

A Review on Smart Ignition System in Automobile Industries

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ABSTRACT

Normally available locks in the two wheeled vehicle do not provide any security to vehicle owner, traditional locking system used keys to lock or unlock the vehicle and these locks are well known to thieves and they can be easily broken by them, if a person having the keys of locking system then that person have the authority to lock or unlock the vehicle, the locking system doesn't know about the person is authorised or not. If the keys are lost or stolen then the owner will unable to unlock the system. About 8.1% of accident caused by teenagers (the person don't having appropriate license) and 6.4% of the accident is happens by drunk and drive cases. Statistics says that only 20% of stolen vehicles can be recovered in India. Thus there is a need for more security options to be available for the two wheeled vehicle which is unique and must be different from the traditional key locks. Biometrics system can be used as a good and effective security option along with alcohol detector and GPS system. An important and very reliable human identification method is fingerprint identification. As fingerprint of every person is unique thus it can be used in various security options. In this study a review on various lacking system in the two & four wheeled vehicles is presented. The till date work in this direction is analysed and further possible development may be analysed.

Keywords: Fingerprint Module, Ignition System, GPS Module, Alcohol Detector, Micro Controller.

I. INTRODUCTION

Because of increasing number of theft cases of the two wheelers there is a need to enhance the security level of the two wheeled vehicle. Traditional and commonly used key locks available in the bikes are well known to the thieves and thus it can be easily unlocked by the professional thieves. With the help of master key it becomes very easy to unlock or broke the lock of the vehicle by the thieves. The owner of the vehicle have to handle those keys carefully that those keys shouldn't be steal or loss. Nowadays the road accident caused by teenagers is getting increases day by day, the children of the owner have those keys and they used to drive their vehicle without

appropriate training and license. The statistics shows that the 8.1% of road accidents are caused by teenagers or the person who don't have license. The numbers of the drunk & drive cases are also big there are 6.4% of road accidents are caused by driving the vehicle by driver whose consume the over limit alcohol. As the number of stolen vehicles are also getting increasing and there are only 20 % of the vehicles can recovered from the stolen vehicles and the cases of eve teasing and girl kidnapping are also raised in todays world so we need some system that can trace the location of our vehicle accurately on our mobile phone.

This creates the demand of such type of lock which is new and provides an additional security level. The new and modern lock must be unique in itself i.e. it must be only unlocked by special and specific key. This type of feature is available in the biometrics locks i.e. the lock which can only be locked and unlocked by the human body features. Biometrics can include: face recognition, voice recognition, fingerprint recognition, eye (iris) recognition. Of all these type of special biometric recognition techniques the fingerprint recognition is the most widely used because fingerprint of every person on the earth is unique and can provide good reliability. Also the implementation of the fingerprint recognition system is easy and cheap than the other ones. Thus fingerprint recognition locking system can provide better reliability than the traditional locks and also is cheaper and easy than the other biometric locking system.

Thus here we are proposing a model which utilizes the concepts of fingerprint recognition with GPS and alcohol detector in the two wheeled vehicle to enhance the security level of the vehicle.

II. LITERATURE REVIEW

Anna Richardson discuss the use of RFID in immobilizer, then the security of different car types. The majority of the paper is on five attacks that can be used on key fobs and immobilizers. First, is the radio jamming attack where the attacker sends garbage data at the same frequency as the key fob to block the users signal from reaching the car. The result is that the car owner isn't able to lock or unlock the car. Next, the RollJam Wireless Attack. Here the RollJam device similarly blocks the key fob signal from reaching the car, but it also records it. The owner then presses the lock/unlock button again and this code is also stored by the RollJam, but the first code is released and the car locks/unlocks. The attack is then able to use the second code to gain access to the car at will. The third attack is the relay attack which carries the key fob

signal over a greater distance such that the attacker can unlock and start the car. The next attack is an attack on the Megamos Crypto transponder. Here, the attack is able to figure out the code needed to unlock and start the car through weaknesses in the cryptography. Last, an attacker can attack the keypad on the driver's code using a long sequence detailed below which must include the password into the vehicle. (2)

Aurelien Francillon, Boris Danev et al., demonstrate relay attacks on Passive Keyless Entry and Start (PKES) systems used in modern cars, build two efficient and inexpensive attack realizations, wired and wireless physical-layer relays, that allow the attacker to enter and start a car by relaying messages between the car and the smart key. Relays are completely independent of the modulation, protocol, or presence of strong authentication and encryption. Relaying the signal in one direction only (from the car to the key) is sufficient to perform the attack while the true distance between the key and car remains large (tested up to 50 meters, non line-of-sight), also show that, with setup the smart key can be excited from up to 8 meters. This removes the need for the attacker to get close to the key in order to establish the relay, analyze and discuss critical system characteristics. Given the generality of the relay attack and the number of evaluated systems, it is likely that all PKES systems based on similar designs are also vulnerable to the same attack. Finally, immediate mitigation measures that minimize the risk of relay attacks as well as recent solutions that may prevent relay attacks while preserving the convenience of use, for which PKES systems were initially introduced. (3)

Tobias Glocker, Timo Mantere et al., describes the possible attacks against a Remote Keyless System and introduces a secure protocol as well as a lightweight Symmetric Encryption Algorithm for a Remote Keyless Entry System applicable in vehicles(33)

Ayush Jain, Ajay Goswami et al., National Journal of Advanced Research, Volume 3; Issue 1; January 2017; Page No. 39-41 a finger print based car ignition system with a view of reducing car theft and to ward off unauthorized users. Nobody can ignite the vehicle except authorized by the designed system already captures its fingerprints pattern features through enrolment into the system. This is achieved with the use of fingerprint module, PIC18F4620 microcontroller and Liquid Crystal Display (LCD) module. More so, after testing of the overall designed project, the results obtained were satisfactory. Hence, the approach adopted in this study can be applied to various systems and fields such as banks, attendance system management in school, hotels, homes and so on. (4)

Harshit Khulbe, Himanshu Bhatt et al., International Journal on Emerging Technologies, a helmet integrated system with bike ignition which could ensure the use of helmet by the user. Furthermore, to enhance the security use the specific feature of human i.e. unique fingerprint. So, identifying a person through fingerprint and implementing it for security will help a lot. The rising demand of security in two wheelers and the issues of lost keys could be resolved by this system. (11)

Prof. Rahil Khan, Sajid Ahmed et al., IJESC, Volume 7; Issue No.3: Car Ignition System using fingerprint scanning as part of the car security system, it to protect the car from unauthorized access. In order to ignite the engine, the user is required to scan their fingerprint at the fingerprint sensor. The system will process the fingerprint image and compare it with the fingerprint stored in the database. If the fingerprint matches, a signal will be sent by the microcontroller to ignite the car engine. However, if the user has an unrecognizable fingerprint problem, this system will provide an alternative way to start the car, by entering a password. This system also allows the owner to enroll new users into the database or delete the existing user as well as changing the password. use of

finger print recognition to start or ignite the motorcycle against the use of conventional methods of key locks. Related work include enhancing the security of the bikes by adding different types of locks and alarming unit to alert owner of the bike in case of danger. (28)

Karthikeyan.a, Sowndharya.j., International Journal Of Computational Engineering Research a fingerprint module to read once identity to start the equipment. For this use a microcontroller to enable the ignition system if the matching between scanned data and the already existing data is correct. Comparison is done inside the fingerprint module itself and its output is given to microcontroller. Result is displayed in a LCD display whether the user is authorised or not. The sensor used is FIM 3030 by NITGEN. Microcontroller used is AT89c52. AT89c52 is a low power, high power CMOS 8 bit microcontroller. It consists of 32 I/O lines. The other main components are the decoder and the latch. The decoder used is DM74LS138 where as the latch used is 74HC373. (18)

Roopam Arora, Kapil Kumar, International Journal of Computer Engineering and Applications, Volume IX, Issue X, Oct. 15] Biometrics' authentication is used in computer science as a form of identification and access control. The special type of a sensor is used to read the fingerprint of a person and matches the data by comparing it with the authorized fingerprint image, which is stored in the database. If the match is found then the vehicles will be started. Digital image processing algorithms is employed to identify whether the incoming fingerprint image is genuine or forgery. (31)

JOHN GEORGE.A, RAJAGOPAL.N et al., ADVANCES in NATURAL and APPLIED SCIENCES, 2017 February 11: pages 133-135 finger print keypad recognition to start or ignite the vehicle against the use of conventional methods of key locks. Related work include enhancing the security of the vehicles

by adding different types of locks and alarming unit to alert owner of the vehicle in case of danger. (15)

Pritpal Singh, Tanjot Sethi et al., International Journal of Materials, Mechanics and Manufacturing, Vol. 3; 4, November 2015 A smart anti-theft system that uses GPS and GSM system to prevent theft and to determine the exact location of vehicle. The system contains GPS module, GSM modem, Infrared sensors, DTMF decoder IC MT8870DE, 8051 microcontroller, relay switch, vibration sensor, paint spray and high voltage mesh. GPS system track the current location of vehicle, there are two types of tracking used one is online tracking and other is offline tracking. GSM system is also installed in the vehicle for sending the information to the owner of the vehicle because GPS system can only receive the vehicle location information from satellites. In case of accident this system automatically sends the message for help to ones relatives. The preventive measures like engine ignition cutoff, fuel supply cutoff, electric shock system (installed on steering wheel) and paint spray system are installed in the vehicle which is controlled using user or owner GSM mobile. The owner can lock or unlock his/her vehicle with the help of SMS. This complete system is designed taking in consideration the low range vehicles to provide them extreme security. (27)

Bhumi Bhatt, Purvi Kalani et al., International Journal Of Engineering And Computer Science, Volume 4, Issue 6 June 2015, Page No. 12508-12511 the wireless technology effectively for the automotive environments by using the GSM Modem used in sending sms in case of theft intimation. whenever a person trying to steal the vehicle, at that time sends an interrupt to a programmable microcontroller of 8051 family that stores owner's number upon a miss call for the first time. When someone tries to steal the car then microcontroller gets an interrupt and orders GSM Modem to send the sms, the owner receives a SMS that his car is being stolen then the owner sends back the SMS to the GSM modem to 'STOP', while the

vehicle will be stopped. The control instruction is given to the microcontroller through interface, the output from which activates a relay driver to trip the relay that disconnects the ignition of the automobile resulting in stopping the vehicle. (6)

Prashantkumar R. , Sagar V. C. et al., International Journal of Engineering Sciences & Emerging Technologies, Volume 6, Issue 3, Dec. 2013 A security system various new features are included in addition to the engine immobilizer and alarm. Few of the important features supported by system are alerting owner by SMS about the theft attempt, allowing user to control the system remotely by SMS, tracking the location of vehicle using GPS technology, Remote Keyless System, servo motor operated locking system (handle lock, fuel lock and rear wheel lock) and side stand indicator. Redundancy is maintained to make the system reliable even in the worst case scenario, designed to be compatible with almost all the brands of vehicle. (26)

S. Philomina, M. Sundararajan., Journal of Chemical and Pharmaceutical Sciences, This framework incorporates a GSM modem and GPS which controls the ignition arrangement of a vehicle by method for a Voice call and can likewise find the vehicle on the off chance that it get lost. The vehicle can be begun or halted by a voice call from an enlisted versatile number and we can likewise find the vehicle by utilizing GPS. Embracing this innovation it will be exceptionally valuable to people to control of vehicles and can likewise find the vehicle on the off chance that it get lost. A communicating device like mobile phone is likewise joined with the Arduino, which thusly, associated with the motor. In light of the signs got by the portable, one can control the ignition. (32)

Achint Agarwala, Amit Saxenaa et al., International Journal of Innovative and Emerging Research in Engineering, Volume 4, Issue 4, 2017 an intelligent system which does not allow the rider to start the ignition of the vehicle if he is not wearing a helmet or

is not sober. The system requires firstly to authenticate the rider from the preloaded fingerprints from the database of the microcontrollers also making it compulsory for the rider to wear the helmet as per the government guidelines. The system consist of alcohol sensor. Microcontroller ATmega328 is used for the performing the efficient working of system. RF module performing the communication part along with the help of IR sensor. (1)

Ms. Khyati Varma, Ms. Sneha Jainwar et al., International Journal of Advanced Research in Computer and Communication Engineering, Vol. 5, Issue 8, August 2016 the system is designed in such a way that the vehicle will not start unless the rider wears a helmet and passes the alcohol test, thereby also solving the problem of drunken driving. The helmet has an additional feature of accident indication and reporting through GPS – GSM technology which sends message to the hospitals and family members at the time of accident. This project is designed for people's safety and is in the best interest of the society. (23)

Kiran Rana Gill, Joel Sachin, International Journal for Innovative Research in Science & Technology, Volume 2, Issue 12, May 2016 the ignition of vehicle using fingerprint sensor and liquid crystal display, they were generating the same results along with same proficiency and accuracy in it by reducing its cost factor, so that it is easily affordable by customers and we can widely spread and implement the security in different domains. This approach would be fruitful to users who want to possess valid and authenticated entry. (19)

P.J.Bharani , B.Gopinath et al., Advanced Engineering Forum, Trans Tech Publications, Switzerland, Vols. 6-7 fingerprints for train ignition along with the conventional method of using keys. The fingerprint recognition software enables fingerprints of valid users of the train to be enrolled in a database. The developed prototype serves as an impetus to drive

future research, geared towards developing a more robust and embedded real-time fingerprint based ignition systems in trains along with ZigBee communication. (25)

Mr. Amit Hatekar, Harsh Babani et al., Int. Journal of Engineering Research and Application, Vol. 7, Issue 5, (Part -2) May 2017, pp.31-34 The system is SMS-based and uses biometric technology to revolutionize the standards of security. It uses a GSM Modem to send an SMS to the authorized person in case of an intrusion. The project is realized by interfacing a fingerprint sensor with a 89c51 microcontroller and a GSM Module. As the system uses GSM technology, it provides ubiquitous access to the system for security. (22)

B. Dimple , M. Veda Chary et al., IOSR Journal of Electronics and Communication Engineering, Volume 10, Issue 1, Ver. 1 (Jan - Feb. 2015), PP 45-48 smart card capable of storing the fingerprint of particular person. While issuing the license, the specific person's fingerprint is to be stored in the card. Vehicles such as cars should have a card reader capable of reading the particular license. The same automobile should have the facility of fingerprint reader device. A person, who wishes to drive the vehicle, should insert the smartcard in the vehicle and then swipe his/her finger. If the fingerprint matches with the fingerprint stored in the smart card then it goes for alcohol detection and seatbelt checking. After passing all authentications, the vehicle will be ignited. The vehicle will not be ignited, if any one of the authentications fails and will not proceed the next step. This increases the security of vehicles and also ensures safe driving by preventing accidents. The prototype of the ignition system is used by the Master controller.(5)

R.M.Vithlani, Sagar Shingala et al., International Journal of Electronics and Communication Engineering and Technology (IJECET), Volume 7,

Issue 5, September-October 2016, pp. 28–37 biometric solution with very low cost hardware and using open source hardware and software tool plus does it our self-installation. (29)

Kuljinder Singh, Maninder Kaur, International Journal of Science and Research (IJSR), the finger print image quality based on an adaptive fingerprint enhancement method that is based on contextual filtering. The term adaptive implies that parameters of the method are automatically adjusted based on the input fingerprint image. Once the finger print image is enhanced at the required level, the pores are extracted based on segmentation of the finger print image by eliminating the finger print area above a threshold limit. The pores location and then interdistances are computed and stored in a data base. Further, the minutiae are extracted and again their location and inter-distances are computed and stored in a data base. Same procedure is repeated for the query image and standard deviation is computed between the inter-distance of the query image and data base images. The finger print information based on pores and minutiae are fused together in order to get the matching score. (20)

Hussaini Habibu, Adamu Murtala Zungeru et al., IISTE, Control Theory and Informatics, Vol.4, No.8, 2014 a biometric (fingerprint based) access control system was developed with added versatility: remotely Adding/Removing users and monitoring the system's operation via a GSM Phone. The administrator phone sends SMS commands to the system to put it in the desired operating modes (as security situations arise) and to add/remove users of the premise; thus, the system can work both independently and as dictated by the administrator. The main components are a Fingerprint Module, a GSM/GPRS modem, the door & its control circuitry, and an AT89C52 microcontroller. The microcontroller polls the SMS received by the GSM modem, interprets it to puts the system in the desired mode, sends appropriate SCAN/DELETE/ADD command to the fingerprint scanner, opens/closes the

door at each access request by any user (registered or not) based on the present system mode and command it receives from the scanner. The microcontroller's code is written in ASSEMBLY language using KEIL MICRO-VISION3 emulator/debugger. At completion, the system quite responded in the four set modes: it adds/deletes user fingerprints appropriately, shuts-off when instructed, opens/closes the door when a registered fingerprint is recognized, displays messages appropriately on the LCD screen and receives/sends the appropriate SMS to the Administrator's phone. (12)

Z. Brijet, B. Santhoshkumar et al., Journal of Chemical and Pharmaceutical Sciences, Fingerprint sensor data reading obtained in the AT mega 328 which is analysed with the pre-assigned data. Identifying the person as the car owner or an authorized fingerprint user who can take control of the car, the engine ignition system starts. If it is an intruder, engine never starts. Improvement: Other security systems can be hacked, whereas in this case fingerprint is being used as the key which is unique for each person and therefore gives improved security. (38)

Tobias Glocker, Timo Mantere et al., the possible attacks against a Remote Keyless System and introduces a secure protocol as well as a lightweight Symmetric Encryption Algorithm for a Remote Keyless Entry System applicable in vehicles. (34)

Younhee Gil, Dosung Ahn et al., 32nd Applied Imagery Pattern Recognition Workshop, additional three fingerprint images are used in enrollment phase of fingerprint verification system. their experiments using FVC 2002 databases show that the enrollment using multiple impressions improves the performance of the whole fingerprint verification system. (37)

I.V.N.S Aditya, Y. Radha Krishna Murthy et al., International Journal of Computer Applications, Volume 13. 6, January 2011 The two devices, retinal scanner and thumb scanner can be used as one alternate to another. If one method is failed, the user

can be authenticated by using another method. The failure of the device or failure of particular component in the device can be indicated to the user by using LEDs. (13)

D.Narendar Singh, K.Tejaswi et al., International Journal of Latest Trends in Engineering and Technology (IJLTET), face recognition, using the Principle Component Analysis (PCA) algorithm. According to the comparison result (authentic or not), ARM processor triggers certain actions. If the result is not authentic means ARM produces the signal to block the car access (i.e. Produce the interrupt signal to car engine to stop its action) and inform the car owner about the unauthorized access via Multimedia Message Services (MMS) with the help of GSM/GPRS modem. Also it can be extends to send the current location of the vehicle using the GPS modem as a Short Message Services (SMS). (09)

YIGANG ZHANG, QIONG LI et al., Int. Conf. on Electronics, Hardware, Wireless and Optical Communications, Madrid, Spain, February 15-17, 2006, pp172-175 the Fingerprint Vault scheme is used to ensure the security of the fingerprint template. By taking advantage of the Fingerprint Vault scheme, which is developed based on Jules and Sudan's Fuzzy Vault scheme, our system does not store the user's fingerprint template in the IC card, but a secret "locked" by his fingerprint. Only the user who owns the matching fingerprint can retrieve successfully and therefore validate his identity. It is computational infeasible for the attacker to obtain the user's fingerprint template from the data stored in the IC card. Comparing with the normal biometrics based access control system, our system can provide higher security. The overall design idea, the implementations of hardware and software of the system. (35)

Nima Karimian, Zimu Guo et al., a noiseaware biometric quantization framework capable of generating unique, reliable keys with reduced enrollment time and denoising costs. The proposed

noise-aware approach is compared to previous approach for multiple biometric modalities, including popular ones (fingerprint and iris) and emerging cardiovascular ones (ECG and PPG). The results show that ECG provides the best tradeoff between reliability, key length, entropy, and cost. In the second and third case studies, demonstrate how reliability, denoising costs, and enrollment times can be simultaneously improved by modeling subject intra-variations for ECG. (24)

D. Maio, D. Maltoni et al., the organization of FVC2002 and to capture the attention of a significantly higher number of academic and commercial organizations (33 algorithms were submitted). The FVC2002 database, the test protocol and the main differences between FVC2000 and FVC2002. The algorithm performance evaluation will be presented at the 16th ICPR. (8)

J.L. Wayman , A.K. Jain et al., the main activities of the FVC2004 organization and provides a first overview of the evaluation. Results will be further elaborated and officially presented at the International Conference on Biometric Authentication (Hong Kong) on July 2004. (14)

Rajesh Kumar Jakkar, Roop Pahuja, American Journal of Traffic and Transportation Engineering, design, development and live-performance test of the prototype of drink and drive situation detection and alert cum vehicle control system to minimize road mishaps and enhance public safety on road. It also analyses the response of breath –alcohol semiconductor sensor with respect to variation in distance from source which is critical part of system design. Based upon the recent smart gas sensing and integration of satellite and cellular wireless communication technologies, the proposed device quickly senses the drunken state of the driver during start-up/driving by estimating the equivalent breath alcohol concentration level corresponding to the legally permissible state's threshold blood alcohol

concentration level. On detection of such situation, on-vehicle siren/audio alarm is activated to warn the persons on road and vehicle control system is triggered to lock ignition or stop the fuel inflow to the vehicle. Additionally, 'alert SMS' indicating drunk driver location, tracked by onboard GPS receiver, along with vehicle number is communicated remotely to authorized (family members, traffic police) mobile user using GSM cellular network to take appropriate action thereafter. The live experiment results highlighted the successful working performance of the device in-housed at the steering wheel of the vehicle with the drunk driver. (30)

Lennox M. Mwaringa and Theophilus Biketi, Annual Conference on Sustainable Research and Innovation, 4 - 6 May 2016 The first layer of protection in the system is a fingerprint recognition, from which the doors and drive implements are opened. The fingerprint matching is done by utilizing the minutiae based fingerprint recognition scheme. The second layer consists of a Dual Tone Multi Frequency (DTMF) module which uses mobile phone to effect control over a long distance, just in case thieves break the glass and get access to the vehicle. The vehicle can be turned on by a start button upon verification by the system. No mechanical keys are used in this system. When finger ID entered is not correct, or a wrong DTMF password is entered will result in vehicle getting immobilized by keeping the door door locked, cutting the fuel supply and switching off the ignition power, an alarm will turned on to alert people in the vicinity of the vehicle. The different layers of protection defined are controlled by an AVR based controller acting as the central node. The whole system was tested using a test set up by mimicking the vehicle door, whereas fingerprint and DTMF data was received from the system. Output signals from the microcontroller proved that the functionality of the anti-theft system in good working condition. (21)

Yolanda D. Austria, Luisito L. Lacatan et al., International Journal of Computing Sciences

Research,1st International Conference on Redesigning, Re-engineering Academic Direction for Global Competitiveness, The prevention of crashing of the system,the Face Recognition System for authentication of engine ignition acceptance test#1 should have an indicator to know if the program is executed successfully. Also, in order to achieve receiving the exact location of the motorcycle, the GPS and GSM for location and anti-theft notification acceptance test#1 should have an antenna in order for the GPS to receive the coordinates from the satellites much more accurate than that of without antenna. Lastly, in order to achieve the error prevention in receiving text messages of the GSM module, the Engine Ignition by Passcode and GSM acceptance test#1 should always delete received messages to clear the allotted memory storage for messages. (34)

Bindu Nagendra, B Bhargavi et al., International Journal of Engineering Research & Technology (IJERT), Volume 6, Issue 13 Fingerprint sensor captures the fingerprint images, matches the uniqueness of each print read by the sensor and compares it to the one stored in its module or local system database. A vehicle tracking system that works using GPS and GSM technology, which would be the cheapest source of vehicle tracking and it would work as anti-theft system. It is an embedded system which is used for tracking and positioning of any vehicle by using Global Positioning System (GPS) and Global system for mobile communication (GSM).(7)

D.Sarathkumar, C.K Sathish Kumar et al., International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering] Vol. 5, Issue 4, April 2016 in driving test a candidate applied for license have to drive over a closed loop path in front of the authorities. The candidate has to drive over the path without any support over the land surface and if he fails to do he will be disqualified. For that, the authorities watch candidate manually. A lab view system with sensor has been developed for watching the candidate for

getting license by using lab view. By using this, the candidate who fails to keep their foot in the vehicle by differential output from the sensor can be monitored. Then it was processed by the microcontroller to the lab view with the help of laptop or PC and number of count detection while a person entering for license test was authenticated by using finger print sensor. So that they will automatically select or reject by the system.(10)

Kanchan Gurule, Jyotsna Nikam et al., International Journal for Scientific Research & Development, Vol. 6, Issue 01, 2018 nobody can ignite the vehicle except authorized by the designed system already captures its fingerprints pattern features through enrolment into the system. This is achieved with the use of fingerprint module, AVR microcontroller and Liquid Crystal Display (LCD) module. More so, after testing of the overall designed project, the results obtained were satisfactory. Hence, the approach adopted in this study can be applied to various systems and fields such as banks, attendance system management in school, hotels, and homes so on. (17)

Joseph E. Harter, Kokomo a starting system for an engine of an automotive vehicle having an ignition system includes a fingerprint sensor that generates a fingerprint signal. A memory has a plurality of authorized fingerprint signals stored therein. A switch is used to generate a start signal. A controller is coupled to the ignition system, the fingerprint sensor, the memory, and switch. The controller compares the fingerprint signal with the authorized fingerprint signal stored in the memory and enables the ignition system in response to the start signal and the fingerprint signal being substantially equal to an authorized fingerprint signal. (16)

III. COMPARISON OF EXISTED MODEL

Sr no	Advantages	Dis advantages
1	<ul style="list-style-type: none"> Fingerprint module used as an additional security feature in the vehicle. System was efficiently differentiating between the authentic and the fake user. 	Option of adding/deleting user from the memory is not given
2	Proposed good system to authenticate the user with the fingerprint recognition	Unsuccessful to implement
3	Various features are added in the bike that efficiently enhances the security. Like locating the bike, sms alert, immobilizing unit.	Features added act only as alarming units but does not prevent from theft.
4	Provides both biometric identification and alerting unit in the vehicle.	Designed for cars not for the bikes.

IV. CONCLUSION

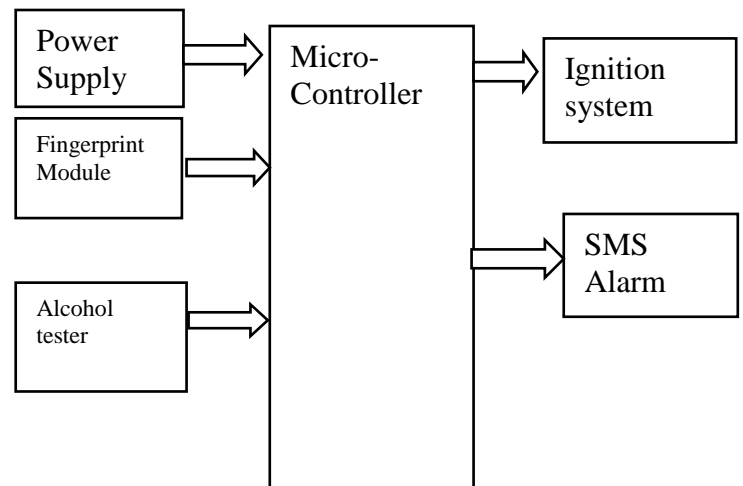
Basically, skin of human fingertips consists of ridges and valleys and they mixing together form the distinctive patterns and these patterns are called fingerprints. From different researches it has been observed that no two persons have the same fingerprints, so they are unique for each individual. Because of the above mentioned characteristic, fingerprints are very popular for biometrics applications. Fingerprints have remarkable permanency and uniqueness throughout the time. From observations we conclude that the fingerprints

offer more secure and reliable personal identification than passwords, id-cards or key can provide.

The GSM modem provides information to the user on his request. The owner can access the position of the vehicle at any instant The GPS receiver on the kit will locate the latitude and longitude of the vehicle using the satellite service. Our project deals with the design & development of a theft control system for vehicle as well as protect the life of rider.

Drunk driving is one of the very serious national and global road safety problem. Though driving under the drunken condition is illegal and punishable in almost every country, even then many persons/ young children, break the rules and feel excited to drink and drive. Presently, to prohibit drunk driving on road and minimize road mishaps is a major road safety challenge, where the recent technological developments have great role to play. We the design, development and in-vehicle testing of the proposed drunk driver detection and altering system (DDAS).

The descriptive statistics from Table 4.1 showed that the values were normally distributed about their mean and variance. This indicated that aggregate stock prices on the KSE and the macroeconomic factors, inflation rate, oil prices, exchange rate, and interest rate are all not too much sensitive to periodic changes and speculation. To interpret, this study found that an individual investor could not earn higher rate of profit from the KSE. Additionally, individual investors and corporations could not earn higher profits and interest rates from the economy and foreign companies could not earn considerably higher returns in terms of exchange rate. The investor could only earn a normal profit from KSE.



From the block diagram we can see that with the help of fingerprint module and alcohol tester input is provided to the microcontroller and on the basis of the input received from the devices microcontroller drives the output devices i.e., ignition system of the bike and the alarm. Scanning checking of the fingerprint is done with the help of the fingerprint module and the on the basis of the output of the module microcontroller drive the ignition system of bike. Only authorized person(s) record is stored in the module. If the driver consumes the alcohol beverages within the limit then the match condition occur ignition system of the bike is turn on otherwise sms alarm is received on cell phone.

V. REFERENCES

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