3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the year

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3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the year

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal
Investigation of Various Laminating Materials for Interior Permanent Magnet Brushless DC Motor for Cooling Fan Application	Dr. Appadurai M	Mechanical Engineering	CES Transactions on Electrical Machines and Systems	2023	2837-0325	https://ieeexplore.ieee.org/abstract/document/10375946
Synthesis of biogenic cerium oxide-supported osmium oxide nanoalloy from Oldenlandia umbellata L. plant extract for pharmacological applications	Dr. Appadurai M	Mechanical Engineering	Biomass Conversion and Biorefinery	2023	2190-6815	https://link.springer.com/article/10.1007/s13399-023-05191-9
Investigation of Solar Air Collectors with Carbon-Nanotube-Based Turbulators and Pin Fin Arrangements	Dr. Appadurai M	Mechanical Engineering	Journal of Composites Science	2023	2504-477X	https://www.mdpi.com/2504-477X/7/8/322
Simulation analysis and development of priority dispatching rules for a partial flexible job shop	Sudeesh S	Mechanical Engineering	International Journal of Services and Operations Management	2024	1744-2389	https://www.inderscience.com/info/inarticle.php?artid=140423

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Investigation of Various Laminating Materials for Interior Permanent Magnet Brushless DC Motor for Cooling Fan Application

A. Infantraj, M. Augustine, E. Fantin Irudaya Raj, and M. Appadurai

Abstract—**Permanent magnet brushless DC motors are used for various low-power applications, namely domestic fans, washing machines, mixer grinders and cooling fan applications. This paper focuses on selecting the best laminating material for the interior permanent magnet brushless DC (IPM BLDC) motor used in the cooling fan of automobiles. Various laminating materials, namely M19-29GA, M800-65A and M43, are tested using finite element analysis. The machine's vital performance metrics, namely the stator current, torque ripple, and hysteresis loss were analyzed in selecting the laminating material. The designed motor is also modelled as a mathematical model from the computed lumped parameters. The performance of the machines was validated through electromagnetic and thermal analysis.**

Index Terms—**Finite Element Analysis, IPM BLDC, Laminating Material, M19-29GA, M800-65A, M43.**

I. Introduction

MOSTLY, Permanent magnet (PM) motors suffer from a common problem called cogging torques. Carious cogging torque reduction strategies like skewing, pole pitch optimization, pole shape optimization, and usage of fractional slot/pole were proposed by [1]-[2]. A new stator and rotor pole design for BLDC motor to reduce torque fluctuation. The improved stator and rotor profiles have improved the air gap, thereby reducing the torque ripples [3]-[4]. A Neodymium free spoke-type BLDC motor was proposed to minimize the cost of the motor and maximize the torque by using ferrite magnets [5]. A reshaped rotor with modified symmetrical poles was proposed by [6], as modified asymmetrical poles and magnetic poles with grooves to reduce the cogging torque. A comparison between the outer rotor BLDC and BLAC motor to estimate the torque ripple using numerical analysis was proposed by [7].

Analytical procedures to design high-speed ferrite-based BLDC motors for electric vehicle applications to limit the demagnetization effects in permanent magnet rotors were proposed by [8]. A novel ferrite semi-modular dual stack BLDC motor for bore well application to reduce the flux leakage in the rotor without using a nonmagnetic hub was proposed by [9]. A comparative study on three types of ironless BLDC motor. Ironless BLDC motors have very little magnetic saturation, very less cogging torque and reluctance torque [10]. A modified stator tooth with T-shaped bifurcation was proposed by [11] for the reduction of cogging torque in BLDC motors.

A hybrid rotor made up of Neodymium and Ferrite permanent magnet was proposed to improve the output characteristics and reduce the effect of demagnetization by retaining the Torque per Rotor Volume (TRV) of neodymium permanent magnet motors [12]. Analysis of four different stator slot shapes was done by retaining the slot area and its performance on electromagnetic torque, efficiency, and flux density was assessed [13]. A two-dimensional (2D) analysis technique was proposed to make improvements in the stack length and thickness of PM in outer rotor BLDC motors [14]. The cogging torque reduction was achieved by implementing different skewed slot configurations for BLDC motors in small electric vehicle applications introduced [15]. To minimize the cogging torque in medium-powered PM motors, the rotor magnets of surface permanent magnet (SPM) are shifted, and its effect on variation in cogging torque was observed [16]. The stator dimensions, skewness, and magnet thickness were optimized for improved efficiency [17]-[18]. Various structural variations in the stator were made, and its influence on magnetic loading was observed [19].

The performance of the modified switched reluctance motor (SRM) in terms of torque density, torque ripple, and efficiency was investigated by implementing different laminating materials like M19, M850-65A, M890-50d, and M43 are compared with the conventional CR-10 steel material [20].

The influence of Sheet molding compound (SMC) material in the electrical drives enhances the performance by reducing the torque ripple. The analysis of SRM with different non-oriented steels has been explored [21]. The analysis of doubly salient permanent magnet SRM with different laminating materials has been illustrated [22]. The analysis of the literature reveals the importance of selecting the appropriate

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Synthesis of biogenic cerium oxide-supported osmium oxide nanoalloy from *Oldenlandia umbellata* L. plant extract for pharmacological applications

Original Article Published: 05 December 2023

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T. Lurthu Pushparaj, E. Fantin Irudaya Raj ✉, E. Francy Irudaya Rani & M. Appadurai

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Abstract

An osmium oxide nanoalloy (CeO_2/OsO_4 NA) surrounded by cerium oxide has been manufactured using a greenish extract that was extracted from the therapeutically valuable *Oldenlandia umbellata L* plant. The obtained cerium-embellished osmium oxide nanoalloy was examined by several kinds of methodologies, comprising diffraction of X-rays, using transmission electron microscopy (TEM), absorbance analysis (UV–visible), Fourier

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Investigation of Solar Air Collectors with Carbon-Nanotube-Based Turbulators and Pin Fin Arrangements

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Abstract: This research attempts to investigate the thermal performance of solar air collectors with pin fins and turbulators. Incorporating carbon-nanotube-based fins and turbulators in solar collectors can enhance their performance due to their high thermal conductivity, low weight, and high aspect ratio. In the present study, numerical analyses of a solar collector with pin fins and turbulators are carried out to investigate its effect on the Nusselt number. The paper begins with the numerical analysis of conventional air collectors and compares them with theoretical results. This is followed by numerical analyses, which are carried out to examine different configurations of the absorber plate with pin fins of varying diameters (10 mm, 20 mm, and 30 mm) and turbulators of varying heights (20 mm, 40 mm, and 60 mm) in the base plate. The analyses include variations in the Reynolds number ranging from 3000 to 15,000. Subsequently, after the performance of the solar collector with pin fins is evaluated, the effect of turbulators of varying heights on the Nusselt number is analyzed, followed by the analysis of the combined effect of pin fins and turbulators. The results are compared with traditional solar collectors and show that the combined effect of pin fins and turbulators can significantly improve the thermal performance of solar air collectors. The findings of this study can contribute to the development of renewable energy-based air conditioning, ventilation, and heating systems.

Keywords: solar air collectors; carbon nanotube (CNT); turbulators; pin fins; computational fluid dynamic (CFD) study; numerical analysis

check for updates

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1. Introduction

Solar energy is currently the second largest by cumulative power capacity and the most adopted green energy resource all over the world [1]. In developing countries like India, it has become the most comprehensive form among other types of green energy technology [2]. Photovoltaic cells and solar towers can be adopted for converting solar thermal energy into electricity, while solar collectors can harness thermal energy for medium- and low-temperature engineering applications [3,4]. Solar collectors using air as a working fluid are advantageous because of their simpler construction, ease of maintenance, and minimum investment. Mainly, solar collectors are ideal for simple heating applications [5], including space heating, energy storage [6], crop drying, and dehumidification projects [7]. However, the lower thermal capacity of air and the varying solar radiation are a few notable disadvantages of using solar air collectors [8].

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International Journal of Services and Operations Management > 2024 Vol.48 No.4

Title: Simulation analysis and development of priority dispatching rules for a partial flexible job shop

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Abstract: The focus of today's manufacturing strategy is to reap the benefits of flexibility, which makes it easier to adapt to changing production needs and requirements. Increased job shop flexibility has only added to the difficulty of scheduling operations. Partial flexible job shop scheduling is one in which a job operation can only be performed on one of a predefined subset of alternative machines. Priority dispatching rules (PDRs) are used to decide the order in which operations in the queue should be selected. In this study, a novel procedure has been devised to prioritise jobs in a partial flexible job shop. Entropy method has been used in this study for determining the weights for the conflicting criteria, and the VIKOR method is used to determine the priority of jobs. Discrete event simulation models are developed to evaluate the performance measures, namely makespan, flow time, and tardiness. Well-known benchmark instances and a large-scale real-world problem have been utilised to evaluate the performance of the proposed method. In both cases, the proposed MCDM-based priority rule performed well for makespan, flow time, and tardiness-based measurements.

Keywords: discrete event simulation; DES; partial flexible job shop scheduling problem; PFJSSP; multi-criteria decision making; MCDM; VIKOR; priority dispatching rules; PDRs.

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1	Cloud-based MQTT protocol for power monitoring and control system	P Sundaramoorthi, Albert Alexander	EEE	INTERNATIONAL JOURNAL OF ADVANCES IN SIGNAL AND IMAGE SCIENCES	2023	2457-0370	www.xlescience.org
2	Investigation of Dynamic Eccentricity in Interior Permanent Magnet Synchronous Motor through finite element method and machine learning	Abeena A, Praveen Kumar N	EEE	IEEE Conference (CISCON)	2024	DOI:10.1109/CISCON	www.ieeeexplore.org
3	Investigation of Dynamic Eccentricity in Interior Permanent Magnet Synchronous Motor through finite element method and machine learning	Abeena A, Praveen Kumar N	EEE	INTERNATIONAL JOURNAL FOR RESEARCH IN APPLIED SCIENCE &ENGINEERING TECHNOLOGY	2024	2321-9653	www.ijraset.com

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CLOUD-BASED MQTT PROTOCOL FOR POWER MONITORING AND SOCKET CONTROL SYSTEM

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Abstract: An efficient system to monitor and manage home power usage and electrical sockets remotely is discussed in this paper. It collects power usage and environmental data from the home sensors, including current, voltage, temperature, and occupancy sensors. These sensors give real-time power monitoring and control information. Relays used in this system are remote-control electrical sockets and appliances. Relays allow users to remotely turn sockets on and off, making connected equipment easier to manage. The lightweight Message Queuing Telemetry Transport (MQTT) protocol is used in the system. The MQTT connects home sensors, relays, and cloud-based infrastructure. With the help of Wi-Fi, connectivity connects the devices. Users can log in remotely from any device with internet access. Users can monitor real-time power use, examine past patterns, and remotely regulate outlets and appliances. Cloud-based infrastructure stores, processes, and controls data. It analyses home sensor data to provide consumers with power usage insights. Data visualization, energy-saving suggestions, and interaction with other smart home devices are possible due to the cloud infrastructure. The technology simplifies home power monitoring and management. The technology helps consumers monitor power use, improve energy efficiency, and simplify their homes.

Keywords: MQTT Protocol, power monitoring, socket control, smart homes, internet of things.

I. INTRODUCTION

Automation technology simplifies life nowadays and replaces manual ones. The increasing growth of Internet users has made it part of life. The Internet of Things (IoT) is a new technology. Consumer and industrial items may be networked to exchange information and accomplish tasks remotely [1]. IoT lets users control house services from afar. It saves energy. Intel Galileo integrates cloud network and wireless connectivity for remote home appliance control and cloud data storage. Sensor data modifies the system automatically. The system controls several devices.

Using wireless smart sockets and IoT technologies, the home energy management system reduces home appliance energy use without sensors [2]. It offers peak-time control, energy-limit management, automated control, and user

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Investigation of Dynamic Eccentricity in Interior Permanent Magnet Synchronous Motor through Finite Element Method and Machine Learning

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Abstract*— Interior permanent magnet synchronous motors (IPMSM) are strong competitors to other motors in commercial and traction applications due to their high efficiency and high speed. As non-uniform air gaps are difficult to identify at the beginning level, over 10% of faults occurring in PMSM are eccentricity-related. This work investigates the effect of dynamic eccentricity in an IPMSM through finite element analysis and a machine learning approach. In this work, an IPMSM of 550 W & 220 V finite element model in ANSYS Maxwell is considered. Eccentric damages ranging from 10% to 40% were included in the model and evaluated for further study. Motor characteristics such as stator current, and radial flux density are compared for both normal and eccentric conditions. Data on motor winding current and air gap flux (radial component) were acquired from the finite element model and faults were examined utilizing MATLAB machine learning tools. The ensemble bagged trees algorithm is employed to analyze the fault which provides an accuracy of 82.5% for stator current.

Keywords*—FEM, Machine Learning, IPMSM, Dynamic Eccentricity Fault

I. Introduction

The IPMSM (Interior Permanent Magnet Synchronous Motors) has gained attention in electric propulsion due to excellent transient performance, better power, and torque density than its counterparts [1]. Saliency in the rotor structure of IPMSM provides reluctance torque and aids flux weakening capabilities, thermal characteristics, and stability better than in surface-mounted machines [2].

IPMSM operates in extreme environmental conditions and is susceptible to a variety of faults in industrial and traction applications, despite its dependability. The three primary types of PMSM faults are demagnetization, electrical, and mechanical. Air gap eccentricity accounts for 10% of mechanical faults, which accounts for almost half of all machine faults [3]. Eccentricity is classified as static, dynamic, and mixed according to the stator position, rotor position, and rotation center. The cylindrical rotor develops a dynamic eccentricity fault if it deviates from its initial location while maintaining its center of rotation at the origin. The rotor will wobble about the rotational axis due to dynamic eccentricity, and the electromagnetic characteristics will vary at each instant due to fluctuations in the air gap.

The root cause of dynamic eccentricity faults in IPMSM is due to poor bearing maintenance, frequent load variations, improper rotor alignment, and aging [4]. Early detection of dynamic eccentricity fault in IPMSM is essential, as it will continue to grow due to imbalanced radial forces resulting in unbalanced magnetic pull and finally damaging the motor electrically and magnetically [5].

The finite element method (FEM) offers an accurate analysis of electrical machines by incorporating the actual geometry and materials used. In addition, it takes into consideration skin effects, eddy currents, friction, windage losses, and nonlinear characteristics of the core materials [6]. One of the most important and accurate parameter for machine fault diagnosis is magnetic saturation which is very evident in FEM. FEM, with the application of signal processing tools such as wavelets, is employed in [7] and [8] to explore inter-turn and demagnetization faults in PMSM. Recently, FEM combined with machine learning algorithms is familiar in the area of machine fault diagnostics [9] and [10] due to their robustness and adaptation potential. The FEM provides precise insights for further study employing machine learning and signal processing methods; future research could explore the potential benefits of integrating machine learning [11].

Machine learning technique is employed in [12] to determine faults in current sensors in an induction motor-based automobile drive. Machine learning-based algorithms are utilized [13] to detect open-circuit and short-circuit winding faults in an induction motor for EV application. In [14], machine learning is used to diagnose winding inter-turn short in a permanent magnet synchronous motor, which utilizes Support Vector Machines (SVM) and Convolutional neural networks (CNN). [15] employs k-Nearest Neighbour (k-NN) and SVM to analyze bearing faults in a three-phase induction motor. In [16], machine learning-based algorithms are implemented to detect winding inter-turn short in a multi-three-phase brushless motor.

This work investigates the effects of dynamic eccentricity in an IPSM employing the ANSYS Maxwell finite element tool and machine learning algorithms in MATLAB. A 550 W IPMSM incorporated with various fault severities from 10% to 40% is utilized for analysis. The motor current and radial flux data for normal and eccentric conditions are acquired from the finite element model and examined using the MATLAB machine learning tool.

II. Finite Element Analysis of Eccentric IPMSM

A healthy IPMSM with a V-shaped permanent magnet rotor and 0.55 kW, three-phase, 220 V, 3600 rpm finite element model is shown in Fig. 1. Table I lists the specifications of IPMSM.

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A Review on the Fault-Tolerant Method of PMSM using Finite Element Method by Modifying Phase Angle for EV Applications

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Abstract: ***The present research reviews a fault-tolerant technique for Permanent Magnet Synchronous Motors (PMSMs) that involves phase angle adjustment. Fault tolerance standards for the motor used in electric vehicles are necessary due to the rapid development of these vehicles. The primary option for electric vehicle drive motors is increasingly being replaced with permanent magnet synchronous motors (PMSM), which have minimal torque ripple, great durability, and other benefits. After comparing a six-phase PMSM to a conventional three-phase PMSM, the performance following a phase open is examined. A fault-tolerant technique for modifying the left phase current's phase angle to reduce torque ripple following a phase open is then described. The finite element simulation indicates that the six-phase PMSM's output torque ripple is reduced, and the fault-tolerant technique that is being described can further reduce the torque ripple.***

Keywords: Electric vehicles, Six-phase PMSM, Fault tolerance, Torque ripple, Adjusting phase angle

I. INTRODUCTION

The motor serves as the electrical vehicle drive system's power supply, and multi-phase PMSM motors are typically found in electric buses and other electric vehicles with strict fault tolerance specifications. By increasing the phase number, a multi-phase motor can achieve fault-tolerant operating in the phase-open state by offering a greater degree of control freedom compared to a three-phase motor.

The development of fault detection and diagnostic (FDD) technology is predicated on the use of monitoring systems. The monitoring of motor-related operating parameters, such as current, voltage, flux, speed, temperature, vibration, noise, and partial discharge, and the application of the proper technique to assess the motor's current operating condition are referred to as PMSM driving system fault monitoring and diagnosis technologies.

If the motor is malfunctioning, more information about the kind of failure, its position, its severity, and its development trend must be obtained. To prevent the occurrence of harmful accidents, this enables the site operators to supply the information required for a reasonable arrangement.

Even if a multi-phase motor can continue to operate in a fault-tolerant manner after a phase open fault in the motor drive system, the failure will negatively impact the torque ripple of the motor. The multi-phase induction motor's stator magneto motive force (MMF) in the phase open state is examined, and a non-disturbing rotating MMF approach is suggested to lessen the torque ripple brought on by the phase open. The most effective course of action for current control is suggested to minimize torque ripple. For both single and multiple faults, fault-tolerant control can be achieved with this method. Based on the optimal current calculation, a mathematical model of the motor phase loss is constructed and the decoupling vector control is implemented. In addition, the effects of spatial harmonics and leakage inductance on the torque ripple are examined, and a corresponding suppression technique is suggested to further lessen the torque ripple.

The conventional three-phase PMSM and the one-phase open's performance are first compared. The fault-tolerant technique of lowering the torque ripple by modifying the phase angle of the left phase current is then proposed, based on the analysis theory of MMF. Ansoft, a finite element application, verifies that the fault-tolerant approach is valid.

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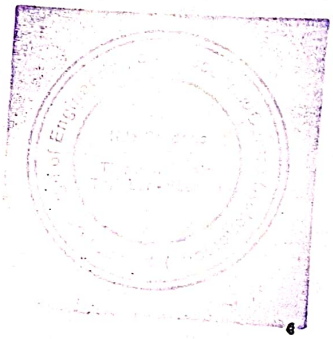

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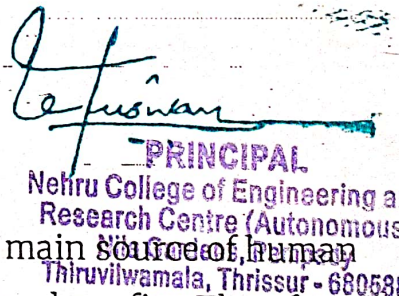

Abstract

Plants are acknowledged as being crucial because they are the main source of human energy generation due to their nutritional, therapeutic, and other benefits. Therefore, it is necessary to increase crop productivity. One of these significant factors contributing to reduced agricultural yields is the prevalence of bacterial, fungal, and viral illnesses. Applying techniques for plant disease identification can stop and treat these diseases. So, numerous machine learning (ML) and deep learning (DL) methods were created and tested by researchers to identify plant diseases. Therefore, this study gives a detailed discussion of the various research studies conducted in plant disease detection utilizing ML and DL-based techniques. This review offers research advancements in plant disease recognition from ML to DL techniques. Additionally, many datasets about

Supply Chain Management Efficiency Improvement in the Automobile Industry Using Lean Six Sigma and Artificial Neural Network

Vinod Ramakrishnan, Narayanan Ramasamy, Manoharan Dev Anand, and Nagarajan Santhi

Abstract—The main aim of this article is to improve the efficiency of supply chain management in the automobile industry using two simulation software. The automotive industry like a car manufacturer always needs an accurate demand forecast to serve the uncertain demand for their products, which plays a key role in decreasing the Bullwhip effect. This article proposes an artificial-neural-network-based prediction technique with the optimization algorithm of the Levenberg–Marquardt tabu search using a questionnaire analysis. This helps to predict future demand with the best optimal solution and improves the efficiency. Product quality is the second consideration, and it plays a significant role in how customers decide whether or not to buy and repurchase a product. Alternately, to increase product quality, this article explored the supply chain using Lean Six Sigma. In addition, for assessing customer satisfaction, this article proposed the Kano 2-D quality model. Furthermore, to reduce the response time between the supplier and customer, proponents of Lean adapted just-in-time to mitigate these issues. This data analysis is performed using MATLAB and SPSS software. From the analysis of two software, the study found the best method based on their performance. In this methodology, the average risk assessment value is predicted as a high-risk factor. The convergence speed of the supply chain reaches 1.89–4.25 s in the SPSS model; furthermore, the implementation time of MATLAB is related to 16.83 s. The result shows that MATLAB can achieve the best predictive model with the proposed technique using the questionnaire data.

Index Terms—Artificial neural network (ANN), automobile industry, just-in-time (JIT), Kano model, Lean Six Sigma (LSS), risk assessment, supply chain management (SCM).

I. Introduction and Literature Survey

THE The automotive industry's global nature makes it extremely vulnerable to external political, economic, and environmental, as well as market and other variables. Tariffs, trade agreements, and political manoeuvrings can all affect the cost of importing and exporting parts and automobiles [1], [2], [3], [4]. Automotive supply chain managers must decrease costs, optimize manufacturing and distribution, and ensure that components and products reach the correct organizations at the right time due to both internal and external influences [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15]. Zhaofang Mao et al. [16] proposed a machine-learning technique for predicting customer demand in the automotive manufacturing business. This article presents a modeling strategy, the boosting method, for predicting consumer demand and shows that by including social-media-related information, this method may perform relatively well. Globalization adds a level of complexity to the automotive supply chain that requires vehicle manufacturers and brands to come up with realistic solutions. The failure mode and effect analysis (FMEA) approach was used by Arora et al. [17] to categorize the various forms of risk into three zones: high, medium, and low-risk factors. Recurrent neural networks/long-short term memory (RNN/LSTM) with a modified Adam optimizer were developed by Chandriah and Naraganahalli [18] to anticipate the demand for spare components. Weight vectors are created in this LSTM in the appropriate order. Its supportive role in LSS for the quality assurance of SCM Uloh Akuns and Okafor [19] suggested quantitative research involving 100 managers. Seven relationships were found to be statistically significant. Raheel Siddiqui et al. [20] study presents the demand-forecasting model, i.e., a good fit for the pharmaceutical sector, and shows promising results. Through this study, it is observed that combining forecasting algorithms can result in greater forecasting accuracies. Hsieh and Zhang [21] study explores the important antecedents of order fulfilment using a decision-making trial and evaluation laboratory (DEMATEL) based on thirteen criteria. Sudan and Taggar [22] analyzed the impact of the COVID-19 pandemic-induced supply chain disruptions (SCDs) on the Indian automotive industry (IAI) using a case study of Maruti Suzuki India Limited (MSIL), which shares about 50% of the automotive market in India and offered mitigation strategies and the SCDs recovery model. Feizabadi et al. [23] proposed hybrid demand forecasting methods grounded on machine learning, i.e., ARIMAX and Neural Network. Both time series and explanatory factors are fed into the developed method. Shafiq et al. [24] suggested various kernel functions to select and extract a parameter. The support vector machine (SVM) model uses the kernel function, namely RBF, along with Neural Networks, in identifying the parameter involved in quality management and undergoes the classification process. Rathi et al. [25] outline the many sorts of impediments that an automobile component manufacturing business experiences.

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Medicinal Plant Detection Using Image Processing

Areal detection of medicinal plants in remote and forest areas

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Abstract: This abstract presents a novel method that makes use of drones and image processing tools to identify medicinal plants in distant forest areas. With the help of the Jupyter IDE and Python programming language, the study uses the Vgg19 Convolutional Neural Network (CNN) to accurately identify plants. Drones can be used to explore inaccessible areas, which improves conservation and biodiversity monitoring initiatives. Real-time analysis is made possible by the integration of image processing techniques, which helps researchers and conservationists make decisions quickly. In the end, our approach promises to transform the identification and monitoring of medicinal plants, supporting biodiversity preservation and sustainable resource management.

Index Terms **– Image processing , Vgg19 , Areal drone detection.**

I. Introduction

Researching and preserving medicinal plants in isolated forest regions is important for both pharmaceutical and biodiversity conservation. However, the difficult terrain and remote locations of these areas frequently provide difficulties for typical survey methods. Drones and image processing technology combined seem like a potential way to get around these restrictions. In this work, we present a novel method for obtaining aerial pictures of forested landscapes using drones fitted with high-resolution sensors. We use the Jupyter IDE and the Python programming language to develop advanced image processing techniques in order to examine the data that has been gathered. To be more precise, we use the Vgg19 Convolutional Neural Network (CNN), which is well-known for its precision in object recognition assignments, to recognize different species of medicinal plants from the photos that are taken.

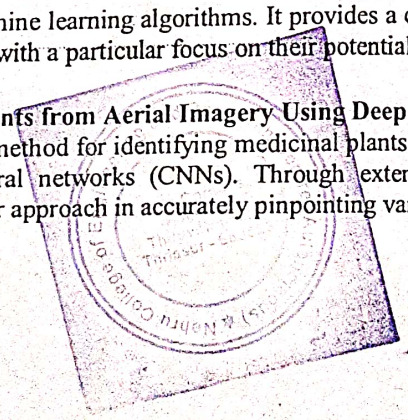
II. Literature Review

Automated Plant Recognition System: A Review

This review article delves into the realm of automated plant recognition systems, emphasizing their reliance on image processing techniques and machine learning algorithms. It provides a comprehensive overview of how these systems are applied to the task of plant identification, with a particular focus on their potential in identifying medicinal plants.

Detection of Medicinal Plants from Aerial Imagery Using Deep Learning

The study outlines a novel method for identifying medicinal plants from aerial imagery by leveraging deep learning techniques, particularly convolutional neural networks (CNNs). Through extensive training on a dataset of aerial images, the authors demonstrate the efficacy of their approach in accurately pinpointing various species of medicinal plants.



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Development Of A Low-Cost Eye-Tracking System For Early Screening Of Autism Spectrum Disorder: A Feasibility Study

A User-Friendly Approach to Early ASD Detection

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Abstract: Social interaction impairments are core to Autism Spectrum Disorder (ASD), including atypical eye contact in social contexts. Early ASD screening remains challenging, while traditional methods like EEG or MRI can be impractical for young children. Eye-tracking offers a child-friendly alternative for investigating visual attention patterns in ASD. This study develops a low-cost eye-tracking system using WebGazer and heatmap.js libraries to facilitate early ASD screening. The system aims to improve accessibility and detection rates compared to existing methods by analyzing children's eye gaze patterns.

Index Terms – Autism, Autism Spectrum Disorder, Eye-Tracking, Early Detection.

I. Introduction

Autism Spectrum Disorder (ASD) is a complex, lifelong neurodevelopmental condition characterized by core challenges in social communication and interaction, alongside restricted, repetitive patterns of behavior. These presentations vary widely across individuals, with a spectrum of intellectual and language abilities. Early detection and intervention are crucial, as research shows significant improvements in communication, social interaction, and quality of life for those who receive timely support. Traditional diagnostic methods like EEG and MRI have limitations, making a case for alternative approaches. This study proposes eye-tracking technology as a promising tool for early ASD screening due to its non-invasive nature, ease of use, objective data collection, and potential to reveal atypical attention patterns in young children. By developing a cost-effective eye-tracking system, this research aims to investigate its feasibility in differentiating visual exploration patterns of children with and without ASD.

II. Literature Review

2.1 Eye Tracking Biomarkers For Autism Spectrum Disorder Detection Using Machine Learning And Deep Learning Techniques: Review

Asmetha et al. conducted a comprehensive review of eye-tracking research in Autism Spectrum Disorder (ASD). The paper acknowledges the challenges associated with diagnosing ASD, particularly in children. Eye-tracking has emerged as a promising tool for assessing social communication and visual processing in individuals with ASD. The study explores how machine learning (ML) and deep learning (DL) models are being utilized to analyze eye-tracking data to identify patterns potentially indicative of ASD. The review highlights variability in the accuracy of different studies, suggesting a need for further research to standardize and improve the effectiveness of eye-tracking for ASD detection.

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AGRICULTURAL SEGREGATION ROBOT USING IMAGE PROCESSING

Automating Ripe and Unripe Fruit Segregation

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tract: The project's primary objective is the automation of fruit segregation using image processing techniques. By replacing r and error-prone traditional methods, the project seeks to reduce supply chain losses. Utilizing computer vision and machine aing technologies, the system transforms the sorting process. Employing a camera to capture subject images, advanced rithms analyze attributes like color, texture, and size to precisely classify ripeness. Through continual learning, machine learning els improve accuracy, ensuring consistent performance. This innovative approach delivers benefits such as faster sorting, htened accuracy, cost reduction, and waste minimization. By enhancing processing efficiency and reducing food waste, the em benefits both producers and consumers, contributing to a more sustainable and efficient agricultural environment.

x Terms – Automaton, Image processing, Machine Learning.

NTRODUCTION

he automation of fruit sorting and dispensing processes represents a pivotal advancement in contemporary agriculture and food uction. The project integrates advanced artificial intelligence (AI) algorithms and machine learning (ML) models to automate sorting and dispensing processes, representing a significant leap forward in modern agricultural and food production methods. endeavor focuses on the development of an Automated Fruit Sorting and Dispensing Machine, empowered by image processing, uter vision technologies, and sophisticated learning models. By leveraging cutting-edge ML algorithms, the system meticulously ms between premium and substandard fruits with unprecedented precision and efficiency. Through continuous learning and ement, the ML models adapt and improve over time, ensuring consistent adherence to stringent quality standards. This approach nly enhances fruit quality and production efficiency but also minimizes resource wastage, underscoring its transformative tial in revolutionizing the agricultural landscape. The overarching aim is to deliver a cost-effective, dependable, and streamlined on, ensuring fruit quality, enhancing production efficiency, and mitigating labor costs, thereby fostering tangible benefits for gricultural sector.

ITERATURE REVIEW

1 AUTOMATED SORTING AND GRADING OF AGRICULTURAL PRODUCTS BASED ON IMAGE PROCESSING

The escalating global demand for high-quality fruits is particularly critical for export-oriented economies. However, prevailing fruit sorting systems suffer from various drawbacks, including low yield, time-intensive processes, high costs, and complexity. This study endeavors to develop an automated sorting system employing image processing techniques to enhance fruit quality, increase production output, and alleviate labor burdens. Preliminary experiments with the proposed system validate its efficacy in tackling prevalent challenges encountered in fruit sorting processes.

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Intelligent Carrier

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ABSTRACT: Logistics especially cargo handling and import-exports highly depend on internal and external transportation chains which are usually handled by human drivers and overseers or-as in recent developments, by partially automated vehicles which has its disadvantage of free-thinking ability. Our project "intelligent carrier" is primarily aimed to make cargo and luggage handling in airports automated, with the help of implanting prefixed paths and sub-paths for intelligent path selection in the carrier, with added ability to avoid obstacles, using its camera module. This robot is completely developed to be controlled by an external processing center which can control multiple robot units. Its complete function is to receive positional data of an airplane on its arrival and allot a robot carrier which travels along the mapped path with intelligent obstacle avoidance to reach predestined position based on proximity to the anchor location (as in anchor-tag setup). This carrier can efficiently replace current systems due to its cost-effective (economical) approach.

I. INTRODUCTION:

This robotic carrier uses various software and hardware elements that make it suitable for its intelligent application. The main software element installed in the robotic system is microROS framework that performs the role of a communicating medium between the functional ROS in the processing unit and the robotic system. micro-ROS enables the development of robotic applications to be deployed onto microcontrollers that are typically limited in computational resources. It follows the ROS 2 architecture and uses DDS-XRCE (Data Distribution Service for eXtremely Resource-Constrained Environments) as its middleware. It replaces the Linux-based communication stack with POSIX-based RTOS (such as FreeRTOS, Zephyr, or NuttX) for microcontrollers. The layered and modular architecture ensures compatibility with ROS 2 components. The second important software element is ROS 2 installed in the processing unit, which is the heart of the complete operations. ROS 2 (Robot Operating System 2) is a collection of open-source software libraries and tools designed for developing and running robotics applications. It provides a flexible framework for building complex robotic systems. It supports multiple programming languages, making it accessible to a wide range of developers. Various hardware elements play the crucial role in implementing the software elements. The ESP32S2 is the main hardware element upon which microROS is embedded. For the crucial application of communicating the distance between the arrived airplane and the robotic carrier an FTM (Fine Time Measurement) communication protocol is used which is available in ESP32S2. To extract this ability of this microcontroller two such boards are used to transfer this data for the robotic carrier to reach to close proximity with the airplane. A camera module (ESP 32 CAM) is used connected to the main board (ESP32S2) to map the paths required for the carrier to traverse and for its intelligent obstacle avoidance. A motor driver with 2 connected motors along with a roller makes up the carrier's mechanical elements that help in its motion.

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3.3.2 Number of research papers per teachers in the Journals notified on UGC

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal
An Analysis of Plant Diseases on Detection and Classification: From Machine Larning to Deep Learning Techniques	Mr. Midhunraj PK	Mechatronics	Springer	2023	ISSN 48659–48682	https://doi.org/10.1007/s11042-023-17600-2
Supply Chain Management efficiency Improvement in the Automobile Industry Using Lean Six Sigma and Artificial Neural Network	Mr. Vinod R	Mechatronics	IEEE Transaction on Engineering Management Vol. 71.2024	2023	3278-3294	https://doi.org/10.1109/TEM.2023.3332147.
Medicinal Plant Detection Using Image Processing	Mr. Midhunraj PK	Mechatronics	International Journal of Creative Reseach Thoughts	2024	ISSN 2320-2882	http://ijcrt.org/viewfull.php?&p_id=IJCRT2405503
Development of Low-Cost Eye - Tracking System for Early Screening of Autism Spectrum Disorder : A Feasibility Study	Mr.Rejumon R	Mechatronics	International Journal of Creative Reseach Thoughts	2024	ISSN 2320-2883	http://www.ijcrt.org/papers/IJCRT2405098.pdf
Agricultual Segrigation Robot Using Image Processing	Mr. Vinod R	Mechatronics	International Journal of Creative Reseach Thoughts	2024	ISSN 2320-2884	http://www.ijcrt.org/papers/IJCRT1601009.pdf
Inteligent Carrer	Ms.Manjusha P	Mechatronics	International Journal of Creative Reseach Thoughts	2024	ISSN 2320-2885	http://www.ijcrt.org/papers/IJCRT2405484.pdf

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3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the year

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal
QR CODE BASED SHOPPING SYSTEM	Smita Unnikrishnan	Computer Science	International Journal of Scientific Research in Engineering and Management	2024	2582-3930	https://ijsrem.com/download/qr-code-based-shopping-system/
CipherShare: CUSTOM KEY ENCRYPTION/DECRYPTION AND MESSAGING SYSTEM	Soumya T	Computer Science	International Journal of Scientific Research in Engineering and Management	2024	2582-3930	https://ijsrem.com/download/ciphershare-custom-key-encryption-decryption-and-messaging-system/
CURRENCY RECOGNITION SYSTEM	Sreeji S	Computer Science (AI & ML)	International Journal of Scientific Research in Engineering and Management	2024	2582-3930	https://ijsrem.com/download/currency-recognition-system-2/
ONLINE PROCTORING SYSTEM	Silja Varghese	Computer Science	International Journal of Creative Research Thoughts	2024	2320-2882	https://ijcrt.org/viewfull.php?&p_id=IJCRT2405250
Cross Polarization Minimized Fractal Antenna for HiperLAN Application	SAJITHA A S	Computer Science (AI & ML)	International Journal of INTELLIGENT SYSTEMS AND APPLICATIONS IN ENGINEERING	2024	2147-6799	https://ijisae.org/index.php/IJISAE/article/view/6004

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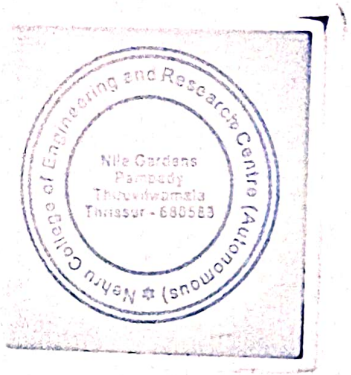
Fractal-Enhanced Micro-strip Antennas: Miniaturization, Multiband Performance and Cross-Polarization Minimization for Wi-Fi Applications	SAJITHA A S	Computer Science (AI & ML)	Engineering proceedingd 2023	2023	Eng. Proc. 2023, 5	https://www.mdpi.com/2673-4591/59/1/127
Border Collie Shuffled Shepherd optimization based image reconstruction using visual cryptography	SAJITHA A S	Computer Science (AI & ML)	The Imaging Science Journal (TAYLOR AND FRANSIS)	2023		https://www.tandfonline.com/doi/full/10.1080/13682199.2023.2266595



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International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 08 Issue: 05 | May - 2024 SJIF Rating: 8.448 ISSN: 2582-3930

QR CODE BASED SHOPPING SYSTEM

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Abstract - Shopping malls are becoming larger and more diverse, with more goods and a wider range of merchandise.The proposed project could give definite and constant shopping objections, permitting shopping centres to mine client information logically. QR code generator is used in this system to generate QR codes for each product. The aim is to implement a directory where the user can navigate through each floor and each shop and can traverse through different products available in the entire shopping mall. Directory is important as guidance to people because it provides information that is needed and guides them to the correct route. The specified directory will be designed in the form of a mobile so that it becomes a mobile directory. Mobile directory is designed to provide easy, real time access to the directory via a mobile device, so it can provide the right solution, quickly and accurately

Key Words: QR code,QR code scanner,Directory.

1. INTRODUCTION

QR code is the abbreviation of Quick response. QR codes are casual patterns, which can be generally observed on the corner of posters or web pages. The objective of QR codes aims at expediency leaning applications for mobile phone users. People can use the smart phone cameras to scan QR code at the corner of web page the propagation of internet usage has made people linking to the web pages easily by using pc or mobile phone over the wired or wireless networks. Particularly, for users using the mobile phones to look around the web pages, it has brought much more conveniences to their daily lives quick response code has been broadly used in the automatic identification fields.

In order to adapting diverse sizes, a little foul or scratched, and variety of illumination conditions of bar code image, this paper proposes a narrative implementation of real-time quick response code recognition using mobile, which is an efficient technology used for data transferring. By using this application .we can save both time of shopping and man power in different organization and big step towards digitalization in shopping sector.The aim of this website is to implement a directory where the user can navigate through each floor and each shop and can traverse through different products available in the entire shopping mall.

Directory is important as guidance to people because it provides information that is needed and guides them to the correct route. Directory board in a shopping mall contains the information about the mall, list of shops and locations of the shops. The specified directory will be designed in the form

of a mobile so that it becomes a mobile directory. Mobile directory is designed to provide easy, real time access to the directory via a mobile device, so it can provide the right solution, quickly and accurately.

2. LITERATURE REVIEW

[1] Smart shopping using QR code-International Journal of Advanced Research in Computer Science Engineering and Information Technology Volume: 4, Issue: 3,Special Issue: 2 ,Apr,2016 ,ISSN_NO: 2321-3337.The application mentioned here would read the QR code(s) of the product(s) & add it to the shopping cart in the applicationThe user have to scan every single item which he wants to purchase with the scanner provided in this app.

[2]QR code techniques for smart shopping-a review-QR code based Shopping Using Androiddz.Near Field Communication (NFC) technology allows users to make secure transactions, exchange digital content, and connect electronic devices with a touch.Here near field communication (nfc) allows two nfc-enabled devices to interact with each other, but it is probable that a third device could interrupt the data.Major concerns was data corruption, data modification, and data insertion.

[3]QR Code based Shopping System-2022 International Conference on Applied Artificial Intelligence and Computing (ICAAIC)Year: 2022 | Conference Paper | Publisher: IEEE.The issue is that the standardized identification can unfortunately store only a limited amount of information.

[4]Smart Shopping Application using IoT and Recommendation System-7th International Conference on Advanced Computing and Communication Systems (ICACC)Year: 2021 | Conference Paper | Publisher: IEEE.An effective mobile assisted software application for grocery shopping.Payment is enabled only after the total weight displayed in the cart is equal to the total weight scanned in the app.

[5] Design and Implementation of an Android Application for Smart Shopping-"Design and Implementation of an Android Application for Smart Shopping", International Conference on Communication and Signal Processing (ICCSP), 2019.This android application is used in smart shopping carts. This app consists of only two parts which

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International Journal of Scientific Research in Engineering and Management (IJSREM)
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CipherShare: CUSTOM KEY ENCRYPTION/DECRYPTION AND MESSAGING SYSTEM

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Abstract - In an age where data security is crucial, the need for robust encryption systems has become increasingly necessary. This paper presents CipherShare, a Custom Key Encryption/Decryption and Messaging System, designed to provide enhanced security and flexibility for secure communication. The system employs a unique approach by allowing users to create custom encryption keys tailored to their specific requirements, ensuring a high level of data protection. The system uses Advanced Encryption Standard (AES) algorithm, due to which the proposed system offers several advantages over traditional encryption systems. Firstly, its custom key approach provides a higher level of security by reducing the risk of brute force attacks. Secondly, the system's flexibility allows users to adapt encryption keys according to their changing security needs. Thirdly, it is platform-independent, making it compatible with a wide range of devices and applications.

Key Words: Custom Key, Encryption, Decryption, Security, Communication, Confidentiality.

1. INTRODUCTION

In today's digital world, the security of communication and data exchange has become a paramount concern. With the increasing reliance on digital platforms for sensitive information sharing, there is a growing need for robust encryption systems that can safeguard privacy and confidentiality. CipherShare emerges as a solution to this pressing demand, offering a custom key encryption/decryption and messaging system that ensures secure communication channels. At its core, CipherShare addresses the vulnerabilities inherent in conventional messaging systems by implementing customizable encryption techniques. By allowing users to generate their encryption keys, CipherShare provides an added layer of security, making it significantly harder for unauthorized parties to intercept and decipher messages.

One of the key features of CipherShare is its custom key encryption/decryption mechanism. Unlike traditional encryption methods, where a single algorithm or key is used for all communications, CipherShare empowers users to create their unique encryption keys. This approach enhances security by minimizing the risk of brute force attacks or key compromise, as each communication channel operates with its distinct encryption parameters. Moreover, CipherShare's messaging system integrates seamlessly with its encryption functionality, providing users with a secure platform for exchanging sensitive information. Whether it's text messages or images, CipherShare ensures that data remains encrypted throughout transmission, thereby safeguarding confidentiality. The versatility of CipherShare extends beyond individual users to encompass organizations and enterprises. CipherShare enables secure communication while sharing sensitive data within a closed environment. This capability is especially crucial for businesses operating in industries where data privacy and confidentiality are paramount, such as healthcare, finance, and legal sectors. Furthermore, CipherShare prioritizes user privacy by employing end-to-end encryption, ensuring that only the intended recipients can access message contents. By encrypting data at the sender's device and decrypting it at the recipient's device, CipherShare minimizes the risk of interception or eavesdropping by malicious third parties.

CipherShare's custom key encryption/decryption and messaging system represent a significant advancement in digital security. By empowering users with control over their encryption keys and ensuring end-to-end encryption for all communications, CipherShare provides a robust solution for protecting sensitive information in an increasingly interconnected world.

2. LITERATURE REVIEW

[1] The implementation of Intelligent Custom Dictionary Based Encryption/Decryption Scheme stores the new words and patterns used by the user in a database that is located in the System of the user itself , hence not sending any vulnerable information over the network. Even if a hacker tends to get hold of the data that is being transmitted over the network all he gets is encrypted data, which is useless without the custom dictionary that is used by the user for the encryption . The same dictionary is available with the recipient who then uses it to decrypt the sent string . The beauty of this security scheme is the custom dictionary which is enhanced and enriched in accordance to the users vocabulary. The scheme develops the encryption codes of new words on the go without any interference from the user hence providing a seamless way to encrypt and decrypt data. User can can use multiple dictionaries while communicating with different people whereas all the other users will only need to maintain only one dictionary that is specific to their conversation.

[2] Proposed Hybrid Cryptosystems Based on Modifications of Playfair Cipher and RSA Cryptosystem proposed two new cryptosystems, one of them called the hybrid cryptosystem using the Playfair cipher with the RSA square. The second is a hybrid cryptosystem using the Playfair with the RSA square and Chinese remainder theorem(RSASQ-CRT). These systems used two layers of encryption: First, encrypt with the Playfair cipher to obtain the first ciphertext. Second, it used RSASQ-CRT to obtain the final ciphertext. The hybrid cryptosystem Playfair with RSASQ provides high security and more complexity against hackers to find the private keys since it does not use the public key directly.

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CURRENCY RECOGNITION SYSTEM

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Abstract - *This project presents a Currency Recognition System designed to accurately identify and authenticate various denominations of currency notes. Utilizing advanced image processing and machine learning techniques, the system detects unique features of genuine notes to differentiate them from counterfeits. A diverse dataset of currency images, including genuine and counterfeit notes, is used for training and evaluation. Key features such as color, texture, and security elements are extracted and analyzed. The system demonstrates high accuracy in tests, offering a reliable solution for counterfeit detection. Future improvements will focus on enhancing robustness and real-time processing.*

Key Words: *Currency Recognition, Detection, Image Processing, Machine Learning, Convolutional Neural Networks, Security Features.*

1. INTRODUCTION

In today's global economy, the ability to quickly and accurately recognize different currencies is essential for various applications, including banking, retail, and automated teller machines (ATMs). Traditional methods of currency recognition, which rely on manual inspection or simple digital methods, often fall short in terms of speed and accuracy. This project aims to address these limitations by developing a sophisticated Currency Recognition System using the Python Django framework.

The Currency Recognition System is designed to identify various denominations of currency notes efficiently. By leveraging advanced image processing techniques and machine learning algorithms, the system can accurately classify and recognize different currencies. The core of this project is a web application built with Django, which provides a user-friendly interface for currency recognition.

The web application includes a home page with a simple and intuitive interface, featuring a recognition button. Users can upload images of currency notes, and the system processes these images to identify the denomination. The backend processing involves several key steps: image preprocessing, feature extraction, and classification using machine learning models.

The development process involved collecting a diverse dataset of currency images, including notes from different countries and denominations. Image preprocessing techniques were applied to enhance the quality and consistency of the input images. Machine learning models were trained on these processed images to recognize and classify the currencies accurately.

This introduction outlines the scope and objectives of the Currency Recognition System project. By integrating advanced technologies and a user-friendly web interface, the project aims to provide a reliable and efficient solution for currency recognition, catering to various practical applications in the financial sector and beyond.

2. LITERATURE REVIEW

[1] Authors in [1] proposed a method that uses currency features such as centre numeral, latent image, RBI seal, shape, and micro letter for currency recognition. Training data set preparing for getting training models is included. PCA analysis is explained for paper currency recognition.

[2] In [2] authors proposed a method that uses features such as colour, texture, size for paper currency recognition. Dirty banknotes recognition method is included.

[3] Author of [3] proposed a system for paper currency recognition using the MATLAB tool. PCA analysis along with Euclidean Distance explained. LBP technique for matching purpose is explained.

[4] In [4] the authors proposed a technique which detects the country first and then detects the denomination of the country. For identifying the country and the denomination different regions of the currency note included.

[5] Authors of [5] have given a brief idea about the features of the Indian currency. Morphology Filtering process along with some different analysis and segmentation explained. Paper currency detection recognition technique using neural networks is carried out.

[6] is a book regarding the CNN that includes different layer processing through the mathematical demonstration. Each is explained through some graphical way. When the image is captured, it is converted into the matrix format before detection and then matched with a trained model so the whole processing in between the matrix formation and recognition is demonstrated using mathematical calculations. Effects of the different convolutional kernels in horizontal and vertical edges.

[7] In [7] Author explained all aspects of the CNN.

[8] In [8] the author proposed a technique for currency recognition using a neural network. Classification using weighted Euclidean Distance along with the different steps required for data collection and processing included.

[9] In [9] the authors proposed a technique of Currency Recognition, [illegible] the teachable machine used for data training and getting accuracy.

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ONLINE PROCTORING SYSTEM

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Abstract: An online exam proctoring system is a software solution designed to monitor and ensure the integrity of online exams. To identify any suspect activity or attempts at cheating during the exam, it usually has features like identity verification, real-time video monitoring, screen recording, and advanced analytics. An abstract for such a system would emphasize its principal features and its contribution to the upkeep of an impartial and safe online testing environment. Robust online proctoring systems have become essential to upholding academic integrity due to the swift transition to online learning and remote examinations. This abstract gives a summary of an online proctoring system that was created to deal with the difficulties associated with conducting tests remotely. A secure and trustworthy examination environment is created by the system by fusing secure identity verification with AI-driven monitoring. To find and identify dishonest behavior, it uses screen surveillance and facial recognition.

Keywords **– Proctoring, Real-Time Video Monitoring, Identity Verification.**

I. INTRODUCTION

Education has crossed traditional lines in the digital age, presenting both benefits and difficulties. Ensuring the integrity of online tests has proven to be one of the major issues. The online proctoring system is here, a technological marvel created to meet the increasing need for reliable and secure distant exams. Since online proctoring systems address the persistent problem of online assessment cheating, they have completely changed the nature of education. These systems use state-of-the-art technologies, such as machine learning and artificial intelligence, to authenticate and monitor test-takers in real time. This paper examines the main features, advantages, and drawbacks of online proctoring systems. In digital learning contexts, online proctoring is a technique for remotely supervising examinations to guarantee academic integrity. The objective is to imitate the supervision of conventional test rooms in the virtual world by utilizing technology such as AI algorithms and video surveillance. The issues of cheating are addressed by this method, which also keeps distant learners in a safe testing environment. A virtual oversight technique for distant exam taking is called online proctoring. In online learning, it tackles the requirement for safe and regulated testing settings.

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II. LITERATURE REVIEW

[1]User interface design is an integral part of any software. Thus, online review is an equally important system in e-learning. Thus, online exam design features are an important factor in improving the effectiveness and convenience of the exam. An online exam typically uses nine main design features, four fonts (ie type, size, color, and style), background color, beep, group of questions, \time counters, and number of questions per page. The values of these characteristics are closely related to the characteristics of the user, whether they are physical, cognitive, psychomotor, demographic or experiential.

Our experiment was conducted with 119 students to find a generally recommended online revision plan. The results show that students' preference for the design of the online exam interface varied, with students preferring to group questions by topic and then by type. The most popular font was Arial, which was size 14 or 12 and uses a standard font. Also, white background and black text were the most popular. Most students unread 5 and

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Cross Polarization Minimized Fractal Antenna for HiperLAN Application

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Submitted: 07/02/2024 Revised: 15/03/2024 Accepted: 21/03/2024

Abstract: Two Fractal based antennas are proposed here for HiperLAN applications. Cantor Square fractal antenna has a size of 30mm×20mm×1.6mm and Sierpinski Carpet antenna has a size of 30mm×25mm×1.6mm. To reduce Cross polarization stubs have been introduced in the feed line and thereby achieving polarization purity for the above said antennas. Both antennas can resonate at a 5GHz band with good return loss and low cross-polarization. Cantor fractal and Sierpinski Carpet at its 2nd iteration gives up to -60dB cross polarization with a return loss at -35dB making these designs good for LAN applications

General Terms: Antenna.Fractal Geometry, Microstrip, Low profile.

Keywords: Miniaturization, Cantor Square, Sierpinski Carpet, HiperLAN, Cross Polarization.

1. Introduction

Fractals are the geometries in which each & every portion will be a replica of its own bigger versions. Benoit Mandelbrot first suggested the term Fractal in his book "The fractal geometry of Nature". The scaling down to a smaller size gives not only gives miniaturization but also enables the antenna to resonate at multiple frequencies. Along with the parameters such as gain, return loss, and VSWR, Cross polarization is also a major concern while designing an antenna. It is the phenomenon that refers to the polarization of the transmitted or received signal which is different from the desired polarization. It is also the ability of an antenna to reject signals having polarization other than the intended one.

Antenna miniaturization became a key concern for researchers these days. Fractal geometry has been used for this purpose widely. [1], explains how the fractals can be used for miniaturization also it explains the reduction in resonant frequency caused by the signal coupling between wire angles. Giuseppe Peano Fractal Geometry is used to get miniaturization by adding slots in its structure [2]. Hilbert geometry can also be used for the miniaturization of the fractal antenna where it utilizes a space-filling nature and therefore can reduce the total size antenna.[3].

It is economical to use Multi-band antennas to receive multiple applications that are arriving at different frequencies than single antennas for each frequency. Such a system based on the Sierpinski gasket is proposed in [4] and shows self-similar behaviour at multiple frequencies. A Hexagonal fractal proposed in [5] has predictable multiband behaviour. A fractal antenna with Koch hexagonal shape for S, C, and X bands is presented in [6] also the size reduction of 43% is achieved using fractal geometry. Hilbert monopole loaded with SRR is explained in[7] where cross-polarization is also reduced along with multi-band operation.An Inverted F antenna for HiperLAN is explained in [8] which can be used for ISM band also. A Multi-Band Coupled-Fed Antenna is proposed by Ming-An Chung in [9] in MIMO configuration. A compact antenna for ISM and WLAN is proposed in [10] by Azimov Uktam which has omni directional pattern.

2. Antenna Design

FR4 substrate which is most popular for Antenna design is used here for making the antenna. Cantor Square Fractal & Sierpinski Carpet designs have been generated on FR4, and both of them show good radiation characteristics. The dielectric constant of FR4 is 4.4 and the thickness chosen was 1.6mm

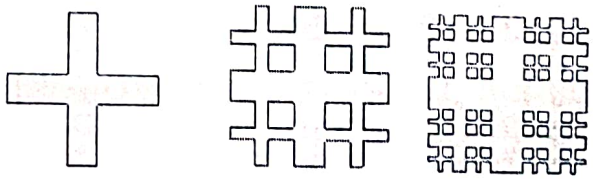

Fig 1. Cantor square fractal iterations (a) initiator (b) 1st iteration (c) 2nd iteration

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Fractal-Enhanced Microstrip Antennas: Miniaturization, Multiband Performance and Cross-Polarization Minimization for Wi-Fi Applications †

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* Correspondence: sanishvs@cusat.ac.in
† Presented at the International Conference on Recent Advances in Science and Engineering, Dubai, United Arab Emirates, 4–5 October 2023.

Abstract: Due to the fast advancement of technology and industry, miniaturization has become an important research area. Also, all wired systems are shifting into wireless, and thus, there is a need for antennas to transmit and receive data in and out of gadgets. Fractal geometries provide many benefits when used to manufacture microstrip antennas, including features like size filling, multiband, low profile, and compact size. In this study, four fractal antennas, the Sierpinski carpet, Sierpinski gasket, circular patch, and Koch fractal, were designed. Three iterations of the above four antennas were completed. The size of the antennas was 20 mm × 26 mm × 1.6 mm. FR4 epoxy with a full ground was used here for antenna generation. These antennas can be used for 5 GHz band wireless applications. They provide a good return loss at 5.2 GHz. The maximum return loss was achieved using the Koch fractal at its 3rd iteration of −39.85 dB with a gain of 3.6 dB. In order to reduce cross-polarization, a square slot was added in all antennas' feed lines, and cross-polarization was reduced by up to 60 dB. For simulation purposes, Ansys-HFSS, using FEM for the analysis of complex EM problems, provided accurate results. Also, 3D and 2D radiation patterns were analyzed, and it was found that they were directional in nature with low radiation toward the back side.

Keywords: fractal antenna; Sierpinski gasket; Sierpinski carpet; Sierpinski circular; Koch fractal; cross-polarization

check for updates

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1. Introduction

Fractals are the new area in antenna study, and with the advent of wireless communication systems comes the ever-increasing importance of manufacturing small-sized antennas and multiband applications that are in greater demand for civilian and defense applications. Fractal antennas are a variant of MSPA, which is low profile and can be manufactured on a PCB. As it is a miniature size, it can be fixed in any small gadget. It provides mechanical robustness as it is self-similar; the failure of one part may be compensated for using the other part. It consists of several iterations of a single elementary shape having the inherent properties of self-similarity and space-filling [1]. The advent of fractal geometry antennas has provided an answer to the two main limitations of classical antennas identified by Werner (1999), namely, their narrow-band nature and the frequency dependency on size [2]. Fractals are generally self-similar and scale-independent. Fractal antennas are needed for the following reasons:

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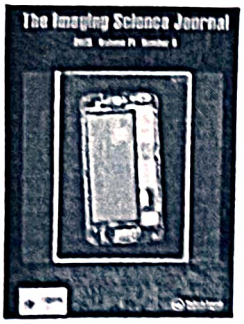

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Border Collie Shuffled Shepherd optimization-based image reconstruction using visual cryptography

Sajitha A S, S. Sridevi Sathya Priya & Sanish V S

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Global To Local Perspectives In Succession Planning Of Family Business In Unorganized Sector

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Authors Krishna Kumar TP, N Shankar, M Deepak

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Description Business Families must create the necessary framework to ensure the prosperity of subsequent generations. The achievement of a long-term legacy depends on continuity and long-term planning, which includes determining when family members can begin working in their family enterprises, which family members can join the team, and how the next generation will be led, either internally or externally. A carefully thought-out strategic plan can offer the family business management tremendous stability, preventing any difficulties and conflicts as the reins are handed down to the members of the following generation. Despite all of these factors, it is difficult for a family business to last for many generations. In this study the researcher makes an effort to comprehend, analyse, and answer the main hurdles and other pertinent problems faced by the Family Business in the unorganised sector in succession planning. Additionally, the report makes an effort to investigate the familial relationships that exist within the business's family. The study is designed as a qualitative exploratory research and the founder to fourth generation owners and their family members were identified as the primary stakeholders. They were systematically contacted and interviewed to collect the primary data and then triangulated these information with secondary data collected from other related sources and previous researches. In the family-owned enterprises in the unorganised sector, the study discovered compelling evidence to support the existence of a sizable gap in succession planning and come-out with a conclusion of intense need of Careful planning, Improved …

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ROLE OF ARTIFICIAL INTELLIGENCE IN RESTRUCTURING THE PROSPECT OF MARKETING INDUSTRY IN INDIA

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ROLE OF ARTIFICIAL INTELLIGENCE IN RESTRUCTURING THE PROSPECT OF MARKETING INDUSTRY IN INDIA

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ABSTRACT:
Consistently developing innovation has constrained each industry to consider out the case and stay aware of arising innovation to stay important. It is no different for the promoting business. As remaining in front of the opposition is the way to progress, advertisers are on the steady post for better than ever innovation. As of late, advertisers overall are going to artificial intelligence to take their promoting techniques to a higher level. As an earth shattering innovation upsetting the promoting scene, computer based intelligence has in short order become an essential piece of current showcasing methodologies. From engaging organizations to convey customized, information driven, and proficient missions to changing the manner in which brands associate with their crowds, simulated intelligence is assuming control over present day advertising. This paper engaged to analyse the role of AI in restructuring the prospect of marketing industry in India.
Key Words: Marketing, Artificial Intelligence, Technology

1. Introduction:

In the present computerized age, the promoting scene is advancing quickly, and Man-made brainpower is at the front of this unrest. Man-made intelligence is significantly altering the manner in which advertisers approach their techniques, empowering them to dissect tremendous measures of information, gain bits of knowledge around buyer conduct, and customize client encounters. This has been made conceivable because of the development of showcasing innovation, or "Martech," which includes a scope of programming and instruments that assist advertisers with robotizing, smooth out, and upgrade their missions. Man-made intelligence has taken huge steps in changing B2B advertising lately. It has empowered advertisers to succeed in different regions, including drawing in site guests through chatbots and using prescient examination in crusades. With the ascent of computer based intelligence fueled Martech, advertisers have a remarkable chance to change their missions and accomplish more prominent productivity, precision, and adequacy. As simulated intelligence keeps on developing, it is reshaping the eventual fate of promoting in thrilling and creative ways, making it more information driven, client driven, and customized than at any other time.

1.1 Objectives of the Study

The core goals of the study are following:
1. To study the role of Artificial Intelligence in marketing industry.
2. To analyse the changes that are going to occur in marketing industry due to the emergence of AI.
3. To trace the challenges of AI in Marketing
4. To find out the future of marketing with AI.

1.2 Research Methodology

The study is entirely based on the secondary data and the data are collected through available sources like journals, Books, weeklies and articles published in research websites.

2. Role of AI in Marketing Industry

Figuring out Customer Conduct and Buying Examples
One of the most significant benefits of consolidating AI in advertising lies an option for its to dissect immense measures of information from different sources. By utilizing AI calculations, AI can recognize examples and patterns in client conduct, inclinations, and collaborations. Outfitted with this understanding, advertisers can make hyper-designated campaigns tailored to individual clients, guaranteeing higher commitment rates and expanded change rates

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Impact of AI Techniques in the Banking Sector

Dhanya Nair, Assistant Professor, Nehru School of Management @ Nehru College of Engineering and Research Centre, India.

Abstract--- Artificial Intelligence techniques refer to a set of methods and algorithms used to develop intelligent systems that can perform tasks requiring human-like intelligence. It can be in the areas of IT sector, manufacturing and production, administration, agriculture and farming, healthcare, banking sector etc.

AI for corporate banking automates tasks, boosts customer services through chatbots, detects fraud, optimizes investment, and predicts market trends. This increases productivity, lowers costs, and provides more individualized services. Artificial Intelligence is the future of banking as it brings the power of advanced data analytics to combat fraudulent transactions and improve compliance. AI algorithm accomplishes anti-money laundering activities in few seconds, which otherwise take hours and days. AI also enables banks to manage huge volumes of data at record speed to derive valuable insights from it. Features such as AI bots, digital payment advisers and biometric fraud detection mechanisms lead to higher quality of services to a wider customer base. All this translates to increased revenue, reduced costs and boost in profits.

The present paper attempts to reveal the impact of AI in the banking sector. For this the researcher has drawn samples from three types of private sector banks such as Federal Bank, South Indian Bank and HDFC Bank. The researcher has used the structured questionnaire to solicit the responses from the bank employees. The variables under study like productivity, customer satisfaction, feedback, AI techniques, chatbots etc were used. The study will benefit the bank to find out the impact of current AI techniques used and whether to make any changes in the policies formulated.

Keywords--- AI techniques, Chatbots, Customer Satisfaction, Productivity, Feedback, Banking Sector.

1. Introduction

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

- *How Does AI Work?*

As the hype around AI has accelerated, vendors have been scrambling to promote how their products and services use it. Often, what they refer to as AI is simply a component of the technology, such as machine learning. AI requires a foundation of specialized hardware and software for writing and training machine learning algorithms. No single programming language is synonymous with AI, but Python, R, Java, C++ and Julia have features popular with AI developers.

In general, AI systems work by ingesting large amounts of labelled training data, analysing the data for correlations and patterns, and using these patterns to make predictions about future states. In this way, a chatbot that is fed examples of text can learn to generate lifelike exchanges with people, or an image recognition tool can learn to identify and describe objects in images by reviewing millions of examples. New, rapidly improving generative AI techniques can create realistic text, images, music and other media.

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A STUDY OF WORK-LIFE BALANCE IN BANKING SECTOR & ITS RELATION WITH JOB PERFORMANCE WITH REFERENCE TO PALAKKAD (DT)

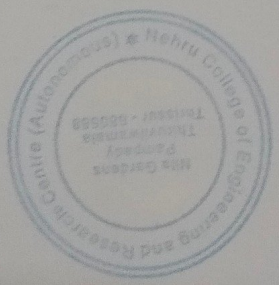
Dhanya Nair

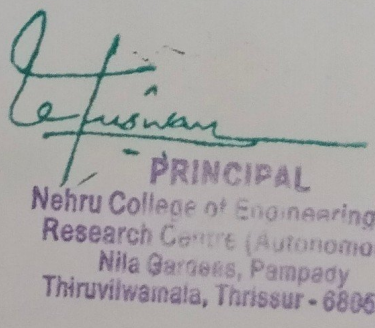
Research Scholar, Department of Management, Hindusthan College of Arts and Science, Coimbatore, Tamil Nadu, India

Abstract

Work – life balance is one of the most central issues & concerns for 21st century today in all the sectors like IT, Education, Banking, Medical etc. Now a days dramatic change has been observed in the banking sector of India. Long working hours, excessive work pressure and handling demanding & unique customers in banks has become a great task. The present paper attempts to reveal the status of work-life balance in the banking sector and its relationship with employee performance. For this the researcher has drawn the sample from four types of banks such as Federal Bank, SBI, HDFC and Canara Bank. The researcher has used the structured questionnaire to solicit the responses from the bank employees. The variables under study like gender, hierarchy, workload, impact of work at home, family & spouse support, job performance etc were used. This study will benefit the banks to formulate the policies for the bank employees.

Keywords: *Work-life balance, job performance, stress, job satisfaction, family, health, career*





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"Navigating Financial Literacy In The Digital Era: Strategies For Success"

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Research Scholar, Department Of Management, Hindusthan College Of Arts And Science, Coimbatore

Dr B Sudhakar
(Director-Mba), Hindusthan College Of Arts And Science

Abstract:
In today's digital era, financial literacy is an important concept. With the rapid advancements in technology and the widespread use of digital platforms for financial transactions, individuals need to posses the knowledge and skills to understand the complexities involved in managing finances digitally.
Financial literacy in the digital era includes understanding concepts such as online banking, digital wallets, cryptocurrencies and investment platforms. It involves being able to evaluate the security and reliability of online financial services, protect personal information from cyber threats and make informed decisions about digital transactions.
Moreover, individuals need to be aware of the potential risks associated with online financial activities such as identity theft, phishing scams and fraud. Developing financial literacy in the digital age empowers individuals to make responsible financial choices, effectively manage their money and safeguard their financial well being in an increasingly interconnected and digitized world.
The present study is undertaken to highlight the importance of financial literacy in the digital era. The data is being collected from the customers of SBI branch, Palakkad RBO. The study will benefit the bank to find out the awareness level, usage and whether they are digitally skilled for using the bank's applications.

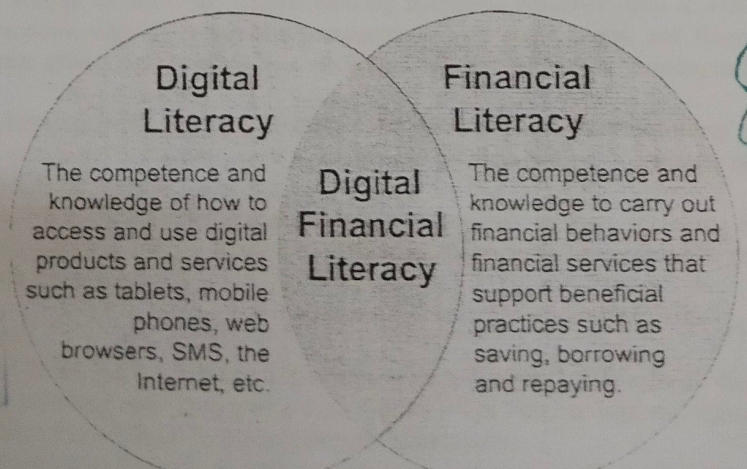
Keywords: *Financial Literacy, Digital Era, Awareness, Usage, Digital Applications*

Date of Submission: 28-05-2024 Date of Acceptance: 08-06-2024

I. Introduction:

Digital Financial Literacy refers to the ability of individuals to understand and use digital technologies to manage their financial affairs, such as online banking, mobile payments, and digital wallets. Digital financial literacy (DFL) is likely to become an increasingly important aspect of education for the Digital Age. Individuals will become more responsible for their own financial planning, including for retirement. Consumers will need to have increasing financial sophistication to make effective use of financial technology (fintech) products and avoid fraud and costly mistakes.

An overview of digital financial literacy, which combines the skills needed to navigate financial services with the skills to use digital technologies.



Digital financial literacy combines the skills needed to navigate financial services with the skills to use digital technologies.

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SSN

Certificate of Presentation

This is to certify that Prof./Dr./Ms./Mr. DHANYA NAIR

presented a research paper titled A STUDY ON THE INFLUENCE OF DIGITAL FINANCE ON INDIVIDUAL BEHAVIOUR TOWARDS FINANCIAL INVESTMENTS

at the 2nd International Conference on Emerging Trends in Business & Management (ICETBM 2024) organized by SSN School of Management on 22nd and 23rd March 2024 in Kalavakkam, Tamil Nadu, India.

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RESEARCH ARTICLE

A Study on the Influence of Digital Finance on Individual Behaviour towards Financial Investments

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Research Scholar, Hindusthan College of Arts and Science, (Affiliated to Bharathiyar University) Coimbatore, Tamil Nadu, India.

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ABSTRACT

Digital finance is the term used to describe the impact of new technologies on the financial services industry. It includes variety of products, applications, processes and business models that have transformed the traditional way of providing banking and financial services. The term financial technology was first coined in 1990s to refer to financial services available online but were later referred to as digital finance or e-finance in the 2000s. The Covid-19 provided additional support for the banking sector's adoption of digitization. Digital financial services, namely digital wallets, made it possible to deliver money to people in need. Consumers today need a simple, affordable solution for accessing financial services. Consumers are shifting toward digital finance as a result of the younger generation's increased propensity to use technology, including the internet and digital platforms. The digital revolution in the Indian economy will lead to a spin off effect on every industry. The adoption of new and emerging technologies has taken a center stage providing consumers with a variety of digital offering to attract them towards its usage. Amidst this revolution, the finance industry moved forward with the change and introduced digital finance. Digital finance is the root towards attaining economic development. Digital finance is the lifeline for economic enhancement enabling businesses, and individuals to invest, save, and pay through digital platforms. The present study is undertaken to highlight the usage of digital technologies in the investment pattern of individuals of Federal Bank in Kottayam dt. The study will benefit the bank to find out the awareness, usage and satisfaction level of customers in using digital solution for investment and can take decisions in modification of any of the applications currently used.

Keywords: Digital Finance, Digitization, Awareness, Usage, Satisfaction

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Dhanya Nair

INTRODUCTION

Digital Financial Services (DFS) include a broad range of financial services accessed and delivered through digital channels, including payments, credit, savings, remittances and insurance. Digital channels refers to the internet, mobile phones, ATMs, POS terminals etc. Everything is going digital and so are financial services. Gone are the days when you had to carry money when going out. A mobile phone is sufficient to take care of all your daily financial needs. All banking services are within your palm. There is no need to go to a bank to get your transactions done. You can deposit, transfer, withdraw or invest money using digital devices. Digital financial services have expanded greatly in India, and people have accepted them with open arms. Their convenience and safety prompt more people to move to these methods.

DIGITAL BANKING

A digital bank represents a virtual process that includes online banking, mobile banking, and beyond. As an end-to-end platform, digital banking must encompass the front end that consumers see, the back end that bankers see through their servers and admin control panels, and the middleware that connects these nodes. Ultimately, a digital bank should facilitate all functional levels of banking on all service delivery platforms. In other words, it should have all the same functions as a head office, branch office, online service, bank cards, ATMs, and point- of-sale (POS) machines. The reason digital banking is more than just a mobile or online platform is that it includes middleware solutions. Middleware is software that bridges operating systems or databases with other applications. Financial industry departments such as risk management, product development, and marketing must also be included in the middle and back ends to truly be considered a complete digital bank. Financial institutions must be at the forefront of the latest technology to ensure security and compliance with government regulations.

DIFFERENT TYPES OF DIGITAL BANKING SERVICES

UPI (UNIFIED PAYMENT INTERFACE)

Among the popular types of digital payments, the most popular is UPI. This allows money transfer from your bank account using a single window directly to the vendor from your mobile. The payee's virtual address with consent for mobile payment needs to be entered for this mode of digital payment. Several bank accounts can be linked with one app.

INTERNET BANKING

Internet banking or net banking is among the oldest types of digital banking. You can manage your bank accounts virtually if you have an internet connection. Customers can visit the bank portal and enter login details (password and username) and register. The bank takes layers of security measures into account, ensuring caution during payment and transactions.

MOBILE BANKING

Another popular type of digital banking is mobile banking. Account holders download the bank application on their mobile. All bank services like balance enquiries, payments etc. can be accessed from smartphones.

BANKING CARDS

Banking cards are essential for all types of digital payments. Cards are based on their issuance, usage, and modes of digital payment. Four types of banking cards are Debit, Credit, Prepaid and Electronic cards.

1. Debit cards issued by the bank are linked to the bank account, and cash can be withdrawn from the ATM, this banking card allows virtual payment for products and services bought through eCommerce or offline stores.
2. Credit cards are issued by banks/ non-banks. These prepaid cards are used for buying products and services on credit.

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THE IMPACT OF USING FACEBOOK ON CONSUMER BUYING BEHAVIOUR IN ONLINE

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Abstract

Facebook Marketing, which has a long list of favorable customer reviews, has a significant impact on consumer purchasing behavior. It is also clear from the glowing testimonials of past clients that new clients have a very high influence rate. Facebook is user-friendly, even illiterate people utilize it. Also, the rise of smartphones and the proliferation of the internet have altered the nature of mass communication. Social media websites are currently where people spend more time than regular hangouts and meetings. Facebook offers a variety of products and services, including social media platforms, advertising tools, and virtual reality technology The Facebook

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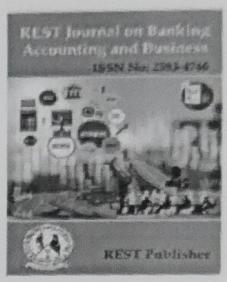

Using this DEMATEL Corporate social responsibility CSR

*[1]Krishna Kumar TP, [2]M. Ramachandran, [2]Kurinjimalar Ramu, [2]Ashwini Murugan
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Abstract: *When discussing Corporate Social Responsibility (CSR) in developing nations, academics and policymakers frequently ignore the perspectives of local producers. This paper fills a void in the literature by explicitly adopting a phenomenological approach and mapping the justifications offered by regional manufacturers to CSR programs in the West. To investigate this topic, data from two qualitative studies on CSR programs in Sialkot, Pakistan's soccer ball industry were used. Previous research has presented technologies related to managing a green aircraft fleet, including retrofits, fleet renewal, and alternative biofuels, as well as opportunities to carry out retrofits and value emissions. An alternative integer program model has also been developed to optimize fleet replacement strategies within budgets. The Intergovernmental Panel on Climate Change has noted the ineffectiveness of airplane operations. Since 2005, IATA's Green Teams have been working with airlines to reduce this inefficiency. Improved operational practices are expected to reduce emissions by 2020. Thus, more efficient operations can reduce CO2 emissions and conserve fuel. Any financial benefits from an international plan to cut airplane emissions should be set aside for environmental causes, and these profits must be partially reinvested. Only a few of the additional measures being taken to lower the emissions profile of the global aviation industry include supporting the development and use of more fuel-efficient aircraft and low-carbon, sustainable jet fuels. The Program in Science and Human Affairs at the Battelle Memorial Institute in Geneva was established between 1972 and 1976 to conduct research and address complex and interrelated problem groups using the DEMATEL (Decision-making Testing and Evaluation Laboratory) system. DEMATEL is one of the decision-making tools that employs several criteria to extract the complex structure of a problem. The DEMATEL method is widely used to identify the cause-and-effect relationships among different elements of a complex problem. The objective of DEMATEL is to scale from a complex system and the relationship between causal dimensions it is to model the understandable structure of that system. When measuring complexity, the cause-and-effect relationship of the criteria can be clearly seen. From the result it is seen that Technology (TE) the first rank where as is the infrastructure (IN) is having the lowest rank. Resulting in Technology (TE) ranked first, There Infrastructure (IN) has low rank.*

Keywords: *CSR, DEMATEL, Corporate Social Responsibility, technology.*

1. INTRODUCTION

Academic and policy discussions on corporate social responsibility (CSR) in developing countries often overlook the viewpoints of regional producers. This research aims to fill the gap in the literature by using a phenomenological method to link the interpretations provided by regional firms to CSR programs in the West [1]. The article uses data from two qualitative research projects on CSR initiatives in the football business of Sialkot, Pakistan, to provocatively explore this topic. According to the article, many Sialkot soccer ball makers view CSR as a component of a larger historical mission of Western imperialism in developing nations [2]. They lose the legitimacy of their beliefs about what constitutes socially responsible behavior and what constitutes economic resources taken from regional producers [3]. The most significant contribution to the literature on Western imperialism, CSR, and CSR and development is CSR, which lays the path for a different interpretation of CSR that contests the managerialist majority of CSR's counter-discourse [4]. This alternate interpretation of CSR as Western imperialism, according to the article, could have important ramifications for current and future change management research and practice [5]. A technique called "green air naval management" can enhance environmental protection without accelerating climate change. When managing the aviation industry's fleet of aircraft, it is important to consider both environmental issues and the concept of Corporate Social Responsibility (CSR) [6]. Building a green aircraft fleet involves complex connections between technology, operations, infrastructure, and economic performance [7]. Therefore, this study recommends a multi-criteria decision-making (MCDM) method that integrates analytical network processes, zero-one goal programming, and management strategy decisions from the DEMATEL decision testing and evaluation laboratory [8]. Our analysis shows that a fleet of environmentally friendly

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Crude Oil Price Influence on the Performance of Selected Stocks from Different Sectors – An Empirical Analysis

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DOI: https://doi.org/10.17762/sfs.v10i3S.694 (https://doi.org/10.17762/sfs.v10i3S.694)

Keywords:
Crude oil, Inflation, Stock market.

Muhamed Rafi, Dr. Jabir Moosa, Dr. Krishna Kumar.T. P, Deepak K

Abstract

In the growing economic scenario, crude oil prices influence on the growth of the nation. Most of the manufacturing industries performance is highly dependent on crude oil. Since manufacturing industry is highly dependent on crude oil, the increase in the oil price will impact the industry in an adverse manner. As the crude oil price is increasing day by day over the past years, the urge to understand the relationship between crude oil price and the economy has also increased. As there are fluctuations in the Indian economy, it leads to fluctuations in the Indian stock market as well. Because, the Indian stock market is highly volatile to the changing situations like inflation, Interest rates, Global events, politics, etc. Russia is well known for its crude oil. As the war between Russia and Ukraine starts, the impact have been seen in the crude oil price. In this scenario, the impact of crude oil price and the stock market have greater relevance. By referring to the historical data, there is an inverse effect on the crude oil price and the stock market is visible. Tyres, lubricants, logistics, refineries, airlines, paints, etc. are highly dependent on the oil prices. Some industries are affected positively and others are affected negatively due to the fluctuations in the price. The research has been made from the point of the investor, and the details regarding the stock prices have been collected and analysed for this purpose.

Issue

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Section

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e-Job Hunting Applicant Perceptions on Online Application System

Dr. Shiny C.M.[1], Dr. Jithin Benedict[2] & Greeta K. James[3]

Abstract:

The fast development and growth of the Internet over the past few years has altered how businesses perform their operations, including human resource management. One of the biggest problems for the HR department is to draw in and hire human resources that are qualified and matching the requirements of the organization. Today, the Human Resource Department uses online recruiting as a key instrument. The goal of the current study was to look at how applicants perceived an online application procedure. Through improved efficiency and reduced costs, online recruiting methods give businesses a competitive advantage while also providing job seekers with advantages and prospects. This study looks into how job seekers perceive and act when using the Internet as a source for hiring. The findings showed a positive and substantial relationship between perceived usefulness and perceived enjoyment and the intention to engage the Internet as a tool for job searching. According to the survey, online job site designers should include more practical features or tools to aid consumers in their job searches. The paper offers advice on how job searchers might use the internet as a job search tool to get employment.

Keywords: Online Job Seekers, E-recruitment, Online Application System, Internet Recruitment, Perception

Introduction

Online application systems are for jobs or careers. To meet the demands of all different sorts of job searchers, they provide a variety of positions. They serve as a conduit between employers and job seekers. Job providers advertise open positions and the kind of candidates they seek, and job seekers advertise the kinds of positions they are seeking for. The online application method searches through the needs of both employers and job seekers to identify the most suitable match. Online application systems significantly contribute to increasing employment and simplify the hiring process. There are countless online application systems, and each one offers the job seeker attempting to cut search tools with limitations to suit their interests. To find the greatest candidates, top companies connect with online application systems. Companies offer thorough job descriptions so that applicants can choose them appropriately. Despite these benefits, using an online application system carries some risk. Among the most frequent issues

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(2)

International Research Journal of
BUSINESS STUDIES

LETTER OF ACCEPTANCE
Number 030/Editorial Management/IRJBS/11/2024

Dear Authors,
Sunil Joseph A. and Prof. Dr. Shiny C.M.,

It's my pleasure to inform you that, after the peer review, your paper, "**Interpreting The Impetus of Artificial Intelligence (AI) On Customer Satisfaction in The Digital Banking Landscape**" has been **ACCEPTED** to be published in the International Research Journal of Business Studies (IRJBS), ISSN 2089-6271 (Print) and ISSN 2338-4565 (Online), and it is available published online at IRJBS Vol. 17 N.2 (2024).

Thank you very much for submitting your article to the IRJBS. I believe that our collaboration will help to accelerate global knowledge creation and sharing one step further.

Best Regards,
Jakarta, 1 November 2024

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Interpreting The Impetus of Artificial Intelligence (AI) On Customer Satisfaction in The Digital Banking Landscape

Sunil Joseph A.[1] & Shiny C. M.[2]

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Keywords:
Artificial Intelligence,
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Problem Solving

Kata Kunci:
Kecerdasan Buatan,
Kepuasan Pelanggan,
Tren,
Daya Tarik Visual,
Pemecahan Masalah.

ABSTRACT

Artificial Intelligence (AI) transforms digital banking technology by augmenting the consumer banking experiences. This study explored the stimulus of AI attributes-trendiness, visual attractiveness, and problem-solving on customer satisfaction in digital banking. To accomplish this, a descriptive and quantitative research approach was embraced, gathering and analysing 120 sample using SPSS 23.0. The correlation analysis exposed positive association between AI attributes and customer satisfaction. Trendiness indicated a modest correlation, Visual Attractiveness and Problem Solving exhibited robust correlations. The regression analysis proved that visual attractiveness is exceptionally significant, problem solving exhibited significant impact and trendiness did not forecast substantial customer pleasure. This study emphasizes the significance of visual attractiveness and problem-solving in shaping positive customer experiences in AI-induced digital banking, stressing the necessity for the constant innovation in the competitive business environment.

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SARI PATI

Kecerdasan Buatan (AI) mentransformasi teknologi perbankan digital dengan meningkatkan pengalaman nasabah. Penelitian ini mengeksplorasi pengaruh atribut AI—tren, daya tarik visual, dan pemecahan masalah—terhadap kepuasan pelanggan dalam perbankan digital. Untuk mencapai tujuan tersebut, pendekatan penelitian deskriptif dan kuantitatif digunakan, dengan mengumpulkan dan menganalisis 120 sampel menggunakan SPSS 23.0. Analisis korelasi menunjukkan adanya hubungan positif antara atribut AI dan kepuasan pelanggan. Tren menunjukkan korelasi yang moderat, sementara Daya Tarik Visual dan Pemecahan Masalah menunjukkan korelasi yang kuat. Analisis regresi membuktikan bahwa daya tarik visual sangat signifikan, pemecahan masalah memberikan dampak yang signifikan, dan tren tidak memprediksi kepuasan pelanggan secara substansial. Penelitian ini menekankan pentingnya daya tarik visual dan pemecahan masalah dalam membentuk pengalaman positif pelanggan dalam perbankan digital yang didukung AI, serta menyoroti pentingnya inovasi yang berkelanjutan dalam lingkungan bisnis yang kompetitif.

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Redefining Risk Management in Banking: Transference from Compliance to Competitiveness

Authored By

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Director- MBA, Sri.Venkateswara College of Computer Applications and Management, Coimbatore, Tamilnadu

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International Journal of Cultural Studies and Social Sciences

Redefining Risk Management in Banking: Transference from Compliance to Competitiveness

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Abstract

In modern banking, risk management has traditionally focused on regulatory compliance, enforcing extensive rules to curb risks. However, this compliance-centric approach has limitations, as seen in the 2007-2008 credit crisis, failing to prevent systemic failures. A holistic, forward-looking approach is necessary to build resilience against unpredictable threats. The banking industry, facing intricate and ever-changing environments, needs to redefine risk management as a strategic necessity, integrating it with core business objectives to foster innovation and competitiveness. This shift includes leveraging risk for competitive advantage and cultivating a risk-aware culture. Successful risk management should address strategic risks such as evolving technology, cyber threats, and shifting customer behaviour. Banks adopting a competitiveness-driven approach can enhance customer confidence, operational efficiency, and market differentiation. By embracing proactive and strategic risk management, banks can better navigate uncertainties, seize opportunities, and achieve sustainable growth, ensuring long-term viability and expansion in a dynamic market.

Introduction

In modern banking operations, risk management is devoted solely to regulatory compliance, in which extensive regulations are developed and strictly enforced across all employees. While some regulatory policies have reasonable foundations and can help curb certain risks, relying exclusively on rules has limitations. It does not meaningfully reduce the probability or impact

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ROLE OF ARTIFICIAL INTELLIGENCE IN RESTRUCTURING THE PROSPECT OF MARKETING INDUSTRY IN INDIA

Authored By

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Associate Professor, Nehru School of Management, Nehru College of Engineering and Research Centre, Pampady, Thrissur

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Stochastic Modelling and Computational Sciences

OTT PLATFORMS' AND ITS INFLUENCE ON VIEWERS BEHAVIOURAL PATTERN

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ABSTRACT

The digital revolution has dramatically impacted the consumption of media and entertainment in Tamil Nadu, thanks to the emergence of OTT platforms such as Netflix, Amazon Prime, and Hot star. These platforms provide viewers with unprecedented access to a vast array of content, including movies, television shows, music, and more. As a result, viewers' habits have changed, with a shift in their behavioral patterns towards the consumption of media and entertainment. OTT platforms offer convenience and accessibility, allowing viewers to watch their favorite shows and movies from the comfort of their homes and discover new genres and stories. The increased demand for streaming services has led to a larger user base and more revenue for the OTT platforms, while also affecting other industries in the region. This paper will explore the influence of OTT platforms on viewers behavior in Tamil Nadu and the potential implications for the entertainment industry.

Keywords: Behaviour,Content, Traditional viewers, Entertainment.

INTRODUCTION

OTT stands for "over-the-top," as in going above and beyond streaming cable networks or YouTube. BIGFlix was the first independent Indian OTT platform in India, launched by Reliance Entertainment in 2008. In 2010, Gurugram-based Digivive launched the first OTT mobile app in India, nexGTV. It offers live TV and on-demand content. nexGTV was the first app to stream live Indian Premier League matches on mobile devices in 2013 and 2014. Hotstar has seen significant growth in India since acquiring IPL live-streaming rights in 2015.

When DittoTV (Zee) and SonyLiv both debuted in the Indian market around 2013, OTT experienced substantial momentum in India. DittoTV was an aggregator platform containing shows across popular media channels, including Star, Sony, Viacom, Zee, etc. There are currently about 46 providers of over-the-top media services in India that distribute content over the internet.

In the 1980s, the rapid growth of video cassette recorders and players (VCRs/VCPs) challenged the established modes of viewing cinema. However, the rise of multiplexes in large cities in the early 2000s effectively killed the DVD industry and single screens. Now, the popularity of OTT platforms is wreaking havoc on multiplexes.

According to a report published by Media Partners Asia (MPA), the Indian OTT streaming video market is currently in its second growth phase with total revenues of $3 billion in 2022. So far, OTT has captured 7-9% of the entertainment industry's share and revenue. With over 40-odd players offering original content in all languages, the industry is expanding quickly and consistently. There are currently over 45 million OTT subscribers in India. This figure is expected to reach 50 million by the end of 2023.

The OTT market is set to become a ₹12,000-crore industry by 2023 at a compound annual growth (CAGR) of 36% (from ₹2,590 crore in 2018). The emergence of OTT platforms has revolutionized the way people watch television in Tamil Nadu. OTT platforms provide viewers with access to a wide variety of content, including movies, television shows, music, and more. As such, they have had a significant impact on the viewing habits of people in Tamil Nadu, especially when it comes to the type of content they watch and the time they spend watching it. This paper will explore the influence of OTT platforms on viewers' behavioural patterns in Tamil

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Nadu and how it has changed the way people how people behave towards this industry and affects other industries too. OTT platforms have provided an unprecedented level of convenience and accessibility to a wide range of content, allowing viewers to watch their favourite shows and movies from the comfort of their own homes. This has led to changes in viewers' habits, as they now no longer need to rely on traditional television for their entertainment. Furthermore, viewers have been able to discover new genres of content and explore new stories, which has resulted in an increased demand for streaming services. Ultimately, OTT platforms have allowed viewers to expand their entertainment options and access content that they may have never experienced before.

The digital revolution has led to a dramatic change in the consumption of media and entertainment in Tamil Nadu. With the rise of online streaming platforms such as Netflix, Amazon Prime, Hotstar, etc., viewers now have access to a vast array of content at their fingertips, drastically altering their viewing and behaviour habits. This has led to a shift in viewers behavioural patterns, as they now have access to more content than ever before. This has enabled viewers to explore different kinds of content and develop new interests. Additionally, the convenience of streaming content on demand has made OTT platforms a preferred choice for many viewers. With the increasing use of OTT platforms, viewers have become more engaged in their content consumption, with an increased willingness to pay for premium content. This has allowed the OTT platforms to develop a larger user base and generate more revenue. Therefore, OTT platforms have had a significant influence on viewers behavioural patterns in Tamil Nadu. It will also consider the potential implications of OTT platforms on the entertainment industry in the region. India is a complex market when it comes to paying for entertainment. Digital content consumption is rapidly growing as a result of easy access to smart devices and affordable mobile data plans. Since the transition from Doordarshan to Direct-to-Home (D2H) to OTT platforms, the content consumption behaviour of Indian [redacted] viewers. According to an EY-Now-KPMG report, an over

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Research Article

Global To Local Perspectives In Succession Planning Of Family Business In Unorganized Sector

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ABSTRACT

Business Families must create the necessary framework to ensure the prosperity of subsequent generations. The achievement of a long-term legacy depends on continuity and long-term planning, which includes determining when family members can begin working in their family enterprises, which family members can join the team, and how the next generation will be led, either internally or externally. A carefully thought-out strategic plan can offer the family business management tremendous stability, preventing any difficulties and conflicts as the reins are handed down to the members of the following generation. Despite all of these factors, it is difficult for a family business to last for many generations. In this study the researcher makes an effort to comprehend, analyse, and answer the main hurdles and other pertinent problems faced by the Family Business in the unorganised sector in succession planning. Additionally, the report makes an effort to investigate the familial relationships that exist within the business s family. The study is designed as a qualitative exploratory research and the founder to fourth generation owners and their family members were identified as the primary stakeholders. They were systematically contacted and interviewed to collect the primary data and then triangulated these information with secondary data collected from other related sources and previous researches. In the family-owned enterprises in the unorganised sector, the study discovered compelling evidence to support the existence of a sizable gap in succession planning and come-out with a conclusion of intense need of Careful planning, Improved Relationship among members and Openness and transparency in the planning for long term survival of the Family Business. This study contributes to family business succession process especially those who run business in Unorganised Sector. Being this study conducted in an accessible geographical area, future study can be done with a larger geographic scope because succession planning in small businesses is a problem everywhere.

Keywords: Succession Planning, Family Business, Unorganized Sector, Psychological pressure, Northern Kerala.

1. Introduction

Family-owned businesses maintain a considerably significant position in established world economies and are the gesture of a healthy market economy. Family businesses hold many uniqueness that keep them greatly differs from non-family businesses. A very common factor most of the Family businesses face are the issues related to succession and generation exchange. According to Carlock and Ward (2001), all businesses, family-owned or otherwise, find it difficult to continue for the long term. In their book, they presented the evolution of the Fortune 500 List as an example, where, since 1955, only 77 companies have remained independent. More than 80% have been sold or acquired or witnessed their sales slide significantly in the past 65 years.

The researcher feels ideal to narrate a real story to expose the issues related to succession and generation exchange faced by Family Business firms. There was a person with the name Janab Khader Musthafa residing at Kuttippuram in Malappuram District of North Kerala. He was running a fairly medium-sized two Super

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kets. One in Perintalmanna, Malappuram District and another one in Cherpullachery, Palakkad District. veloped these stores from a grocery shop opened by his father who is now in bed ridden stage because of d ailments and Mr.Khader was inducted into business at a very early age. Khader was having three en, the elder two were daughters the youngest one was a son which he got it after a long waiting with se prayer and spiritual offerings to many deity's. As usual, this little one was consadered as the strength is further life and babied to the extent of ruining him to the core by each and every member of the family. e studied in the best schools and colleges his father could buy and grew up with kids of high-class society. Unfortunately, when Khader met with an accident and left to his ultimate abode. The untimely departure without any on-record document about the business created irreparable issues in the family. The son was not hadow and willing to take over the leadership being his vision and focus were not synching with the same. There

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Securing the Cloud: Understanding Threats and Countermeasures

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Abstract: ***Cloud computing has completely transformed how businesses and individuals store, manage, and retrieve data. Nevertheless, despite its many benefits, there are inherent security challenges. This research investigates the different risks encountered by cloud computing, which consist of data breaches, insider threats, and denial of service attacks. It also covers successful prevention methods like encryption, multi-factor authentication, routine security checks, and staff education. By comprehending these dangers and putting in place strong security measures, organizations can improve the security of their cloud environments and guarantee the confidentiality, integrity, and availability of their data. Cloud computing is now being extensively researched and utilized in both academic and industrial sectors. Both cloud service providers (CSPs) and consumers benefit from cloud computing. The security issues related to cloud computing have been extensively researched in various studies.***

Keywords: Cloud Computing, Data breaches, Security challenges, Security Threats, Mitigation strategies

I. INTRODUCTION

Cloud computing has become a prevailing method for providing computing resources and services through the internet in more recent times. The transition to cloud-based infrastructure provides unprecedented scalability, flexibility, and cost-efficiency. Nevertheless, despite these advantages, there are substantial security issues that need to be dealt with in order to safeguard sensitive information and crucial systems.

This article explores cloud computing security, examining the different dangers organizations encounter in cloud settings and investigating effective methods to protect against these dangers. Organizations can fully utilize cloud computing by comprehending its distinct security environment, implementing strong security measures, and safeguarding data confidentiality, integrity, and availability to minimize risks.

The idea of Cloud Computing originated from the distributed software architecture. Cloud computing technology aims to offer services over the internet, which are hosted. Recently, cloud computing in the field of Information Technology has led to the emergence of several new user communities and markets. Cloud computing services are offered from data centers situated in various regions around the globe. Microsoft SharePoint and Google applications are typical instances of cloud computing services. Cloud computed technology is aimed to provide hosted services over the internet. In recent years, cloud computing in Information Technology has given rise to various new user communities and markets [1]. Cloud computing services are provided from data centers located in different parts of the world. Microsoft SharePoint and Google applications are general examples of cloud computing services.

Security plays an important role in the wider acceptance of cloud computing services [2]. Existing literature is focused on different security solutions, including technology and security policy implementation. The latter study introduced new attacks on the cloud environment from criminological perspectives. The proposed solution to these recent attacks is based on criminal theories for the protection of the cloud.

A study [3] identified several security issues affecting cloud computing attributes. The same research proposes to overcome the identified problems concerning the security of cloud. A security guide, developed in this research, enables the cloud user organizations to be aware of security vulnerabilities and approaches to invade them. Security vulnerabilities and challenges arise from the usage of cloud computing services. Currently, cloud computing models are the primary source of these challenges and vulnerabilities.

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AI AND THE FUTURE OF WORK: HOW MICROSOFT COPILOT IS RESHAPING USER INTERACTION WITH TECHNOLOGY

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Abstract: The rise of artificial intelligence (AI) is fundamentally altering the landscape of work. This paper explores the impact of Microsoft Copilot, a powerful AI assistant integrated within Microsoft 365 applications. By analyzing Copilot's capabilities in suggesting content, formatting, and data analysis across Word, Excel, PowerPoint, and Outlook, this research examines how it reshapes user interaction with technology. The paper investigates into how Copilot streamlines workflows, enhances productivity, and fosters a more collaborative human-AI work environment. Furthermore, it explores potential implications for the future of work, considering how AI assistants like Copilot may redefine skillsets and necessitate adaptation in various professions. By investigating Microsoft Copilot as a case study, this research sheds light on the evolving nature of user interaction with technology in an AI-driven future of work.

Index Terms **- Artificial intelligence (AI), Microsoft Copilot, Microsoft 365 applications.**

I. INTRODUCTION

The unrelenting march of artificial intelligence (AI) is transforming the landscape of work in profound ways. One fascinating example of this transformation is the emergence of AI assistants specifically designed to augment professional workflows. Microsoft Copilot, a groundbreaking AI tool embedded within familiar Microsoft 365 applications, exemplifies this trend. Microsoft Copilot is an AI-powered code completion tool developed by OpenAI in collaboration with GitHub. It assists developers by providing suggestions and completing code snippets based on context and patterns learned from a vast amount of code available on GitHub. This machine learning model, called Codex, empowers developers to write code more efficiently. One key feature is its ability to understand natural language descriptions of code and generate corresponding snippets. Developers can simply describe their desired outcome in plain English, and Copilot offers relevant code suggestions. Additionally, Copilot can assist with writing tests, documentation, and other repetitive coding tasks, saving developers valuable time and effort. While Microsoft Copilot is a valuable tool, it's not without limitations. As with any AI-powered tool, Copilot may sometimes generate incorrect or suboptimal code suggestions, requiring careful review and validation by developers. Additionally, there are concerns about potential copyright and licensing issues when using code generated by Copilot, as it may inadvertently incorporate code snippets from copyrighted sources. Overall, Microsoft Copilot represents an innovative approach to code completion and has the potential to enhance developer productivity and efficiency. By leveraging the power of AI and machine learning, Copilot aims to streamline the coding process and empower developers to focus on higher-level problem-solving tasks.

This introduction sets the stage with the broader impact of AI on work, introduces Copilot within that context, and then dives into a concise explanation of its functionalities and limitations. This provides a well-rounded introduction that piques the reader's interest and prepares them for your deeper exploration of Copilot's impact on user interaction with technology.

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Unified Payments Interface (UPI): A Catalyst for Financial Inclusion and Digital Economy Growth

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ABSTRACT

The UPI has revolutionized digital transactions in India, changing the payment system significantly. This article provides a comprehensive analysis of UPI, covering its structure, characteristics, and possible impacts on the future of digital banking. UPI functions on a live interbank payment system, enabling effortless money transfers between bank accounts through a single identifier. Its structure unites different participants such as banks, payment service providers, and users by using a consistent protocol, guaranteeing compatibility and safety. The article explains the main characteristics of UPI, including its ease of use, availability, and strong security measures, which have led to its broad acceptance among various user groups. Moreover, it examines how UPI is influencing financial inclusion, e-commerce, and peer-to-peer transactions, promoting a cashless economy and stimulating economic growth. The paper investigates the future outlook of UPI, considering current trends and regulations, focusing on advancements in payment technologies, improved user experience, and looming challenges like cybersecurity risks and regulatory adherence. This review offers valuable insights for policymakers, financial institutions, and researchers on how to utilize UPI fully and adapt to changes in digital payments through a synthesis of current literature and empirical evidence.

Keywords: Unified Payments Interface (UPI), Digital Payments, Financial Inclusion, Payment Technologies, Interoperability, Security, Economic Growth.

INTRODUCTION

The advancement of digital payment systems has been central to the worldwide effort for financial inclusion, with India leading the way in this progressive process. The Unified Payments Interface (UPI) is leading India's digital payment revolution, transforming the landscape of financial transactions. UPI is a significant change from traditional banking methods to a smooth, interconnected system that goes beyond geographical and institutional limits. This introduction delves deep into the origins, structure, and revolutionary effects of UPI on India's financial scene. Launched by the National Payments Corporation of India (NPCI) in April 2016, UPI was designed with the goal of making financial services accessible to all and promoting inclusive development. In its core, UPI operates as a payment system in real-time, allowing individuals to easily and conveniently make peer-to-peer (P2P) and peer-to-merchant (P2M) transactions. In contrast to conventional payment methods requiring complex account details, UPI utilizes a distinct virtual payment address (VPA), removing the requirement for sharing sensitive information and simplifying the transaction process. The design of UPI showcases innovation and teamwork, utilizing the combined knowledge of banks, payment service providers, and technology enablers to build a strong ecosystem. At the heart of its operations, UPI functions on a 'layered' structure, in which a unified group of APIs (Application Programming Interfaces) enables smooth communication among different parties. This uniform protocol guarantees compatibility among various banks and payment platforms, promoting fairness for all involved parties. The exponential growth in the adoption of UPI is driven by its inherent benefits in simplicity, security, and ubiquity.

From city-dwelling millennials to countryside craftsmen, UPI has gone beyond demographic limitations, enabling millions to engage in the official financial system. The increase in smartphone use and the introduction of digital wallets have accelerated the adoption of UPI, resulting in a significant increase in both the number and value of transactions. Additionally, UPI has become a fundamental element of India's digital framework, supporting various purposes such as paying bills and making online purchases, catering to small-scale businesses and government payments. Its far-reaching influence goes beyond personal convenience, causing systematic shifts in how business is carried out and financial services are provided. As India progresses towards a digital-first economy, UPI is set to be a key player in influencing the future of financial services. Nonetheless, during its rapid increase, UPI is also encountering a variety of obstacles including cybersecurity risks and regulatory conformity problems. It is crucial to overcome these obstacles and fully utilize UPI in order to achieve the goal of creating a financially inclusive society.

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BUILDING AN INTELLIGENT HABITAT: EXPLORING DYNAMICS OF SMART HOME ECOSYSTEM

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Abstract : The intricate world of interconnected devices and systems known as the Smart Home Ecosystem creates a symphony of convenience, efficiency, and security in today's homes. This analysis delves into the multifaceted nature of smart home technologies, investigating how they are integrated, how they work together, and how they prioritize the needs of users. From seamlessly connecting IoT devices to utilizing data-driven automation, this research explores the evolving landscape of smart homes and their significant influence on daily living and society as a whole.

Index Terms **- - Artificial Intelligence, Automation, Internet of things, Natural language processing, Smart hubs, Smart home**

I. INTRODUCTION

A smart home is a sophisticated arrangement of state- of- the- art technologies that make your home more responsive, effective and secure. At its core, a smart home consists of connected bias that automate and streamline ménage tasks similar as conforming room temperature, controlling lighting, and managing security systems. Each smart device is frequently connected to a central mecca or platform via the Internet of effects (IoT) , allowing homeowners to control these functions ever. A smart home refers to a accessible home setup where appliances and bias can be automatically controlled ever from anywhere with an internet connection using a mobile or other network device. These smart home bias are connected via the internet, allowing the stoner to ever control features similar as home security access, temperature, lighting and home theater. Smart homes can be set up using wireless or hard-wired systems. They provide homeowners with convenience, cost savings, and the ability to control appliances, thermostats, lights, and other appliances via an Internet connection using a smartphone or tablet A smart home is a phenomenon of technology not only because of the individual bias it contains, but also because of the complex network they inclusively form. bias interact with each other, swapping data and instructions to produce a connected ecosystem- Smart Home Ecosystem. The network operates on the backbone of wireless communication technologies and uses several platform

II. LITERATURE SURVEY

[1] In his 2013 publication, 'The Rise of Smart Home Ecosystems: A Historical Perspective,' John Smith presents a thorough exploration of the origins and evolution of smart home technologies. Through meticulous analysis, Smith delves into the history of technological advancements and societal changes to uncover the roots of the smart home phenomenon. He traces the trajectory from its experimental beginnings to the sophisticated integrated ecosystems of today, revealing a captivating narrative of innovation and transformation. By examining key milestones and groundbreaking innovations, Smith offers valuable insights into the development of smart homes. His review not only chronicles the evolution of smart home technologies, but also provides a deeper understanding of the societal and cultural factors that have influenced their growth. By placing the development within the broader context of technological progress and societal trends, Smith's work offers a comprehensive understanding of the intricate relationship between innovation, adoption, and societal change. This historical perspective serves as an essential resource for scholars, practitioners, and enthusiasts, providing a deeper appreciation of the forces driving the rise of smart home ecosystems and their significant impact on modern living environments.

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Internet of Things for Healthcare

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Abstract
The first principle of IoT (Internet of Things) is to connect smart objects - things- to the Internet in a transparent way. This leads to an exchange of data between all things, and bring users information in a more secure way. Cisco Systems estimates that IoT will consist of 50 billion devices connected to the Internet by 2020 and it is predictable that many physical objects, like computers, sensor actuators, will be distributed with unique addresses and the ability to transfer data, from the common daily activities to restricted medical records, in a secure way. This technology, named as Internet of Things (IoT), "provides an integration approach for all these physical objects that contain embedded technologies to be coherently connected and enables them to communicate and sense or interact with the physical world, and also among themselves" [19]. The Internet of Things
(IoT) is a concept that's reflects a "connected set of anyone, anything, anytime, anyplace, any service, and any network". One of the most attractive applications fields for IoT is the Healthcare, giving to us the possibility of many medical applications such as remote health monitoring, fitness programs, chronic diseases, and elderly care.

Keywords: Internet of Things, healthcare, medical environments, sensors.

INTRODUCTION

In the ever-evolving landscape of healthcare, a silent revolution is underway, orchestrated not by surgeons or scientists alone, but by the harmonious integration of technology and compassion. This revolution finds its crescendo in the symphony of the Internet of Things (IoT), an unconventional maestro poised to transform every facet of healthcare delivery. As we peer into the corridors of hospitals and clinics, we witness the emergence of a new era, one where medical devices no longer merely treat symptoms but anticipate needs, personalize care, and empower patients to take charge of their well-being. Imagine a scenario where wearable sensors monitor vital signs in real-time, alerting healthcare providers of anomalies before they manifest into crises. Envision a world where smart pills, equipped with miniature sensors, track medication adherence, ensuring precision in treatment regimens and reducing the burden of forgetfulness.

Yet, beyond the realm of diagnostics and treatment lies a realm of empathy and understanding, where IoT becomes the bridge connecting patients with their caregivers in unprecedented ways.

In this narrative, IoT transcends its conventional role as a mere technological enabler and becomes a conduit for empathy, fostering a deeper connection between patients and providers. It's not just about collecting data; it's about understanding stories, fears, and aspirations. It's about transforming the clinical

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Serverless MERN Stack Web Deployment with AWS Lambda

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Abstract : The emergence of serverless architecture has transformed the manner in which web applications are deployed and controlled. This paper explores serverless deployment, specifically concentrating on building a MERN stack web app using AWS Lambda, an AWS serverless computing platform. Our study covers the advantages, obstacles, and complexities of this method, revealing its ability to simplify the implementation process and improve scalability for contemporary web applications.
Serverless architecture, exemplified by AWS Lambda, signifies a revolutionary change in cloud computing, allowing developers to release the responsibility of overseeing servers and concentrate solely on coding. This system enables developers to pay for the resources used by their functions, allowing for cost savings compared to traditional server-based payment methods.
The MERN stack, known for its flexibility and strength, forms the foundation of current web development practices. MongoDB, which is a NoSQL database, offers a flexible storage option for application data, while Express.js streamlines the creation of server-side logic. React.js facilitates the development of interactive user interfaces through its component-based structure, while Node.js acts as the server-side runtime environment for code execution.
The process of deploying a MERN stack application on AWS Lambda is complex and involves multiple steps. The process starts with creating an AWS account and setting permissions for deploying Lambda functions and accessing other AWS services. Developers then move on to writing server-side code with Node.js and generating Lambda functions to manage API requests and business logic. These features work alongside AWS API Gateway to reveal RESTful APIs, facilitating smooth interaction between the application's frontend and backend elements. Moreover, the React.js-based frontend is hosted on either AWS S3 or CloudFront to ensure effective distribution of static assets.

IndexTerms **- Serverless Architecture, MERN Stack, AWS Lambda, Web Deployment, Scalability.**

1.INTRODUCTION

This paper investigates how serverless architecture transforms by examining the implementation of a MERN stack web application with AWS Lambda, a top serverless computing platform from Amazon Web Services (AWS). Analyzing the advantages, difficulties, and details of putting this method into practice reveals how serverless deployment can simplify operations and enhance scalability of modern web apps.
Serverless architecture, demonstrated by AWS Lambda, represents a shift away from conventional server-dependent computing, eliminating the need for developers to worry about managing infrastructure and enabling them to focus exclusively on coding. This model implements a payment system where users are only charged for the compute resources they use, leading to substantial cost reductions. The MERN stack, known for its flexibility and durability, acts as the foundation of the application by utilizing MongoDB for flexible data storage, Express.js for efficient server-side logic development, React.js for creating dynamic user interfaces, and Node.js as the runtime environment.
Setting up a MERN stack application on AWS Lambda involves setting up an AWS account, creating Lambda functions for managing API requests and business logic, configuring API Gateway for smooth communication, and hosting the frontend on either AWS S3 or CloudFront. Although facing obstacles like cold start latency and possible vendor lock-in, deploying a serverless MERN stack with AWS Lambda provides an attractive option for contemporary web development projects by focusing on scalability, affordability, and simplified administration.

2. LITERATURE SURVEY

Serverless computing has gained significant focus in recent years, leading to thorough investigation and exploration in different fields. The literature on serverless architecture, especially in its use for web development and deployment, offers valuable information on advantages, difficulties, and recommended approaches. This literature review summarizes main discoveries and patterns from current studies, centering on serverless MERN stack implementation with AWS Lambda.

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STEGANOGRAPHY-A DATA SECURITY TECHNIQUE

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Abstract: With the ever-expanding sum and assortment of information to be put away and transmitted in different mediums, the detail of security which has to be set up at different levels of medium get to and the going with issues of verification and authorization has gotten to be a basic figure. Different steganographic, watermarking and data-embedding calculations have more often than not controlled the real information in arrange to either stow away any pined for data or to give a few levels of get to control over the medium. The mediums are more often than not pictures, video, sound etc., wherein particular parcels or the in general space is as a rule 'corrupted' with 'significant' information. We endeavor to bring out the centrality of the steganographic procedures that are utilized in data handling calculations for information security. It bargains with the issue of information security, centering primarily on pictures, and tries to state the different properties and characteristics that the steganographic calculations ought to have. We moreover highlight the strategy of concealing utilized in the customary steganographic LSB calculations and in its variations. Steganography, an antiquated procedure dating back to the days of Herodotus, has advanced into a modern strategy of concealing touchy data inside harmless carriers, such as pictures, sound records, or indeed content. In today's computerized age, where information security is fundamental, steganography plays a pivotal part in defending data from prying eyes and unauthorized get to. This unique investigates the standards, methods, and applications of steganography in cutting edge information security paradigms.

IndexTerms **- Steganography, LSB, Information Security, Secret Message, Encoding.**

I. INTRODUCTION

Steganography is the hone of concealing messages or data inside other non-secret information. In the setting of information security for reports, steganography can be utilized to insert mystery data inside the content of a report without changing its appearance. This can be accomplished by unpretentiously adjusting the dividing between letters, utilizing imperceptible ink, or covering up data inside the metadata of the archive. Steganography offers an extra layer of security, as indeed if the archive falls into the off-base hands, the covered-up data remains concealed unless the beneficiary knows how to extricate it. Not at all like encryption, which conceals the substance of a message, steganography masks the exceptionally presence of the message. This can be accomplished by inserting the mystery data into different sorts of computerized media, such as pictures, sound records, or indeed content reports, without unmistakably modifying the unique file's appearance. Steganography plays a significant part in information security by giving a clandestine communication channel for secret data, making it troublesome for unauthorized parties to distinguish or caught. It's frequently utilized in conjunction with encryption to give an extra layer of security, particularly in scenarios where communication may be observed or compromised. It moreover investigates developing patterns in steganography, such as the integration of fake insights and machine learning calculations to improve the proficiency and security of clandestine communication systems. Moreover, the theoretical underscores the moral and legitimate suggestions of steganography, highlighting the sensitive adjust between protection rights and national security concerns. It emphasizes the significance of capable utilization and direction to relieve potential abuse of steganographic procedures for illegal purposes.

A Study of Pioneering Sustainable Reforestation through Drone Technology

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Abstract: It is common knowledge that forests are the primary and essential resource for our nation. Their advantages are greater, however, because of deforestation, wildfires, and excessive human population, livestock farming is conducted to increase production. As cities expand and more land is used for housing, urbanization is causing the loss of 1.5 acres of forest every second. Therefore, it is important to preserve forests. We have encountered these issues and developed a concept known as the tree planting drone, which incorporates four technological components covering a variety of topics, including IOT, Mechanics, Aerodynamics, and fly control system. Initially, we will conduct an assessment of the terrain is shot into the ground by a drone after we have prepared the soil for planting. We will plant seeds in the ground and then use Internet of Things technology to manage their germination and growth. Innovation in the field of technology. With the assistance of two operators and ten drones, we are able to plant approximately 10 thousand plants in a single day. With the help of operators and drones, we can plant approximately 35,000 plants in just one day. Presently, in rural areas The only reason behind the delay in agriculture is on the downside. There are no workers currently available to do the planting task. also, they will require additional payment, but the crucial point to grasp is that the former is contingent on farming. The planting drone includes a seed container for storing seeds, as well as a funnel for planting them. When the seeds are released, the entire planting system is connected to the underside of the drone and has the capability to transport. Planting can be done quickly and efficiently by using one to five kilograms of seeds at a time, as estimated. This method saves time and makes planting easier. To combat deforestation, we plan to restore the forest by planting trees in order to reap the benefits. We rely on forests and there are more of us. The seeds container is both biodegradable and contains a nutrient solution. The seeds begin to germinate with the assistance of a nutrient solution, which is a key factor in combating deforestation and promoting reforestation to preserve our forests.

Keywords: Biodegradable, Drones, Precision agriculture

I.INTRODUCTION

Deforestation in recent times is proving to be a significant threat to destabilizing the earth's natural cycles. As a result of fewer trees, the soil undergoes the phenomenon of the 'Green House Effect', where greenhouse gases like carbon dioxide, methane, nitrogen dioxide, and chlorofluorocarbons trap the sun's heat within the atmosphere excessively, leading to warming of the soil and posing a threat to life forms on land. [1]

When trees are chopped down, the carbon dioxide they hold to maintain balance will be released into the atmosphere, contributing to the problem. Farming and forestry activities are the main contributors to greenhouse gases emissions in the nursery. These include forest fires, deforestation for agriculture and farming, urban expansion, and logging of trees [2]

These exercises are causing a decrease in mother nature's ability to reforest. The current tools and nursery supply chains are largely inadequate to fill this gap. Our project "Reforestation using drones and deep learning" aims to tackle this challenge. We contemplate how trekking paths can be used for reforestation and constructing a functioning prototype of the concept. [3] By utilizing drone reforestation, multiple problems can be addressed quickly as it is 9 times faster than other manual planting methods, stays in the air, enables efficient and rapid travel, saves time and coverage for greater efficiency in less time. We envision a future where we implement a strategy using deep learning methods to effectively track deforested areas with a drone and sow seeds in those specific locations by either hovering over them or dropping the seeds from the air. [3]

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BIOINSIGHT PRECISION: "BIOINFORMATICS SHAPING THE FIELD OF PERSONALIZED MEDICINE"

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Abstract : The emergence of systems biology as an all-encompassing field has resulted in new advancements in high-utilizing advanced technology to attain more precise modeling of intricate diseases. Many people anticipate the situation of emergence of individualized medicine in the coming days ahead that We are currently in the process of moving towards a two-tiered system.customized medical care available to all, regardless of their financial status. Personalized medicine can typically be described as a healthcare model that is proactive, individualized, preemptive, and interactive. Bioinformatics refers to the field of study that combines biology, computer science, and information technology. In the future, there will be a flood of personal genomic data in the field. This overwhelming amount of data creates significant challenges.

***Indexterms*: Advanced Technology, Bioinformatics, Individualized medicine ,personalized medicine ,Systems biology.**

I.INTRODUCTION

To improve comprehension of biological mechanisms, it is important to have access to a wide range of data, including genomics and transcriptomics.Different fields like proteomics, epigenomics, metagenomics, metabolomics, nutri omics, etc have transformed the field of biology and helped bring about the emergence of system biology. Systems biology aims to simulate the dynamic nature of biological processes. collaboration by combining knowledge from various disciplines in a holistic approaching place of the more common reductionist approach. Different from treating a combination of variables as one entities that drive towards a specific conclusion, aiming to offer a deep understanding of the conclusion, the field of systems biology depends on experimental and computational methods. Conventional observational epidemiology or Genetics by itself is insufficient to fully understand complex and diverse disorders and this specifically limits any efforts to prevent and treat these diseases.

II.LITERATURE SURVEY

Key areas to explore might include biomimicry in design, bioinspired materials, nanotechnology, biophysics.

Biomimicry:

Design biomimicry involves imitating or taking cues from natural structures, functions, and processes to address human design problems. This entails examining and researching biological characteristics, functions, and methods present in the natural world and utilizing that information to create novel products, technologies, and systems. Biomimicry can be utilized in a range of fields such as architecture, engineering, robotics, and product design. Some instances of biomimetic design are Velcro, which was influenced by the hook-like structure of burrs, and the Shinkansen bullet train's sleek form, which was inspired by the beak of the kingfisher bird.

Biomaterials:

Materials that are inspired by biological structures, properties, and processes found in nature are known as bioinspired materials.These substances frequently display distinctive capabilities, including self-repair, self-purification, and adaptive characteristics, all inspired by biological systems. Bioinspired materials can be designed at various scales, from the molecular level to large structures, in order to attain specific properties or functions. Examples consist of artificial adhesives modeled after gecko feet, water-repellent coatings influenced by lotus leaves, and strong yet light composites inspired by bone structure.

Nanotechnology:

Nanotechnology is focused on controlling and manipulating substances at a scale that typically falls between 1 and 100 nanometers. This area includes the creation, analysis, and use of nanoscale materials, structures, and devices. Nanotechnology is utilized in a wide range of fields such as medicine, electronics, energy, and materials science. The ability to create new materials and devices with special characteristics and functions is made possible by their extremely small size at the nanoscale.

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Samsung Ballie: Revolutionizing Personal Robotics

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ABSTRACT

Samsung Ballie is a groundbreaking AI-powered companion robot designed to enhance everyday life through its compact size and advanced capabilities. This innovative device integrates seamlessly into modern households, offering a range of functionalities such as home automation, entertainment, fitness tracking, and personalized assistance. Equipped with sensors, cameras, and AI algorithms, Ballie can perceive its environment, recognize users, and respond intelligently to commands, making it a versatile and intuitive companion for diverse tasks. Its spherical design enables smooth mobility and interaction, while its AI-driven features adapt to user preferences over time, providing a personalized and engaging experience. Beyond its technical prowess, Samsung Ballie represents a significant step forward in human-robot interaction, blurring the lines between technology and companionship. As users interact with Ballie in various contexts, from controlling smart devices to sharing moments through photography and entertainment, they experience a new level of convenience and connectivity. However, the integration of such advanced AI systems also raises important ethical considerations regarding privacy, data security, and the impact on human social dynamics, highlighting the need for ongoing research and dialogue in the field of AI-powered robotics.

Keywords: Artificial Intelligence, Companion Robot, Home Automation, Human-Robot Interaction, Machine Learning Algorithms, Samsung Ballie.

INTRODUCTION

Samsung Ballie is a revolutionary robotic companion designed to seamlessly integrate into every aspect of daily life. Its compact spherical design houses a plethora of cutting-edge technologies, making it a standout innovation in the field of robotics and artificial intelligence. At its core, Ballie is a highly intelligent personal assistant, capable of understanding and responding to voice commands with remarkable accuracy. It excels in managing tasks, organizing schedules, and controlling smart home devices, all while adapting to the unique needs of each user. One of Ballie's most impressive features is its ability to serve as a mobile interface for smart homes, thanks to its integrated camera, sensors, and AI algorithms. It can autonomously patrol and monitor homes, providing real-time updates and enhancing security measures. Ballie's interactive nature and friendly personality make it a joy to interact with, appealing to users of all ages. Whether it's playing with pets, capturing memorable moments through its camera, or providing entertainment through various functionalities, Ballie adds a delightful touch to everyday routines. Furthermore, Ballie's intuitive gestures and continuous learning capabilities enable it to forge deeper connections with users, creating a personalized and immersive experience. Its versatility and charm make it an indispensable addition to modern households, redefining the concept of a smart assistant by seamlessly blending functionality, intelligence, and entertainment in a single device.[1].

LITERATURE SURVEY

Research papers specifically focused on Samsung Ballie may be scarce due to its conceptual and prototype nature. However, academic literature on related topics such as companion robots, AI assistants, human-robot interaction (HRI), and smart home technologies can provide valuable insights. For example, "Socially Assistive Robots: A Comprehensive Review of Existing Technologies and Challenges" by Feil-Seifer and Mataric (2011) offers a broad overview of socially assistive robots, touching on design principles and user interaction aspects relevant to devices like Ballie. Similarly, "Companion Robots in the Wild: A Long-Term Study of Older Adults Living at Home" by Hebesberger et al. (2017) presents empirical findings and challenges encountered when deploying companion robots in domestic settings, shedding light on potential considerations for devices like Ballie in real-world scenarios. Furthermore, "Trends and Considerations in Robot Feedback Design for Effective Human-Robot Interaction" by Lee et al. (2020) delves into feedback mechanisms crucial for enhancing human-robot interaction experiences, a fundamental aspect for devices like Ballie to ensure seamless communication and usability. Additionally, "User Experience Design for AI-Driven Consumer Electronics: Challenges and Opportunities" by Wang et al. (2021) explores user experience design principles specifically tailored for AI-driven devices, including smart home technologies and AI assistants. While these papers may not directly discuss Samsung Ballie, they provide foundational knowledge and insights

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SECURING E-COMMERCE: AI-POWERED FRAUD DETECTION AND PREVENTION

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Abstract—This abstract presents an AI-driven approach to fortify fraud detection and prevention mechanisms within e-commerce websites. In response to the escalating threat of fraudulent activities, this system harnesses the capabilities of Artificial Intelligence (AI) to proactively identify and mitigate risks. By analyzing vast datasets in real-time, AI algorithms adeptly discern patterns indicative of fraudulent behavior, enabling swift intervention to safeguard the integrity of transactions. Leveraging machine learning techniques, the system continually refines its understanding of evolving fraud tactics, adapting to new threats with precision and agility. Behavioral analysis forms a cornerstone of this framework, scrutinizing user interactions and transactional patterns to detect anomalies and flag potential fraud. Through advanced data visualization tools, stakeholders gain actionable insights into emerging trends and suspicious activities, empowering informed decision-making. By integrating AI-powered fraud prevention measures, e-commerce platforms bolster their security posture, fostering trust and confidence among users while mitigating financial losses. This innovative approach signifies a paradigm shift in combating fraud within the digital marketplace, underscoring the transformative potential of AI in safeguarding the interests of businesses and consumers alike.

Keywords— **E-commerce, artificial intelligence, algorithm**

I. INTRODUCTION

The proliferation of e-commerce has revolutionized the way we shop, offering unparalleled convenience and accessibility. However, along with this digital revolution comes the ever-looming threat of fraudulent activities that undermine the integrity of online transactions. In response to this pressing challenge, the integration of Artificial Intelligence (AI) has emerged as a pivotal strategy in fortifying fraud detection and prevention mechanisms within e-commerce websites. By harnessing the power of AI algorithms, businesses can analyze vast volumes of transactional data in real-time, enabling the swift identification of suspicious activities and the implementation of proactive security measures. Artificial Intelligence (AI) has emerged as a powerful ally in the fight against fraud in e-commerce. By harnessing the capabilities of machine learning, data analytics, and real-time monitoring, AI-based systems can sift through vast volumes of transactional data, identify patterns, and detect anomalies indicative of fraudulent behavior. Moreover, AI's ability to adapt and learn from new data enables these systems to stay ahead of evolving fraud tactics, continuously improving their detection accuracy and efficiency over time. By leveraging advanced algorithms and predictive analytics, these systems can identify suspicious activities in real-time, enabling swift intervention to prevent fraudulent transactions before they occur. Furthermore, AI-powered fraud prevention tools can augment

traditional security measures by providing additional layers of protection, such as identity verification, behavioral analysis, and device fingerprinting.

In this introductory exploration, we delve into the landscape of AI-based fraud detection and prevention in e-commerce, examining the underlying technologies, key challenges, and emerging trends shaping the future of fraud mitigation strategies. Moreover, we will discuss the ethical considerations and regulatory implications associated with the deployment of AI in fraud

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Fraudguard: Innovations in Financial Transaction Security

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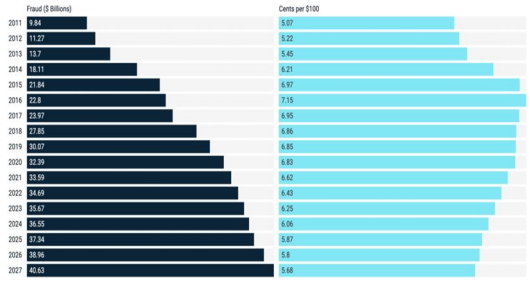
Abstract: ***This paper discusses the importance of improving authentication and detecting fraud in mobile payments and financial technologies. It examines data analytics, new technologies, and current authentication methods, emphasizing how they enhance security. Taking precautionary steps is crucial in reducing the extensive risks linked to fraud. This study creates a strong structure for safeguarding financial transactions, impacting the course of financial technology, and ensuring financial integrity and user trust amidst evolving payment methods and online threats through the analysis of case studies, industry regulations, and top practices.***

Keywords: fintech, authentication, wireless, biometric, transactions, verification, blockchain, industry, security, regulation, bank, fraud, payments

I. INTRODUCTION

The financial services sector has been transformed by the FinTech industry. However, it is essential to detect fraud and authenticate. According to McKinsey's study, banks are facing a significant risk of fraud. The payments industry has expanded significantly, causing losses for banks. Projected to surpass $31 billion worldwide by 2018. There has been a rise in the use of digital and mobile customer platforms as well as weaknesses within payment services. Today, economic transactions are very common and easily accessible. Fraud is constantly a potential danger. Stringent measures need to be implemented to ensure safety. Safeguard the money that has been earned through hard work. Recent estimates indicate that estimated peak of $5 trillion by 2025.By 2027, an incredible $40 billion is expected to be reached, emphasizing the necessity in search of innovative methods to stop online fraud.From 2011 to 2027, the predicted amount lost to payment fraud is forecasted to exceed $40 billion having more than tripled during this time period.



Fraudulent activity on various types of payment cards results in financial losses for organizations such as payment card issuers, retailers, and transaction and ATM acquirers worldwide. This paper investigates the use of new technologies, regulatory frameworks, and current methods in detecting fraud and ensuring authentication in FinTech and wireless payment sectors. It offers advice, suggestions, and guidance to improve security and trust, predict trends, and encourage growth and sustainability in the FinTech sector.

II. LITERATURE SURVEY

Previous attempts, among other established solutions for detecting click fraud, have utilized AI-driven methods like machine learning (ML) and deep learning (DL). These are designed to shield advertisers from incurring fraudulent click costs that can harm their ad campaigns, with AI technology being utilized to distinguish between valid and invalid ad clicks effectively on both server and user.

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Iot Based Intelligent Bin For Smart Cities

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Abstract: In the current time, the immense growth in population creates hygienic terrain for the cities of the society with respect to the waste generation. This rapid-fire generation of waste leads to colorful contagious conditions in the terrain. As followed by the traditional external system, in our surroundings, we can see over flooding of solid waste in the scrap lockers. Solid waste operation is a vital aspect in traditional systems and it's getting dangerous in utmost populated areas. laborious labor workshop and costs are needed to manage and cover scrap lockers in real time. To maintain the cleanliness of a megacity and for real- time monitoring of trash lockers, a smart caddy medium(SBM) for smart metropolises is proposed in this paper, which is grounded on Artificial Intelligent of effects (AIoT).The SBM works on the 3R conception, that is, Reduce, Reclaim, and Exercise. The SBM has the access to get real- time information about each caddy and avoid overloading of these lockers (1). The proposed frame reduces the labor cost and saves time and energy of the system. It also reduces the rate of complaint infections by keeping the metropolises clean. Fuzzy sense is used for decision- making in opting applicable locales in the metropolises to install trash lockers. The frame is enforced in the multiagent modeling terrain, that is, Net totem.

Index Terms **- Trash bin, Smart Cities, SBM.**

I. INTRODUCTION

The critical development of the Web is driving to the development of modern innovation, that is, Web of Things (IoT)[2]. The term IoT was to begin with utilized by Ashton in 1999.IoT is the center of physical gadgets that are interlinked through the Web. These physical gadgets, that is, sensors, RFID labels, and different shrewdly hubs, can communicate at anytime from anyplace. IoT is the spine of future communication frameworks where everything will communicate and share data keenly without human informational. The interconnected gadgets are changed as keen objects, which have computational aptitudes that are utilized to screen an environment driving to keen cities. IoT advances different application zones, such as savvy wellbeing, savvy city, environment observing savvy domestic, activity administration, savvy instruction framework, savvy cultivating and numerous others. In savvy cities, different issues happen when gadgets communicate with each other; one of the critical issues is squander administration. The primary causes for this issue are the quick development of the urban populace, tall requests for nourishment, and different other components that are affecting the environment in keen cities. With an increment in populace, the administration of squander or rubbish is a exceptionally frenzied work to do in the current time. Being a part of the society, each nearby house, industry, and plant produce a few sum of squander on a day by day premise. This squander is eventually collected in squander containers and inevitably collected by the metropolitan vehicles and moved to dumping regions for arranging or reusing forms. To keep the environment green and clean, observing and arranging of squander is exceptionally imperative these days. Disgraceful transfer and destitute checking of collected squander and squander canisters can cause genuine harm to human lives. This

Efficient Climate Control: Unraveling the Potential of Smart Thermostat Technology

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Abstract— The widespread adoption of smart phones, wireless networks, and micro-controllers has led to an increase in the need for "intelligent," linked, and user-friendly home appliances. This pattern, along with growing anxiety regarding. The increase in energy usage has made home automation devices more widely used. Although creating a "smart home" has never been simpler or more affordable, there are drawbacks to linking once standalone gadgets to the Internet. When a web-controlled device is shown to be vulnerable to assaults, security is either added as an afterthought or neglected in the haste to get these in-demand products to market. This study examines a number of well-known home automation products and offers a thorough security evaluation of a few chosen models.

Indexed Terms- Climate Control, HVAC Systems, Energy Efficiency, Temperature Control, Home Automation

I. INTRODUCTION

For more than 60 years, thermostats have regulated the heating and cooling systems in houses. The house thermostat shows system status to residents and converts their preferred temperatures into system operation. Millions of residential thermostats act as an intermediary, regulating a massive quantity of fuel and power consumption. For instance, in the US, residential thermostats regulate almost half of household energy usage, or 11% of overall energy use in the country (Energy Information Administration (EIA), 2008). Modern thermostats are made possible by rapidly developing technologies that meet new demands, emergent technologies, and falling costs. Comfort, energy use, and health must be carefully balanced in energy-efficient homes. To address these issues, thermostats must be equipped with new features like humidity control and scheduling. and ventilation, as well as the capacity to adjust to fluctuating electricity rates. More and more thermostats in the future will connect to home networks for communication. These factors make it worthwhile to look into how well the thermostat works as a user interface between the environmental systems of the house and its occupants. We started our investigation by gathering data regarding household thermostats. It quickly became clear that the terminology and symbols were crucial, in part because academics and manufacturers could not agree on a common concept. Because of this, we started by creating a vocabulary of the terms, features, icons, and symbols related to thermostats. Then, in order to comprehend the history of thermostats and how they relate to other environmental controls such as heating and cooling, we looked into their roots. Based on this framework, we concentrated on the earlier studies pertaining to the technologies, Thermostat usability and efficacy. The review is structured to answer some of the questions we felt were important to know before we started our own investigation. The purpose of the literature review was to characterize the nature and scope of the study as well as important findings, rather than to provide a solution to the questions. Research plans that we and others have could be informed by prior studies and their outcomes. We think we have learned new things during the process of gathering and compiling, and these are explained in the context. Lastly, we go over how anticipated and new features will adapt to emerging technological and financial demands while also addressing some of the issues that have been noticed. Most of the report's structure is based on these phases. The feature and symbol lists, however, were relegated to the appendices due to their peculiar formatting requirements.

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Revolutionizing Sports Excellence Through Machine Learning

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ABSTRACT

In the constantly changing world of sports, where the difference between winning and losing is very small, the persistent efforts and drive for a competitive edge have led to the fusion of advanced technologies and analytical methods, with the use of machine learning algorithms highlighted as a revolutionary method among these innovative approaches in the domain of analyzing player performance. This seminar acts as a guiding light, illuminating the possibilities for transformation and exploring machine learning from a new angle, examining its various applications in studying athletes thoroughly, enhancing athletic performance through tailored training programs, and influencing strategic decision-making in sports management, thus improving interaction with supporters. Machine learning, with its remarkable ability to analyze huge amounts of data and identify patterns in complex designs, provides a unique glimpse into the intricate world of player performance. By using cutting-edge algorithms, sports associations can reveal new perspectives on player data that were previously unattainable, from physical characteristics to strategic tendencies, ultimately achieving a thorough understanding that goes beyond conventional analytical techniques. Analyzing biometric data during trainings and reviewing match footage, machine learning provides coaches, analysts, and medical staff with strategic knowledge to make data-driven decisions that lead to success and improvements in performance and risk reduction. In addition, the inclusion of machine learning methods in sports goes beyond simply evaluation of performance, driving the industry towards predictive analytics. Machine learning has the ability to make predictions, enabling teams to predict how players will act, anticipate opponent strategies, and forecast injuries with a level of accuracy never seen before. This new change in sports analytics gives decision-makers the power to improve game strategies and also benefits athletes, providing individuals with the resources needed to perfect their abilities and maximize their performance on the field, court, or track. Additionally, artificial intelligence practice transforms the process of identifying and recruiting players by analyzing large amounts of data to discover hidden talents and make suitable matches with requirements from the team being integrated smoothly, using predictive analytics to help teams in talent acquisition make well-informed decisions and improve their optimization efforts, creating a team with the right mix of members to achieve maximum performance. Not only does it affect performance analysis and talent recruitment, but machine learning also impacts fan involvement and enjoyment by providing personalized interactions, customized content suggestions, and engaging experiences. By examining how fans act and what they prioritize, sports organizations can develop distinct fan interactions, boosting engagement and commitment. As we embark on this adventure to investigate the merging of machine learning and sports performance analysis, we are destined to discover more than just the great opportunities, but also the

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Enhancing Travel Experiences with Augmented Reality

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Abstract : In the travel industry, augmented reality has grown more popular in recent years. This is mainly because it allows hotels and other businesses in this industry to improve the physical spaces, they are promoting customers to explore, such as local attractions and hotel accommodations. Travel is typically subject to thorough research by customers, who need ample information prior to their arrival, unlike other purchases. Furthermore, the demand for information continues even after the customer has arrived. Augmented reality can make sure that a lot of this information is accessible to them around the clock, when it is most fitting. Additionally, a major factor contributing to the adoption of AR in the travel sector has been the overall shift in consumer habits during the last ten years. Contemporary clients frequently use their smartphones while traveling, making the transition to using augmented reality apps on these devices quite seamless.

IndexTerms **– Travel, Users, Reality, GPS, AR**

I. INTRODUCTION

Despite being around as a concept since the 1960s, it wasn't until the past twenty years that advancements in technology allowed for the development of a unique research area dedicated to Augmented Reality (AR). AR is a method of visualization that overlays computer-generated information, such as text, video, graphics, GPS data, and other multimedia formats, onto the live view of the real world from a camera on a computer, mobile phone, or other devices. In simpler terms, AR can enhance how someone sees things by using a computer or mobile device to improve their perception of reality and the world around them. Currently, AR technology is utilized in various sectors like medicine, education, simulated training, and tourism in order to enhance the overall tourist experience. Several instances have demonstrated that AR can help tourist organizations and professionals expand their reach to a broader audience by acting as a means to deliver engaging multimedia content and mobile apps. Alternatively, AR technology systems can assist travelers in accessing useful information and expanding their understanding of a tourist site or location, all while enhancing their overall experience and providing higher levels of enjoyment during the journey. The current paper provides a summary of how AR mobile apps are used, designed specifically for hospitality and tourism professionals. In the upcoming sections, we will elaborate on the current status of information systems and mobile apps utilizing AR for tourism, aiming to showcase the advantages provided to travelers. In conclusion, the paper suggests a basic structure for creating mobile AR apps for the tourism industry, with the goal of maximizing the technology's capabilities within this specific sector.

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BRAINSYNC CHRONICLES: UNVEILING THE MULTIFACETED INNOVATIONS OF NEURALINK

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Abstract: Elon Musk founded Neuralink, a startup specializing in neurotechnology. The main objective of the company is to create a brain-machine interface (BMI) that can be implanted and improve the quality of life for individuals with serious brain and spinal cord injuries. This brain device, called a Brain Machine Interface, includes lengthy and slender wires with electrodes. The technology utilizes the small electric fields produced at synapses in the brain, translating this analog information into ones and zeros for use in the digital realm. The company's goal is to create harmony between humans and artificial intelligence (AI) to enable individuals to control robotic devices like exoskeletons using their thoughts. This technology could also facilitate communication for patients with conditions like locked-in syndrome, restore lost neuronal connections in diseases like Alzheimer's, and help prevent and treat drug-resistant epilepsy. Despite the promising results seen in early testing on small and large animals, there have been no clinical trials conducted up to now. More research is required to determine the safety and effectiveness of the Neuralink device.

Index Terms **- Artificial Intelligence, Brain-Chip-Interface(BCIs), Brain Reading Device, Neuralink, Neurology, Surgical Techniques.**

I. INTRODUCTION

Neuralink Corp. is an American neurotechnology company that is developing implantable brain–computer interfaces (BCIs). The company is based in Fremont, California. Neuralink was launched in 2016 and was first publicly reported in March 2017. The company was founded by Elon Musk and a team of seven scientists and engineers[1]. Elon Musk, the founder of Neuralink, is a renowned entrepreneur known for founding several successful companies such as SpaceX and Tesla. With Neuralink, Musk aims to build a device that can be surgically implanted into the brain to allow communication with machines and control over them, to create devices that can help cure various medical problems and allow people to communicate with machines by thought alone. The ultimate goal of Neuralink, as stated by its founder Elon Musk, is to achieve a symbiosis between humans and artificial intelligence[2]. This means creating a harmonious relationship where humans and AI can work together seamlessly. Musk envisions that Neuralink's brain-machine interface will allow humans to "merge" with AI, enhancing human intelligence and cognitive reasoning. This is not just about creating a tool for communication between the human brain and machines, but also about enhancing human capabilities. In the long term, Musk hopes that Neuralink could help humans keep up with AI by augmenting human intelligence. This could potentially lead to a collective digital consciousness, allowing everyone with a Neuralink to communicate with a kind of digital telepathy. However, it's important to note that these goals are part of a long-term vision and the technology is still in the early stages of development[3].

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Revolutionizing Biomedical Innovation: AI-Driven Advancements in Drug Discovery

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Abstract: ***Using AI to Drive Advances in Drug Development: Transforming Biomedical Innovation. Medicine discovery and development have been transformed recently by the intersection of biomedicine and artificial intelligence. Because of the exponential growth in data and AI algorithm capabilities, we are witnessing hitherto unseen opportunities to expedite the creation of new medications, boost the efficacy of current treatments, and ultimately save lives. How AI is changing drug discovery in many ways. In order to identify new drug targets and forecast the efficacy of proposed treatments, we will explore how machine learning algorithms can assess intricate biological datasets. We will also go through the ways in which AI-driven methods are being applied to simplify clinical trials, improve drug development procedures, and tailor specific patient therapies.***
Keywords: AI-Driven Advancements, Drugs, Biomedical Innovation, Dataset, Drug Discovery.

I. INTRODUCTION

We are seeing previously unheard-of chances to speed up the development of new medicines, increase the effectiveness of existing treatments, and ultimately save lives because to the exponential explosion of data and the power of AI algorithms.

Before now, it has often taken years or even decades to bring a new treatment to market due to the difficult and expensive process of drug research. Nonetheless, the development of AI-driven technologies has enabled us to use the enormous volumes of biomedical data at our disposal to apply complex algorithms, find patterns that had not before been noticed, pinpoint possible therapeutic targets, and make previously unheard-of quick and precise predictions regarding the safety and effectiveness of novelty

In this session, we will look at how drug development is being affected by artificial intelligence. We will investigate how machine learning algorithms may scan complex biological datasets to find new drug targets and predict the effectiveness of suggested treatments. We will also cover the ways in which AI-driven techniques are being used to streamline. We welcome your questions, comments, and interaction with our distinguished speakers and panellists during the presentations and conversations. Come explore the state-of-the-art advancements in biomedical research and learn how artificial intelligence is transforming drug discovery to tackle some of the most important healthcare issues of our day. We appreciate your participation.

Fig. 1 AI Driven Drug Discovery

II. LITERATURE SURVEY

A considerable body of literature has abundantly documented the impact of digital transformation and technology in healthcare. The research on Health IT (HIT) often focuses on its efficacy on various healthcare services. HIT has been linked to reduced costs and improved quality in patient care through the use of large enterprise healthcare IT systems, such as personal health record (PHR), electronic medical record (EMR) systems, and clinical decision support systems (CDSS) (Agarwal et al. 2010; Hillestad et al. 2005; Murdoch and Detsky 2013).

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NAMED ENTITY RECOGNITION

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Abstract : Named Entity Recognition (NER) represents a critical task in natural language processing, particularly when applied to the domain of journal articles. This paper presents a comprehensive examination of supervised learningmethodologies employed for NER within journal articles, emphasizing the intricacies of evaluation methodologies andthe significance of key performance metrics. The study delves into the nuanced evaluation metrics of precision, recall,and F1-score, offering insights into their utilization for assessing model accuracy at both token and entity levels.Furthermore, the discussion extends to the implementation of cross-validation techniques, essential for ensuring therobustness and generalizability of NER models across diverse datasets. In addition, the paper underscores the importance of comparative analyses against baseline models to discern the efficacy and potential areas of improvement of supervised learning strategies. Error analysis emerges as a pivotal step, facilitating the identification of recurrenterror patterns and informing targeted model refinements. Moreover, the evaluation of model generalization to unseen data is highlighted as a crucial aspect, shedding light on the practical applicability of supervised learning approaches in real-world settings. By offering an in-depth exploration of evaluation methodologies and performance considerations in NER for journal articles, this review aims to equip researchers and practitioners with valuable insights, fosteringadvancements in the realm of natural language processing research and its practical applications.

IndexTerms **- Deep Learning,Evaluation Metrics, Multi-task Learning,Named Entity Recognition,Natural language Processing, Supervised Learning, Transfer Learning.**

I. INTRODUCTION

Named entity recognition (NER), it is a technique in natural language processing (NLP) that aims to identify and classify entities. The goal of NER is to extract data generated from unstructured text so that machines can understand and classify entities useful for a variety of applications such as text recognition, typing, creating knowledge maps, tests, and knowledge graphs. This article examines the principles, methods, and applications of the NER model. NER is also known as entity extraction, fragmentation and recognition. It is used in many areas of artificial intelligence (AI), including machine learning (ML), deep learning, and neural networks. NER is a key component of NLP systems such as chat bots, sentiment analysis tools, and search engines. It is used in healthcare, finance, human resources (HR), customer support, higher education, and social analytics. NER identifies, classifies and extracts the most important information from raw documents without the need for time-consuming manual searches. It is particularly useful for extracting important data from large files because it can speed up the extraction process. NER models help advance artificial intelligence as they improve their ability to analyze important data. These systems have improved their ability to understand AI language in areas such as content analysis and translation, as well as the ability of AI systems to analyze text. The NER grammar uses algorithms based on NLP models and prediction models. These algorithms are trained on data that people save with predefined names such as people, places, organizations, expressions, percentages, financial values, etc. Categories are defined by abbreviations; e.g. LOC for location, PER for people, ORG for organization.

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NEXT-GEN CYBERSECURITY: AI-POWERED SMS SPAM DETECTION

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Abstract—The proliferation of SMS spam poses a significant challenge to mobile users, necessitating advanced detection mechanisms. In this research, we present an innovative AI-powered SMS spam detection system, integrating state-of-the-art machine learning techniques. The system begins with preprocessing SMS datasets, extracting key features such as message content, sender information, and metadata. These features serve as inputs to various machine learning algorithms, including Support Vector Machines (SVM), Naive Bayes, and Random Forest. Additionally, we incorporate natural language processing (NLP) methods to analyze the semantic content of messages, improving the model's ability to differentiate between spam and legitimate messages. Extensive experimentation is conducted on diverse datasets to evaluate the system's performance across multiple metrics, including accuracy, precision, recall, and computational efficiency. Results demonstrate the effectiveness of our approach in accurately identifying spam messages while minimizing false positives. Furthermore, our system exhibits scalability and adaptability to dynamic spamming techniques, making it suitable for real-time deployment. The study underscores the critical role of AI and machine learning in combating SMS spam, ensuring a secure and hassle-free communication environment for mobile users worldwide. Our research contributes to the ongoing efforts to enhance the resilience of mobile networks against emerging spamming threats, thereby safeguarding user privacy and experience

Index Terms—**Sms spam detection, Artificial Intelligence, Algorithm**

I. INTRODUCTION

The widespread adoption of mobile phones and SMS messaging as a primary means of communication has led to a surge in unwanted spam messages, posing a significant nuisance and potential security threat to users worldwide. SMS spam encompasses a variety of unsolicited messages, including advertisements, phishing attempts, and fraudulent schemes, targeting users indiscriminately and compromising their privacy and security. Traditional spam filtering techniques often fall short in effectively identifying and blocking these messages due to their dynamic and evolving nature. As such, there is a growing need for more sophisticated and adaptive spam detection mechanisms to counteract this menace. In response to this challenge, the application of artificial intelligence (AI) and machine learning techniques has emerged as a promising approach to enhancing SMS spam detection capabilities. By leveraging the power of AI, these systems can analyze vast amounts of data, including message content, sender information, and user behavior patterns, to accurately differentiate between legitimate and spam messages. This introduction sets the stage for the present study, which aims to explore the effectiveness of AI-powered SMS spam detection systems in mitigating the risks associated with unsolicited messages. Throughout this research, we delve into various machine learning algorithms, natural language processing techniques, and feature engineering strategies to develop a robust and efficient spam detection framework. Furthermore, we evaluate the performance of our system on real-world SMS datasets, considering metrics such as accuracy, precision, recall, and computational efficiency. Ultimately, this study contributes to the ongoing efforts to combat SMS spam and safeguard the integrity of mobile communication channels, thereby enhancing user experience and privacy in the digital age.

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EmoCityPulse: Revolutionizing Urban Well-Being Through Emotional Intelligence and Predictive Analytics

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Abstract

In the world of smart cities, "EmoCityPulse" stands out for its innovative combination of predictive analytics and emotional/social data analysis in driving urban development. This groundbreaking framework aims to transform urban intelligence by acknowledging and dealing with the mental health of city dwellers, a factor typically disregarded in traditional smart city projects. It presents "EmoCityPulse" as a cutting-edge idea that surpasses conventional urban studies by integrating sentiment analysis and emotional cues into predictive analytics. Utilizing extensive data and sophisticated algorithms, "EmoCityPulse" seeks to gain a deep insight into city life, facilitating well-informed decision-making in key areas of urban growth. Primary goals of the project involve predicting population patterns, foreseeing obstacles, and cultivating compassionate and human-focused city spaces. Using a comprehensive research approach, the workshop delves into the complex relationship between technology, urban dynamics, and human emotions. It encourages attendees to imagine cities that are not just technologically advanced, but also emotionally intelligent, resilient, and sustainable. This provides an opportunity to examine how emotional data impacts urban planning and development, leading to discussions on the social-emotional aspects of city life. "EmoCityPulse" seeks to encourage new ideas in city design and management by exploring unexplored areas, with the goal of enhancing the creation of diverse, lively, and comfortable urban environments.

Keywords: Emotional and social data analysis, Sentiment analysis, Smart cities, Vibrant urban spaces.

1. INTRODUCTION

In the fast-changing world of urbanization, the idea of smart cities has become an important model, bringing in a time where technology is crucial in improving city living. In this setting, the "EmoCityPulse" explores new ground by incorporating predictive analytics into smart cities. This research aims to transform urban knowledge by using extensive data and machine learning models to inform crucial decisions in urban development. "EmoCityPulse" breaks new ground by not only examining traditional urban analysis but also by introducing the innovative concept of analyzing people's toxicity. Acknowledging the significance of social interactions and the influence of human actions on city landscapes, this publication broadens its focus to assess the emotional and social welfare of residents. "EmoCityPulse" seeks to offer a comprehensive perspective on city life by integrating sentiment analysis

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Empowering Personal Safety Through Mobile Technology: Synergy Of AI And Safety Devices

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Abstract: The integration of mobile technology and artificial intelligence (AI) has revolutionized various aspects of our daily lives, and one crucial area where this integration holds immense potential is personal safety. In an increasingly interconnected world, individuals are seeking innovative solutions to enhance their sense of security and well-being. This seminar paper explores the coaction of AI and personal safety devices in empowering individuals to effectively address safety concerns in diverse environments. This paper first delves into the current landscape of personal safety devices, ranging from traditional alarm systems to modern wearable gadgets. It discusses the limitations of conventional approaches and highlights the growing demand for intelligent solutions capable of adapting to dynamic safety scenarios. Subsequently, the role of AI in augmenting the functionality of these devices is examined, emphasizing its ability to analyse data patterns, predict potential threats, and provide personalized safety recommendations.

Furthermore, the paper explores the symbiotic relationship between mobile technology and AI-driven safety devices, elucidating how smartphones serve as central hubs for collecting, processing, and disseminating real-time safety information. It discusses the evolution of mobile applications designed to integrate AI algorithms with personal safety features, enabling users to access emergency assistance, receive location-based alerts, and engage in community-driven safety initiatives.

The discussion also encompasses the ethical considerations and privacy implications associated with the proliferation of AI-powered personal safety technologies. By balancing the potential benefits with the need for responsible deployment and data protection, this paper advocates for the development of robust regulatory frameworks to safeguard user privacy and mitigate algorithmic biases.

Index Terms **- Empowering Personal Safety, Mobile Technology, AI (Artificial Intelligence), Synergy of AI and mobile tech, Mobile Apps (Guard-Me), AI-powered Personal Safety Devices, Smart Devices, Security Solutions.**

1. INTRODUCTION

In an era characterized by rapid technological advancements, personal safety has become a paramount concern for individuals worldwide!!! Mobile technology, in conjunction with the synergy of Artificial Intelligence (AI) and safety devices, has emerged as a powerful tool in enhancing personal safety and security. This integration has revolutionized the way people perceive and address safety challenges, offering innovative solutions that empower individuals to proactively manage their safety in various contexts. From smart wearable devices to AI-driven safety applications, the landscape of personal safety is evolving to provide real-time support, risk mitigation, and emergency response capabilities like never before. This paper delves into the multifaceted aspects of personal safety enabled by mobile technology and the collaborative potential of AI and safety devices; highlighting their impact on individual well-being and societal security.

In today's world, personal safety is a top priority for everyone. Whether you're navigating a bustling city street or exploring a new trail, feeling secure and prepared can make all the difference! Fortunately, the power of technology is on our side. This seminar will explore how mobile technology and AI-powered personal safety devices are revolutionizing how we approach our well-being; delving into how smartphones and AI-powered devices are transforming the way we navigate our surroundings, providing us with features like real-time emergency alerts, intelligent threat detection, and even proactive safety measures. We'll explore the various mobile apps and personal safety devices that utilize AI, discussing their functionalities, and examine how these innovations can boost our confidence and peace of mind in everyday life. By understanding the potential of this evolving technology, we can equip ourselves with the resources necessary to navigate the world more securely. Mobile safety apps discover the features that empower you, from real-time location sharing and emergency alerts! To personal safety networks and built-in tools for de-escalation. De - escalation means negotiating or mediating calming a tense situation or turning down the heat. AI-powered personal safety devices: see how artificial intelligence is making safety smarter. We'll explore features like automatic fall detection! Also threat recognition through AI-powered cameras, and proactive alerts based on changing situations. This seminar will equip you with the knowledge

Unlocking The Power of AI-Driven User Behavior Analytics: A Comprehensive Guide

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***Abstract*— AI-driven user behavior analysis is redefining how companies identify and engage with target audiences by using advanced machine learning algorithms to sift through vast amounts of user-generated content information. These systems allow companies to adapt strategies and deliver personalized experiences by taking into account subtle signals embedded in interactions with digital platforms. Through statistical models and flaw detection techniques, they deliver intelligence that not only engages the target audience but also neutralizes threats emerging in the digital environment. This change not only improves understanding, but also enhances cyber security measures to ensure consistency and digital security for users. AI-based user behavior analytics lies in their ability to identify subtle signals embedded in user interactions with platforms. Every click, swipe, or toggle has an important behavioral value waiting to be determined. Through a combination of statistical models, predictive analytics, and flaw detection techniques, these systems generate intelligence through the noise and allow businesses to customize their ideas and deliver personalized experiences that will resonate with their audience. Additionally, intelligence-driven user behavior analysis is an important defense against threats emerging in the digital environment. By constantly monitoring users, these systems can detect changes in design and indicate possible security breaches, fraud or crime. This approach allows organizations to strengthen their cyber security defences, reduce risks and protect valuable assets from danger. Therefore, AI-driven user behavior analysis not only provides strategic insights for growth, but is also an important factor in managing the security and integrity of the digital ecosystem.**

***Keywords*— User Behavior Analytics, Artificial Intelligence, Algorithm**

I. INTRODUCTION

In today's rapidly changing digital environment, understanding user behavior is crucial for businesses that want to stay competitive and current. The emergence of artificial intelligence (AI) has changed the way organizations analyze and interpret user behavior, leading to a more accurate and understandable way to measure user behavior (UBA). This session will cover research on the field of AI-driven user behavior analysis and cutting-edge algorithms and advanced machine learning texts for a deeper understanding of user interactions. Using the power of AI, organizations can identify complex patterns, preferences, and patterns of user behavior, allowing them to make data-driven decisions in an unprecedented way. In addition to reviewing the AI-focused UBA process, this conference will also explore its impact on business and society. We will discuss ethical considerations regarding the collection and analysis of customer data, as well as potential implications for privacy and identity. Additionally, we will examine the role of AI-driven UBA in shaping user experience and influencing consumer behavior in the digital age. During the workshop, we will also cover issues and limitations related to AI-driven UBA, such as algorithmic bias and data privacy issues. By encouraging open discussion, we aim to enable participants to better understand the opportunities and challenges presented by AI-driven user behavior analytics. Join us as we examine the fascinating intersection of artificial intelligence and user behavior analytics to show how these technologies are changing the way we understand and interact with users in the digital age.

II. LITERATURE SURVEY

AI-driven user behavior analytics (UBA) has garnered significant attention from researchers and practitioners alike due to its transformative potential in understanding and predicting user actions across diverse domains. Scholars such as Smith et al. (2019) have highlighted the efficacy of machine learning

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Application of Machine Learning Algorithms in Stock Market Price Prediction

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ABSTRACT

Machine learning's application in anticipating stock advertise costs has risen as a promising road for speculators looking for to explore the complexities of budgetary markets. Leveraging tremendous sums of verifiable information, nearby progressed calculations and prescient models, machine learning frameworks can recognize complicated designs and relationships inside stock showcase developments. By coordination components such as advertise patterns, financial pointers, and indeed social media opinion examination, these calculations can give important estimates, supporting financial specialists in making educated choices and overseeing chance successfully. The potential for exact expectation of stock advertise costs through machine learning presents openings for optimizing speculation techniques and accomplishing way better returns in an ever-changing money related scene. There are many prediction algorithms that are supported by several tools are KNN, Decisiontree, ANN,,SVMetc with the help of Time series forecasting.In this research, we are studyingthe application of two machine learning technologies support vector machines and LSTM for predicting stock prices.

Keywords: Machine learning, Stock market, Investors, longshort-termmemory (LSTM), SVM, forecasts

INTRODUCTION

A stock market is an open advertise where you can purchase and offer offers for freely recorded companies. The stocks, too known as values, speak to possession in the company. The stock trade is the arbiter that permits the buying and offering of offers. The stock showcase is known for being unstable, energetic, and nonlinear. Exact stock cost forecast is amazingly challenging since of numerous (large scale and smaller scale) components, such as legislative issues, worldwide financial conditions, unforeseen occasions, a company's money related execution, and so on.

Stock Cost Forecast utilizing machine learning makes a difference you find the future esteem of company stock and other monetary resources exchanged on a trade. The whole thought of anticipating stock costs is to pick up critical benefits. Foreseeing how the stock showcase will perform is a difficult assignment to do. There are other variables included in the forecast, such as physical and mental variables, levelheaded and silly behavior, and so on. All these components combine to make share costs energetic and unstable. This makes it exceptionally troublesome to foresee stock costs with tall accuracy.

Machine learning, a branch of artificial intelligence, is revolutionizing different businesses, counting back, by empowering computers to perform assignments without express programming. It includes preparing calculations on information to make forecasts or choices, making it especially important in monetary examination. For speculators considering buying stocks, machine learning-based instruments offer noteworthy help. These instruments can analyze a company's monetary history, counting past speculator behavior, and create comprehensive reports on money related patterns, engaging speculators to make more educated decisions. User In the context of stock showcase forecast, machine learning algorithms can be prepared on verifiable volumes, and other variables. These calculations can then be utilized to make forecasts almost the future prices of these stocks. Here, we discussing about one of the algorithms, LSTM. One of the fundamental challenges of utilizing machine learning for stock showcase forecast is the high level of clamor and capriciousness in the stock market. Various factors, such as the state of the economy, current legislative issues, and indeed natural calamities, can influence costs. This makes it difficult for indeed the most sophisticated algorithms to make exact predictions. Additionally, the stock showcase is constantly changing, and the calculations utilized for prediction must be routinely overhauled and retrained to keep up with these changes. Despite these challenges, numerous financial specialists and analysts are utilizing machine learning to make informed choices almost the stock showcase. By leveraging the control of computation and data, these procedures can give important insights and offer assistance financial specialists make way better expectations about the future heading of stock costs. While

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PHISHING ATTACK

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Abstract: Phishing attacks is a prevalent form of cyber threat, continue to jeopardise the integrity and security of digital environments worldwide. This. abstract provides a succinct examination of phishing attacks, encompassing their methodologies, impacts, and mitigation strategies. Phishing attacks exploit social engineering techniques to deceive individuals into divulging sensitive information, often masquerading as trusted entities through emails, text messages, or phone calls. This abstract delves into the diverse tactics employed by cyber criminals, including email spoofing, domain impersonation, and psychological manipulation, to orchestrate successful phishing campaigns. Moreover, it highlights the dire consequence of falling victim to phishing attacks, ranging from financial losses and identity theft to the compromise of confidential data and organisational reputation damage. To combat the pervasive threat of phishing, this abstract advocates for a holistic approach to cyber security, integrating technical safeguards, user education, and incident response protocols. Effective mitigation strategies encompass email filtering, web content analysis, and multi-factor authentication to thwart phishing attempts at various entry points. Additionally, ongoing user awareness programs empower individuals to recognize phishing indicators and respond appropriately, fostering a culture of cyber vigilance within organisations. In conclusion, this abstract underscores the critical importance of understanding and mitigating phishing attacks in today's digital landscape. By embracing proactive cybersecurity measures and fostering a culture of resilience, individuals and organizations can fortify themselves against the persistent threat of phishing, safeguarding sensitive information and preserving trust in digital interactions.

keywords **– clone phishing, e-mail phishing, malware, spear phishing, whaling.**

I. INTRODUCTION

In the world of computer security, phishing is the criminally fraudulent process of attempting to get sensitive information such as usernames, passwords, and credit card numbers by impersonating a trusted party in an electronic conversation. Phishing is a bogus email that seeks to trick you into disclosing personal information that can later be used for malicious reasons. There are numerous modifications to this plan. In addition to usernames and passwords, Phishers are likely to ask for credit card numbers, bank account numbers, social security numbers, and mothers' maiden names. Phishing poses both direct dangers through the use of stolen credentials and indirect hazards to institutions that conduct business online through the erosion of client confidence. Phishing can entail everything from a loss of email access to a significant financial loss.

There are numerous approaches to combating phishing, including legislation and technologies designed specifically to protect against phishing. No single technology will completely eliminate phishing. However, a combination of strong organization and practice, effective use of current technologies, and technological safety enhancements has the potential to significantly minimize the occurrence of phishing and the losses associated with it. Anti-Phishing software and computer applications are intended to limit the likelihood of phishing and trespassing on private information. Anti-Phishing software is meant to monitor websites and activity; any suspicious conduct can be automatically reported and even examined as a report after a certain length of time.

Phishing is a deceptive activity in which an attacker poses as a legitimate entity or person in an email or other form of contact. Phishing emails are frequently used by attackers to deliver malicious links or files that can steal users' login passwords, account numbers, and other personal information. Deceptive phishing is a common cybercrime because it is far easier to deceive someone into clicking on a harmful link in a seemingly legitimate phishing email than it is to penetrate a computer's defenses. Learning more about phishing is crucial for consumers to detect and avoid it.

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Crypto Watermarking in Multimedia Transmission

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Abstract: ***Multimedia information is critical of examining, information perceived, and which are illustrated by the human cerebrum. A Crypto-watermarking approach reserves more popularity in certain important fields like medical, military, and law enforcement. This paper discusses detailed the importance of crypto-watermarking techniques and strategies used to improve information security. The main objectives of developing this crypto-watermarking application are that it can provide the user with the security of data. Also, these techniques aim to protect the Multimedia Contents aim to restrict the avoid unauthorized copies of digital documents. Payload and minimize the bit error rate are the parameters that are in line with these techniques.***
Keywords: Authentication, Copyright Protection, Multimedia Security, Wavelet Transform

I. INTRODUCTION

The computer era's advancement has exponentially increased the transmission of multimedia content, posing challenges such as unauthorized access and modification. This necessitates heightened focus on licensed innovation's assurance within society. Despite algorithmic developments, particularly in textual data protection, safeguarding multimedia content remains a challenge. Researchers have diligently sought solutions for copyright protection and validation, recognizing the lack of distinction between original and duplicate digital data. Digital Watermarking, a method embedding marking data into digital media, addresses this challenge by concealing information imperceptible to the human eye, enhancing integrity and authenticity verification. Industry and academia have intensified efforts in this domain. Digital image watermarking categorizes fetching processes into spatial and transform domains. Spatial domain methods modify pixel values directly, while transform domain methods adjust frequency coefficients using transformations like Discrete Fourier Transform (DFT), Discrete Cosine Transform (DCT), and Discrete Wavelet Transform (DWT). These techniques, focusing on frequency space, offer robust copyright protection during transmission. In cryptography, symmetric and asymmetric techniques ensure data privacy. Symmetric cryptography utilizes a shared key for encryption and decryption, whereas asymmetric cryptography employs public and private keys for secure message transmission and decoding. Both techniques are integral to safeguarding digital content in today's interconnected world.

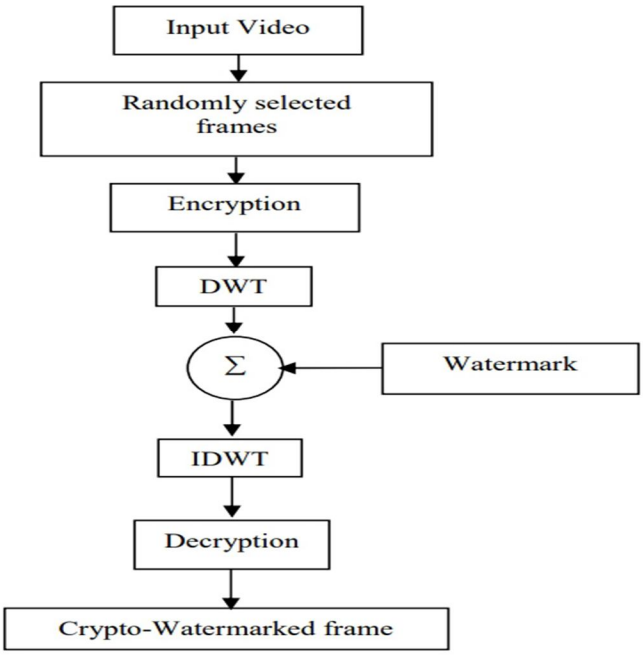

Figure 1: Process of Crypto-Watermarking Technique

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ARTIFICIAL INTELLIGENCE AND DEEP LEARNING FOR WEAPON IDENTIFICATION IN SECURITY SYSTEMS

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Abstract : Advanced weapon identification systems are in greater demand due to the global growth of security concerns. In real-world situations, traditional approaches have not been able to reliably detect concealed weapons. In order to improve weapon recognition capabilities in security systems, this research suggests integrating deep learning approaches with artificial intelligence (AI). In order to achieve superior accuracy and efficiency in detecting different types of weapons, including firearms and bladed instruments, from different camera perspectives and environmental conditions, the proposed system makes use of convolutional neural networks (CNNs) and recurrent neural networks (RNNs) in conjunction with sophisticated algorithms for feature extraction and classification. This research shows the effectiveness of AI-powered weapon recognition systems in enhancing security protocols and ensuring public safety through extensive testing and assessment.

IndexTerms **- Artifical Intelligence, CNN, Deap Learning, Faster RCNN, SSD, Weapon Detection, YOLO.**

I.INTRODUCTION

Because of the increase in crime that occurs in busy places and suspiciously isolated locales, security is a major problem in all fields. A wide range of problems are addressed by computer vision, which is extensively employed in anomalous detection and monitoring. Applications for video surveillance systems that can recognize and analyze the scenario are growing in demand, as is the requirement for safety, security, and personal property protection. Anomalies are crucial for intelligence tracking. The discovery of irregular, unexpected, unpredictable, uncommon events or things items that are not thought of as regularly recurring events or regular items in a pattern or items included in a dataset that are distinct from preexisting patterns is known as weapon or anomaly detection. Globally, the rate of crime has gone up. The primary reason for the rise in crime rates worldwide is the increased use of handguns during violent incidents. A nation needs to maintain law and order in order to advance. Artificial intelligence (AI) weapon detection uses sophisticated algorithms and computer visual methods to recognize and categorize firearms in different environments. Security systems frequently use this technology to improve security and thwart possible attackers. A diversified dataset comprising pictures or videos of different kinds of weapons in various settings with varying illumination levels is necessary for a strong weapon detection system. The training of a machine learning model depends on the dataset. Preparing the data entails cleaning and improving it. This stage could involve deleting pixels, adjusting pixel values, and shrinking images. To ensure the efficacy of the model, this stage may involve downsizing photos, standardizing pixel values, and eliminating any unnecessary information. We can work to reduce the rate of mass killing or manslaughter while also attempting to save human life. Furthermore, our suggested system is able to additionally be used in sophisticated security and surveillance robots to identify weapons or dangerous objects in order to prevent assaults and risks to human life. Gun-related violence has a major negative influence on public health, psychological well-being, and the economy. Many lives are lost to gun-related violence every year. Children who grow up in environments where there is a lot of violence or who watch violent media often suffer from psychological trauma. Children who witness, engage in, or are the victims of gun-related violence may experience negative psychological effects in the short and long term [1].

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THE NEXT GENERATION TECHNOLOGY EYE GAZE COMMUNICATION SYSTEMS

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Abstract: The Eye Gaze Communication System represents a groundbreaking endeavor aimed at empowering individuals with disabilities through innovative technology. This project seeks to develop a sophisticated computer interface that allows users to interact with computers using only their eye movements. By harnessing the human gaze, users can execute commands and navigate computer functions with remarkable precision and efficiency, eliminating the need for traditional input devices such as keyboards or mice. Through the implementation of advanced eye tracking technology and intuitive user interfaces, this system promises to revolutionize communication and accessibility for individuals with complex physical disabilities who may face challenges in using conventional methods. The potential applications of this technology are vast, ranging from enabling individuals to control smart home devices, access educational resources, and engage in social interactions, to facilitating communication with caregivers and healthcare professionals. With roots tracing back to the pioneering work of Yarbus in the 1960s, the Eye Gaze Communication System represents a significant leap forward in assistive technology, offering unprecedented levels of independence, empowerment, and inclusion for individuals with disabilities.

Index Terms **–Eye gaze, Assistive technology, Augmentative and alternative communication (AAC), User-centered design, Human-computer interaction, Eye tracking.**

I. INTRODUCTION

The Eye Gaze Communication System stands as a remarkable innovation aimed at enhancing the lives of individuals, especially those with visual impairments, by providing them with a means to engage in daily activities and communication. At its core, this system relies on the concept of eye tracking, which involves measuring the point of gaze or the motion of the eye relative to the head. Eye trackers serve as indispensable devices in this process, capturing and interpreting eye movements with precision and accuracy. Widely utilized across diverse disciplines such as research, psychology, cognitive linguistics, and product design, eye tracking technology has revolutionized our understanding of visual perception and behaviour. Central to this technological advancement is the Eye gaze System, a pioneering communication and control platform that enables users to interact with devices and interfaces solely through their gaze. Unlike traditional input methods that require physical manipulation, the Eye gaze System offers a direct-select vision-controlled approach, allowing users to navigate menus, select options, and input text simply by directing their gaze. This intuitive and non-invasive interface empowers individuals with disabilities to communicate effectively, access information, and control their environments with unprecedented ease and independence. Beyond its immediate applications in communication and control, the Eye gaze System holds profound implications for fostering inclusivity and accessibility in society. By providing individuals with disabilities with a means to participate fully in daily activities, educational pursuits, and social interactions, this technology promotes greater equity and autonomy for all. Furthermore, the Eye gaze System serves as a testament to the power of innovation and human-centered design, showcasing how advancements in technology can profoundly impact the lives of individuals and communities.

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Voice-Activated E-commerce: Revolutionizing Shopping Experiences with Personalization and Seamless Integration

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Abstract: ***In today's rapidly evolving landscape, voice technology has emerged as a transformative force reshaping the way consumers interact with e-commerce platforms. This exploration delves into the progression of commerce experiences facilitated by voice technology, emphasizing the integration of personalized recommendations, voice-enabled payments, and seamless compatibility with e-commerce platforms. The forefront of this evolution lies in the integration of personalized recommendations. Leveraging advanced algorithms and artificial intelligence, voice-enabled shopping assistants can provide tailored feedback on products by analyzing customer preferences, purchase history, and real-time content. This not only enhances customer satisfaction but also fosters a more efficient and personalized shopping experience. By examining the synergy between voice technology and e-commerce, this discussion highlights the potential of voice commerce to simplify long-term online shopping, making it more personalized and convenient for consumers worldwide.***
Keywords: E-e-commerce, voice, artificial intelligence, algorithm, customer

I. INTRODUCTION

In today's rapidly evolving landscape, the convergence of voice technology and e-commerce has revolutionized the consumer experience with online businesses. Voice assistants such as Amazon Alexa, Google Assistant, and Apple Siri have streamlined shopping, offering enhanced convenience and personalization. Unlike traditional online interactions reliant on visual cues, voice-activated technology enables users to express their needs directly, simplifying the purchasing process significantly. Voice commerce facilitates seamless interactions with online retailers for purchasing groceries, clothing, or planning travel, transcending mere convenience. Leveraging modern machine learning calculations and characteristic dialect preparing, these frameworks convey custom fitted item proposals by analyzing person inclinations and past acquiring behaviors. This level of customization not only boosts business efficiency but also fosters greater customer loyalty and satisfaction. Moreover, the influence of voice-activated e-commerce extends beyond personal devices like smart speakers, reaching various platforms such as smartphones, smart TVs, and even automobiles. This widespread accessibility empowers customers to utilize their preferred online shopping channels wherever they are, blurring the boundaries between online and physical retail spaces. Join us as we delve into the exciting possibilities of voice-activated e-commerce, exploring its transformative potential through enhanced customization and collaborative purchasing experiences

II. LITERATURE SURVEY

An overview of voice-activated e-commerce was provided in the publication.

1) *Smith, J. & Johnson, A. (2019). "The Rise of Voice in Business: A Critical Review"* offers a thorough examination of the evolution and influence of voice marketing technology. The article traces the development of voice assistants and their integration into e-commerce platforms, discussing pivotal technologies like natural language processing (NLP) and automatic speech recognition (ASR). It also explores the impact of voice marketing on consumer behavior and business operations. By addressing challenges and opportunities in voice marketing, this article provides valuable insights for businesses seeking to leverage this emerging trend.
2) *Garcia M and Chen L (2020). "Enhancing Identity in Voice-Activated E-Commerce*" focuses on strategies to enhance the identity of voice-activated e-commerce platforms. Through the exploration of machine learning algorithms and personalized recommendations, the study aims to optimize user experiences and increase conversions. By examining the effectiveness of personalized recommendations, this article offers practical guidance for businesses aiming to leverage voice marketing effectively, emphasizing customer trust and satisfaction through personalized strategies.

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SECURING E-COMMERCE: AI-POWERED FRAUD DETECTION AND PREVENTION

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Abstract—This abstract presents an AI-driven approach to fortify fraud detection and prevention mechanisms within e-commerce websites. In response to the escalating threat of fraudulent activities, this system harnesses the capabilities of Artificial Intelligence (AI) to proactively identify and mitigate risks. By analyzing vast datasets in real-time, AI algorithms adeptly discern patterns indicative of fraudulent behavior, enabling swift intervention to safeguard the integrity of transactions. Leveraging machine learning techniques, the system continually refines its understanding of evolving fraud tactics, adapting to new threats with precision and agility. Behavioral analysis forms a cornerstone of this framework, scrutinizing user interactions and transactional patterns to detect anomalies and flag potential fraud. Through advanced data visualization tools, stakeholders gain actionable insights into emerging trends and suspicious activities, empowering informed decision-making. By integrating AI-powered fraud prevention measures, e-commerce platforms bolster their security posture, fostering trust and confidence among users while mitigating financial losses. This innovative approach signifies a paradigm shift in combating fraud within the digital marketplace, underscoring the transformative potential of AI in safeguarding the interests of businesses and consumers alike.

Keywords— **E-commerce, artificial intelligence, algorithm**

I. INTRODUCTION

The proliferation of e-commerce has revolutionized the way we shop, offering unparalleled convenience and accessibility. However, along with this digital revolution comes the ever-looming threat of fraudulent activities that undermine the integrity of online transactions. In response to this pressing challenge, the integration of Artificial Intelligence (AI) has emerged as a pivotal strategy in fortifying fraud detection and prevention mechanisms within e-commerce websites. By harnessing the power of AI algorithms, businesses can analyze vast volumes of transactional data in real-time, enabling the swift identification of suspicious activities and the implementation of proactive security measures. Artificial Intelligence (AI) has emerged as a powerful ally in the fight against fraud in e-commerce. By harnessing the capabilities of machine learning, data analytics, and real-time monitoring, AI-based systems can sift through vast volumes of transactional data, identify patterns, and detect anomalies indicative of fraudulent behavior. Moreover, AI's ability to adapt and learn from new data enables these systems to stay ahead of evolving fraud tactics, continuously improving their detection accuracy and efficiency over time. By leveraging advanced algorithms and predictive analytics, these systems can identify suspicious activities in real-time, enabling swift intervention to prevent fraudulent transactions before they occur. Furthermore, AI-powered fraud prevention tools can augment

traditional security measures by providing additional layers of protection, such as identity verification, behavioral analysis, and device fingerprinting.

In this introductory exploration, we delve into the landscape of AI-based fraud detection and prevention in e-commerce, examining the underlying technologies, key challenges, and emerging trends shaping the future of fraud mitigation strategies. Moreover, we will discuss the ethical considerations and regulatory implications associated with the deployment of AI in fraud

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Enhancing Intelligence Operations: Exploring Social Media Intelligence (SOCMINT) Red Teaming Strategies and Challenges

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Abstract : SOCMINT, or Social Media Intelligence, involves the gathering and analysis of publicly available social media data to inform decision-making, typically in the realms of security, law enforcement, marketing, and beyond. It encompasses the monitoring, collection, and analysis of information from various social media platforms. SOCMINT Red Teaming involves a simulated adversarial approach to test and evaluate the effectiveness of SOC (Security Operations Center) teams in detecting and responding to threats originating from social media. Red teaming, in general, is a method used to challenge assumptions and test the effectiveness of security measures. SOCMINT Red Teaming specifically focuses on how well an organisation can detect and respond to threats or other relevant information originating from social media sources. This could include assessing how well the organisation monitors social media for mentions of their brand or organisation, detecting potential security threats or breaches being discussed on socialmedia platforms, or identifying trends or sentiments that could impact the organisation's operations or reputation. By conducting SOCIMINT Red Teaming exercises, organisations can identify weaknesses in their social media monitoring and response capabilities and develop strategies to improve their overall security posture in the digital realm.

IndexTerms **-** Social Media Intelligence, SOCMINT, Red Teaming, Intelligence Gathering, Digital Landscapes, Methodologies, Tools, and Technologies, Case Studies, Challenges, Limitations, Ethical Considerations, Privacy Concerns, Future Trends, Security Implications, and Data Analysis.

I. INTRODUCTION

Social Media Intelligence (SOCMINT) refers to the practice of gathering and analysing data from various social media platforms to extract valuable insights and information. It involves monitoring and examining publicly available content such as posts, comments, likes, shares, and profiles across platforms like Facebook, Twitter, Instagram, LinkedIn, and more. SOCMINT utilises advanced analytical techniques and tools to interpret the vast amounts of data generated by social media users, aiming to understand trends, sentiments, opinions, and behaviours within specific demographics or communities.

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SOCMINT is utilised by various entities, including businesses, government agencies, law enforcement, intelligence organisations, and researchers, for diverse purposes such as market research, competitive analysis, brand reputation management, public sentiment analysis, security threat assessment, and intelligence gathering. By leveraging SOCMINT, organisations can gain valuable insights into consumer preferences, emerging trends, potential risks, and opportunities, enabling them to make informed decisions and take proactive measures to address challenges or capitalise on favourable developments in the rapidly evolving digital landscape. However, SOCMINT also raises ethical and privacy concerns regarding the collection, storage, and usage of individuals' personal data, requiring careful consideration and adherence to legal regulations and ethical guidelines to ensure responsible and respectful practices.

Red teaming in the context of SOCMINT (Social Media Intelligence) involves employing a specialised team to simulate adversarial actors and their tactics in order to test the effectiveness of an organisation's social media monitoring and intelligence capabilities. This approach allows organisations to identify vulnerabilities, gaps, and blind spots in their SOCMINT strategies by subjecting them to realistic scenarios and challenges. Red Teams use various techniques, such as creating fake personas, conducting social engineering attacks, spreading disinformation, and exploiting social media platforms' features to mimic the behaviours of actual threat actors or adversaries.

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Enhancing User Experience: User Interface (UI) And User Experience (UX) In Augmented Reality

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Abstract: "Enhancing User Experience: UI/UX in Augmented Reality" delves into the pivotal role of user interface (UI) and user experience (UX) design in augmenting the effectiveness of augmented reality (AR) applications. The seminar explores the significance of AR in modern technology, showcasing examples such as Pokémon GO and Snapchat filters. It highlights the challenges and opportunities inherent in designing UI/UX for AR environments, emphasizing the impact of well-crafted interfaces on user adoption and satisfaction. Principles of effective AR UI/UX design, including contextual awareness, intuitive gestures, visual hierarchy, and feedback mechanisms, are discussed alongside case studies and best practices, offering insights into successful design strategies and common pitfalls to avoid. Additionally, the seminar provides an overview of tools and resources for AR UI/UX design, underscores the importance of collaboration between designers, developers, and content creators, and explores future trends and opportunities in the rapidly evolving AR landscape.

Overall, the seminar report underscores the transformative potential of UI/UX design in elevating AR experiences, offering practical guidance and insights to practitioners and enthusiasts alike. Through a comprehensive exploration of principles, best practices, case studies, and future trends, the report equips attendees with the knowledge and tools needed to create immersive AR applications that seamlessly integrate digital content with the real world, fostering engagement and usability.

Index Terms - Augmented Reality (AR), User Interface (UI), User Experience (UX), Interaction Design, Immersive Technology, Gesture-Based Interaction, Design Principles, User Engagement, Augmented Reality Applications, User-Friendly Design.

I. INTRODUCTION

Augmented Reality (AR) has emerged as a transformative technology, reshaping the way we interact with digital content and the physical environment. By seamlessly integrating virtual elements into real-world settings, AR has opened up new frontiers across various industries, from gaming and entertainment to healthcare and education. Central to the success of AR applications is the seamless fusion of digital and physical realms, a feat made possible by the intricate design of User Interface (UI) and User Experience (UX). In this paper, we delve into the critical role that UI/UX design plays in enhancing the user experience within augmented reality environments.

AR technology has gained momentum in recent years, propelled by advancements in hardware and software capabilities. From smartphone apps to specialized headsets, AR devices offer users an immersive experience that blurs the lines between the virtual and tangible worlds. However, the effectiveness of AR hinges not only on technical prowess but also on the ability to deliver intuitive and engaging interactions. This is where UI/UX design steps into the spotlight, serving as the bridge between users and the augmented environment. By crafting interfaces that are intuitive, aesthetically pleasing, and seamlessly integrated with the user's surroundings, designers can elevate the AR experience to new heights.

The significance of UI/UX design in AR extends beyond mere aesthetics; it directly influences user engagement, satisfaction, and adoption rates. A well-designed interface not only facilitates smooth navigation within AR applications but also fosters a sense of immersion and empowerment. Conversely, poor design choices can lead to frustration, disorientation, and ultimately, abandonment of the technology. Therefore, understanding the principles of UI/UX design in the context of AR is paramount for developers and designers seeking to create compelling and user-friendly experiences.

In this research paper, we aim to explore the multifaceted aspects of UI/UX design within the realm of augmented reality. Through an analysis of existing literature, case studies, and practical insights, we will examine the challenges and opportunities inherent in designing interfaces for AR environments. By shedding light on best practices, emerging trends, and future directions, we seek to provide a comprehensive understanding of how UI/UX design can be leveraged to enhance the user experience in augmented reality.

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Spam Identification in Cloud Computing Using text Filtering

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ABSTRACT

With the rapid growth and diversity of spam on the Internet, how to quickly and effectively identify the many spams on the Internet has become an urgent problem. Cloud computing has distinct advantages in terms of storage and processing, so it can compute large email files. Due to the uncertainty and existence of spam, feedback and reposting have also been added to spam protection, and four levels of filtering are used: active learning, training, filtering, feedback and refiltering. The feedback filter system can improve the filter effect of the content compared with the old system. To reduce the negative decision of ordinary emails and improve the accuracy of spam decision, it is recommended to improve the decision weight by using email header data to ensure complete good service. For emails with no content, the weight method is applicable and effective and can improve the identification of spam emails with little content. The development of the Internet can solve the problem of spam increase, as the air filter system is more efficient than the traditional system. Therefore, this article conducts an in-depth study of spam detection of cloud computing based on content filtering and analysis of existing anti-spam tools.

Keywords: Anti-spam, Artificial Intelligence, Black-list method, centralized spam filters, Decentralized spam filters,machine learning, Rule-based method, Spam filtering, text filtering, White-list method

INTRODUCTION

Email is one of the most popular applications on the internet. Email is slowly replacing traditional communication methods. Its simplicity and timeliness make it an important method of electronic communication in today's life; Therefore, sending e-mail is an important form of communication in the daily life, education and work of the same people. But many spam emails will bring many problems to people. Therefore, effective email filtering is an important topic in network security research. Although the use of email has increased andbecome an important method of rapid communication between social groups, many types of spam have persisted. Therefore, to ensure the normal use and securityof users, it is necessary to ensure the accuracy and security of the e-mail filtering system and establish a harmonious, healthy and harmonious network environment. That's why anti-spam technology has become a research hotspot for many researchers. one Spamming the Internet. Spam is created and changed very quickly, so all relevant information needs to be kept up to date. Therefore, spam needs to be integrated and more flexible, that is, anti-spam. Know the filtering process as active learning, as the feedback and re-evaluation process is also added to it due to the uncertainty of the anti-spam system.

LITERATURE SURVEY

Several case studies and experiments have assessed the efficacy of text filtering-based spam identification techniques in cloud computing environments. In one study, researchers evaluated machine learning-based methods in cloud email services, employing diverse algorithms like support vector machines and deep neural networks on a sizable dataset to distinguish between spam and legitimate emails accurately. Another experiment conducted a comparative analysis of text filtering techniques, including traditional methods like keyword-based filtering and advanced approaches like machine learning, within cloud-based web applications. This comparison revealed the superiority of machine learning-based approaches in terms of adaptability and accuracy. Additionally, a case study focused on hybrid text filtering in cloud-based collaboration platforms, combining rule-based, machine learning, and Bayesian filtering methods, showcasing significant enhancements in spam detection accuracy and reduction in false positives. These investigations collectively underscore the effectiveness of leveraging text filtering techniques, especially machine learning-based and hybrid approaches, in bolstering spam identification within cloud computing infrastructures. Case studies and experiments have been conducted to evaluate spam identification techniques in cloud environments. One notable case study focused on implementing machine learning algorithms, such as logistic regression and support vector machines, for spam detection in cloud-based email services. By collecting a large dataset of emails from cloud email providers and labeling them as spam or non-spam, researchers trained and evaluated several machine learning models using features

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ENHANCING MILITARY OPERATION THROUGH INTEGRATED VISUAL AUGMENTATION SYSTEM(IVAS)

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Abstract: The Integrated Visual Augmentation System (IVAS) is a transformational platform that will enhance the mobility and lethality of Armed personals, outfits and units on the battleground. IVAS features an exquisite interface and a mixed reality head up display that provides military officials high- resolution simulations and situational mindfulness tools to ameliorate planning, decision- making and targeting on the battleground, during both day as well as night operations. IVAS' fielding to the force will start over the coming time. still, through stoner studies and recruit soldier's touch points, Military have formerly taken advantage of the system's embedded training mechanism known as the Squad Immersive Virtual Coach (SiVT), which makes training more realistic, effective and effective for close combat force Soldiers. the Army, led by Program Executive Office Simulation, Training and Instrumentation (PEO STRI) and Microsoft are developing SiVT coincidently with IVAS. SiVT allows for the reiteration of team- position training in a mixed reality-grounded synthetic terrain, wherever training is being occurring.

Index Terms **- Ameliorate, Augmentation, Lethality, Mobility, PEO STRI, SiVT, Transformational platform.**

I. INTRODUCTION

These days, martial computing bias can achieve numerous of the same computing tasks as smart- phones and laptop computers; still, in some cases, martial technology can outperform smart- phone bias entirely. Martial technology tends to be more sophisticated than smart- phone operation technology on the request moment because it can give sensitive and surveying features not generally discerned in smart- phone and laptop bias, similar as ground- image and shadowing of physiological function [1].

The Integrated Visual Augmentation System (IVAS) is a military technology developed and introduced for the United States Army. It's a sophisticated stoked reality (AR) system designed to enhance the capabilities of armed force on the battleground. IVAS integrates advanced technologies, including high- resolution display defenses, night vision capabilities, and stoked information overlays, into a single head- mounted device. The primary thing of IVAS is to give dogfaces with bettered situational mindfulness by overlaying digital information onto their physical surroundings. This includes data similar as charts, navigation cues, armament sights, and other applicable information directly within the military individual's field of view.[2]

The system leverages artificial intelligence (AI) for features like prophetic analysis, aiming to enhance decision- timber and charge effectiveness. IVAS is intended to revise how dogfaces perceive, navigate, and engage in combat surroundings, offering real- time data and connectivity. The development and deployment of IVAS represent a significant advancement in military technology, emphasizing the integration of slice- edge tools to support dogfaces in complex and dynamic functional scripts.[3]

II. LITERATURE REVIEW

The study [4] (Hicks, Jeffrey, et al.) The battleground is a place of violence ruled by query. Timely knowledge of what's passing around a dogface can mean the difference between life and death. The pretensions of an enhanced mobile army are getting a reality due, in part, to the U.S. Army's 21st Century Land Warrior (LW) program. still, the current system doesn't give a "head up" display capability like that handed by moment's avionics. When the dogface employs the armament, he should see objects fluently distinguishable as friendly or not, as well as adversary locales. The Eyekon design is an intelligent agent- grounded decision support system hosted on the dogface's wearable computer. Eyekon will use the dogface's private network to give a perspective view in the armament sight. This will naturally draw the legionnaire to the most desirable target. There are numerous performance and mortal factors issues to address before the conception can be used in murderous situations.

Computers In Industry Hybridizing Humans And Robots: An RPAHbrizon Envisaged From The Trenches

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Abstract: Hybrid Robotic Process Automation (RPA) emerges as a promising paradigm in automation, blending the strengths of both traditional RPA and cognitive technologies. This paper provides a comprehensive review of the state-of-the-art in hybrid RPA, synthesizing insights from scholarly articles, industry reports, and case studies. The review encompasses key concepts, architectures, implementation approaches, benefits, challenges, and future directions of hybrid RPA.The analysis reveals that hybrid RPA combines rule-based automation with advanced cognitive capabilities such as natural language processing, machine learning, and computer vision, enabling organizations to automate complex, cognitive tasks that were previously beyond the scope of traditional RPA. By leveraging this fusion, businesses can achieve higher levels of efficiency, accuracy, and scalability in their operations while also enhancing customer experiences**.** Half and half RPA alludes to the blend of conventional Mechanical Interaction Computerization (RPA) with other trend setting innovations like man-made reasoning (simulated intelligence), AI (ML), normal language handling (NLP), and mental mechanization. By incorporating these cutting edge innovations with RPA, associations can improve the capacities of their robotization answers for handle more intricate and mental undertakings that include unstructured information or require critical thinking skills past straightforward rule-based mechanization.By integrating the advanced technologies with RPA, organizations can enhance the capabilities of their automation solutions to handle more complex and cognitive tasks that involve unstructured data or require decision-making abilities beyond simple rule-based automation. In recent years, Robotic Process Automation (RPA) has emerged as a transformative technology for automating repetitive tasks within business processes. However, the limitations of traditional RPA in handling unstructured data and complex decision-making scenarios have prompted the development of hybrid RPA systems.

IndexTerms **- Attended robotic process automation, Bench marking, Cognitive capabilities, Robotic process automation.**

I. INTRODUCTION

Cross breed Mechanical Interaction Computerization (RPA) combines the force of conventional RPA with mental innovations like man-made reasoning (simulated intelligence) and AI (ML) to make a more wise and proficient robotization arrangement. Basically, it joins the standard based mechanization abilities of RPA with cutting edge mental capacities to deal with complex errands that require human-like judgment, navigation, and versatility Like customary RPA, half breed RPA begins with computerizing rule-based, monotonous undertakings, for example, information section, structure handling, and straightforward dynamic cycles. These errands are computerized utilizing programming robots, or "bots," which imitate human activities by associating with advanced frameworks and applications[1] .
Crossover RPA goes past static rule-based processes. It use artificial intelligence and ML calculations to examine information and adjust to evolving conditions, making it appropriate for dynamic conditions where assignments might fluctuate in intricacy or recurrence. This versatility upgrades productivity and versatility, permitting associations to robotize a more extensive scope of cycles. With mental abilities, cross breed RPA can settle on wise choices in view of relevant comprehension and verifiable information. Bots can break down designs, recognize irregularities, and focus on errands, prompting more educated and ideal dynamic across different business capabilities[2].

Crossover RPA cultivates cooperation among people and bots, utilizing the qualities of each. While bots handle tedious errands and information handling at scale, people contribute their imagination, critical thinking abilities, and space skill to deal with special cases, complex situations, and vital independent direction. Via computerizing commonplace errands and empowering quicker, more exact reactions, mixture RPA can upgrade the client experience. Associations can convey customized connections, resolve requests instantly, and smooth out processes, prompting higher fulfillment levels and faithfulness[3].

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MICROFLUIDIC INTEGRATION: REVOLUTIONIZING LAB-ON-A-CHIP TECHNOLOGY FOR COMPACT AND EFFICIENT BIOMEDICAL ANALYSIS

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Abstract : A lab-on-a-chip (LOC) device is a miniaturized platform that integrates various laboratory functions onto a single chip typically only a few square centimeters in size. These devices are designed to perform a wide range of biochemical and biomedical analyses, often with small sample volumes and rapid turnaround times. Key components of a lab-on-a-chip device may include microfluidic channels, where fluids such as blood or chemical reagents are manipulated and processed; sensors for detecting analytes or biological molecules; and actuators for controlling fluid flow or other operations. Lab-on-a-chip devices offer several advantages over traditional laboratory techniques, including reduced sample and reagent consumption, faster analysis times, portability, and potential for automation. They have applications in fields such as medical diagnostics, environmental monitoring, drug discovery, and biotechnology.

IndexTerms **- Biosensor, Lab-on-Chip, MEMS, Microfluidics, PCB**

I.INTRODUCTION

Lab-on-a-Chip technology refers to methods that carry out different laboratory tasks on a smaller scale, such as chemical emulsion and analysis on a single chip, which results in a portable and handheld device. Stated differently, LoC is a tool that can measure one or more laboratory functions at the chip level. This chip is between a few millimetres and several square centimetres in size [1]. The integration of fluidics, electronics, optics, and biosensors is the main element of LoC [2]. The main motive of LoC is the need for the state- of- art pathological analysis on the- go. LoCs prove to be useful for chancing the styles for the early stage opinion of deadly and habitual conditions. Due to the appearance of advanced technologies similar as MEMS,NEMS, the integration of large number of interdisciplinary modules on a single chip is possible [3].

fig 1 represents the various steps involved in Lab-on-Chip processing. The first step in the LoC procedure is to gather a physiological sample, from which a specific analyte or biomarker is created. The transducer will operate on the analyte electrically, electromechanically, optically, or mechanically, depending on the biological function. The coming step involves counting, sorting and modification of the transducer affair is performed according to the operation. Eventually ,the amplified sample is reused using microelectronics ways. Current trend shows the growth of research in this area .In numerous universities across the world, numerous groups are formed that are earmarking their exploration in this area .For illustration, memoirs in University of Twente, Mina Med in Germany, and Nanobe in Finland [3] are some of the groups. Their main motive is to understand naonofluidics and nanosensing, to connect micro/ nanoeng. with biomedical and life wisdom fields, to develop new micro and nano technologies for LOC, and to demonstrate new LOC operations.

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AI-Based Assistance System for Visually Impaired: Object Detection and Smart Navigation

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ABSTRACT

In the field of assistive technologies, visually impaired individuals encounter significant challenges in their daily lives, necessitating innovative solutions to enhance their independence and mobility.This paper presents an artificial intelligence-based assistive technology aimed at aiding visually impaired individuals in navigating their environment independently. The system utilizes a machine-learning model trained on diverse object images and incorporates distance measuring to detect obstacles in real-time. Through scene segmentation and object recognition, the device provides auditory feedback, enabling users to understand their surroundings swiftly. By combining computer vision and auditory feedback, this innovation enhances the quality of life for visually impaired individuals by facilitating confident navigation.

Keywords: Artificial Intelligence, CNN, Computer Vision, Object Detection, Smart Navigation, TensorFlow, Text-To-Speech, Visually Impaired, YOLO..

INTRODUCTION

One of the biggest health issues facing the globe today is vision impairment. The inability to see or see things clearly is caused by visual impairment or loss, which cannot be treated with glasses. Over 15 million of the world's nearly 37 million blind individuals are from India. Visually impaired individuals frequently rely primarily on other people, trained canines, or specialized electronic gadgets as decision-making supports. Around unfamiliar places, navigation gets more challenging. Risks associated with stairs, objects at an abrupt depth, and obstructions higher than waist level include survival devices[1].Millions of people worldwide are visually impaired, which prevents them from understanding their environment. For those who are blind or visually impaired, getting around is one of the most challenging chores. Their inability to judge the relative positions of people and objects makes it difficult for them to travel on their own. People with visual impairments require assistance from a companion to navigate outside. The white cane is a widely used assistive device for individuals with visual impairments. Although it facilitates navigation, the user is not made aware of the existence of many obstacles until they are extremely near to them. Due to the shortcomings of these conventional methods, a great deal of research is being done. As a result of the inadequacies of these traditional solutions, more study is being undertaken to build better[2]. This study proposes an ensemble solution for object detection in a live camera frame, together with the audio output of the object's position and name.The paper's primary contribution is the development of a smart system for blind individuals that combines object detection with audio output for identified objects in real-time camera frames, along with the location and distance of the discovered object [3]. In this research, artificial intelligence was employed to identify and assess objects and communicate information through a speaker. The proposed effort reduces the recognize time of many objects in less time with the best time complexity by using darknet YOLO techniques to address the current system problem. The necessity for blind individuals to help each other navigate as well as a more comprehensive look at the cutting edge technology that is becoming available in today's world led us to establish this project. The purpose of technology is to facilitate human labor.Therefore, in this effort, we employ solutions to meet the challenges faced by visually impaired people. The project's objective is to help users navigation with the aid of technology, something that our engineering profession strongly advocates[4].

LITERATURE SURVEY

Recent advancements in computer vision, particularly in object detection, have garnered significant attention due to their wide-ranging applications in security surveillance, autonomous driving, and robotics. However, amidst these technological strides, addressing the unmet needs of visually impaired individuals in navigating their surroundings independently remains crucial. Traditional aids like white canes offer limited assistance, prompting recent research to focus on innovative solutions. This paper proposes an Android application utilizing object recognition technology to aid people with low vision, leveraging convolutional neural networks (CNN) and TensorFlow Lite to identify objects and provide audio alerts about their presence and location. Through this endeavor, the aim is to offer a visual

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Revolutionazing Software Development: The Rise of No Code/Low Code Development Solutions in Digital Era

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Abstract
Low/No-code improvement is a program development method that gives clients with a stage for outwardly creating applications with small or no coding. Companies and organizations require program applications and information systems for different commerce purposes like administration in the technology period. Low/No-code advancement gives non-IT professionals a helpful device for quickly building simple business applications they require without or with small coding. In this paper, we investigated the benefits & confinements of Low/No Code advancement and advanced Low/No Code development platforms in the industry. In expansion, we analyzed how it can be improved and prospected the impacts of Low/No Code development on society and related businesses in the future. In conclusion, we discover that Low/No code improvement is a promising trend that can essentially affect future program development and computerized change.

Keywords: Digital transformation; Low code development; No code development; Software development.

1. INTRODUCTION

Traditional software development approaches typically find it difficult to keep up with the fast changing technical landscape in the digital era, where agility and creativity are critical. But a new force in software development is upon us: low- and no-code development solutions. Without requiring a great deal of coding experience, these cutting-edge platforms enable anyone with different degrees of technical proficiency to design, develop, and implement apps.[1] No code and low code solutions provide an efficient way to develop software by using pre-built components and intuitive visual interfaces. This lowers the barriers to entry for both corporations and aspiring developers and significantly reduces time-to-market.

The use of low-code and no-code development solutions is growing as businesses come to understand the need of agility and quick iteration in the current competitive landscape. We will examine these platforms' revolutionary potential to change software development processes in this seminar.[2] We will discover how low-code and no-code solutions are changing the software development landscape, spurring creativity, and helping businesses succeed in the digital era through a thorough examination of

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RINGPAYMENT: POINEERING CONTACTLESS TRANSACTIONS WITH BIOMETRIC FINGERPRINT SECURITY

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Abstract: Ringpay, the innovative wearable ring, transforms the payment experience by merging advanced technology seamlessly into daily life. With its smart card chip and biometric fingerprint scanner, Ringpay ensures secure and convenient transactions, revolutionizing traditional payment methods. By harnessing NFC technology, this ring effortlessly communicates with POS systems, mirroring the ease of debit and credit card transactions. Its standout feature lies in biometric authentication, guaranteeing user consent for each transaction and enhancing security measures. Ringpay's core mission is to simplify payments, removing the need for physical cards or smartphones, and offering a futuristic payment encounter. This stylish wearable not only epitomizes convenience and security but also adds a touch of elegance to the payment process, marking a significant advancement in contactless payments.

Index Terms **- NFC wearable technology, Payment Ring, Ringpay, Wearable ring**

I. INTRODUCTION

The payment landscape in India has been significantly shaped by the widespread adoption of credit and debit cards across various sectors such as airlines, railways, malls, shops, hotels, and business establishments. Merchant establishments rely on Point of Sale (POS) devices [1] or terminals to facilitate card payments, with each transaction conducted through these devices termed as a sale transaction. These POS machines are connected to host computers via a payment network, enabling the transfer of electronic data of card users to the POS devices. During transactions, the POS machines automatically read the data stored in the chip of the cards, which typically includes the customer's name, account number, and security features necessary for the operation. Smart cards embedded with microprocessor or cryptoprocessor chips have revolutionized payment methods, offering enhanced security and efficiency. These chips [2] securely store and transmit data when processed by a chip reader, ensuring fast and secure communication with host computers. Smart cards are categorized into two main types: contact-based smart cards and contactless smart cards. Contact-based smart cards necessitate physical contact between the card and a reader for data exchange, whereas contactless smart cards utilize radio frequencies or Near Field Communication (NFC) technology to enable communication and data transfer between the card and the reader. NFC technology, a form of wireless communication commonly used in mobile payment systems, enables short-range communication between compatible devices, making it a popular choice for proximity payments.

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Cogito Connect: Synergizing Artificial General Intelligence (AGI) and Internet of Things (IoT)

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ABSTRACT

The prospect of Artificial General Intelligence (AGI), which is capable of learning and doing tasks with human cognitive capacities, is highly anticipated and intriguing in the scientific, commercial, and social contexts. This attraction is especially present in the Internet of Things (IoT), an environment in which numerous devices, sensors, and systems are connected to one another. Together, these gadgets acquire and share data that facilitates automation and intelligent decision-making. In the framework of the Internet of Things, this study sets out to investigate the prospects and difficulties associated with reaching AGI.

Index Terms: Artificial General Intelligence (AGI), Internet of Things (IoT),Artificial Intelligence(AI)

INTRODUCTION

The Internet of Things offers a huge network of interconnected devices that produce a tremendous amount of data. Using this data, AGI could discover and make judgments instantly, resulting in AI systems that are more responsive and adaptable. Intelligent environments where AGI systems can regulate and optimize anything from home automation to urban infrastructure, improving efficiency and sustainability, may result from the integration of AGI with IoT.

Thus, artificial general intelligence, or AGI, is a theoretical model of a fully functional artificial intelligence that possesses generalized human cognitive abilities and can tackle complicated tasks.While (AI) can manage scenarios where it is trained on predetermined data, (AGI) can handle scenarios in which it is not trained.Thus, the scope of artificial general intelligence (AGI) is increased since it offers a means of handling issues in a variety of disciplines without the need for human participation. AGI can become self-taught and supply solutions on its own.

IoT is made up of people plus physical objects (such as gadgets, sensors, controllers, storage, etc.).The term "Internet of Things" (IoT) can be described as the following formula,

IoT = Humans + Physical Objects + Internet
which comprises a revolutionary technical paradigm that emphasizes the peaceful coexistence of technology and people in order to demonstrate an improvement in the standard of living for people.

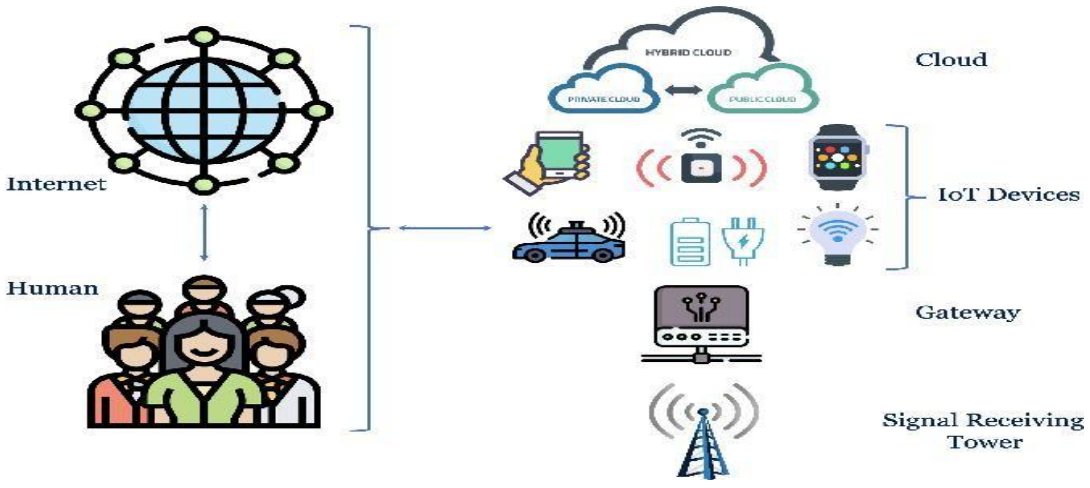

Fig .1. An illustration of IoT architectures.

Breakthrough in Brain-Computer Interface Technology Paves the Way for Mind-Controlled Devices(BCI)

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Abstract: A brain – computer interface(BCI) is a system that allows its druggies to control external bias with brain exertion. Although the evidence- ofconcept was given decades ago, the dependable restatement of stoner intent into device control commands is still a major challenge. Success requires the effective commerce of two adaptive regulators the stoner's brain, which produces brain exertion that encodes intent, and the BCI system, which translates that exertion into device control commands. In order to grease this commerce, numerous laboratories are exploring a variety of signal analysis ways to ameliorate the adaption of the BCI system to the stoner. In the literature, numerous machine literacy and pattern bracket algorithms have been reported to give emotional results when applied to BCI data in offline analyses. still, it's more delicate to estimate their relative value for factual online use. BCI data competitions have been organized to give objective formal evaluations of indispensable styles. urged by the great interest in the first two BCI Competitions, we organized the third BCI Competition to address several of the most delicate and important analysis problems in BCI exploration. The paper describes the data sets that were handed to the challengers and gives an overview of the results
.

Keywords:
Amyotrophic side sclerosis, Electrocorticography, Magnetoencephalography, Neurofeedback training, Intracortical

I. INTRODUCTION

a. Conditions Similar as amyotrophic side sclerosis(ALS), brainstem stroke, and brain or spinal cord injury can vitiate the neural pathways that control muscles or the muscles themselves. People who are most oppressively affected may lose all or nearly all voluntary muscle control, indeed eye movements and respiration, and may be basically " locked in " to their bodies, unfit to communicate in any way or limited to slow unreliable single- switch styles. Studies of the formerly 20 times show that the crown- recorded electroencephalogram(EEG) can be the base for brain – computer interfaces(BCIs)(1) –(5) that restore communication and control to these oppressively crippled individualities. Since 1986, the Wadsworth Center BCI Laboratory in Albany, New York, has shown that healthy and impaired people can learn to control the breadth of mu and beta measures in the EEG recorded over sensorimotor cortex and that these measures can be used to control a cursor on a computer screen in one or two confines(5) –(7). further lately, we've estimated and perfected P300- rested BCI operation(8),(9), and also begun to explore BCI operations of electrocorticographic exertion(ECoG)(10). Our primary focus at present is to convert the handwriting entered March 20, 2006; revised March 24, 2006. This work was supported in part by the National Center for Medical Rehabilitation Research of the National Institute of Child Health and Human Development under NIH Grant HD30146, in part by the National Institute of Biomedical Imaging and Bioengineering under NIH Grant EB00856, in part by the JamesS. McDonald Foundation, in part by the Altran Foundation, and in part by the ALS Hope Foundation

b. A brain – computer interface(BCI), or a brain – machine interface(BMI), or simply a neural interface is a tackle – software complex(HSC) for functional connection between a natural object and a machine, i.e., for direct connection of computing or other digital intelligent control systems with the brain. Unlike traditional control bias, similar as keyboards, mice, joysticks,etc., which interact with calculating systems, the BCI records brain exertion in colorful areas and translates these signals into commands for controlling an external digital device. BCI is one of the most fleetly progressing motifs in colorful fields of wisdom and technology, including engineering, drugs, neuroscience, drug, hightech diligence, dispatches, robotics, and defense complexes. also, BCI is of special interest for recuperation and enhancement of the quality of life of people with disabilities. The BCI operations include, but not limited to,

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ADVANCEMENTS IN CYBERSECURITY FOR CONNECTED VEHICLES: HARNESSING THE POWER OF MACHINE LEARNING AND BLOCKCHAIN TECHNOLOGIES

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Abstract : This paper explores the application of machine learning (ML) and blockchain technologies in enhancing cybersecurity for connected vehicles. With the proliferation of interconnected systems in modern automobiles, the risk of cyberattacks has intensified, necessitating robust security measures. ML algorithms offer the capability to detect anomalies, identify suspicious patterns, and predict potential threats, thereby bolstering the resilience of connected vehicle systems. Concurrently, blockchain technology provides secure data storage, transparent transaction records, and decentralized identity management, mitigating the risk of unauthorized access and data tampering. By integrating ML and blockchain, automotive stakeholders can proactively address cybersecurity challenges, safeguarding against emerging threats and ensuring the safety and reliability of connected vehicle operations.

IndexTerms **- blockchain, connected and autonomous vehicles, cybersecurity, federated learning, machine learning.**

I.INTRODUCTION

Cybersecurity is the term used to describe the tools, tried-and-true procedures, and professional standards created to guard against attacks, damage, and illegal access to networks, devices, programs, and data. Cybersecurity is also known as information technology security. Because there are so many potential attacks and threats against a system, securing its information flow is a major concern. For this reason, cybersecurity experts emphasize the importance of having a specialized security system in place for current domains like healthcare, telemetry, IoT, and other systems that use big data analytics. The basic communication framework for connected and autonomous vehicles is vulnerable to a variety of cyberattacks, which presents a serious security risk. Furthermore, there are still a lot of questions and concerns regarding the mechanics and cause-and-effect correlations pertaining to vehicle cybersecurity. We'll offer a comprehensive analysis of various cybersecurity risks, defences against them, and potential solutions.

We must talk about the communication strategies used in connected and autonomous cars (CAVs), which fall into two main types, in order to comprehend different security flaws. Vehicle-to-vehicle and inter-vehicle communication are the first two. With the help of data and information gathered from onboard sensors, intra-vehicle communications [1] make it possible to automate autonomous vehicles. When operating in this mode, CAVs don't interact or communicate with smart infrastructure or other CAVs. Conversely, inter-vehicle communications facilitate vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) connections through a cooperative model. A hacker can target smart cars through a variety of attack surfaces, depending on these two fundamental forms of communication. Vulnerabilities related to inter- and intra-vehicular communications can impact multi-modal sensors like ultrasonic, infrared, and vision sensors as well as communication, and they can be exploited remotely or from close proximity.

Requirements of secure vehicles

The car industry may conduct research projects aimed at solving the serious security issues that the CAV network presents.
Due of their internet connectivity modes and their ability to communicate via V2V and V2I, CAVs are susceptible to hostile cyberattacks. Numerous electronic control components found in CAVs can be used against them in a cyberattack. In addition, the majority of CAVs have a significant number of sensors for detecting their surroundings, which makes it possible for cyberattacks to target the sensors and jeopardize the vehicles' performance.

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ILLUMINATING THE FUTURE: A COMPREHENSIVE STUDY ON IoT-ENABLED SMART LIGHTING SYSTEMS

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Abstract: Internet of Things (IoT)-enabled smart lighting solutions provide ground-breaking improvements in user comfort, environmental sustainability, and energy efficiency. These systems may dynamically change lighting levels, color temperatures, and patterns in response to occupancy, natural light, and user preferences by integrating sensors, actuators, and network connectivity. This flexibility improves user enjoyment and well-being in addition to lowering energy use. Additionally, IoT-enabled smart lighting systems allow for remote control and monitoring via centralized platforms or mobile devices, enabling real-time administration and data-driven insights. These features enable defect identification, performance optimization, and predictive maintenance, which lowers operating costs and boosts dependability. IoT-based smart lighting applications include retail settings, office buildings, outdoor lighting, and home automation in addition to applications in the commercial, industrial, and residential domains. Smart lighting transforms how we illuminate and engage with our surroundings and helps to create smarter cities and sustainable environments through seamless connection with other IoT devices and systems.

Index Terms **-** Smart lighting; Internet of things; IoT-enabled lighting systems; Efficiency; Flexibility; Control;

I. INTRODUCTION

An important advancement in the creation of intelligent urban infrastructure is the integration of smart lighting with the Internet of Things (IoT). Smart lighting solutions are revolutionizing how we use and manage light by utilizing the Internet of Things. These systems adjust lighting based on real-time data by using energy-efficient LEDs and coming with sensors and connection. Adaptive lighting control is made possible by this clever strategy, which improves operational efficiency and energy savings. Beyond simple lights, IoT-enabled smart lighting can provide features like automated scheduling, daylight harvesting, and occupancy sensing. By incorporating these elements, surroundings can be made more responsive, increasing user comfort and lowering carbon emissions. Smart lighting systems are an essential part of smart cities and play a major role in the shift to more efficient and sustainable urban living. IoT has enormous promise for smart lighting, with uses spanning from public areas and streetlights to residential and commercial structures. These systems' scalability and agility make them a crucial component in the creation of intelligent infrastructure solutions. It is anticipated that as technology advances, smart lighting will be increasingly more linked with IoT ecosystems, creating settings that are more responsive, intelligent, and sustainable. .

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Blockchain Fortified: A Holistic Examination of Cybersecurity Strategies in Distributed Ledger Technology

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Abstract : Cybersecurity issues pose a significant challenge to the adoption and implementation of blockchain technology. This study investigates the various cybersecurity threats and vulnerabilities associated with blockchain technology and explores potential solutions to mitigate these risks. By conducting a thorough literature review and analysis, this research aims to provide insights into the contemporary cybersecurity landscape in blockchain technology and offer recommendations for enhancing security measures. The findings from this study contribute to a deeper understanding of cybersecurity in blockchain and provide valuable insights for researchers, practitioners, and policy makers**.**

IndexTerms **- Cybersecurity, Security Framework, Threat Intelligence, Monitoring tools.**

I. INTRODUCTION

Blockchain technology has gained significant attention in recent years due to its potential to revolutionize various industries by providing a secure and transparent platform for transactions and data storage. However, the implementation of blockchain technology also introduces unique cybersecurity challenges that need to be addressed to ensure the integrity and security of the system. Cybersecurity in blockchain focuses on protecting the decentralized network of nodes and the data stored on the blockchain from various security threats, such as hacking, fraud, and data breaches. One of the key features of blockchain technology is its immutability, meaning once data is recorded on the blockchain, it cannot be altered or deleted. While this feature enhances the security and integrity of the system, it also poses challenges in terms of managing vulnerabilities and ensuring data privacy. To address cybersecurity challenges in blockchain technology, various approaches and techniques have been developed, including encryption, digital signatures, consensus mechanisms, multi-factor authentication, and secure smart contract development. These cybersecurity measures aim to protect the confidentiality, integrity, and availability of data on the blockchain network. In this journal paper, we will explore the cybersecurity challenges associated with blockchain technology and discuss the current state-of-the-art cybersecurity practices and solutions. We will also consider the future directions of cybersecurity in blockchain, including emerging threats and innovative cybersecurity mechanisms to mitigate risks and enhance the security of blockchain networks. Through this paper aim to contribute to the growing body of knowledge on cybersecurity in blockchain and provide insights and recommendations for researchers, practitioners, and policymakers in the field of cybersecurity and blockchain technology

II. LITERATURE SURVEY

Aydin Sezgin and Gokhan Bal titled “A Survey of Blockchain Security Issues and Challenges" published in 2018, presents a comprehensive examination of the security concerns associated with blockchain technology. The paper delves into various areas of vulnerabilities within blockchain systems, including smart contracts, consensus algorithms, privacy issues, and the likelihood of attacks on blockchain networks. By addressing these critical points, the authors offer a valuable resource for understanding the complex landscape of blockchain security, shedding light on potential risks and paving the way for future advancements in securing blockchain technology

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FIDO2 Passkey: The Passwordless Future

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Abstract: ***FIDO2 passkeys represent a transformative step towards a passwordless future. This technology, developed by the FIDO Alliance, offers a user-friendly, secure, and privacy-preserving solution to the problem of password management. By leveraging public key cryptography and biometric or device-based authentication methods, FIDO2 passkeys eliminate the need for traditional, easy-to-forget, and often insecure passwords. The adoption of this technology could significantly enhance online security, reduce instances of identity theft, and streamline the user experience across various digital platforms***
Index Terms: Authentication ,Brute force attack, FIDO2 Passkey, Passwordless Authentication , Password , Phishing attack, Public key cryptography.

I. INTRODUCTION

Passwords continue to be the most used method of user authentication on the web. Regrettably, even with highly secured online services, phishing and credential stuffing assaults against passwords continue to do significant harm. The security issues with using passwords may only be partially resolved by encouraging the use of password managers and enforcing passwords through the use of risk-based authentication, two-factor authentication, and account security alerts [1]. According to a statistical report, 81% of hacking-related breaches are the result of weak or stolen passwords.

Malicious phishing emails have increased by 156% since Q4 2022, and 54% of consumers have noticed that phishing messages are getting more sophisticated [2].

Passwordless, single-factor authentication on the web is highlighted by the FIDO Alliance's FIDO2 suite of protocols, which builds on previous work to improve multi-factor authentication. a user's authenticator creates a distinct asymmetric cryptographic keypair linked to a certain website. This can be either software operating on an existing device or dedicated hardware, such a YubiKey. The website contains the public key, while the user's authenticator stores the private key. The user uses a biometric or PIN to authenticate locally to their authenticator, which utilizes the private key to authenticate to the remote website, in order to log in. Media attention concentrated on the idea that FIDO2 will "kill the password" at the moment the World Wide Web Consortium (W3C) approved FIDO2 as a web standard in 2019 [3].

Apple, Google, Microsoft, and other companies introduced passkeys, multi-device credentials that adhere to the FIDO2 standard, beginning in 2021. Though they include capabilities like syncing private keys across a user's devices (to prevent having to re-register on each device) or utilizing a single existing device (like a phone) as the authenticator across all devices, passkeys are really just a rebranding of the current FIDO2 technique. Passkeys were once again hailed by the mainstream media as the device that will "kill the password." FIDO2-based passwordless authentication is supported by the majority of popular operating systems and browsers today [3].

Scholars have examined the security and usability of FIDO2, concluding that it is both more secure and more user-friendly than passwords. Working groups led by the FIDO Alliance and W3C are tasked with encouraging the use of FIDO2. It is therefore unexpected that so few businesses have used passwordless authentication, either extensively or at all.

This article discusses the FIDO Alliance's open authentication protocol, which includes FIDO2 passkeys. These are cryptographic login credentials that are kept on the user's device and are intended to offer quick, safe, and password-free authentication. Since each passkey is exclusive to a particular service, security is improved because the compromising of one service does not impact others. Because FIDO2 passkeys employ public key cryptography and the user's device retains the private key at all times, they are immune to phishing attacks. This implies that an attacker cannot use login credentials to authenticate as a user, even if they are misled into entering them on a fraudulent website.

When it comes to usability, FIDO2 passkeys provide a practical way for users to log into websites and applications on many devices. Users can utilize their device's built-in security features, biometrics, or security keys to authenticate themselves instead of remembering and inputting passwords. Because they combine speed, convenience, and increased security, FIDO2 passkeys constitute a significant leap in online security.

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BLOCKCHAIN IN THE AGE OF AI: HARNESSING THE POWER OF TWO TRANSFORMATIVE TECHNOLOGIES

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Abstract : Blockchain and artificial intelligence (AI) technology integration offers both intriguing prospects and challenges in the AI era. In the framework of artificial intelligence, this abstract investigates the possible implications and uses of blockchain.AI can be improved in a number of ways by blockchain, a distributed ledger technology renowned for being transparent and safe. It gives AI systems more responsibility, privacy, and data integrity. Concerns about prejudice and discriminatory practices can be addressed by using blockchain to audit and approve AI models and algorithms. Additionally, blockchain makes it possible for trustworthy and decentralized data exchange, which promotes AI partnerships and data marketplaces. By giving people and organizations the ability to manage and profit from their data, this decentralized strategy promotes an AI ecosystem that is more equitable and inclusive. Blockchain and AI integration has a lot of potential, but in order to assure broad adoption, issues with scalability, interoperability, and regulatory frameworks must be resolved. Additionally, maintaining moral and responsible AI activities requires finding the ideal balance between privacy and transparency. As a result, in the era of AI, the way data is stored, exchanged, and monetized could completely change as a result of the convergence of blockchain and AI. Blockchain can promote a more open, responsible, and cooperative AI environment by addressing concerns about trust, privacy, and fairness.

IndexTerms **- Artificial intelligence, Blockchain technology, Decentralized AI .**

I.INTRODUCTION

In the era of technological convergence, the integration of Artificial Intelligence (AI) and Blockchain is ushering in a new wave of innovation and disruption across industries. AI's cognitive capabilities and Blockchain's decentralized ledger technology are fundamentally transforming how data is managed, processed, and utilized. AI enables computers to autonomously learn, think, and act, while Blockchain provides a transparent and secure platform for data storage and exchange among a network of users. Together, these technologies offer immense potential for addressing long-standing issues in supply chain management, healthcare, finance, and beyond. In the age of AI, Blockchain serves as the cornerstone for secure and decentralized data management, while AI enhances decision-making processes and unlocks insights from vast datasets. The synergies between Blockchain and AI enable automation, efficiency improvement, and innovation, driving transformative outcomes and unlocking new growth opportunities across diverse sectors. However, navigating this intersection requires careful consideration of ethical, technical, and regulatory challenges to ensure responsible deployment and maximize societal benefits. By exploring the potential synergies and implications of Blockchain in the age of AI, we can chart a course towards a more decentralized, inclusive, and equitable future driven by the power of emerging technologies [1]. Blockchain, a decentralized digital ledger system, is revolutionizing industries such as supply chain management, financial services, biological sciences, healthcare, and social network analysis. Through its distributed ledger architecture, Blockchain eliminates the need for central authorities, ensuring transparency and security in transactions. Paired with AI, Blockchain enables automation, enhances decision-making, and ensures data integrity, paving the way for unprecedented innovation and disruption [2].

II.LITERATURE SURVEY

The Alexis Collomb, David Menga, Emmanuel Fragnière [3]: They co-authored a paper titled "Artificial Intelligence and Blockchain: A Disruptive Integration." The paper explores the intersection of AI and blockchain, discussing the potential synergies and challenges of integrating these technologies.

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SUPPLY CHAIN COUNTERFEIT PRODUCT DETECTION SYSTEM USING BLOCKCHAIN TECHNOLOGY

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Abstract: Counterfeit goods have become increasingly important in the creation of products in recent years. The companies' sales and profit are impacted by this phenomenon. Product counterfeiting is prevented by using a functional block chain technology, which guarantees the identification of genuine products along the supply chain. By employing block chain technology, customers may reliably determine the product's origins without depending on reliable third parties. Any application that makes use of block chain technology as its foundational technology guarantees "tamper-resistant" data content. Considering that a block chain is a distributed, decentralized, digital ledger that keeps track of public transaction records called blocks across numerous databases and networks. The problem of product counterfeiting has been addressed in the past by the development of several techniques. The most popular methods include RFID tags, artificial intelligence, and systems based on QR codes. However, there were a few issues with each of them: artificial intelligence uses CNN and machine learning, which are computationally intensive; a QR code can be copied from a legitimate product and used on a phony one, and some other issues. By tracking the origins of the supply chain, this research aims to improve the detection of counterfeit items. This is made feasible by blockchain technology, which ensures the identification and tracking of authentic products across the supply chain. Everything in a blockchain-based system is decentralized and available to multiple parties at once.

Index Terms **– Blockchain, Counterfeit Products, Ethereum, QR Code, Supply chain.**

I. INTRODUCTION

For all supply chain participants, identifying counterfeit goods in the marketplace has proven to be difficult over time. The Organization for Economic Cooperation and Development (OECD) and the EU Intellectual Property Office (EUIPO) have released a report that shows the worrisome rise in sales of counterfeit and pirated goods to 460 billion euros worldwide, or around 3.3% of global trade .This phenomena has an impact on the sales and earnings of businesses worldwide. Sales losses in the apparel and pharmaceutical industries were around 26.3 billion euros and 10.2 billion euros, respectively [1]. Furthermore, the market for counterfeit goods has flourished on social media platforms due to the introduction of new technology and E-commerce. Counterfeiters now have an easier time operating because of the anonymity, reach, and segmentation capabilities offered by social media and e-commerce. Therefore, creating identical or near-identical replicas of genuine goods, or counterfeiting, is a serious danger to economic progress and innovation. Over the past ten years, blockchain technology has drawn a lot of attention, and several applications are currently being developed. Blockchain is a distributed, unchangeable ledger system that operates decentralized. It lowers risks and lowers expenses for all parties involved by making the process of tracking, exchanging, and registering assets over a corporate network easier. Therefore, any application that uses blockchain technology as its foundation guarantees that the data is secure against tampering. This article presents the architecture of a decentralized application system (DApp) built on the Ethereum network. The DApp makes sure that product

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A MOBILE BASED WOMEN SAFETY APPLICATION

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Abstract : In the last five years, the percentage of smart phones with GPS navigation units has risen sharply from 3% to over 20%. Thus, a smartphone can be effectively used for numerous forms of protection, includingpersonal safety in particular for women. When the user senses that she is in danger, she only needs to click once to activate this application. This program sends out messages to registered contacts every few seconds with the user's position. Consequently, it follows the user until she feels safe, much like a sentinel. This articleanalyzes an application's unique feature that allows messages to be sent to registered contacts continually until they touch the "HELP" button.Constant location monitoring data sent by SMS makes it easier to locate the victim and ensure their safe rescue. The purpose of this application is to protect ladies. This is accomplished by tackling the issues that put women's safety at jeopardy in the modern world. Through a variety of capabilities provided by our system, this software makes sure that ladies are never placed in such circumstances.

IndexTerms **- Android, App, GPS location, mobile, safety, URL, women.**

I. INTRODUCTION

Traveling alone at night is dangerous in today's environment, especially for women; it will take more time to trave alone because women are not very powerful as men to keep them at bay. One effective strategy to lessen the likelihood of falling victim to violent crimes such as rape, robbery, sexual assault, or domestic abuse is to recognize and utilize resources that can assist you in escaping dangerous circumstances.Whether you find yourself in an emergency situation or become separated from pals late at night and are unsure about how toget home, possessing these Apps on our phones can reduce risk and provide support when needed. In this article, we introduce Security Alert, an Android-based smartphone application. According to the National Crime Records Bureau of India, there was a 6.4% increase in crime against women in 2012; one crime against a woman is perpetrated every three minutes.In order to maintain the stability of the home, 65% of Indian males think that women should put up with violence and that there are instances when beatings are justified.The International Men and Gender Equality Survey (IMAGES) Questionnaire released its findings in January 2011. revealed 24 per cent of Indian males had abused their sexuality at some point in their lives. Our goal in creating this software was to give women access to a safe environment via their smartphones, as most people carry them around with them these days.Naturally, the Delhi Nirbhaya case compelled the government to pass more stringent laws, but even so, India's rate of sexual crime has not decreased. Consequently, it is better to take safety precautions for our own protection than to become victims of these kinds of crimes. This document is organized as follows.A literature review is presented in section 2 followed by some methods and materials in section 3. The results and discussions in section 4. Finally, the paper future scope section 5.The concludes in section 6 with future research direction in section 7.

II. LITERATURE SURVEY

1) A survey [1] claims that 35% of women worldwide have experienced non-partner sexual abuse or intimate relationship violence, whether it be physical or sexual. A major concern for worldwide public health is violence against women. The paper also explains the effects that violence has on women's reproductive and mental health
2) The authors of [2] aim to situate concerns about surveillance technologies within a theoretical framework that highlights the difficulties that antiviolence movements face as a result of emerging surveillance technology. They specifically discuss how surveillance technologies affect violent behavior, offer potential remedies, and take into account the various applications of these technologies. Disproportionately when it comes to criminalizing disadvantaged communities. The goal is to exacerbate worries about surveillance technologies by centering emphasis on violence against women.
3) The author of [3] talked about how technology is applied in situations involving interpersonal terrorism. It will look at how a batterer uses technology to exercise coercive control over their victim. It will also examine how regulations have changed in an effort to keep up with the quick development of technology. In We will specifically examine the current usage of GPS monitoring of terrorists who are close to us.
4) In the UK, 92% of adults individually own or use a mobile phone, however just 39% of people use their mobile device to access the internet[4].

Smart Firewatch: Integrating IOT and Machine Learning for Forest Fire Prediction

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Abstract -This paper presents a novel approach to forest fire prediction leveraging the integration of Internet of Things (IoT) devices and machine learning techniques. With the increasing frequency and severity of wildfires, early detection and prediction are paramount for effective mitigation efforts. Our proposed system employs a network of IoT sensors strategically deployed in forested areas to monitor environmental variables such as temperature, humidity, and wind speed. Data collected by these sensors are fed into machine learning algorithms, specifically designed to analyse historical patterns and real- time inputs to predict the likelihood and spread of forest fires. The integration of IoT and machine learning enables proactive measures, such as early warning alerts and resource allocation, to minimize the devastating impact of wildfires on ecosystems and communities. Through simulations and real- world deployments, our system demonstrates promising results in enhancing forest fire prediction accuracy and response efficiency.

Index Terms: Early Detection, Firewatch, Fire prevention IoT, Machine Llearning, Sensor, Networking.

I. INTRODUCTION

In recent years, the devastating impact of forest fires has become increasingly apparent, posing significant challenges to both human lives and the environment. Traditional methods of fire detection and prevention are often limited in scope and effectiveness, leading to a pressing need for innovative solutions. In response to this urgency, the integration of Internet of Things (IoT) technology and Machine Learning (ML) algorithms has emerged as a promising approach to enhance forest fire prediction and management. The convergence of IoT and ML offers unprecedented opportunities to revolutionize the way we detect, monitor, and respond to forest fires. By leveraging a network and vegetation moisture content. These data streams serve as the foundation for ML algorithms to analyse and identify patterns indicative of fire risk. The concept of "Smart Firewatch," a novel of interconnected sensors deployed across vulnerable regions, IoT systems can collect real-time data on various environmental parameters such as temperature, humidity, wind speed, framework that combines IoT sensor networks with advanced ML models to enable proactive forest fire prediction and early warning systems. Through the seamless integration of hardware, software, and data analytics, Smart Firewatch aims to mitigate the impact of forest fires by providing timely and accurate insights to stakeholders, including firefighters, land managers, and policy makers. We delve into the technical components of Smart Firewatch, including the design and deployment of IoT sensor nodes, the development of ML algorithms for fire risk assessment, and the implementation of a robust communication infrastructure for data transmission and visualization.

II. LITERATURE SURVEY

John Smith et al provide an overview of IoT-based fire detection systems, including sensor technologies, communication protocols, and integration with ML algorithms for improved fire detection accuracy.

Johnson et al. review various ML techniques, such as neural networks, decision trees, and support vector machines, applied to fire detection in IoT environments, highlighting their strengths and limitations.

Garcia et al. offer a comprehensive review of the integration of IoT and ML technologies for early fire

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Wildlife Detection System Using Deep Neural Networks

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ABSTRACT

The increasing movement of animals from forested areas into human habitats poses a growing concern. Their intrusion into agricultural lands near forests leads to crop damage and poses potential threats to human safety. Hence, there is a pressing need for a system capable of detecting animal presence and issuing warnings for security purposes.The project "Wildlife Detection using Deep Neural Networks" aims to address this need by utilizing Convolutional Neural Networks (CNNs) to identify the type and count of animals, thereby facilitating the mitigation of animal-vehicle collisions. In the preprocessing stage, images are converted to grayscale, segmented, and masked to enhance detection accuracy. Subsequently, Computer Vision techniques are employed to generate bounding boxes around detected animals, along with providing the count, utilizing relevant libraries. Through this comprehensive approach, the system can accurately identify the species and quantity of animals present.

Keywords: computer vision, CNN, tensor flow,

INTRODUCTION

Studying wildlife in their natural habitats is a critical aspect of ecological research. However, human-induced changes to the landscape have significantly impacted wildlife populations, habitats, and behaviors. With the vast diversity of animal species, manual identification becomes increasingly challenging. Therefore, an algorithm capable of classifying animals based on their images can greatly aid researchers in monitoring wildlife more efficiently.

The implementation of a Wildlife Detection and Classification System holds immense potential in various applications such as preventing animal-vehicle collisions, tracking animal movement, deterring theft, and ensuring the security of animals in captivity. Deep learning techniques, particularly in the realm of computer vision, have emerged as powerful tools for building robust classification and identification models.

By leveraging such technology, the Wildlife Detection System can significantly reduce the occurrence of animal-vehicle accidents. Moreover, it enables individuals to gain comprehensive insights into the behaviors of various animal species within their ecosystems. Animal identification within this system serves as a means to classify and track identified animals, aiding in the administration of necessary treatments and ultimately contributing to the overall well-being of both wildlife and humans.

LITERATURE SURVEY

Yu, X., Wang, J., Kays, R. et.al [1] introduced a system employing the ScSPM algorithm, which achieved notable results. The dataset comprised 7196 images encompassing 18 distinct vertebrate species. These images were captured by motion-sensitive camera traps, generating sequences of 3.1 Megapixel JPEG images at approximately 1 frame per second upon activation by an infrared motion sensor. All images were converted to grayscale, and SIFT descriptors were extracted from 16x16 pixel patches. The system deeply sampled all patches of each image on a grid with a step size of 4 pixels. Within the proposed model, both SIFT and cLBP were normalized to a unit norm with dimensions 128 and 59, respectively. For the dictionary learning phase, SIFT and cLBP were extracted from 20,000 patches randomly sampled from the training set. Separate dictionaries were trained for SIFT and cLBP, each with a dictionary size of K = 1024. The system demonstrated an overall performance of approximately 82%, with classification accuracy exceeding 90% for one-third of the 18 species.

Willi, M., Pitman, R. T., Cardoso, A. W., Locke, C., Swanson. et.al [2] outlined a systematic approach for recognizing camera trap datasets accumulated by multiple research teams. Each dataset consisted of camera-trap images accompanied by observations provided by citizen scientists on Zooniverse. The proposed method utilized capture events interpreted by

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REMOTELY OPERATED VIDEO ENHANCED RECEIVER

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Abstract: **Area mindful figuring involves the programmed fitting of data and administrations in view of the current area of the client. We have planned and carried out Meanderer, a framework that empowers area based administrations, as well as the customary time-mindful, client mindful and gadget mindful administrations. To accomplish framework versatility to extremely enormous client sets, Wanderer servers are carried out in an "activity based" simultaneous software design that empowers fine-grained application-explicit booking of undertakings. We have illustrated feasibility through executions for both open air and indoor conditions on different stages.**

Index Terms **- Activity model, Meanderer engineering, Meanderer dataset, Multi-wanderer framework, Wanderer administration, Wanderer clients, Wanderer regulator.**

I. INTRODUCTION

The robot utilizes three IR sensors to detect any deterrent in its way. The information coming from those sensors are taken care of into voltage comparators where the sensor information is contrasted and a fixed reference voltage. After the examination of sensor information and the V ref, the voltage comparator gives yield as OV for presence of any snag and 5 V for nonappearance of impediment. This result of comparator circuit is taken care of into the microcontroller in which choice it is put away .The microcontroller interaction utilizes the to make program result of comparator circuit as per the program put away in it what's more, gives yield at another port. The result of microcontroller is taken care of into the engine driver circuit which intensifies the low result current coming from microcontroller so that its result becomes fit to drive the DC engines fitted in the mechanical vehicle base.

Following are the significance of rover services:

- Area mindful, notwithstanding the more customary thoughts of time-mindful, client mindful, and gadget mindful. Meanderer has an area administration that can follow the area of each and every client, either via robotized area determination innovation (for instance, utilizing signal strength or time distinction) or by the client physically entering current area (for instance, by tapping on a guide).
- Accessible through an assortment of remote access innovations (IEEE 802.11 remote LANs, Bluetooth, Infrared, cell administrations, and so on) and gadgets (PC, PDA, phone, and so on), and permits wandering between the different remote and gadget types. Meanderer progressively picks either unique remote connections and tailors application-level data in light of the gadget and connection layer innovation.
- Scales to an exceptionally enormous client populace, for instance, a large number of clients. Meanderer accomplishes this through fine-goal application-explicit planning of assets at the servers and the organization.

II. LITERATURE SURVEY

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Ambient Intelligence with Humanized Computing and Smart Environment

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ABSTRACT

The configuration of the communications and computer systems present in offices and homes is a complicated system design that currently needs the user's attention. Lately, scientists have started investigating computers that may configure themselves on their own by seeing what or who is around them. Computing devices could identify their context and use information from dispersed sensor systems to tailor themselves to the user they are now interacting with, adjust their behavior based on where they are, or interact with their environment. Ambient Intelligence (AmI) is the name given to this branch of intelligence. Building networks with artificial intelligence (AmI), which combines context awareness and user centricity, has gained popularity. To put it briefly, AmI is a new information paradigm that empowers people by creating a digital environment that is "aware" of their presence and context and is sensitive, adaptable, and responsive to their needs and requests. With the aid of AmI concepts and designs, intelligent adaptive devices and sensors will be widely distributed across users' settings, coordinating with one another to assist users in their activities. In addition to introducing the idea of artificial machine intelligence (AMI) and outlining its necessity, this paper also discusses the various advancements made in this exciting area of science and technology. This paper also addresses the topic of providing context aware services in smart environments. We review recent works in smart environments, and further defines and debates essential aspects concerning context-aware service supply. Future challenges for the research in context-aware smart environments are also discussed.

Keywords: Ambient Intelligence, Context- awareness, Embedded Systems, Intelligent Class rooms, Smart rooms, Ubiquitous computing.

INTRODUCTION

AmI presents a vision of the future that is replete with intelligent and interactive everyday objects, offering a wide range of captivating possibilities, advancements, and upgrades. This transformative concept introduces a fresh perspective on life, characterized by interconnected devices and sensors that collectively foster an ambient intelligence within the surrounding environment. This ambient intelligence serves as a catalyst for facilitating and enhancing user activities and interactions. The core objective of Ambient Intelligence is to bring about a significant paradigm shift in the way individuals lead their lives. This shift is made possible by the rapid advancements in digital technology and the widespread availability of diverse devices. However, it is important to emphasize that the mere presence of electronic devices does not constitute true AmI. True Ambient Intelligence is realized when these devices effectively coordinate and collaborate with one another, harmoniously supporting human activities and intelligently responding to enrich the living space. Ambient intelligence is poised to bring about remarkable transformations in the way people live. By utilizing digital information, the ease of interaction between humans and computers can be greatly enhanced by expanding the available interface media and enabling wireless and portable communication, eliminating the limitations imposed by wires and stationary units . Additionally, certain forms of ambient intelligence enable computers to adapt to the preferences of their users. The ultimate result of ambient intelligence is a more empowered computer that offers the advantages of added convenience, time and cost savings, and opportunities for increased safety, security, and entertainment. This technology has the potential to significantly impact business and government processes, as well as personal life[1].

KEY TECHNOLOGIES

Ubiquitous Computing: Ubiquitous computing, known as pervasive computing as well, is a computing paradigm that envisions a future in which computing technology is seamlessly integrated into the environment, making it omnipresent and transparent to users. Coined by Mark Weiser in the late 1980s, ubiquitous computing represents a departure from the traditional model of interacting with discrete computing devices like desktop computers or smartphones. Instead, it imagines a world where computing is embedded in everyday objects and surroundings, creating an invisible computing infrastructure that supports and enhances human activities. Pervasive computing systems exhibit the capability to

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ARTIFICIAL INTELLIGENCE IN MEDICAL DIAGNOSTICS AND IMAGING

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Abstract: In recent years, Artificial Intelligence (AI) has emerged as a transformative force in the field of medical diagnosis and imaging. Leveraging advanced machine learning algorithms and deep neural networks, AI systems have demonstrated remarkable capabilities in interpreting medical images, detecting abnormalities, and assisting healthcare professionals in making accurate diagnoses. However, the widespread adoption of AI in medicine also raises ethical and regulatory challenges, necessitating careful consideration of issues such as data privacy, algorithm bias, and accountability. As AI continues to evolve and integrate into clinical practice, collaborative efforts between AI developers, healthcare providers, regulators, and ethicists are essential to realize its full potential while ensuring patient safety and ethical integrity. With the offer assistance of Profound Learning (DL) algorithms, medical imaging innovation presently empowers restorative professionals to identify abnormalities and identify maladies with a higher level of exactness and speed than ever some time recently. This has contributed to critical changes in the exactness of diagnosis, the proficiency of treatment, and the in general quality of understanding care. AI- powered therapeutic imaging is trusted to be in the close future a significant improvement in symptomatic changes and applications that will bring considerable benefits for the medical specialists. Counterfeit insights (AI) procedures in later developments have appeared the potential to quicken the movement of conclusion and treatment of cardiovascular infections (CVDs), counting heart disappointment, hypertrophic cardiomyopathy, intrinsic heart illness and so on. AI has been demonstrated to apply well in CVD conclusion, upgrade adequacy of assistant apparatuses, malady stratification and writing, and result Breast mammograms for cancer location, Pap tests, colon cancer imaging, brain tumor imaging are utilized routinely to check individuals for signs of cancer or precancerous cells that can turn into dangerous tumors. In the last decade restorative professionals have created AI instruments to help screening tests for several sorts of cancer. Without question, fake insights (AI) is the most examined point nowadays in therapeutic imaging inquire about, both in demonstrative and restorative. For demonstrative imaging alone, the number of distributions on AI has expanded from almost 100–150 per year in 2007–2008 to 1000–1100 per year in 2017–2018. Analysts have connected AI to naturally recognizing complex designs in imaging information and giving quantitative appraisals of radiographic characteristics. In radiation oncology, AI has been connected on distinctive picture modalities that are utilized at diverse stages of the treatment. i.e. tumor depiction and treatment evaluation. Radiomics, the extraction of a expansive number of picture highlights from radiation pictures with a high-throughput approach, is one of the most prevalent inquire about subjects nowadays in restorative imaging inquire about. AI is the basic boosting control of handling gigantic number of therapeutic pictures and in this manner reveals illness characteristics that fall flat to be

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CARBON ROBOTICS LASER WEEDER: AI BASED SOLUTION FOR AGRICULTURE

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Abstract: The Carbon Robotics LaserWeeder represents a significant improvement in precise weed management for specialty crops at a large scale. This advanced tool uses modern cameras and technology to rapidly differentiate weeds from crops. No matter the weather or time of day, it uses a variety of strong lasers to specifically aim and remove weeds. The LaserWeeder provides a sustainable solution for modern farming by increasing crop yield and reducing farming costs, addressing the long-standing issue of weed management that has troubled farmers for centuries. Manual weeding, machines, and herbicides have influenced the techniques used for weed management. Nevertheless, every method has its own drawbacks. Despite their effectiveness, herbicides can have negative effects on crop health and lead to environmental concerns. There is a danger of damaging plants while using mechanical weeding, and it is still difficult and costly to hire manual workers. With the progress of agriculture, there is a growing urgency for creative solutions. Farmers around the globe encounter a complicated network of difficulties in terms of controlling weeds. As weeds compete with crops for resources, they can significantly reduce the overall productivity of agricultural systems. Additionally, the increase in herbicide-resistant weeds has led to a decrease in the efficiency of conventional chemical treatments. The issue is worsening due to a lack of skilled workers willing to engage in manual weeding. It is still a challenging task for farmers to balance productivity, cost-effectiveness, and environmental impacts.By introducing the Carbon Robotics LaserWeeder, a cutting-edge device designed to fight against weeds. This autonomous robot operates 24/7 with great accuracy, utilizing artificial intelligence, sophisticated cameras, and 30 powerful lasers. It is effective on over 100 different types of crops and can be used on all soil types, including certified organic fields. offers a more environment-friendly alternative.

Index Terms **- Herbicide Resistant, Precision Weed Management,Sustainability, Weed Control Technology**

I. INTRODUCTION

The Carbon Robotics Laser Weeder is a significant breakthrough in the field of precise weed control, providing a sustainable answer to the traditional issue of managing weeds in farming. Originally created as a self-operating laser weeding device in 2021, this groundbreaking technology has since been upgraded and improved, leading to its widespread recognition and praise among farmers. In 2022, the system was upgraded significantly, utilizing state-of-the-art autonomous features and advanced laser technology for highly precise weed removal. The Carbon Robotics Laser Weeder has received prestigious awards for its role in promoting agricultural sustainability, leading to widespread recognition of these technological advancements. By skipping ahead to 2024, we find the track laser weeder standing out as the top choice for precise weed control technology. With cutting-edge sensors and advanced algorithms, this state-of-the-art device functions independently to detect and eradicate weeds with unmatched precision. By utilizing lasers, it accurately focuses on unwanted plants with minimal harm to crops, soil, and nearby ecosystems. The Carbon Robotics Laser Weeder is highly valuable for farmers looking to increase crop yields and reduce environmental impact, thanks to its precise field navigation and targeted weed control capabilities. This paper explores the development of the Carbon Robotics Laser Weeder from its beginning to its present state in 2024. We investigate the functioning of this

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RECENT ADVANCEMENT IN SMART GRID TECHNOLOGY: FUTURE PROSPECTS IN THE ELECTRICAL POWER NETWORK

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Abstract : The smart electrical grid (SEG) is regarded as an advanced digital two-way power in flow power system since it uses information to create a widely dispersed automated energy delivery network. SEG is capable of repairing, adapting, flexible, and sustainable under many circumstances, with the foresight to prevent ratiocination. SEG is therefore regarded as the next generation power grid. This study provides a thorough analysis of SEG as a novel technology and operational models that may impact distribution network performance in the future. The majority of the introductory generalizations are applied to comparable emerging technologies, such as fog, cloud computing, big data analysis, and the Internet of Things (IoT). An introduction to IoT technology is given. It will examine the architectural layout of a typical Internet of Things (IoT) palm computing system as well as various system scenarios. Similar to this, a variety of bracket designs and the electrical cargo soothsaying (ELF) technique, which combines the pre-processing and vaticinator phases, have been used. Additionally, several approaches to managing large amounts of data produced by operation processing measures and detectors are examined. In order to slant the data, pre-processing techniques like point selection and outlier rejection are used. The cargo vaticinator procedure is also described. In the end, this research analyses the cargo vaticinator phase of the ELF strategy, reviewing the various vaticinator methods.

Keywords : Big data, Cloud computing, Data mining, Fog, Load forecasting, IoT, Smart grids

I.INTRODUCTION

The concept of smart grids did not just appear. They were created in response to the need to upgrade, modernize, and enhance the delivery of power in the electrical grid. With the increased autonomy and improved efficacy and efficiency of Smart Grids, utilities may leverage the current infrastructure, reducing the need to construct more power plants and substations. With the help of smart grids, users can safely connect renewable energy resources to the grid to augment the power supply with power from their distributed generation and storage. The purpose of this article is to provide an overview of the features, functions, and characteristics of the smart grid. It seeks to illustrate how the present electrical grid has been influenced by Smart Grid technologies. It goes over laws, trials, and initiatives from several nations to show how far smart grid technology have advanced. It also aims to identify concerns, difficulties, trends, and research efforts. People will be less reluctant to make potentially necessary compromises and more likely to recognize the benefits of the smart grid as more information about it becomes available. Gaining more understanding of the problems and achievements related to smart grids promotes active engagement to enhance their potential and minimize their drawbacks. Electricity flows from power producing facilities to end consumers in the traditional electrical power system, which is unidirectional in nature. Over the past 100 years, this system has performed admirably. But recently, it has had a number of technological, financial, and environmental problems in addition to government deregulation. In addition to being cost-effective, secure, and interoperable, modern society expects this system to be more scalable, manageable, and reliable [1]. The "smart grid," a next-generation electric power system [2], is a viable answer to the long-term evolution of the business. By permitting two-way flows for both electrical power and information, the smart grid is anticipated to completely transform the production, transmission, and distribution of electricity [3]. Furthermore, by incorporating renewable energy sources like biomass, solar, and wind—which are cleaner for the environment than the fossil fuels utilized in many bulk electric power producing facilities—it can supplement the current electric grid system. Additionally, in order to improve reliability and lower gearbox loss, each of these new power generating units can be dispersed across the load centers and kept relatively small. This gives the current power system more complexity while simultaneously adding another level of flexibility.

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CRYPTOGRAPHY FOR EXPLAINABLE AI: BRIDGING THE GAP BETWEEN SECURITY AND INTERPRETABILITY

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Abstract: In the field of artificial intelligence (AI), explainability has become a major concern, especially in application were decisions impact individuals or society. Cryptography, with its ability to secure and protect information, offers promising avenues for improving the explainability of AI systems. This article explores the intersection of cryptography and explainable AI, providing an overview of cryptographic techniques and their applications to improve interpretability, transparency, and reliability of AI models. We discuss how cryptographic principles such as homomorphic encryption, secure multi-party computation, and zero-knowledge proofs can be leveraged to enable transparent and transparent AI decision-making processes verifiable while ensuring data privacy. Additionally, we consider the challenges, opportunities, and future directions for integrating cryptocurrency into explainable AI frameworks, highlighting the potential to advance both fields in a coordinated manner to promote greater trust and understanding of AI systems.

***IndexTerms*-Differential Privacy,Explainable AI,Homomorphic Encryption,Secure Multi-Party Computation, Zero-Knowledge Proofs**

I.INTRODUCTION

In our rapidly evolving digital landscape, the intersection of cryptography and artificial intelligence is becoming increasingly important. Today we'll explore how cryptographic techniques can improve the explainability of AI systems, ensuring transparency, accountability, and reliability. Cryptography and Explainable AI (XAI) are two separate fields, but they can be linked together to tackle the challenge of making AI models more transparent and understandable. Explainable AI (XAI) is at the forefront of the artificial intelligence (AI) revolution, addressing the critical need for transparency and explainability in AI systems. As AI algorithms increasingly penetrate various aspects of society, from healthcare to finance and beyond, understanding how these systems make decisions becomes paramount. XAI strives to demystify the inner workings of AI models, demystifying their decision-making processes in a way that people can understand. By providing insights into the factors that influence outcomes, identifying biases, and shedding light on the reasoning behind predictions, XAI not only builds trust in AI technology but also empowers stakeholders to make informed decisions and take appropriate action. Through a multidisciplinary approach drawing on fields such as machine learning, psychology and human-computer interaction, XAI aims to bridge the gap between complex AI algorithms and human understanding. humans, paving the way for responsible, accountable and ethical deployment of AI. Explainable AI focuses on developing techniques and methods to improve the transparency of AI models, making their decision-making processes comprehensible to humans.

Cryptography forms a fundamental pillar in the field of explainable artificial intelligence (XAI), providing essential tools to ensure transparency, accountability and integrity of AI systems. In the evolving AI landscape, where algorithms increasingly influence decision-making in key sectors such as healthcare, finance and law, the need to understand and explain AI models becomes increasingly important. necessary. Cryptography provides mechanisms to protect sensitive data, support secure communications, and enable verifiable computation, all of which are essential for promoting trust and interpretability in systems. AI system. Using techniques such as homomorphic encryption, secure multi-party computation, and zero-knowledge proofs, cryptography enables stakeholders to learn from AI models without compromising privacy personal privacy or disclosure of proprietary information. Additionally, cryptographic protocols enable authentication of AI output, allowing for rigorous inspection and testing of the Model 's behaviour. By integrating cryptographic principles into the XAI framework, we can bridge the gap between complex AI algorithms and human understanding, thereby enhancing trust, accountability, and transparency in deploying AI technology.

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ADVANCING ROAD SAFETY: HARNESSING AI FOR TRAFFIC MANAGEMENT AND VIOLATION DETECTION

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Abstract: In the realm of urban infrastructure, the efficient flow of traffic stands as a pivotal challenge for municipalities worldwide. As cities grow in size and population, traditional traffic management approaches struggle to keep pace with the increasing demands placed upon transportation networks. However, the integration of artificial intelligence (AI) into traffic management systems offers a promising avenue for addressing these complexities. This seminar delves into the transformative potential of artificial intelligence (AI) in revolutionizing traffic management practices. Beginning with an exploration of AI applications in traffic management, the seminar elucidates how AI algorithms, including machine learning and deep learning models, are reshaping traffic flow optimization and safety enhancement strategies. A focal point of the seminar is the discussion on AI-powered traffic violation detection app, where an in-depth analysis of their introduction, functionalities, and benefits is provided. Furthermore, a case study on a traffic patrol app demonstrates how AI insights are leveraged for efficient traffic violation detection, illustrating real-world implementations of AI in traffic management. Through illustrative examples, the seminar showcases diverse applications of AI in traffic management, shedding light on its potential to address various challenges and considerations. Emphasizing future directions, the seminar concludes by highlighting emerging trends and opportunities for further innovation in AI-enabled traffic management systems. Leveraging advanced algorithms and real-time data analytics, AI-powered traffic management holds the potential to optimize traffic flow, enhance safety, and reduce congestion in urban environments.

Index Terms **-** Artificial Intelligence (AI), Traffic Management, Traffic Violation Detection, AI Applications in Traffic Management

I. INTRODUCTION

Traffic violations pose significant challenges to society, primarily revolving around congestion, safety risks, and frustration. When drivers break traffic laws, such as speeding, running red lights, or illegal parking, they disrupt the flow of traffic, leading to bottlenecks and delays. Violations of traffic laws significantly increase the risk of accidents and injuries on the roads. Speeding, reckless driving, and disregarding traffic signals heighten the likelihood of collisions, putting both drivers and pedestrians in danger. Moreover, failure to use seat belts or helmets increases the severity of injuries in the event of a crash. The consequences of traffic accidents can be devastating, resulting in loss of life, long-term disabilities, and emotional trauma for victims and their families. Persistent traffic violations can lead to frustration among law-abiding citizens. When drivers witness others flouting traffic laws without consequences, it undermines their confidence in the fairness and effectiveness of traffic enforcement. Moreover, dealing with the repercussions of traffic violations, such as delays caused by accidents or gridlock, can lead to stress and frustration for all road users. This frustration can further escalate into road rage incidents, exacerbating safety risks and eroding the overall quality of the driving experience. Traditional enforcement methods like patrols and speed traps have limitations. They are reactive, addressing violations after they occur, and are resource-intensive, leading to inconsistent coverage and potential biases. Additionally, they lack scalability and adaptability, struggling to address evolving challenges like distracted driving.

Artificial Intelligence (AI) stands poised as a transformative force in the realm of traffic management, offering innovative solutions to reduce violations and enhance road safety. By harnessing the power of advanced algorithms and data analytics, AI technologies bring a new dimension to traditional enforcement methods, complementing them with proactive and adaptive approaches. One key aspect of AI in traffic management is its ability to analyse vast amounts of data in real-time. Through the integration of sensors, cameras, and other IoT devices, AI systems can monitor traffic patterns, identify potential violations, and predict areas prone to infractions. This predictive capability enables law enforcement agencies to deploy resources strategically, pre-empting violations before they occur and optimizing the allocation of personnel and equipment. Moreover, AI-powered systems excel in pattern recognition and anomaly detection, allowing them to identify and flag suspicious behaviour with high accuracy. For example, AI

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PLASMA ANTENNA: HARNESSING IONISED GAS FOR NEXT-GENERATION WIRELESS COMMUNICATION

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Abstract: We have shown that a single or dual plasma tubes can be utilized for concentration. Disperse and direct antenna beams. We have also proven our ability to mimic convex. Cylindrical plasma tubes are employed to create concave plasma lenses. Concentrating through the use of plasma. It is beneficial as it helps enhance the antenna's amplification and speeds up the process. Adjust the width of the beam without having to move the antenna physically. Having With this technology, phased arrays are unnecessary for adjusting and concentrating an antenna. ray. Plasma beam steering enables adjustment to various frequencies, facilitating... challenging job for regular antennas. Our findings from the experiment conducted at 44 GHz indicated a significant enhancement in the features of beam steering and focusing in comparison to Focusing and directing beams at 24 GHz. The wavelength is shorter in comparison. the plasma tube's radius influences the spatial variation in plasma density, making it easier to direct and concentrate antenna rays. This new information has been included in a fresh study. intelligent design of plasma antennas.

Index Terms **- Antenna Beam steering, Density, Hollow cathode, plasma antenna, plasma source.**

I.INTRODUCTION

Partially or fully ionized gas is utilized as the conducting medium in plasma antennas. Using something other than metal for constructing an antenna. Plasma antennas have benefits such as they are very adaptable and can be switched on and off easily. Therefore, investigation into It is crucial to decrease the amount of power needed to ionize the gas at different plasma densities. This has been accomplished through different methods, such as using pulsing techniques. The text should be rephrased using the same language and word count. Power needed for plasma antenna functioning is still decreasing. Plasma antennas and metal antennas exhibit similar geometric resonances. Plasma antennas with identical shape, length, and frequency as their metal counterparts The antennas will exhibit identical radiation patterns. Plasma antennas offer a benefit. in terms of being able to be reconfigured. High frequency antennas are able to send and receive signals at lower frequencies. Plasma antennas help get rid of or lessen co-site interference. Due to this principle, it is possible to place higher frequency plasma antennas within lower frequency ones. plasma antennas can transmit at higher frequencies. obtain via the plasma antennas with lower frequencies. Plasma with a higher frequency Antenna arrays have the capability to send and receive signals using plasma antennas operating at lower frequencies. collections of elements. Co-site interference happens when bigger antennas of lower frequency obstruct or partly obstruct the radiation patterns of smaller antennas of higher frequency. The article discusses the benefits of using renewable energy sources for electricity production. With plasma antennas, the presence of co-site interference can be minimized or eradicated.

II. LITERATURE REVIEW

J. John ,V. Swarup, published in Progress in Electromagnetics Research, 2005, "Plasma antennas: An overview". This paper provides a comprehensive overview of the concept of plasma antennas, including their operating principles, advantages, and applications in wireless communications.

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GI-FI Technology using UWB Modulation

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Abstract: ***Gi-Fi or Gigabit Wireless refers to wireless with data transfer rates in excess of a billion bits (Gigabit) per second. Ten times faster than other technologies. Its chip offers multi-gigabit transfer rates in a local environment up to 5 Gbit/s at a distance of 10 meters. It is the world's first transmitter integrated on a single CMOS chip and operates in the currently largely unused 60 GHz frequency band. It uses a 5mm square chip with a 1mm antenna that uses less than times to transmit data at high speed over short distances, just like Bluetooth. The exciting features and\advantages of this new technology can influence the most anticipated technologies in the huge global market\to transform large file transfers\in seconds. It should be the key wireless technology enabling the digital economy of the future. Gi-Fi speeds up wireless communication.***
Keywords: Bluetooth, Gi-Fi, Wi-Fi, Wireless, ZigBee

I. INTRODUCTION

Gi-Fi is a technology that uses a very high 60 GHz frequency for data transmission. Signal mixing and filtering increase signal strength with minimal carrier loss. Similar to Bluetooth, this technology uses short-range wireless communication. Wi-Fi (IEee-802.11b) and Wi-Max (IEee-802.16e) caught our attention.

Since faster data transmission has not been developed recently, it takes time to send video data. This\leads to the introduction of Gi-Fi technology. It has several advantages over a similar wireless technology, Wi-Fi. As a result, it offers faster transfer rates in Gbit/s, lower energy consumption and lower costs for short-distance transmission. Gi-Fi is developed for an integrated radio transceiver circuit. Which uses a small antenna and transmitters are integrated on a single chip, manufactured with CMOS (Complementary Metal Oxide Semiconductor).

Thanks to Gi-Fi transmission of large videos, files are available in seconds. In theory, this technology would stream our favorite high-definition movies in gigabytes of seconds. Gi-Fi, for example, can be considered\as a rival to Bluetooth rather than Wi-Fi, and can find\applications in everything from new cell phones to consumer electronics.

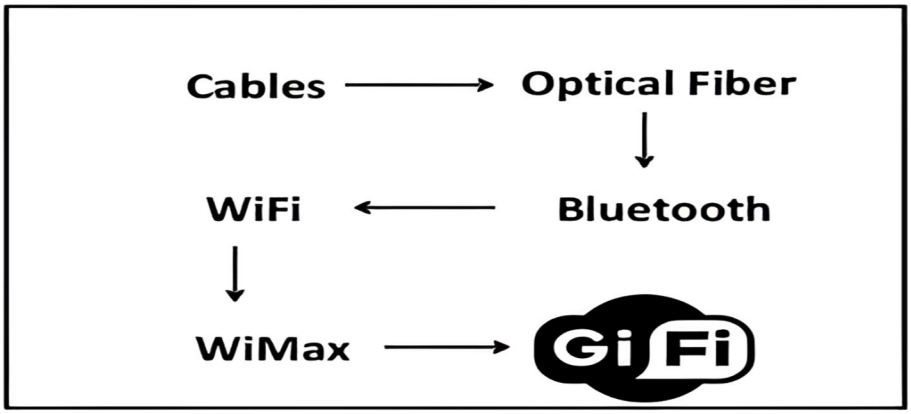

Figure 1: Network Evolution

II. LITERATURE SURVEY

1) S. Dheeraj and S. Gopichand et.al, 2002 [1] proposed a model in which they implement a technology which gain flexibility of infrastructure, reduce capital expenditure, gain advantages over competitors and to solve business problems.
2) Gowtham S Shetty et.al, 2006 [2] proposed that wireless dual band router and wireless dual band USB adapter are based on the next generation Wi-Fi technology, which is a new wireless computer networking standard in the 802.11 ac family.
3) Ross and John et.al, 2007 [3] proposed a model that MIMO (Multiple input Multiple output) increase the capacity 10 times or more and simultaneously improve the radiated energy efficiency of the order of 100 times and the system enables significant reduction of latency on the radio interface using the low numbers and be forming in order to avoid feeding pipes

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