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Design of an Intelligent Crypto Currency Mining Farm (CMF) For Vehicle Using ML

*1Elanthamizh. S, #2Thamizhselvan. V, #2Sameer. B, #2Harish. A, #2Gogularaj. V

*1 Professor, Department of Electrical and Electronics Engineering, Sri Manakula Vinayagar Engineering College, Pondicherry, Tamil Nadu, India

#2UG Scholar, Department of Electrical and Electronics Engineering, Sri Manakula Vinayagar Engineering College, Pondicherry, Tamil Nadu, India

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ABSTRACT

Globally all the companies have made huge Capital investment on their workstation Computers, mostly this huge investment has not utilized efficiently which will leads to a less profit to investment ratio, In order to make high profit to investment ratio, workstation Computer's unused time should be efficiently used by Crypto Currency Mining with the help of Artificial Intelligence which will earn extra income to the owners. The considerable major problems, while doing cryptocurrency mining with usual and traditional PC systems are 1. System Health Issues, such as heating up 2. Algorithm for System availability free timing for mining 3. Electricity consumption vs crypto coin ratio. The proposed AI (LSAI48266x) board has the ability to tackle the above discussed problems with PC mining by the Intelligent AI algorithm. In this proposed system we introduce an Artificial Intelligence board based on several parameters this will decide the Crypto Currency Mining whenever it seems employee is not present in the Workstation Computers. While it's certainly possible to load up good hash, set it all up and leaves it running for years, it's best to do a smart AI LSAI48266x hardware board to get the most out of your CPU without using too much electricity. If we can lower our consumption without affecting performance, we stand to make some profit. The easiest cryptocurrency to mine is one that doesn't require you to build a massive mining rig. Although it was initially not possible to mine Bitcoin using laptops and desktops, the growing mining difficulty as well as the advent of Application Specific Integrated Circuit hardware created specifically for bitcoin mining has made it all but impossible to profitably mine Bitcoin at home using the processing power of a PC or laptop computer.

Keywords : Crypto vehicle, Mining, IoT, AI, Bitcoin

I. INTRODUCTION

Internet connects the world in terms of business, marketing, research and data exchange. Day by day millions of people interact electronically through e-mail, e-commerce and mobile phones. The relentless information flowing over the network demands a safe transmission. Cryptography provides more confidence and privacy for the personal information which are stored and transited. The potential problem associated with e-transactions can be restricted with efficient cryptographic algorithms. The main goal of cryptography is to ensure secure communication over insecure channel even in the presence of adversaries. From the past few decades, strong cryptographic primitives have been evolving for higher end applications.

There have been major changes which are witnessed in the world in last couple of decades and at the centre is the ever changing phase of technology such as innovations in the way people communicate, do businesses, exchange information etc. In almost all of the major fields, may it be science, commerce, or any other applied areas, the use of technology has increased and it has also smoothened the work process. Personal computers, laptops, Smart phones, Tablets etc. have become our best and most reliable friends. So ingrained is the Internet that it is hard to fathom life without e-commerce - without online shopping and banking and downloading of books, music and apps. Not only on the personal space, the internet has done disruption in the way business and financial transactions are done or handled. It is now very common for the public to make banking transactions online and buying of goods online. A recent development in the monetary and financial sector out of technological developments is the emergence and high usage of electronic money in India. Day by day the physical use of cash is declining. Huge payments are made through mobile wallets, digital wallets and smart cards. This revolution is because of the fastest development of technology and hence a new branch of commerce that is E-commerce (electronic commerce or EC) emerged. It is defined as the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the Internet. Together with the development of e commerce, the payment transactions are also done by way of internet. Especially in the developed economies there has been a gradual switchover from the use of paper-based payments medium to those based on electronics. Electronic money (e-money) is one such new product which has appeared on Indian horizon. There has been contrasting views with respect to electronic commerce, however it needs to be noted that Electronic commerce is a structured method of transacting with the use of different methodologies and technologies for undertaking the business activities. The dramatic increase in the usage of internet has enabled the development of different businesses like banking, insurance; supermarkets and other related elements such as hospitals have also integrated the information technology into different segments of their operations.

Related Works

(Brodbeck, 2010) The author in his paper "Virtual Money A new form of privately issued money in the money market", has in length explain how the money works. As per the economists money is defined by its functions. Money works as a medium of exchange, a unit of account and a store of value. Money's function as medium of exchange means that it can be used to pay for goods and services. It can be issued in three different forms: i) as a traditional currency in form of coins and currency notes, ii) can be privately issued in paper form- first form of paper money was the bill of exchange and iii) can be privately issued in electronic form. It was concluded in the research that privately issued money in electronic form is superior to the money issued in paper form because of lower transaction cost, reach and richness of service.

(Gajdhane, 2012)In this research paper, the author has explained the evolution and history of banking in India. He focused on how the need of banks and banker aroused. Money plays an important role in today's life. Hence banking is an integral part of the day to day life. The existence of bank in financial system is must. Forms of money have evolved from coin to paper currency notes to credit cards. Commercial transactions have increased in content and quantity from simple banker to speculative international trading. Hence the need arose for a third party who will assist smooth banding of transaction, mediate between the seller and buyer, hold custody of money and goods, remit funds and also to collect proceeds. He was the "banker". As the number of such mediators grew there is need to control. Such mediating agencies gave birth to the concept of "banks" and "banking". As the Indian economy is rapidly growing the demand for banking services, especially retail banking and mortgages is expected to remain strong.

(Chandra, 2015)in this research paper focus is on how the developments have taken place in Indian Banking. Among the various developments, technology has influenced the way customer interacts with banks. Electronic channels and products such as ATMs, cards, internet banking and mobile banking are offered along with traditional branch channel. People are now shifting from traditional way of banking to the new way of banking through internet. There is greater propensity of customers to move towards digital channels. Customers recognize greater convenience through digital channels. However, banks will need to cope up with issues of customer service and frauds which are associated with digital channels. This research paper focuses on effect of formation of NPCI (National Payment Corporation of India) on retail electronic payment products. It was concluded that after formation of NPCI, there is a significant growth in electronic banking such as electronic clearing products like National Electronic Fund Transfer (NEFT) and card products.

(Mandeepkaur, 2021)Here the author studied the perception of users towards plastic money both from the angle of users as a final consumer and also the member establishments in India. The paper focuses on some vital aspects like challenges accepted by bankers, users and members who are accepting money by way of plastic money in India. An empirical analysis was done and it was concluded that the users of plastic money is heavily increasing due to the high usage of technology. But simultaneously there are many other legal factors like frauds and other rules to be followed should be taken care of.

II. PROBLEM SPECIFICATION

The research is based on finding the impact of demographical factors on usage and frequency of e money and virtual money. The type of demographical factors that leads to increase in use of e money and virtual money are analysed. Even the perception of e money and virtual money users is analysed on the basis of satisfaction level of the users towards various parameters such as convenience, cost, security and privacy, easier transactions, availability, etc. It is because the perception will affect the future growth in use of the e money and virtual money. Technical issues or any other problems faced by the user are also known so that in future the users do notface any more issues

Types of Mining

(a) Self-Mining: This involves the use of a mining equipment/hardware by an individual to find a valid block

(b) Cloud Mining: In this case, the equipment and hashing power is not owned by the individual but rented from remote hosting services

(c) Group Mining/Mining Pool: Rather than working alone with limited ability to find a valid block, a group of individuals or miners could work together to find a valid block and thereafter, share the profit. Mining takes a lot of power source and from a US case, has Palleging that a device within the premises of the

individual used in mining Bitcoin was generating spurious radiofrequency emissions which was interfering with a portion of T-Mobile‟s mobile telephone and broadband network. (see www.covfinancialservices.com Date of use: 28th February, 2018).

Exchanges

The role of an exchange house or exchanger is strategic in the valuation and sustenance of the crypto-currency. New crypto-currencies must be offered to the public through the ICO before they are listed on the exchanges. An exchange is an entity engaged as a business in the exchange of virtual currencies, denomination of local currency for crypto-currency and vice versa, and exchanges of one virtual currency to another (FinCEN 2014). Most exchanges also act as wallets and money remitters or payment providers. Exchanges could be: ¬ Order-book exchanges, which use trading engines to match buy and sell orders from users. ¬ Brokerage services, which are services that allows users to conveniently acquire and/or sell crypto currencies at a given price. ¬ Trading platforms, which provide a single interface for connecting to several other exchanges and/or offer leveraged trading and crypto currency derivatives. ¬ Custodial exchange, which takes custody of users‟ crypto-currency funds (Garrick & Michel 2017).

III. METHODOLOGY

In this proposed system hereafter, all the next generation vehicles should come up with a new technology called Crypto Currency Mining Farm (CCMF) which will do Standalone Mining in the vehicle end and earn Crypto Currencies, This Crypto Currencies will be used for meeting all types of expenses for the Vehicle, it means Vehicle will earn Crypto Currencies and spend for all the listed expenses without disturbing the Vehicle owner.

The proposed concept contains two modules 1. CCMF in the vehicle 2. toll collection, CCMF is a device can be installed by any low voltage. Which will convert electrical energy to digital money. Tensilica's 64 bit processer is used in crypto currency mining farm. Crypto currency mining farm will connect with internet, inside the vehicle and access the crypto currencies and will start the mining process and will earn the Crypto Currency and moves the Crypto Currency to the Digital Wallets. Figure 1 shows electric tollgate collection .This will be used for all expenses on the later stage and a Wi-Fi module is attached for the internet. Wi-Fi module with 2 relay is provided in the ETC side for toll gate access and EV charging. Once pay mode switch is pressed automatically the amount from the digital wallet from vehicle will transferred to the ETC as toll fee and something will be detected from our digital wallet. The same process will be followed for all the expenses like Charging and parking.

Globally Transportation charge is getting to an extreme high due to the demand of non-renewable resources like Petrol & Diesel, Electronic Toll Collection and Vehicle Parking Expenses all leads to make the travelling cost unaffordable. The automobile industry proposes new ideas like Electric Vehicle which will replace the usage of existing high-cost non-renewable resources like Petrol & Diesel, in the same way Automobile Industry proposes a new idea to reduce the Expenses of Electronic Toll Collection Charges, Vehicle Parking Expenses, and expenses like Electric Vehicle Charging Station Bills.

Crypto currency mining is the process that crypto currency use to generate a new coins. By mining we can earn crypto currency. And we can receive a crypto currency as a reward for completing blocks of verified transactions , which r add to crypto currencies. Block chain, as an immutable distributed ledger, is the underlying technology behind crypto currencies. The core elements of block chain include complex cryptographic functions for security and immutability,

linear and nonlinear data structures to store, manage, and process crypto currency transactions.

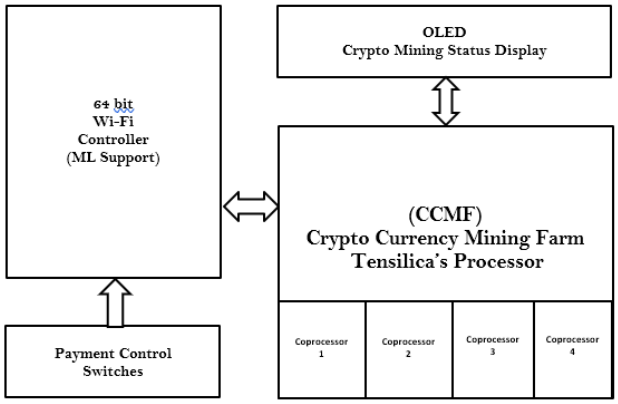

Figure 1 Vehicle Unit

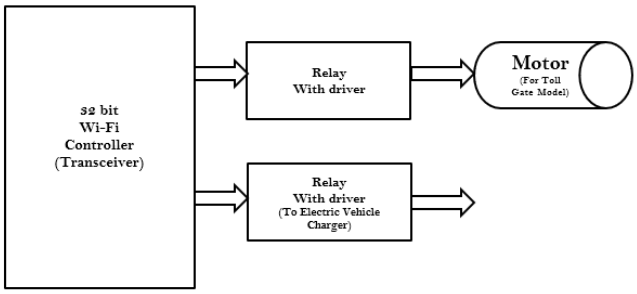

Figure 2 Toll Gate Unit

64 Bit Mining Processor

Processors are available in the form of semiconductor chip, performs like heart in the human being for billions of electronics systems, computer, digital TV, set up boxes, mobile phones, laptops, tablets, home appliances like washing machine, oven, dish washers etc. Contemporary processors handle gigabyte operations in one second and operate at Gigahertz frequency.

To implement parallelism in multicore Processor, it is required to identify programs that can be run parallel. Also program coding style must be change appropriately to maximize the parallelism. 3

➢ For identifying the parallelism, there are 3 popular automation approaches like compiler based analyzer, hardware approaches and profiling.

➢ Multithread methods that would enable parallel computing and programming models.

➢ Memory wall problem that limits the memory bandwidth for all communications between main memory banks and multicores, fragmented cache and latency in main memory. ➢ IO pins are big bottleneck that will slow down the pin growth rate and pin pair bandwidth, due to narrow pin pitch, if this issue is not taken proper care by decoupling the inter pin serial capacitance, the maximum data rate handled by the pin will be degraded enormously.

➢ Inter processor synchronization, context switching and mutual exclusion needs efficient co-ordination [5][6][7].

Both RISC and CISC Processor Architecture have their own merits and demerits and neither RISC nor CISC standalone Processor can produce a complete solution to the present day computational needs, hence there is a strong need of Hybrid Processor. Latest Multi Core Processors give efficient performance for modern day computation, control and communication System based applications. Same heterogeneous cores fail to deliver desired results. In certain situations, RISC processors are better. CISC is better in some others situation. In which situations/applications CISC is better and what situations/applications RISC better.

OLED DISPLAY

The light generation in either conventional LED(Yokoyama et al., 2009)or OLED, is because of the recombination of holes and electrons. But the carrier transport to process governing recombination rate and architecture are different .However, so far available organic materials have very high hole mobility as compared to electron mobility, which is very low, and this causes the recombination to take far from interface at near the cathode. Additionally, holes often reach at the cathode having a higher mobility and thus carrier quenching took place, (Kim et al., 2016; Park and Lim, 2007)which was major cause for the poor performance

of Chapter 1 | Introduction 8 OLED in initial days. To offset this problem, researchers have suggested using the different layers/ multi layered structures for the charge injection balancing. To form a multi-layered architecture, these layers are used in conjunction with each other. For example, the base substrate can be a flat glass, coated with indium tin oxides (ITO) by sputtering process. ITO coated glass works as anode for hole injection as well as high work function transparent material. The p-type semiconductor polymers used as hole transport layer (HTL) can be coated on top of the anode by spin coating and further then treated by UV light to cure. In order to cap the organic ligands, the emitting layer can be deposited by inkjet printing/ spin coating and then treated by annealing. A metal oxide or n-type semiconductor polymer used as electron transport layer (ETL) can be deposited by vapour deposition technique.

IV. Algorithm

1 Smart contract is Created between buyer and Battery service provider.

2 Status of the application is requested with vehicle blockchain cloud.

3 Applications are selected for a vehicle based on the age of vehicle, battery discharging time.

4 Road transport department validate the vehicle records with blockchain.

5 Consider the charging time T1 = 5hours for the typical EV model. Once the vehicle charged (actual time taken- T2) recorded with EV blockchain cloud. If T2 == T1 then Smart Contract state changes to Battery performance is good. else Recorded with blockchain cloud. If T2 = 7 hours to 10 hours, then battery needs to be replaced and should be recorded with blockchain cloud. Smart contract status changes to Battery performance is poor needs service/replacement.

6 Change State of application to new battery fixed. Approved by smart contract.

7 | Blockchain vehicle analysis report is sent to the cloud.

8 | Vehicle details are updated to the smart contract.

9 The updated smart contracts are finally sent to the road and transport authority department.

10 end

12 else

13 Revert application and smart contract if the vehicle is not recommended for the buyer due to poor battery performance.

V. CONCLUSION

This research fixated on engendering the transparency in an automobile sector. the terminus-to-end process is monitored through the duno blockchain. first, simulation of blockchain transaction of conveyance tested with the duno sandbox platform. second, the design of the conveyance chain is done with the ethereum truffle platform. all the transactions can be monitored in an authentic time environment. each conveyance assigned with the dunocoin address to track all the transaction; the full history of the conveyances can be accessed by the truffle platform. third, we have engendered the meta mask interface for the conveyance chain. this is a mobile/desktop application where all the tracking is done with the avail of the web page. each conveyance can be assigned with the meta mask engendered blockchain code. all the transaction referred to that conveyance can be tracked with the blockchain code. this sanctions the users to test the records of conveyances afore they make purchase. blockchain consortium approach brings all the automobile sector manufactures in a single platform. this sanctions anyone to track the conveyances records utilizing blockchain technology. ecumenically all the manufacturers can join and engender a cumulated solution for the customers, this will enhance the utilizer experience and bring the transparency to an ecumenical level. blockchain electric conveyance cloud of things (bevcot) proposed

to integrate the iot – blockchain- cloud accommodations to enhance the utilizer experience, accommodate sizably voluminous volume of customers.

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