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1	Dr.E.Upendar	Department of Management	Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE): Boost to Micro and Small Enterprises (MSEs) in India	0970-2555	http://www.journal-iiie-india.com	http://www.journal-iiie-india.com/1_jan-dec_21/5_june.pdf	UGC
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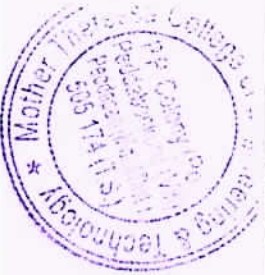
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Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE):

Boost to Micro and Small Enterprises (MSEs) in India

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ABSTRACT:-

The purpose of this paper is study how the CGTMSE scheme is boosting the entrepreneurs for their financial requirement of business. Availability of bank credit without collateral/third party guarantee would be a major source of support to the first generation entrepreneurs to realize dream of setting up a unit of their own Micro, Small Enterprises (MSE). The government of India and SIDBI set up this scheme to empower the entrepreneurs. The scheme will be improve competitiveness of MSE Entrepreneurs. The past 13 years the Performance of this scheme is increasingly every year.

The MSE Units are boon for the rural people and it will also create new enterprises to develop the nations. In this scheme many public sector banks, private sector banks, foreign banks, Financial Institutions will grant the loans to MSE Sector. This study knows the overall performance of CGTMSE scheme in India.

Key Words: - CGTMSE, Entrepreneurs, GDP, MSEs, Performance, Banks, SIDBI, India.

ENSURING PATIENT-DEFINED DATA PRIVACY IN DECENTRALIZED ELECTRONIC HEALTH ENVIRONMENTS

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ABSTRACT: Through a private, blockchain-based ehealth ecosystem, only approved healthcare providers can access patients' medical records. All blockchain transactions are permanently recorded in the ledger. The eHealth system maintains tabs on patients' shifting privacy preferences. Changing privacy settings is something that many patients do without informing their doctor or anybody else who could be affected. To address these issues, we developed, evaluated, and analyzed PDPM, an adaptable nudging-driven data security system for user-driven e-health systems. Patients have the ability to restrict access to their own medical records. Protecting sensitive information in real time is now possible with blockchain smart contracts. Privacy settings that can be easily adjusted by e-health firms benefit from being user-defined and immutable. Only those with permission to do so can challenge entries in the ledgers, which record all transactions. People should be given privacy advice that is tailored to their specific habits in accordance with the principles of nudge theory, but they should be allowed to exercise free will regardless of the information provided to them. Finally, we demonstrate how PDPM can be implemented in distributed eHealth systems to provide users agency over their personal information.

Keywords: blockchain, decentralized ehealth, data privacy management, nudgetheory,smartcontract,tamperproofdata

1. INTRODUCTION

Medical services may be enhanced by the integration of artificial intelligence (AI), the internet of things (IoT), the blockchain, and robotics (Robots). There have been efforts from corporate, academic, and healthcare sectors to improve the quality of real-time patient medical records. Electronic medical records (EMR), personal health records (PHR), continuity of care records (CCR), open electronic health records (open EHR), and other similar systems make it possible to access a patient's medical history either remotely or remotely (see Table 1). Maintaining access to medical patient data from several sources is simplified by employing security measures. Patient information may be difficult to get since it is spread among so many different places. So, the blockchain-based solution enables a unified platform for those authorized to

access data from many locations. As a result, people are paying closer attention to issues of safety, communication, and system efficiency.

The default data privacy policy for each patient in an e-health system is typically determined by hospital guidelines or healthcare stakeholders. By design, e-health services have multiple layers of privacy protection in place. The memo detailed measures that would be used to ensure the safety of users' private data on the massive eHealth and online booking platform. Unfortunately, not all electronic health record systems allow users to modify their privacy settings or notify registered users of such modifications. Privacy concerns are made clear by standard eHealth resources. The procedure is currently performed manually, and information is stored in a notebook that is accessible both online and offline. However, dishonest individuals are given room to
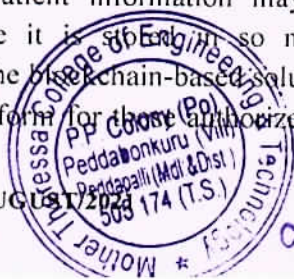
MACHINE LEARNING AND DEEP LEARNING FOR FRAUD DETECTION

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Abstract— Forgeries are difficult to detect since they change frequently and do not adhere to any clear trends. Con artists are taking advantage of modern technology. They utilize these tactics at their own risk to circumvent safeguards. Data mining can uncover patterns of unusual activity that can be used to identify and investigate potential fraudulent actions. A monetary exchange occurs when two or more persons exchange money or other financial assets. This paper examines some of the most well-known machine learning and deep learning algorithms. K-Nearest Neighbors (KNN), Random Forest (RF), and Support Vector Machines (SVM) are a few examples. It discusses other tools such as autoencoders, CNNs, RBMs, and DBNs. People in Australia, Germany, and the EU will be able to use records. Common measurements include area under the curve (AUC), Matthews correlation coefficient (MCC), and cost of failure.

Keywords—credit card, fraud detection, machine learning,deeplearning,randomforest,knearestneighbor,supportvector machine, autoencoder, restricted boltzmann machine,deepbeliefnetworks,convolutionalneuralnetworks

1. INTRODUCTION

Untrustworthy individuals can easily take advantage of trusting clients who use credit cards and internet payment systems to steal their credit card information and perpetrate crimes. Every day, people buy awful items. Scammers are stopped and punished when online markets and financial institutions cooperate together. Using machine learning and deep learning techniques, you can avoid pre-transaction scams.

Machine learning is one sort of AI that is gaining popularity. Machine learning is being utilized by an increasing number of businesses to improve the quality of their products. Statistical models and algorithms underpin machine learning. Deep learning based on ANNs is utilized in machine learning. There are various types of tools that can learn from "training data" and improve over time. Restricted Boltzmann machines, auto-encoders, deep belief machines, and recurrent machines are a few examples. A learned neural network can be used to discover patterns in massive datasets. Credit card users and businesses are exposed to

fraud and illegal entry. Credit card theft is expected to cost €1.8 billion in 2016, which is 0.4% less than in 2015. Divide the total number of transactions, which totaled to 4.38 trillion euros, by 1,000 to get the answer. According to Nelson, credit card fraud would cost the global economy $21.84 billion in 2015 and $32 billion in 2020.

In this study, we will compare three different types of data. For this investigation, databases from Germany, Australia, and Europe were examined. The contrast between machine learning and deep learning. An ensemble is formed by combining the three best models from each dataset. To obtain findings, models created using machine learning and deep neural networks were compared.

2. RELATEDWORK

Tuyls et al. state in their year that identity theft generates a slew of major issues. Because the datasets are skewed and theft occurs seldom, it is difficult to create good models for this application. Adding unstructured data and trends
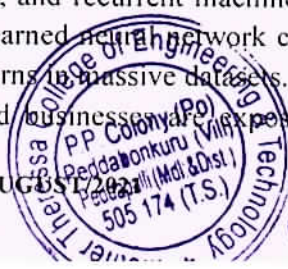
ENHANCING MANET MULTICAST CAPACITY THROUGH INFRASTRUCTURE SUPPORT

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ABSTRACT:

We investigate the multicast capacity of a simulated network in this study. Both node mobility and the availability of supporting infrastructure are taken into account. Combining mobility and infrastructure with multicast transmission and infrastructure looks to be the best technique for increasing multicasting capacity. In this analysis, we look at the correlations between the three criteria described above and a network's overall data transmission capability. In an ad hoc network, the number of stationary "base stations" is often less than the number of mobile users. Following the implementation of a comprehensive mobility framework, users are free to roam wherever they choose within a certain radius of their operational headquarters. The effective range is determined by the user.

Key words: Wireless ad hoc network, multicast capacity, mobility, infrastructure, hybrid network, scaling law

1. INTRODUCTION

Wireless ad hoc networks have advanced significantly in recent years, particularly in the corporate and academic sectors. They did the most important research, which established that when the number of nodes in a network approaches infinity, the capacity of each node in the network decreases at a rate of $(1/n)$. Despite advancements in scheduling, routing, and data relaying systems, this problem persists. Several research groups have investigated how to improve the data transfer rate of ad hoc networks. Combining node mobility with network architecture has been a key focus of this study, particularly through the use of multicast broadcasting.

We propose including the requirement that all wandering nodes be located inside a spherical zone with a radius equal to $1/f(n)$. This will increase the mobility model's applicability. The authors created a generalized random geometric graph to demonstrate that the network's per-node capacity was practically workable.

The adaptability of ad hoc networks enables increasing data transfer speeds straightforward and economical. As this 2019 study illustrates, the implications of climate change on global food security are complex. They contend that the majority of previous study has concentrated on the direct A mixed network's capacity grows linearly when new base stations are installed at a faster rate than new infrastructure. Capability growth is linear. Despite the fact that a single base station can only support a limited number of users, Kozat and Tassels demonstrated that a per-node capacity of $(1/\log n)$ is nevertheless possible. A preceding study (1) mentioned by Agarwal and Kumar (year) provides more context for this finding.

A multicast transmission occurs when data is sent from one node to $k+2$ more nodes. Both unicast and broadcast methods are supported. Having a chat with everyone at once is the inverse of broadcasting, or unicasting. According to Li's research, a single multicast broadcast may have a larger per-flow capacity than k individual unicast transmissions. Multicast transmission speeds rise
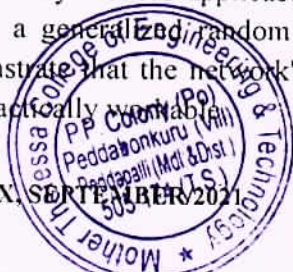
GREEN AND EASY: SYNTHESIS OF POLYFUNCTIONALIZED PIPERIDINES ISCATHED BY ASCORBIC ACID AT ROOM TEMPERATURE

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ABSTACT:The Knoevenagel intramolecular aza-Diels-Alder imin-based reaction in ethanol media can be used to efficiently manufacture polyfunctionalized piperidines in a moderate and environmentally friendly manner. In this procedure, ascorbic acid is used as a green and biodegradable catalyst. The condensation method, which has five components, efficiently enables the reaction between 1,3-dicarbonyl compounds, aromatic aldehydes, and different amines, resulting in the creation of products with good to high yields. Several fundamental characteristics characterize the proposed strategy. These include the use of an environmentally benign, biodegradable, and widely available catalyst. Furthermore, the method employs a simple work-up procedure that does not necessitate column chromatographic separation. The reaction conditions used are mild, ensuring that any potentially toxic organic solvents are avoided. Furthermore, the procedure is highly efficient and adheres to atomic economics principles.
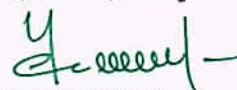
*Keywords:*Ascorbicacid,Polyfunctionalizedpiperidines,Greenprocedure,Ethanolmedia,Simplework-up

1. INTRODUCTION

Polyfunctionalized heterocyclic compounds are essential components of many natural products and synthetic molecules with enormous potential for use in biology and the development of synthetic therapies. In extensively substituted piperidines, both synthetic medicines and naturally generated monocyclic and bicyclic alkaloids are prevalent. Furthermore, piperidine and its derivatives have a wide range of biological actions, such as antihypertensive, antimalarial, neuroprotective, antibacterial, anticonvulsant, and anti-inflammatory properties. As a result, these molecules are extremely important in the field of pharmaceutical research and development. It is important to note that substituted piperidines are effective therapeutic agents for viral infections, diabetes, influenza, AIDS, and cancer metastases. Furthermore, recent research has shown that certain tetrahydropyridine (THP) derivatives can inhibit the enzymatic activity of farnesyl transferase. Solvents and catalysts are two of the most important components in green chemistry. In recent years, researchers have struggled to synthesize target molecules utilizing ecologically friendly and sustainable catalysts while avoiding harsh reaction conditions. Green catalysts for multi-component reactions (MCRs) have sparked substantial interest in organic and medicinal science.

Because piperidines are so important, current research has used multi-component techniques to synthesis them, utilizing the following constituents: The compounds listed are VCl3, BF3.SiO2, Ph3CCl, LaCl3.7H2O, tartaric acid, iodine, ZrOCl2.8H2O, ZrCl4, tetrabutylammonium tribromide (TBATB), Bi(NO3)3.5H2O, bromodimethylsulfonium bromide (BDMS), cerium ammonium nitrate (CAN), p-toluenesulfonic acid monohydrate (p-TsOH•H2O), Fe@Si-Gu-Prs, SbCl3, glutamic acid, and SbI3. Although these methods have certain advantages, they also have some drawbacks. These constraints include the need for multiple procedural steps, the use of potentially hazardous organic solvents or catalysts containing transition metals, a time-consuming setup process, relatively high catalyst costs, waste disposal challenges, and suboptimal yields.

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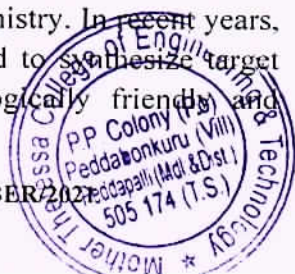
AUTOMATING HEALTHCARE SUPPLY CHAIN PROCUREMENT WITH BLOCKCHAIN SMART CONTRACTS

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ABSTRACT: Regular checks of the healthcare supply chain (HCSC) by doctors and nurses are essential during the COVID-19 pandemic. Healthcare personnel still confront challenges in areas such as ordering, forecasting, delivering, and purchasing despite advances in technology and a wider variety of treatment options. Group purchasing organizations (GPOs) provide savings and a wide range of options when shopping for healthcare services and consultancy (HCSC). Slow and inefficient is how the Government Printing Office (GPO) makes purchases. It has been proven that incorporating blockchain technology and decentralized storage systems can enhance several facets of how firms function. Increased transparency, enhanced communication with all relevant parties, streamlined procurement procedures, and more precise pricing are just a few examples. Distributors, wholesalers, retailers, and manufacturers may all communicate with one another thanks to blockchain technology. This research utilizes blockchain technology and smart contracts in an effort to streamline the GPO contracting procedure. Our organization provides HCSC with a comprehensive legal structure by employing cutting-edge stakeholder link tactics. The Remix IDE was used by the development team while they edited and tested the Github smart contract code. Within the scope of our study, we investigate the risks and costs associated with such transactions. Our research shows that blockchain technology is practical for the economy since members in the network incur low transaction costs.

INDEX TERMS: Blockchain, Ethereum, Security Analysis, Blockchain Applications, Group Purchasing Organizations, Healthcare Supply Chain

1. INTRODUCTION

Supply chain management is useful in many fields, including healthcare. Suppliers play a crucial role in improving care by ensuring patients are safe, ensuring treatments are effective, and keeping costs down. It's possible that healthcare providers will avoid using supply chain and logistics technologies. Supplying, transporting, and managing medications is an expensive process for the healthcare business. According to Healthcare Finance, the supply chain waste amounts to around $25.7 billion annually. Industry and retail supply networks are more streamlined and controlled than healthcare networks.

Lack of communication and outdated protocols

and technology are just a few of the issues plaguing the HCSC. False information can damage commercial relationships. High transaction costs, fluctuating prices, inaccurate forecasting, and convoluted distribution structures all work against HCSC's expansion. Healthcare supply chain management (HCSC) is greatly aided by GPOs, or group purchasing organizations. The economic impact of the concept of collective purchasing power is broken down. Many businesses, particularly those in the retail and hotel sectors, cater to customers who prefer to shop in groups. Group Purchasing Organizations (GPOs) are similar to wholesalers in that they purchase things in bulk from manufacturers, but they negotiate pricing with hospitals.
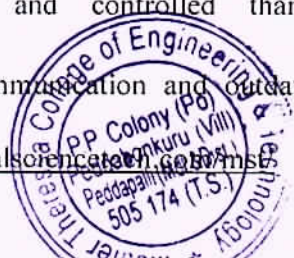
LOW-POWER, HIGH-AREA APPROXIMATION MULTIPLIERS: A DEVELOPMENT PERSPECTIVE

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Abstract: There is a requirement for data compression in several fields, including signal processing, digital image analysis, multimedia, and image processing. The use of approximation computation is widespread in mathematics. A potential catalyst for the introduction of additional high-speed areas is the development of multimedia programs capable of transmitting and receiving massive volumes of data quickly. Due to their robust nature, these circuits can easily recover from malfunctions. They are also renowned for their impeccable numerical precision. Improved system performance is attributed to the application. Eliminating lag time and power consumption is a priority. The two compressors we provide are more compact, faster, more powerful than our own, and they achieve the same level of precision. All designs were thoroughly analyzed and forecasted with regards to AOC, area, delay, power (PDP), margin of error (ER), range of error (ED), and CMOS technology at 45 nm. Precision compressors save 57.20% on energy and 56.80% on time as compared to a 4:2 compressor. Compressors often use 8- and 16-dada multipliers. In terms of precision, boosters are on par with cutting-edge tools. The proposed framework will be compatible with error-handling techniques, allowing for the application of features like image improvement and transmission.

Keywords: **Signal –** processing, Digital image analysis, Multimedia, Error tolerant, AOC, CMOS.

1. INTRODUCTION

For tasks like data mining and multimedia signal processing, less precise techniques can be applied. They can be substituted for the same items. Mathematical approximation and working with errors are two areas that are getting a lot more attention in the realm of study. More and more individuals are utilizing these apps, and they continue to expand in size. It is possible to alter digital signals with a simple transistor-based adder. The incomplete output of a multiplier could be added to with a full adder. The complexity of fixed-width multiplication circuits can often be reduced by employing truncation. A variable correction component corrects any errors introduced by quantization as soon as the size is shrunk.

Power consumption can be reduced by employing approximate multipliers during bit capture. Partial outputs can be generated with less complicated circuitry by eliminating the less crucial inputs. Multiple adder circuits are required to accommodate partial products. The unfinished product reduction tree reveals that there are a total of four Dadda 8 x 8 multipliers and two Dadda 4 x 2 compressors. The proposed compressors are harmful to MRE because they generate non-zero outputs when given inputs of zero. The focus of this analysis shifts to an alternative scenario. Accuracy improves as a result. The first bit of each input is used by Sequential Shift Machines (SSMs) to
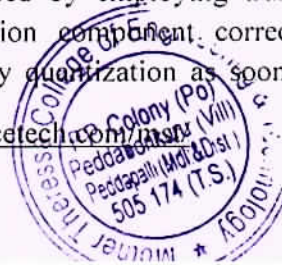
AN EXTENSIVELY MODIFIABLE PIEZOELECTRIC COMPRESSOR APPARATUS: THE CREATION PROCESS

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Abstract. Positive displacement compressors necessitate the use of valves or internal volume ratios. The majority of compressor losses are caused by these two factors. The peristaltic compressor is a novel compressor design. It is an efficient compressor due to its variable volume ratios and valve less compression. The design, actuation pattern, and compression chamber construction of a prototype peristaltic compressor will be demonstrated in this talk. By sealing and pushing a flexible diaphragm on a female die, a compression chamber is formed. By continually squeezing the female die diaphragm, a linear motor squeezes and displaces fluid. The working fluid in the early tests was air, with volume ratios ranging from 1.143 to 8 and operation frequencies ranging from 1.28 to 2.31 Hz. These results show that the actuation pattern influences the compressor's primary performance parameters. Take into account mass flow, volume displacement, and pressure ratio.

Keywords: peristaltic compressor, valves or internal volume ratios, compressor losses

1. INTRODUCTION

The vapor compression cycle is used in systems such as transportation, industry, residential, and aerospace. Refrigerators and air conditioners are examples. To improve gas compression efficiency, new compressor technologies are required. During gas compression, the compressor generates more heat than the rest of the apparatus. Leaking valves, port losses in reciprocating and rotary compressors, and set volume ratios that over compress or under compress scroll and screw compressors are the most typical causes of these losses in positive displacement compressors.

Peristaltic compressors are employed in HVAC&R because they may operate at various volume ratios without the usage of valves. The cylinder chamber of the compressor aligns. A flexible diaphragm is engaged in cylinder manufacturing. Spaces can be divided into smaller ones using electromechanical motion control.

Electromechanical devices form a pocket that completely shuts off the room. This compression does not require any valves or volume ratios. Finally, the HVAC&R industry will investigate this technology and its numerous applications.

Islam and Bradshaw created a basic peristaltic compressor thermal model in another investigation. The model included diaphragm types, materials, actuation speeds, and volume ratios. The compressor's major physical measurements were estimated using this model, and a reconfigurable prototype was created. The prototype facilitates testing of this compression method in order to find the ideal volume ratio, diaphragm arrangement, and material composition for maximal capacity and volumetric efficiency. The experiment makes use of air for simplicity. The primary goal is to squeeze refrigerant.

2. LITERATURE REVIEW
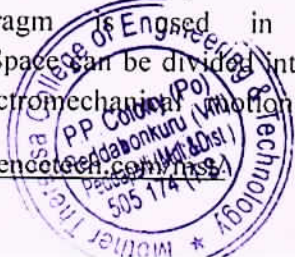
BLOCKCHAIN IN SECURITIES EXCHANGE BOOKING AND REGISTRATION

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ABSTRACT: When the securities exchange goes online, information and data security become critical concerns. Because Blockchain (BC) technology is distributed and unchangeable, the "Trust Machine" no longer requires third parties. This study looks into how Blockchain can protect stock exchange transactions, with an emphasis on technological and legal aspects. Given the complexities of securities exchange operations, the research suggests designing, developing, and implementing a hybrid BC tailored to each stock exchange. According to the research, such BC has numerous advantages over other techniques. However, when building a BC application, the country's legislation and regulations must be taken into account.

Keywords: Securities Exchange, Stock Exchange, Blockchain, Distributed Ledger, FinTech, RegTech, LawTech.

1.INTRODUCTION

There are several ways to define a securities exchange. The name implies it is a real or virtual stock and bond trading facility. Stock exchanges play many important functions in economic development.

For 50 years, stock exchanges have used its infrastructure, including data transmission technology, to contract and move securities and cash. Deep learning has improved algorithmic or "robotic" trading. FinTech, or financial information technology, has long affected the stock market. Data security is important because stock exchange transactions and ownership data are exchanged electronically and shown electronically (with certificates or not). This makes the "Sealed Envelope" based on "Bit Commitment" and Blockchain applications like crypto-currencies and smart contracts promising.

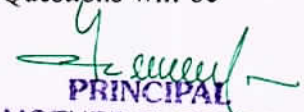Bitcoin spinoff DLT is a Blockchain. Many Blockchain versions have emerged from "The Blockchain" of Bitcoin. Blockchain technology is being studied and applied in FinTech, RegTech, and LegalTech to protect sensitive data and consumer privacy.

BC's digital transaction record is protected by Proof-of-Work (PoW) mathematical conundrums like Adam Back's HashCash. BC's dynamic Public Key ensures user privacy and anonymity. BC includes technology like:

Cryptography Algorithms

Dispersion of Systems and Networks

Program, etc. BC protocol.

Blockchain for securities clearing and settlement? This question requires understanding blockchain technology's theoretical and practical capabilities. The first question is how democratic control of booking ledgers works, how the ledger architecture prevents manipulation, and what encryption is and why it works. Questions will be answered below.
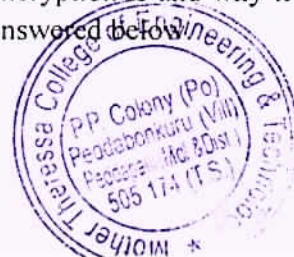
VERIFICATION AND PROTECTION: ENSURING MESSAGE INTEGRITY AND SOURCE CONFIDENTIALITY IN WIRELESS SENSOR NETWORKS

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ABSTRACT: Message authentication is a great way to ensure that wireless sensor networks (WSN) do not send unwanted or incorrect data. As a result, a plethora of message authentication mechanisms utilizing both private and public key encryption have emerged. Despite this, the bulk of these systems have significant processing and connection latency, making resource-intensive operations challenging. To obtain access to nodes, simple hacking techniques can also be utilized. A innovative polynomial-based technique was used to solve these problems. The adversary will be able to reconstruct the complete polynomial if more messages are sent than the limit. This study explains how to use elliptic curve cryptography (ECC) to improve authentication security and flexibility. The suggested solution intends to make authentication for intermediary nodes easier. The problem of message termination is overcome by using this mechanism, and each node can now send a limitless number of messages. Furthermore, our solution secures the sender's privacy during communication. The strategy used in this investigation took less computational time and mental work than the polynomial-based method. The information in the message is designed to protect the sender's privacy.

Keywords—Wireless Sensor Networks(WSN),Elliptic curve cryptography(ECC)Source Anonymous Message Authentication(SAMA)

1. INTRODUCTION

Message authentication is required to ensure that messages sent via networks have not been tampered with or sent illegally. As a result, several identification methods have been developed to simplify the verification of the validity of data supplied by wireless sensor networks (WSNs). The systems are classified into two types: public key systems and symmetric key systems. Because both the sender and the recipient must have the same secret key, a symmetric-key system is difficult to manage. In addition to scalability difficulties, these technologies can be used to undermine the security of the nodes that use them in a variety of ways. Using the shared key, the sender creates a message authentication code (MAC) for each message delivered.

Nonetheless, only the node that has the secret key can verify the transmission. A set of sensor nodes normally shares the confidential key. One hacked sensor location is enough to open all doors. The utilization of several networks exacerbates the performance problem with this technology. To solve the issue of scalability, a cryptographic approach that uses polynomials to verify the authenticity of secret messages was devised. The degree of the polynomial effects the system's threshold determination. This results in a mechanism similar to a threshold secret sharing method. A mechanism exists to ensure that a shared secret key remains private as long as the number of messages exchanged remains below a particular threshold. The intermediary nodes utilize polynomial evaluation to validate the message's authenticity. When the total number of