendly and assist in organizing agricultural excess, mostly sugarcane ash. The article explores the use of sugarcane bagasse ash in concrete to increase the industry's sustainability. The concrete beams are tested for the effects of shear and flexure. Additionally, the report gives valuable information for durability investigations and microstructural analyses.

Keywords: Sugarcane bagasse ash, sustainability, construction industry, durability.

Assessment of Contract Jeopardies Controlling Techniques in Private and Government Building Projects at Bule Hora, Ethiopia: A Case Study

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Abstract

The study conducted at West Guji zone, Bule Hora, assessed the extent of construction contract jeopardies control techniques used in building projects, investigated the level of awareness of various contractual parties, and determined the impact of multiple areas and causes of jeopardies on meeting project objectives. During the study, numerous works of literature were analyzed to illustrate that jeopardy controlling is an important management technique that aids in the success of projects. Totally 93 questionnaire survey was conducted on several randomly chosen building construction enterprises in West Guji to assess their jeopardies awareness and jeopardies controlling techniques. According to the study's findings, most of those participating in the construction of West Guji zone buildings have heard of the idea of jeopardies control but lack a proper understanding of the principles of jeopardies control. And also, it was found that the majority have heard of jeopardies controlling but lack the appropriate knowledge of jeopardies controlling concepts. Most parties participating in construction projects feel that using construction contracts jeopardies management approaches may considerably reduce the impact of jeopardies on project objectives.

Keywords: Jeopardies, building construction, contract, contract management, projects, goals.

Investigation On Time Controlling Practices In Construction Projects' at Bule Hora, Ethiopia: A Case Study

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Abstract

The building industry is critical to the country's growth. According to the CIOB [1], in 2008, time management on construction projects was frequently inadequate. As a result, excellent time management for the construction project is critical in reducing the risk of project delays. The construction industry is vital to the country's development. Eighty-seven questionnaire sets were delivered to the respondents to achieve these goals. According to the statistics, the project manager has the highest percentage in creating a planning method statement and project planning meetings. The sequence was scheduled as a result of a discussion and written method statement. The activity durations were calculated in whole or in part, and the price was allocated in separate documents with contingency. The date constraints were used to constrain the performance to the dates given in the contract documents. And float constraints were used to control critically. The majority prefer to maintain them on paper for progress reports, but they are quickly entered into the database. The majority of them had prior experience with extra work linked to labor allocation. The majority of respondents recognized jobs on schedule for both labor and plant, and equipment records when it

came to tying the resource used to work done and in which location. And, also the respondents preferred to report progress in meetings or through letters, and the schedules were revised on a monthly basis. Finally, most of them have changed the logic to correspond to the progress made to deal with the implications of out-of-order labor.

Keywords: Time, management, construction project, practice, schedule, development

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A STUDY ON PERCEPTION OF STUDENTS TOWARDSONLINELEARNINGDURINGCOVID-19WITHSPECIALREFERENCETO

THRISSURDISTRICT

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Abstract

Online learning is the education that take place over the internet. It is also known ase-learning. Here the teachers and students interact or communicate online. This may takeplaceinavideochatroom,virtuallearningclass etc…Online learning is classified as synchronous and asynchronous. Synchronous technologyallows for 'live' interaction between the teachers and the students. For example: audioconferencing, video conferencing, web chat. While asynchronous technology involvessignificant delays in time between instructors and its receipt. For example: E-mail,earlier videorecording,discussionforum,etc…Corona Virus called Covid-19 sprouted from Wuhan, China in December 2019 and itspreadallaroundtheworldrapidly.Thispandemicbroughtchangesinallareas,especiallyineducation.Mostoftheeducationalinstitutionsarebasedonlyonthetraditional method like face-to-face learning in the classroom. But now Covid-19 becamea challenge to the education system and force them to close the schools and collegestemporarily and shift into online learning. This sudden transition from the classroomlearning to online learning changes the method of teaching strategies. This made studentsandteacherstofacephysicalandemotionalsocialdistancingandalsotheyfeeldepressed,stress,anxiousandunmotivated.Andtheisolationaffectedpersonalinteractionofstudentsandteachers.Thishasseriouslyaffectedstudent'sperformanceandattitudeintheirlearning.Teachers plays an important role in student's learning motivation. Direct contact andinteraction with the teachers significantly contribute to their learning motivation. But thepandemicforcedtotransitthelearningtoonline.Thentheteachershadtoteachinfront of their computer while also made students more dependent towards their mobiles andcomputers.At this situation it is very important to understand the satisfaction of students towardsthe online learning and the problems and challenges faced by them related to theirstudies during the covid-19 pandemic. In this study we are focusing the satisfaction andopinion of students towards the sudden transmission of classroom learning to the onlinelearning.Also we discuss

about the problems faced by them. It may include stress, lackof student-teacher relationship, lack of relation with friends, anxious about the exams andtheirfutureplans,physical andmentalhealthissues,etc… Thephysicaland mentalhealth issues of students while attending the online classes were headache, back pain,sleepless, muscle pain, social isolation etc... Also we focus onthe factors that affectonline learning.

SUM DIVISOR CORDIAL LABELING OF VARIOUS GRAPHS

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Abstract

In a simple,undirected chart G we define $f(uv) = 1$ if $2 \mid f(u) + f(v)$, else 0.This f is called cordial labeling as sum divisor only ifthis condition holds $\left|e_{f^*}(0) - e_{f^*}(1)\right| \leq 1$.In this paper we provefor graphs like Cartesian product, composition, ladder graph, brush graph etc are cordial graphs sum divisor.

Keywords: Sum divisor cordial Labeling and dividing graphs cordial.

CORDIAL LABELING IN VARIOUS GRAPHS

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Abstract

Allow G being a strict chart with point set V & line set E. The mapping $g : V(G) \to \{0,1\}$ of one-to-one & onto labeling produced a line-labeling $g : E(G) \to \{0,1\}$ explained by $g^*(uv) = \left|g(u) - g(v)\right|$ for evey lines $uv \in E(G)$. Letting $Vg(i)$ to be the point set V of G along with $g(v) = i$ & $E_{g(i)}$ to be the line set uv along with $g^*(uv) = i$. The cardinalities of $V_g(0), V_g(1), E_g(0)\, and\, E_g(1)$ are symbolized by $v_g(0), v_g(1), e_g(0)\, and\, e_g(1)$ orderly. If these two conditions, $\left|v_g(0) - v_g(1)\right| \leq 1$ & $\left|e_g(0) - e_g(1)\right| \leq 1$ are satisfied in graph G then it is termed as cordial labeling & graphs carrying that particular labeling is called Cordial graphs. Here in this article , we look into cordial labeling of join and composition of some graphs.

Keywords: Cordial Labeling and Cordial Graph.

Mining Sequential Pattern for Online Shopping Recommendation System using Prefix Span Algorithm

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Abstract:

Online shopping has earned a huge popularity nowadays. E-commerce companies tries to bridge the needs of producers and customers. Recommendation system is a one of the technique carried out by e-commerce to increase customer's satisfaction. Recommendation system helps in suggesting products to buy based on the consumer activities. Sequential pattern mining is one of the data mining task specialized for analyzing sequential data to discover the common sub-sequences and patterns that are occurring in a given set of sequences. Prefix Span algorithm is one of the sequential pattern mining approaches for finding frequent sub-sequences greater than minimum support. This paper proposes a sequential pattern mining approach using Prefix Span algorithm for recommender system in e-commerce application. The experimental results validate the Precision and recall of the recommender system.

Keywords: Recommender system**,** Sequential pattern mining, Prefix span algorithm

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3D printed heat exchanger design and fabrication

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Abstract

As additive manufacturing becomes more cost-effective, designs become lighter, stronger, and more efficient. Heat exchangers are a vital part of the thermal sector. Design by additive manufacturing Innovate in a way no other manufacturer 3D printing advances allow us to rethink and maximize heat exchanger performance with fantastic design It is owing to manufacturing limitations. This study used additive manufacturing and a heat exchanger. We investigated to develop the efficiency of the heat exchanger. We were using a mathematical model to adjust cell size. The model is then enclosed in a cubical surface with fluid manifolds. Inlets and outlets for thermal assessment before 3D printing using nylon. The heat exchanger created in this research is experimental Evaluated. The collected data are utilized to establish a connection between Efficacy and Transfer Units (NTU). Pressure loss in a fluid The Schwarz D channel is also investigated. This study's results are part of an early experimental assessment of 3D. TPMS heat exchangers Among comparable heat exchangers, the A shell-and-tube heat exchanger is 32% smaller.

Finite element Analysis of Mechanical and Structural Properties of Long Fiber-Reinforced Composites

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Abstract

This section examines how lengthy fiber-reinforced composite structures samples are mechanically characterised to assist optimise the constructions they have created. Firstly, it is possible that basic difficulties are encountered with composite structures strengthened in terms of long fibres (carbon or glass) and, in general, composites with parameter specifications that would optimise theoretical strength in terms of mechanical properties. Furthermore, the potential and methods of carbon and glass fibre composite measurements are addressed. Then we provide analytic models to describe the transversal isotropic composite in which the mathematical linkages allow unknown elastic constants to be calculated and are important also for numerical models to be verified. The issues involved in creating a number model for advanced composite fibrous structure to determine the mechanical characteristics are further described, either by describing the continuum or a complex numerical model that has a structural configuration to enable closer interaction between fibres and matrices. Numerical simulations show a comparable stress pattern in strain compared to the averages derived from experimental samples with results from simulations.

Keywords: FEM, Composite Structure, Testing , Mechanical Properties, nano linear properties

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An Empirical Study of Bhagwad Gita in the Context of Business Management Lessons for the Modern Corporate World

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Abstract

During an economic breakthrough and the dynamic changes happening, businesses continuously play an essential role in impacting society. In the domain of management, emergence of organizational behavior components has emerged. Management is not just the term but a summary of the human psychology that affects methodology and perception about getting the work done.

Management is related to and stresses spirituality. Studies have been done for explaining spirituality as well as its roots in the context of India. They focus on Bhagwad Gita that lays the principle of karma, dharma, and ethics. The terms are not only terms, but they state the map for management in terms of the organizational front. It has examples and quotes from Bhagwad Gita that clearly define today's old wine in the new bottle—shifting from the truth. Following Lord Krishna's teachings, studies have attempted to send a message to leaders and managers worldwide, emphasizing the importance of understanding the essence of Lord Krishna's teachings and establishing a foundation for the entire concept of spirituality concerning the stream of knowledge. Finally, they attempt to integrate the relationship between ancient wisdom, knowledge, current management theory, and the modern management vision by providing a fresh viewpoint for rethinking, reinventing, and rationalizing management methods rooted in traditional dynamics. A convenience sample of 133 respondents was gathered using a "standard questionnaire" developed on a five-point interval scale.**Keywords:** Gita, Ved, Puranas

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A Qualitative Study of Opportunities and Challenges in the Implementation of Cryptocurrency in India

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Abstract

The world of cash and money is undergoing rapid evolution right before our eyes. Digitized resources and novel monetary channels, tools, and frameworks build alternative capital channels and develop new standards for monetary exchange. Rather than relying on traditional monetary organizations to validate and guarantee our transactions, cryptographic money transactions are verified and ensured by the client's PCs signed into the money's organization. Because the money is guaranteed and encoded, it becomes impossible to grow the cash supply at a fixed algorithmic pace. Each customer is aware of the algorithmic rate. As a result, since each computation has a ceiling, no digital money may be supplied or "mined" over that ceiling. However, the market is saturated with more than 1000 digital currencies. A considerable increase in online clients has resulted in the computerization of express ideas and transformed every commercial venture. Financial actions like purchasing, advancing, and supplanting are required to convert cryptocurrency to pieces of art. Digital money is a term that refers to physical and intangible goods that are transferred electronically in a variety of applications and organizations, including online social games, virtual worlds, and shared organizations. In recent years, the usage of virtual money has spread to a variety of scenarios. This article will analyze the advantages and disadvantages of cryptocurrencies in INDIA. A convenience sample of 151 respondents was gathered using a "standard questionnaire" developed on a five-point interval scale.

KeywordsCryptocurrency, challenges, opportunities, cryptographic money, digital, bitcoin, blockchain

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A detailed study on Elon Musk and his social media influence: A Quantitative perspective

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Abstract

The rise of social media platforms has aided in the revolutionization of the whole world, where innovation has eroded borders, added color to people's lives, and created new realities. Online platforms, like the pandemic, have influenced practically everyone who uses the internet is on social media. Initially, this worldwide phenomenon started by granting users freedom of expression, assisting them in becoming content producers and architects, improving their visibility and exposure on a colossal scale. Everyone is linked through the virtual world. Thus, social networks have evolved into a luxury, not only for CEOs, who may use them to make announcements about their firms and current events and promote CSR and solidarity initiatives.

Nonetheless, it provided firms with the chance to be more accessible to their consumers and solicit their input more promptly and more effectively publicize their product and service offerings. Elon Musk's tweets significantly affect social media and its followers. His tweets even cause the financial market to move.

Keywords: Elon Musk, social media, Twitter, Instagram

An Empirical Study of the Food Habits and Nutritional Perception of the Indian Vegetarians: A Holistic Perspective

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Abstract

India is now seeing impressive economic expansion, followed by a steady decrease, much like the stalling of malnutrition levels. As a developing country, research on eating trends and their relationship to nutritional status are somewhat limited. Several nutritional studies have also been conducted in recent years to examine various sociological populations' food kinds eaten in other nation areas. These studies will evaluate and describe nutrition trends and food consumption patterns in different Indian states. They are concerned with food information and the country's consumption statistics. The food consumption patterns indicate that most Indians have a vegetarian diet, with micronutrient-dense foods such as fruits, pulses, oilseeds, nuts, and animal products ingested on rare occasions. A monotonous and deficient cereal-based diet encourages inadequate nutrient intake compared to the recommended daily amount.

Keywords: Nutrition, malnutrition, adolescence

An Empirical Study onRetention of Employees inEducation Sector

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Abstract

Each school acts as an inspiration and a model for other organizations. They employ teachers whose only purpose is to assist pupils in developing their abilities and knowledge. While few organizations can recruit efficient academics full-time, many should encourage and help management and workers. Junior staff is recruited for crucial leadership roles (similar to critical leadership posts). Effective organizations predict their future success's leadership and personnel needs. Academic leaders and essential business professionals recognize the need to boost their brilliant staff via career planning and development. Each year, every highly recognized faculty member at a professional institution is offered at another university. Consequently, the institute's top management's standard response should concentrate on retaining all such highly ranked academic personnel. Academic administrators have a critical (middle) role in maintaining highly valued faculty members.

Critical Study of possibilities of Gamification in Higher Education: Challenges, Opportunities, and Solutions

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Abstract

The use of gamification in education is a continual process for developing the learning abilities of people. It is a trending concept used by corporates for providing a learning environment for the employees, while schools and colleges are also adopting this to foster the students with exciting and exciting learning methods. This teaching approach increases students' motivation and makes the cumbersome process more engaging. Gamification makes use of various design elements in the atmosphere of education. This learning technique is gaining more popularity in today's world (**Koivisto &Hamari, 2019**). However, there is a mixed element of success associated with its application in the institutional contexts. The following study highlights the importance of gamification in higher education and other aspects, such as the challenges faced while implementing this technique, the added benefits and opportunities that come along, and the solution to different issues arising in this context. The study used a sample of 223 respondents to determine the function of gamification in courses and the influence on students in higher education. The study concludes that gamification can engage, Innovative and productive, learning to new processes, and it also helps retain knowledge. It is also found that gamification has a significant impact on higher education students.

Key Words: gamification, students, high school, training, learning, active learning

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RWA for Multi-domain Optical Network using OBGP

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ABSTRACT

The Next Generation Networks (NGN) means All-Optic-Networks needed seamless connectivity between heterogeneous (multi-domain) networks maintained by different Internet Service Providers (ISP). Routing and Wavelength Assignment (RWA) certainly be required for packet routing from source to destination in this All-Optic multi-domain network. To route in a single Autonomous System (AS) Open Shortest Path First (OSPF) lonely can perform, but for a Network with multiple Autonomous Systems (multi-domain) may require an algorithm that satisfies Wavelength Continuity Constraint (WCC) for RWA and also need to maintain communication with Border Gateways. Optical Border Gateway Protocol (OBGP) with OSPF and WCC can meet the requirements. The proposed algorithm is simulated in various scenarios like SISO, SIMO, MISO, and MIMO. Few metrics like best shortest path, the wavelength available for packet routing, path length and latency are identified for mentioned scenarios.

KEYWORDS: Next-Generation Networks (NGN), All-Optic-Networks, Dense Wavelength Division Multiplexing (DWDM.

STRESS –STRAIN BEHAVIOUR OF RC BEAMS BY REPLACING STEEL BARS BY G.I.PIPES AND GFRP RODS

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Abstract

Steel bars that are commonly used in RCC structures are subjected to corrosion due to atmospheric conditions and other calamities at critical temperatures. To avoid corrosion, it is necessary to find an alternative source for steel reinforcement. For the investigation purpose materials especially G.I.Pipes and GFRP rods havechoosen. G.I pipes have better corrosion resistant property as it will resist corrosion. GFRP rods will eliminate major repair problems that arise due to steel reinforcement and have high load carrying capacity. In order to investigate the performance of these materials on RC Structures steel roads are replaced by G.I Pipes and GFRP rods fully and partially. Beams of cross section (150x200) mm of span 1500 mm were casted. M35grade concrete is used. The casted beams are cured for about 28 days. Among them, one beam is casted using steel reinforcement, one beam is of partial steel and GI pipe reinforcement, one beam is of partial steel and GI pipe reinforcement, one beam is of fully G.I Pipe reinforcement, one beam is of partial steel and GFRP rods and one beam is of fully GFRP rods. The Specimens are tested in loading frame after curing process. Among the tested specimens, the beam which is casted with partial steel and GFRP rods shows better outcome than the other specimens.

A novel token-basedauthentication algorithm for DoS attacks in wireless sensor network

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Abstract

Abstract. In Wireless sensor networks (WSN) tiny sensor nodes are deployed in remote locations to collect information like temperature, moisture level, water level etc in the selected area. Information collected by sensor nodes is highly sensitive and vulnerable to different security attacks including Denial of Service (DoS) attack. Due to resource constraints providing security to the WSN is a difficult task. Successful authentication schemes used in wired networks are not suitable for WSN. Most of the available authentication schemes use more computations for encryption and decryption. This paper proposes a novel token-based authentication algorithm to provide security against Denial of Service attacks. The proposed algorithm has three different phases namely Registration phase, Authentication phase and New token creation phase to preserve user anonymity and provide secure authentication against DoS attacks. A simple private key based cryptography algorithm with minimal computation has been used for encryption and decryption which makes this algorithm more suitable for WSN.