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RFID BASED SMART CAR PARKING SYSTEM

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Abstract:

Parking management in high-security areas presents unique challenges due to the need for security measures and restricted access control. In such environments, traditional parking systems often struggle to efficiently manage vehicle movements while maintaining security protocols. This paper proposes an RFID-based smart car parking system specifically designed for deployment in security-sensitive areas.The system addresses the problem of parking and security by monitoring the availability of parking spaces and guiding vehicles to vacant slots in real-time. Additionally, it incorporates features for pre-reservation of parking slots and optimizing parking operations. its utilization of RFID technology for user identification and access control. Each user undergoes a one-time registration process where an RFID tag, containing unique identification information, is attached to their vehicle. This eliminates the need for repetitivetoken generation and ensures seamless access for authorized users.

Key Words: RFID Module, IR Sensor, Arduino uno,Lcd display, Servomotor

1. INTRODUCTION:

The "RFID based Car Parking System" offers a tailored solution for parking management in private places, addressing the specific needs and challenges associated with such environments. In private areas, such as residential complexes, office buildings, and gated communities, efficient parking management is essential to ensure optimal space utilization, convenience for residents or employees, and enhanced security measures. This system introduces an automated approach to parking management, leveraging RFID (Radio Frequency Identification) technology to streamline vehicle entry and exit processes. By deploying RFID tags on vehicles, the system enables seamless identification and authentication, allowing for swift check-ins and check-outs without

BLIND STICK USING ULTRA SONIC SENSOR WITH VOICE ANNOUNCEMENT

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ABSTRACT

This project present to design and implementation of Blind Stick using ultrasonic sensor with voice announcement. In this world visually challenged people are facing so many problems in their everyday life. Often, have a difficult time to navigate outside environment.
The main aim of this project is to assist the blind persons without the need of another person. It is well known that the blind people carry a hand stick with them whenever they need a support. Sometimes even when they use this stick, there is no guarantee that the blind persons are safe and secured in reaching their destinations. There may be an obstacle in their path but is not encountered by the person with the help of the stick. Thus, the people may be injured if the obstacle is big enough or dangerous. Thus, a design has been developed to assist the blind and provide them a clear path.
Now a day's so many useful technologies are coming out to make our lifestyle more comfort, luxurious and secure. In this project we use

ACCIDENT IDENTIFICATION WITH AUTOMATIC AMBULANCE RESCUE SYSTEM

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ABSTRACT

Nowadays, road accidents are very high. On time medical aid can help in saving lives. Integrated engineering is a latest trend to solve problems. To be able to design a product using an integrated technology will be beneficial to any engineering problems and a huge contribution to the community. An important indicator of survival rates after an accident is the time between the accident and when emergency

Cailiao Kexue yu Gongyi/Material Science and Technology

INTELLIGENT SYSTEM FOR TRAIN ENGINES TO AVOID ACCIDENTS AND TO CONTROL THE RAILWAY GATE

Abstract

In the current railway systems, it is becoming more necessary to have safety elements in order to avoid accidents. One of the causes that can provoke serious accidents is fire accidents. The other application of this project is to automize the unmanned railway gate i.e. the gate is closed automatically whenever the train comes and is opened after the train leaves the railway-road crossing. Using this project, the arrival of the train can be identified in either directions. For this purpose, two IR transmitter and receiver pairs are used in this project. And the last one is obstacle detection, in this we use a ultrasonic sensor which is placed in the bottom of the train.

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CYBER THREAT DETECTION BASED ON ARTIFICIAL NEURAL NETWORK USING EVENT PROFILES

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ABSTRACT

One of the major challenges in cyber security is the provision of an automated and effective cyber-threats detection technique. In this paper, we present an AI technique for cyber-threats detection, based on artificial neural networks. The proposed technique converts multitude of collected security events to individual event profiles and use a deep learning-based detection method for enhanced cyber-threat detection. For this work, we developed an AI-SIEM system based on a combination of event profiling for data preprocessing and different artificial neural network methods, including FCNN, CNN, and LSTM. The system focuses on discriminating between true positive and false positive alerts, thus helping security analysts to rapidly respond to cyber threats.

All experiments in this study are performed by authors using two benchmark datasets (NSLKDD and CICIDS2017) and two datasets

VIRTUAL CARE TAKER-ONLINE PATIENT MONITORING SYSTEM

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ABSTRACT

Every human is busy in their own scheduled life, whether to take care of themselves or their families. Humans are facing a problem of unexpected deaths due to lack of medical care at the right time. The aim of this project is to monitor a patient without any presence of a guardian, it is also used for the patients who are living away from their families or guardians.

Cailiao Kexue yu Gongyi/Material Science and Technology

STOCK MARKET PREDICTION USING MACHINE LEARNING

Abstract

A good stock price prediction model will help investors, management and decision makers in making correct and effective decisions. We review studies on supervised machine learning models in stock market predictions. The study discussed how supervised machine learning techniques are applied to improve accuracy of stock market predictions. Support Vector Machine (SVM) was found to be the most frequently used technique for stock price prediction due to its good performance andaccuracy. Other techniques like Artificial Neural Network (ANN), K-Nearest Neighbour (KNN), Naïve Bayes, Random Forest, Linear Regression and Support Vector Regression (SVR) also showed a promising prediction result.

KEYWORDS: Stock Market Prediction, Supervised Machine Learning, Classification, Regression, Support Vector Machine (SVM), Artificial Neural Network

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UPS BATTERY MONITORING SYSTEM OVER GSM FOR HIGH AVAILABILITY SYSTEM

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Abstract:

AnUninterrupted Power Supply (UPS) is a critical component in any high availability system. However, the effectiveness of a UPS depends largely on its battery backup, which must be continuously monitored to ensure that it is working properly. In the past, this monitoring has been done manually or through local monitoring systems, but advances in IoT technology now make it possible to remotely monitor the status of UPS batteries and receive real-time alerts if any issues arise.

Finally, the system will be scalable, allowing additional sensors to be added to the network as needed. Nevertheless, physically checking the UPS battery is highly challenging since it requires more money and time. Data center operators, at the center of the digital economy, are under pressure from several directions. sustaining the highest level of availability at the most affordable level. A leading provider of battery management solutions.

IndexTerms:*Arduino, Voltage Sensor,GSMModule,GPSModule, Arduino IDE, Relay, UPS Battery.*

I.INTRODUCTION

In today's digital world, high availability systems are critical to the smooth functioning of various organizations, including data centers, hospitals, financial institutions, and many more. These systems require a continuous power supply, and to achieve that, they rely heavily on uninterrupted power supplies (UPS). A UPS provides power backup during power outages and prevents downtime, which is crucial for high availability systems. However, a UPS is only as effective as its battery backup, which must be continuously monitored to ensure its proper functioning.

In the past, UPS battery monitoring was done manually or through local

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Cailiao Kexue yu Gongyi/Material Science and Technology

ENVIRONMENTAL POLLUTION MONITORING USING MOBILE SENSORS

Abstract

Air pollution has become a serious problem worldwide, putting people's health and the environment at risk. This paper presents anEnvironmental Air Quality Monitoring System (EAQMS) that uses various sensors and modules to thoroughly assess air quality. The system includes an MQ7 sensor to detect carbon monoxide (CO) levels, a MQ135 sensor to monitor particulate matter (PM) concentrations like Benzene, carbon dioxide(CO2) and many other, and a DHT11 sensor to measure temperature and humidity. It also has a GSM module for real-time data transmission and remote control and a GPS module for location tracking. To alert users when pollutant levels are unsafe, a buzzer is integrated. The data collected is processed by an Arduino microcontroller and sent to a GSM and LCD Modules.

Index Terms: *Arduino, MQ7 Sensor, Smoke Sensor, DHT11 Sensor, GSM Module, GPS Module, Buzzer.*

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Cailiao Kexue yu Gongyi/Material Science and Technology

ADVANCED SECURITY SYSTEM FOR JEWELLERY SHOPS AND BANKS

Abstract

Due to the increase in robbery and theft daily, security in some places is essential, so the main aim of our project is to provide high security to bank lockers, ATMs, Jewellery showrooms, research centers, etc. The objective of the project is to design a low-cost system. The owner of the shop can take appropriate action without much delay with the help of the system designed. Also, this system has several other applications it can be used in Industrial monitoring as well where the proper functioning of machines and any malfunction of machines will be informed to the concerned person as fast as possible preventing any further loss. It can be effective for home security as well. Thus, using this system would be considered wise. An economic anti-theft setup for highly confidential areas such as shopping malls, banks, etc. An automatic security system developed by applying RFID and GSM technology is presented. The system is designed such that it

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Cailiao Kexue yu Gongyi/Material Science and Technology

CELL PHONE TOWER BASE STATION SAFETY AND SECURITY SYSTEM

Abstract

The rapid advancement of technology has led to an increased reliance on cell phone tower base stations for communication purposes. However, these base stations are vulnerable to various safety and security threats, ranging from unauthorized access to physical tampering. To address these concerns, this project aims to develop a comprehensive safety and security system for cell phone tower base stations using Wi-Fi technology.

The proposed system will provide real-time monitoring and surveillance capabilities to ensure the integrity and functionality of the base stations. By leveraging Wi-Fi technology, the system will establish a network of sensors strategically placed around the base stations. These sensors will continuously monitor the surroundings, detecting any unauthorized access attempts or suspicious activities.

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Fraud Guard: Detecting Financial Frauds Using Machine Learning

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ABSTRACT: Financial fraud poses significant risks to both individuals and institutions in today's dynamic economic landscape. Fraud Guard is a comprehensive project aimed at enhancing financial fraud detection through the utilization of machine learning algorithms, specifically Decision Trees and Random Forest. In response to the ever-evolving landscape of fraudulent activities, this project focuses on bolstering the effectiveness of fraud detection mechanisms in real time. The project emphasizes advanced feature engineering techniques to enhance the detection of subtle anomalies indicative of fraudulent activities.

Overall, Fraud Guard represents a significant advancement in financial security, offering a proactive approach to combat fraud in the ever-changing financial landscape. By leveraging machine learning algorithms like Decision Trees and Random Forest, it aims to safeguard financial institutions and individuals against fraudulent activities, preserving trust and integrity in financial transactions.

KEY WORDS: Fraud Guard, Fraud analysis and detection, Fraud cybercrimes.

I. INTRODUCTION

In today's dynamic financial landscape, combating fraudulent activities is paramount to maintaining the integrity and stability of financial institutions globally. "Fraud Guard" and our project focused on enhancing fraud detection through Decision Trees and Random Forest represent pivotal advancements in this pursuit. Leveraging the interpretability and efficacy of Decision Trees, Fraud Guard aims to swiftly discern fraudulent behaviours, fortifying defences against evolving threats. Concurrently, our project emphasizes the power of Random Forest in bolstering online payment fraud detection, offering adaptability and reliability in the face of sophisticated schemes. This introduction sets the stage for our exploration of innovative approaches to safeguarding financial ecosystems against fraudulent activities.

Fraud Guard revolutionizes fraud detection using Decision Trees, swiftly distinguishing fraudulent from legitimate transactions. With its adept utilization of Decision Trees, Fraud Guard navigates complex financial data, ensuring real-time identification of anomalies. This project embodies resilience and vigilance, redefining fraud detection paradigms for financial institutions. Simultaneously, our emphasis on Random Forest enhances online payment fraud detection, augmenting adaptability and reliability. Through meticulous data preprocessing and model training, Fraud Guard ensures precision and efficiency in fraud detection. By mitigating financial risks and preserving trust, these innovations bolster the integrity of financial ecosystems. Fraud Guard stands as a beacon of innovation, heralding a new era of security and trust in financial transactions.

II. LITERATURE SURVEY

The literature survey for fraud detection spans from 2019 to 2023, encompassing a diverse range of research endeavors. This survey delves into the evolution of fraud detection methodologies, exploring advancements in machine learning, blockchain technology, and domain-specific applications like healthcare and e-commerce. From deep learning-based systems to federated learning approaches, the survey offers insights into cutting-edge techniques for detecting fraudulent activities across various sectors.

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Streamlining Hotel Booking Experiences

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Abstract*— The abstract introduces a project aiming to develop a comprehensive Hotel Booking App to meet the increasing demand for seamless and user-friendly hotel reservation systems. Leveraging the MERN Stack, the project focuses on user interface development for customers and an intuitive admin dashboard for hotel administrators. Key features include user authentication, real-time room availability updates, and secure payment processing. The iterative development approach prioritizes backend establishment using Node.js and Express.js, MongoDB for database management, and React for frontend design. Integration with external APIs and rigorous testing ensures functionality and security. Deployment via platforms like Heroku or AWS aims to reach a broad audience, with ongoing feedback driving continuous improvement.

***Index Terms*— Hotel Booking Application, Iterative Development, MERN Stack, Secure Payment Processing**

I. INTRODUCTION

In dynamic world of web development, mastering full stack technologies is essential for building robust and feature the -rich applications. One exciting project that showcases the power of full stack development is a Hotel Booking App built using the MERN Stack – MongoDB, Express.js, React.js, and Node.js. This project not only demonstrates proficiency in these cutting-edge technologies but also provides a practical application scenario that many businesses can benefit from.

In this guide, we'll embark on a journey to create a Hotel Booking App from scratch, covering every aspect of development, from setting up the development environment to deploying the application to a live server. Whether you're a seasoned developer looking to expand your skill set or a beginner eager to dive into the world of full stack development, this project will provide valuable insights and hands-on experience.

II. LITARATURE REVIEW

The MERN stack has emerged as a powerful solution for building web applications, leveraging the capabilities of four key technologies: MongoDB, Express.js, React.js, and Node.js. This literature review aims to explore the significance and applications of each component within the MERN stack, as well as related technologies commonly used in web development.

MERN Stack: The MERN stack represents a cohesive ecosystem that enables developers to build scalable and efficient web applications entirely using JavaScript. By integrating MongoDB's flexibility with Express.js' simplicity, React.js' reactivity, and Node.js's event-driven architecture, developers can create dynamic and responsive applications with ease (Yao et al., 2020).

III. METHODOLOGY

Setting up the backend involves connecting Node.js with MongoDB using Mongoose for data management. Express.js facilitates server creation, route handling, and middleware integration, including JWT for secure authentication.

For the frontend, React.js is employed with essential packages like react-router-dom and axios for routing and HTTP requests. Components are designed for various application sections, and state management is ensured through React Hooks or Redux.

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TIKONS

An Online Stadium ticket booking application

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Abstract: Tikons redefines event ticketing with its user-centric approach, providing a streamlined platform for seamless ticket purchases. Offering a diverse array of events, from concerts to sports matches, it boasts an intuitive interface and advanced filtering options for personalized browsing. Secure payment gateways and social media integration enhance trust and sharing capabilities, while robust backend infrastructure ensures reliability even under heavy loads. Tikons aims to be the ultimate destination for event enthusiasts, delivering an unparalleled ticket booking experience.

Index Terms – Seamless ticket purchases, Secure payment gateways, Social media integration, realibility.

I. INTRODUCTION

Tikons isn't just a platform; it's a testament to the marriage of innovation and human connection. It transcends the mundane, offering a gateway to experiences that linger in the heart long after the event ends. With its seamless interface and diverse catalog, Tikons becomes more than a mere booking site—it's a curator of memories. Through advanced features and robust infrastructure, it ensures every interaction is smooth and secure, fostering trust and confidence. Tikons isn't just about attending events; it's about embracing life's tapestry, weaving moments of joy, excitement, and cultural richness. In its essence, Tikons symbolizes the pursuit of shared experiences, enriching lives and bridging distances through the power of technology. Welcome to Tikons, where every click unlocks a world of possibility and adventure.

II. SYSTEM ANALYSIS

Tikons emerges as a disruptive force in the realm of event attendance, leveraging cutting-edge technology and user-centric design to transform the ticket booking experience. By eliminating intermediaries and establishing direct communication channels between users and event organizers, Tikons streamlines the process, reducing complexity and costs. Its robust backend infrastructure guarantees scalability and reliability, ensuring uninterrupted service delivery even under high demand. Adhering to stringent security protocols and regulatory standards, Tikons safeguards user data and privacy. Through meticulous testing strategies and quality assurance measures, Tikons pledges a seamless user journey, fostering satisfaction and loyalty. With a commitment to innovation and user satisfaction, Tikons stands poised to revolutionize the landscape of event discovery and attendance.

III. CODE DESIGN

Tikons promises a seamless and engaging user experience. With React Native and React.js driving the frontend development, users can access Tikons effortlessly across iOS and Android devices as well as web browsers. The Redux state management library ensures smooth data flow within the frontend components, enhancing performance and responsiveness. On the backend, Node.js coupled with Express.js forms the backbone, handling HTTP requests efficiently. MongoDB, a NoSQL database, serves as the repository for user

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PRICE NEGOTIATION CHATBOTS ON E-COMMERCE WEBSITE USING MACHINE LEARNING

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ABSTRACT: In the thriving realm of e-commerce and digital transactions, effective price negotiation stands as a cornerstone for both consumers and businesses. This project embarks on a journey to redefine price negotiation dynamics by harnessing the power of Natural Language Processing (NLP) models within chatbot frameworks. Our aim is to revolutionize user interactions and streamline negotiation processes through the innovative integration of NLP techniques. These models facilitate the analysis of user inputs, interpretation of negotiation contexts, and formulation of optimal bargaining tactics, thereby enhancing user experiences and fostering mutually beneficial outcomes. Through iterative refinement utilizing performance metrics and user feedback, we strive to elevate the efficacy and efficiency of price negotiation interactions, ultimately empowering users and businesses in their decision-making processes. This project exemplifies the transformative potential of NLP-based chatbots in reshaping price negotiation dynamics within digital marketplaces. By bridging the gap between human-like negotiation dynamics and automated conversational agents, we pave the way for enhanced user experiences, streamlined transactions, and empowered consumer decision-making in the competitive landscape of e-commerce.

Index Terms - Natural Language Processing, Stochastic Gradient Descent (SGD), Price Negotiation, E-Commerce Negotiation, Chatbot.

INTRODUCTION:

In today's digital marketplace, effective price negotiation is essential for both consumers and businesses. To streamline this process, we introduce a groundbreaking approach leveraging Natural Language Processing (NLP) within chatbots. These advanced systems, equipped with NLP models, offer dynamic negotiation strategies tailored to user inputs and market dynamics. By interpreting natural language queries, understanding negotiation contexts, and formulating optimal bargaining tactics, these chatbots aim to enhance user experiences and ensure mutually beneficial outcomes. Throughout this project, we'll explore the integration of NLP models into chatbot frameworks, focusing on data preprocessing, model training, and iterative refinement. The ultimate goal is to empower users with seamless, personalized negotiation experiences, driving efficiency and satisfaction in the digital marketplace. This project represents a significant step forward in harnessing AI technologies to reshape price negotiation dynamics and empower both consumers and businesses in their decision-making processes.

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Car Price Fluctuation Prediction using Machine Learning

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ABSTRACT: The automative industry is subject to dynamic changes influenced by various factors, including economic conditions, consumer preferences, technological advancements, and regulatory policies. Predicting Fluctuations in car prices is crucial for manufactures, dealers, and consumers to make informed decisions regarding buying, selling and public tourism plans. Many cab services have fixed prices regardless of demand or time of day. This means that users may end up paying more than necessary during peak hours or special events when demand is high. The Price of travel is adjusted daily based on demand for public transportation services. This dynamic pricing strategy allows the fare to fluctuate according to factors such as time of day, day of the week, seasonality, and special events. This Study proposes a machine learning-based approach to predict car price fluctuations. The proposed model leverages historical data on car prices along with relevant features such as destination, sources, fuel, timestamp, cab type and technological innovations. Through data preprocessing, feature engineering, and model selection techniques, the model aims to capture the complex relationships between these variables and car prices. The effectiveness of the proposed approach is assessed through comprehensive experimentation and performance evaluation using real-world car price datasets and also weather dataset. The results demonstrate the potential of machine learning models in accurately forecasting car price fluctuations, thereby providing valuable insights for public.

KEYWORDS: Random Forest, Price Prediction, Cab Fare Fluctuation, Prediction.

I.INTRODUCTION

Many organizations do not have a direct role in travel and tourism but offer related products and services. Some examples would be offering travel insurance, parking facilities at airports, theatre and event tickets, car hire, and travel by rail or coach to airports, etc. at competitive rates. There are various different forms of dynamic pricing: 1. Peak Pricing – This is a strategy that is common in transportation businesses. Airlines are a good example. Airlines often charge a higher price to travel during rush hour mostly on weekdays and sometimes on weekends. 2. Surge Pricing – Companies such as Uber respond dynamically to changes in supply and demand in order to price their services differently. Like most of us have noticed, this frequently happens on stormy evenings and nights when more people request for cabs. Taxify also not so long ago introduced dynamic pricing to ensure the drivers are encouraged to go online and offer services when the demand is high. Every day the price of travel was changed due to the demand for public uses. The framework developed for the price prediction is analysed for the travel plans. For the same travel plan offered at a fixed price for a particular group of customers, our proposed model saw a final fare with a lesser number of errors in predicting customer planning.

II.SYSTEM MODEL AND ASSUMPTIONS

Cab price prediction typically falls within the domain of regression analysis, where the goal is to estimate a continuous target variable in this case, the fare price based on one or more predictor variables, such as time of day, day of the week, location, and demand-supply dynamics. Regression models in machine learning, such as linear regression, decision trees, and ensemble methods, are commonly used for this purpose.

Feature engineering plays a crucial role in predicting cab price fluctuations. It involves selecting, transforming, and creating new features from the raw data to improve the predictive performance of the model. Features such as time-

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Stock Market Prediction Using Machine Learning

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Abstract: **This project explores the utilization of Long Short-Term Memory (LSTM) neural networks, a type of recurrent neural network (RNN), for predicting stock prices. The objective is to develop a predictive model that can effectively forecast future stock prices based on historical data. The project involves collecting and preprocessing historical stock price data along with relevant features such as trading volume, technical indicators, and macroeconomic factors. The LSTM model architecture is then constructed and trained using the prepared data. Various optimization techniques and performance metrics are employed to enhance the model's accuracy and assess its effectiveness. The project aims to provide insights into the potential of LSTM-based models for stock price prediction and their implications for investors and financial analysts.**

Index Terms: **Machine Learning, Financial Markets, Stock Prices, Long Short-Term Memory (LSTM)**

I. INTRODUCTION

This project focuses on the application of machine learning, specifically Long Short-Term Memory (LSTM) neural networks, for stock price prediction. LSTM networks are a type of recurrent neural network (RNN) that are well-suited for modeling sequential data, making them particularly suitable for time series forecasting tasks such as stock price prediction. The primary objective of this project is to develop a predictive model that can accurately forecast future stock prices based on historical data. By harnessing the power of LSTM networks, the project aims to overcome some of the limitations of traditional forecasting methods and provide investors with valuable insights into potential market trends.

II. LITERATURE REVIEW

Stock market prediction using machine learning techniques has been a subject of extensive research in recent years. Various approaches, ranging from traditional statistical models to advanced deep learning algorithms, have been explored to forecast stock prices accurately. In this literature review, we provide an overview of key research findings and methodologies employed in the domain of stock prediction, with a focus on Long Short-Term Memory (LSTM) neural networks. Traditional methods of stock price prediction, such as autoregressive integrated moving average (ARIMA) models and linear regression, have long been used in financial forecasting. However, these methods often struggle to capture the complex nonlinear relationships inherent in financial time series data.

III. METHADOLOGY

Existing systems: Time series forecasting consists of a research area designed to solve various problems, mainly in the financial area.

Support vector regression (SVR), a variant of the SVM, is typically used to solve nonlinear regression problems by constructing the input-output mapping function.

The least squares support vector regression (LSSVR) algorithm is a further development of SVR and its use considerably ably reduces computational complexity and increases efficiency compared to standard SVR.

Proposed Systems:To generalize the application of the existing system, our work uses the system to estimate other stocks in similar emerging markets and mature markets

The system can be extended to analyze multivariate time series data and import raw dataset directly

Profit can be maximized even when the corporate stock market is has lower value

The development of a user interface has been considered to improve the user-friendliness and usability of the expert system.

Formula:

Virtual Trailroom using Machine Learning

Author(s)	Marrapu Anusha, Bevara Ramu, Kalidindi Swathi, Golajapu Venu Madhava Rao, Manda Sravanthi, Andavarapu Mounika
Country	India
Abstract	The virtual trail room system receives a real-time video feed from a camera and processes data with the OpenCV computer vision library and Haarcascade classifier. In order to correctly identify faces in the video feed, the Haarcascade classifier is trained on a sizable dataset of human faces.The virtual room system may function independently, which eliminates the need for additional employees and associated expenditures, in contrast to typical security systems that demand the presence of physical security officers.
Keywords	Virtual trail room system, Computer vision, Haarcascade classifier, Dlib, Real-time tracking.
Field	Computer
Published In	Volume 6, Issue 3, May-June 2024
Published On	2024-05-11
Cite This	Virtual Trailroom using Machine Learning - Marrapu Anusha, Bevara Ramu, Kalidindi Swathi, Golajapu Venu Madhava Rao, Manda Sravanthi, Andavarapu Mounika - IJFMR Volume 6, Issue 3, May-June 2024. DOI 10.36948/ijfmr.2024.v06i03.19971
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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

AGRICULTURAL CROP RECOMMENDATION SYTEM USING MACHINE LEARNING

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[123]UG Students,[4]M.Tech(Ph.D.),Assistant Professor,[5]MCA,Assistant Professor

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ABSTRACT:

The agriculture sector plays a crucial role in the economic development of a nation, and technological advancements have the potential to enhance its productivity and sustainability. This project focuses on leveraging machine learning techniques to provide intelligent and data-driven recommendations for crop selection, aiming to optimize agricultural output. The proposed system utilizes historical and real-time data related to soil characteristics, climate conditions, and crop performance to make informed decisions.

Index Terms - Random Forest, machine learning model, Nitrogen and pH level, temperature, and recommendation system, Naive bayes, factors.

INTRODUCTION:

Agriculture is the backbone of many economies worldwide, playing a crucial role in ensuring food security and contributing significantly to the socio-economic development of nations. As the global population continues to grow, the demand for agricultural products escalates, placing increasing pressure on farmers to optimize crop yield and resource utilization. In this context, the integration of advanced technologies, particularly machine learning, into agricultural practices presents an opportunity to enhance productivity andsustainability. The project titled "Crop Recommendation Using Machine Learning Techniques" addresses thechallenges faced by farmers in making informed decisions regarding crop selection. Traditional methods of crop selection often rely on intuition and historical practices, which may not be optimal in dynamically changing environmental conditions. The proposed system leverages machine learning algorithms to analyze diverse datasets encompassing soil characteristics, climate patterns, and historical crop performance. By doingso, the project aims to provide intelligent and data-driven recommendations to farmers, empowering them to make optimal choices for crop cultivation.

RELATED WORK

Crop recommendation systems leveraging machine learning techniques have gained prominence in recent yearsas technology intersects with agriculture, aiming to address the challenges faced by farmers in optimizing crop selection.

1. **Traditional Crop Recommendation Methods:** Historically, crop selection has been based on traditional practices, experience, and local knowledge. However, these methods often lack precision and fail to adapt to changing environmental conditions. Various studies (Smith et al., 2017; Kumar et al., 2019) emphasize the limitations of traditional approaches, paving the way for the integration of machine learning to enhance decision-making processes.
2. **Machine Learning in Agriculture**: The integration of machine learning algorithms in agriculture has shown promising results. Studies by Mishra et al. (2018) and Singh et al. (2020) demonstrate the potential of machine learning models, including decision trees, support vector machines, and neural networks, in predicting crop yields and providing insights into optimal cultivation practices. These models leverage historical data on soilproperties,

Glimpses Of Modern India In Gita Mehta's 'Snakes And Ladders

PDF (https://jazindia.com/index.php/jaz/article/view/3935/3457)

Published: Feb 19, 2024

DOI: https://doi.org/10.53555/jaz.v45i2.3935 (https://doi.org/10.53555/jaz.v45i2.3935)

Keywords:
Indian Culture, Tradition, Modernity, Modernization, Westernization, Ritualistic Past, Modern Rationalistic Present, Antithetical, Co-Exist

N. Satishkumar

Nammi suresh kumar

Abstract

Gita Mehta, in her fiction and non-fiction, has dealt with the paradox of the old and the new as a significant component of Indian culture. Scholars tend to believe that the twin factors of tradition and modernity are not antithetical to each other, as some earlier thinkers used to consider. They always co- exist, drawing regularly from each other and work together for the progression of society. Taking into consideration the observations of the scholars on the aspects of tradition, modernity, modernization and westernization, the present article is an effort to study Gita Mehta's attempt to explore the dual strands of the Indian ritualistic past and its modern rationalistic present, their interaction and their impact on the Indian culture. For this study, Mehta's non-fiction Snakes and Ladders: Glimpses of Modern India is being taken into consideration.

Manuscript Title:

THE PSYCHOLOGY OF VOICE-ACTIVATED SHOPPING: UNDERSTANDING HOW AI-POWERED SMART SPEAKERS INFLUENCE E-CUSTOMER CHOICES

Author:

LAKSHMI PRIYANKA A, UMA DEVI M

DOI Number:

DOI:10.5281/zenodo.10017760

Published : 2023-10-20

About the author(s)

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2. UMA DEVI M - Professor, Department of Commerce and Management Studies, Andhra University, Visakhapatnam.

Full Text : PDF

Abstract

The study delves into the intricate realm of voice-activated shopping and the psychological mechanisms that underlie consumer decision-making in this emerging e-commerce paradigm. As the adoption of AI- powered smart speakers for shopping continues to surge, it is imperative to gain insights into the cognitive and emotional factors that shape e-customer choices. This research employs a multidisciplinary approach, drawing from consumer behavior, technology adoption, cognitive psychology, and marketing. Through a combination of surveys, user interviews, and behavioral data analysis, the study aims to unravel the impact of key psychological variables, such as convenience, trust, personalization, cognitive ease, and emotional engagement, on the choices made by e-customers in the context of voice-activated shopping. Additionally, the research will explore the utilization of behavioral economics principles, ethical considerations surrounding data privacy and security, and the influence of marketing strategies in this burgeoning domain. The findings of this study have practical implications for businesses, marketers, and technology developers looking to optimize the user experience, build trust, and effectively leverage the potential of voice-activated shopping. Ultimately, this research contributes to a deeper understanding of the evolving dynamics of e-commerce and how AI-powered smart speakers are reshaping the way consumers interact with and make choices within the digital marketplace.

Keywords

Voice-Activated Shopping, AI-Powered Smart Speakers, E-Customer Choices, Psychological Factors, Online Consumer Behavior

Manuscript Title:

FROM ONLINE TO OFFLINE: EXPLORING THE ROLE OF AI-DRIVEN INTERACTION IN SHAPING CONSUMER PURCHASE INTENTIONS

Author:

LAKSHMI PRIYANKA A, UMA DEVI M

DOI Number:

DOI:10.5281/zenodo.11064995

Published : 2024-04-23

About the author(s)

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Full Text : PDF

Abstract

This empirical study investigates the influence of AI-driven interactions on shaping consumer purchase intentions, focusing on the transition from online engagement to offline purchasing behaviors. As artificial intelligence becomes increasingly integrated into marketing strategies, its impact on consumer decisions remains a critical area of research. This study utilizes a mixed-method approach, combining quantitative data analysis from online consumer interactions with qualitative interviews from 300 participants who have experienced AI-driven customer service tools such as chatbots, personalized recommendations, and virtual assistants. The primary aim is to evaluate how these AI features affect consumers' willingness to make a purchase in a physical store after an online interaction. Results from logistic regression analysis suggest that personalized AI interactions significantly enhance the likelihood of offline purchases, with a 40% increase in consumer transition rates from online browsing to in-store buying. The qualitative data further reveal that effective AI interactions contribute to a heightened sense of trust and satisfaction, which are pivotal in influencing purchase intentions. However, the study also identifies challenges, including privacy concerns and the impersonal nature of some AI interactions, which could inhibit consumer conversion. This research not only sheds light on the pivotal role of AI in modern consumer behavior but also offers valuable insights for retailers looking to optimize their integrated online-to-offline marketing strategies. The findings are particularly relevant for enhancing customer engagement and tailoring AI tools to meet evolving consumer expectations in the digital age.

Keywords

Consumer Purchase Intentions, AI Interactions, Online Shopping, Online Consumer Behavior, Content Marketing.

Reading Practices of Higher Education Students in North Andhra Pradesh: a Study

Author(s)	Harihararao Mojjada, Asi Lakshmi Priyanka
Country	India
Abstract	The aim of this research is to study the factors affecting the reading habit in the path of computer-generated and realistic reading. To this culmination, a study was led and the questionnaire among the students of the higher education. The replies have been studied by chart analysis. The consequences of the study have shown that most of the people already habituated to virtual reading and prefer to continue it. The reasons are ease of access from the root sources, availability of space for storage and forwarding from one to another within fraction of seconds. This could give enough to qualify the academic curriculum. This work would cover all the factors like language of reading, types of material, source of material, time spending on reading, purpose of reading, etc., influencing the students about their reading habits and reading behavior in the stated colleges. This study not covered several aspects due to restricted to Srikakulam, Vizianagaram, and Visakhapatnam locality only.
Keywords	Reading Activities, Virtual Reading, Authentic Reading, Social Media and Recreation.
Published In	Volume 5, Issue 3, May-June 2023
Published On	2023-06-15
Cite This	Reading Practices of Higher Education Students in North Andhra Pradesh: a Study - Harihararao Mojjada, Asi Lakshmi Priyanka - IJFMR Volume 5, Issue 3, May-June 2023. DOI 10.36948/ijfmr.2023.v05i03.3777
DOI	https://doi.org/10.36948/ijfmr.2023.v05i03.3777
Short DOI	https://doi.org/gsct4g

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A Study on Artificial Intelligence in Marketing

Author(s)	A LAKSHMI PRIYANKA, M HARIHARARAO, M PRASANNA, Y DEEPIKA
Country	India
Abstract	Artificial Intelligence in Marketing is a rapidly emerging field that is transforming the way businesses approach their marketing strategies. It involves the use of Artificial Intelligence (AI), Machine Learning (ML), and other advanced technologies to automate and optimize various marketing processes. With the explosion of data and the increasing complexity of customer behavior, businesses need to leverage these tools to stay competitive. This article explore the concept of Artificial Intelligence in Marketing, its role in modern marketing, its benefits and challenges, best practices for implementation, and ethical considerations. It will also look into the future of Artificial Intelligence in Marketing and its potential impact on the marketing landscape.
Keywords	Artificial Intelligence, Machine Learning, Human Intelligence, Predictive analytics
Field	Business Administration
Published In	Volume 5, Issue 3, May-June 2023
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Cite This	A Study on Artificial Intelligence in Marketing - A LAKSHMI PRIYANKA, M HARIHARARAO, M PRASANNA, Y DEEPIKA - IJFMR Volume 5, Issue 3, May-June 2023. DOI 10.36948/ijfmr.2023.v05i03.3789
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Enhancing Thermal Efficiency of Nano fluid Flow within Single Pipes Using Helical Inserts under Steady Wall Temperature Conditions: A Numerical Analysis

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Abstract *- The thermal performance of a heat exchanger can be enhanced by external agencies or allowing fluid to pass through finned tubes, helical inserts, nano fluids etc. The external agencies can be a source of electrical power, electromagnetic field, and surface vibrations. Augmenting heat transfer by using helical inserts is attempted by many researchers, In the present study a single pipe of 40 mm internal diameter under constant wall temperature is investigated numerically. The fluid volume flow rate is varied from 0.25 to 4 liters/min covering laminar, transition and turbulent regions. Water flowing through the pipe without insert is as taken as the base for investigating the combined influence of helical inserts and silver nano fluids in enhancing heat transfer. Two types of inserts i.e., 3 meters long (HI-L, extending to full length of pipe) and 1.5meters (HI-S, centrally spaced) and three compositions of silver nano fluids (volume fractions of 0.3,0.6 and 0.9) are considered. It is observed that the exit temperature for pure water raises linearly with flow rate increasing from 0.25 to 0.2 lit/min and there after drops down slowly. On the other hand, the exit temperature remains constant for all silver nanofluid volume fraction investigated at all volume flow rates. The possible reason for above deviation could be due to superior thermal properties of silver nanofluids, which enables more heat transferred to the fluid irrespective of change in volume flow rate. Pure water flowing in the single pipe at 1liter/min has resulted in heat transfer coefficient (HTC) of 57 W/m²k, and is taken as base value. With silver nanofluids alone the HTC value has shown large enhancement Viz111,121,133 W/m².k with 0.3,0.6 and 0.9 volume fraction at same mass flow rate of 1liter/min. Compounding nano fluids and long insert has resulted in very large improvement in heat transfer viz 153,171 and 187 W/m².k. With pure water & long insert, HTC value has increased to 106 i.e.is 96% more than the base value. On the hand, compounding with short insert and silver nanofluids (1lit/min mass flow rate) has yielded HTC values Viz 122,137, &150 W/m². k, which are lower compared with values obtained with long insert indicating the length of inserts has a leading key role in augmenting heat transfer.*

Key words *-*
Heat transfer coefficient, Augmentation, Silver nano fluids, Helical inserts (HI) .

1.INTRODUCTION

Using inserts in the fluid path in steam boiler is reported long back in nineteenth century(1896) by **Whitham [1]** .Hot gases flowing in the boiler tubes were allowed to pass through metal inserts for retarding the flow of gases .Extensive numerical and experimental work on improvement of heat transfer by using helical inserts in the fluid path and effect of variation of twist ratio, pitch and preformatted inserts ,relative spacing of inserts and using nano fluids is reported in detail in literature. Combined influence of helical insert and nano fluids in particular silver nano fluids would yield large heat transfer enhancement. **H. M. Shankara Murthy et al [2]** used graphene oxide with volume fractions of 0.05%,0.1% and 0.15% as the working fluid in the outer tube. In their experimental study while maintaining constant flow rate of hot fluid in inner pipe of double pipe heat exchanger. Maximum enhancement was achieved with 0.15% nano fluid flowing past insert with twist ratio 9.8. **Ahmet Selim et al [3]** carried out

Developing Environment Friendly Nanofluids for Minimum Quantity Lubrication in Machining Processes

Rao, Penta Shreenivasa and Avvari, Ravi Kant and Krishna, N. Murali (2023) *Developing Environment Friendly Nanofluids for Minimum Quantity Lubrication in Machining Processes*. In: Advances and Challenges in Science and Technology Vol. 2. B P International (a part of SCIENCEDOMAIN International), pp. 85-93. ISBN Dr. Guang Yih Sheu Advances and Challenges in Science and Technology Vol. 2 09 20 2023 09 20 2023 9788119761432 B P International (a part of SCIENCEDOMAIN International) 10.9734/bpi/acst/v2 https://stm.bookpi.org/ACST-V2/issue/view/1187

Abstract

Modern-day machining operation has become more economical, with increasing challenges towards efficient machining that is eco-friendly and safe to use. To make the machining process eco-friendly, a new method is introduced, i.e. the Minimum Quantity Lubrication (MQL). It has been successfully used as cutting fluid for near-dry applications because of its environmental friendliness. Formulation of cutting fluids is a subject of research where authors use oil as the base material for lubrication and to deal with the heat liberated during the process of machining. Since conventional cutting fluids may not offer better lubrication characteristics, solid lubricants are also been used as additives to reduce friction between the two surfaces sliding against and over each. The paper discusses the advantages of the eco-friendly fluid (with additives) as a cutting fluid in reducing the temperature and frictional forces at the tool/workpiece interface; ensuring enhanced performance of the machining.

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Cha and Fabrication of Hybrid Matrix Composites of AZ91E Metal with Distinct Reinforcements of Fly Ash and ZrO2

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Abstract

nThe current work choose the characteristics of (Magnesium composite) AZ91E-ZrO2-Fly ash Hybrid Metal Matrix using the regular analytic system. The chosen materials for this purpose are fly ash and ZrO2 in equivalent load extents, Stir casting uses a vortex technique to produce composite materials. A comprehensive experimental investigation was conducted to assess the performance characteristics of AZ91E-ZrO2-Fly ash during the cold upsetting process. The study involved utilizing AZ91E magnesium alloy and incorporating ZrO2 and Fly ash particles on different weight ratios (0%, 5%, and 10%) through the stir method. The UTM was employed to test these samples, revealing their mechanical compressive properties such as maximum compressive strength (in MPa), maximum compressive strain, and Young's modulus (in MPa). Standard analytical equations were used to determine the hub, compressive, and hydrostatic pressures, and the obtained results were compared to those obtained from ANSYS programming, showing consistency between the two. Strength co-efficient, strain hardening explains the plastic conduct on manufactured sample. Composites built up with fly ash and ZrO2 in various weight rates changing since 0 – 10 % rate with a molecule size of fifty three µm were arranged. Pre-arranged composite be described utilizing optical magnifying lens, Scattering electron microscope.

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Keywords: ZrO2/Fly Ash, Reinforcements, ANSYS, SEM, compressive strength

n[if 424 equals="Regular Issue"][This article belongs to Journal of Polymer and Composites(JOPC)]

Advancements in Vehicle Technology by Development of Metal Matrix AZ91E Composites for Automotive Applications with Different Aspect Ratios using Upset Forging and Analysis on Evolution of Microstructure

PDF (https://yanthrika.com/eja/index.php/ijvss/article/view/2822/1849)

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DOI: https://doi.org/10.4273/ijvss.15.7.03
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Keywords:
Magnesium composite, Vortex method, Fracture toughness, Deformation height

Surya Chandra Swamy Gari

K.V. Durga Rajesh

Evaluation of Fly Ash/ZrO2 Reinforced AZ91E Hybrid Composites Based on Wear and Friction Characteristics

Open Access

Year : 2024 | Volume :11 | Special Issue : 08 | Page : 324-338

By Surya Chandra Swamy Gari • G. Murali • K.V. Durga Rajesh • S. Ramesh Kumar •

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Abstract

In the current study the compo-casting Al alloy MMCs' wear resistance was examined under a variety of abrasive circumstances, including coefficient friction, wear rate and it's sliding distance. The AZ91E matrix composite was made by the liquid metallurgy process and reinforced with aluminum plated zirconium dioxide (ZrO2) particles. Designers examined the characteristics of matrix alloys along with created composites. friction and wear from dry sliding experiments had been performed on a Pin-on-disk equipment throughout a load and velocities of sliding within the scope The objective appertaining to the present study was to regulate the ramification of ZrO2 and wear with fly ash properties of Al-Zn (AZ91E) and the weight % of hybrid complex. Investigation has done on Al-Zn alloy reinforced composite by ZrO2-fly ash. The efficiency of incorporating ZrO2 into the composite for the purpose of reducing wear was studied. Ceramic components were placed into an aluminum alloy matrix together with solid lubricants to enhance CoF and diminish wear resistance together with friction. Al-Zn/fly ash/ZrO2 hybrid compound was synthesized using a weight proportion of ZrO2 and fly ash particles of 5 and 10%, respectively. The wear attribute containing ZrO2 demonstrated its

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ADVANCED VOICE BASED BLIND STICK WITH VOICE ANNOUNCEMENT OF OBSTACLE DISTANCE & IMAGE IDENTIFICATION LEARNING

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ABSTRACT

Living in a world of touch-button life, there are millions of blind people in this world who always need some help; this makes them feel low. These visually impaired people find it challenging to travel outside their homes independently. The Smart Blind Stick that we build can support the blind community by providing a better and simpler way of life by moving independently. So, the idea is simple, unlike the traditional stick, they need to carry a smart blind stick, which will help them to some extent by avoiding the obstacles around their way while walking or going out, which may be caused by accident. The stick will be having sensors and cameras to find the objects and give feedback alert messages to the user to avoid unnecessary accidents. The stick is very similar to those of the traditional, but it can save them from accidents as well as save their lives. The stick consists of raspberry pi, camera, and an earphone/speaker. For further processing of data camera is attached to the raspberry pi. The algorithm running in raspberry pi determines the distance from the obstacle that it informs the user by triggering the buzzer and by illustrating the environment through the camera's captured image. The camera is used for object recognition, and the image obtained through the camera will be captioned and presented to the user in the form of audio. This audio will tell what that image is and what should be done if it is an obstacle; thus, working as a virtual eye for blind people.

Keyword: - raspberry pi, camera, smart blind stick, captioned

1. INTRODUCTION

1.1 Introduction

An embedded system can be defined as a computing device that does a specific focused job. Appliances such as the air-conditioner, VCD player, DVD player, printer, fax machine, mobile phone etc. are examples of embedded systems. Each of these appliances will have a processor and special hardware to meet the specific requirement of the application along with the embedded software that is executed by the processor for meeting that specific requirement. The embedded software is also called "firm ware". The desktop/laptop computer is a general-purpose computer. You can use it for a variety of applications such as playing games, word processing, accounting, software development and so on. In contrast, the software in the embedded systems is always fixed listed below: Embedded systems do a very specific task, they cannot be programmed to do different things. Embedded systems have very limited resources, particularly the memory. Generally, they do not have secondary storage

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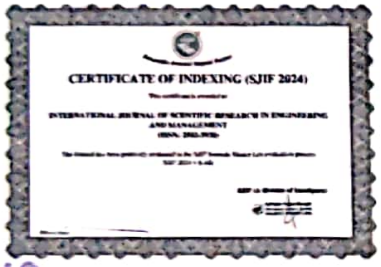

Description

UNDERSTANDING THE SUN'S ROLE AND ANALYZING PV SYSTEM PERFORMANCE

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ARDUINO BASED SMART GLOVE FOR HUMAN INTERACTION

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ABSTRACT

The Smart Glove for Human Interaction Project aims to revolutionize communication for the Physically and mentally impaired community by creating a wearable technology that translates sign language into spoken or written words. This innovative project has the potential to break down communication barriers and empower individuals with physical disabilities. The gloves convert the specific gestures to text then to speech using Arduino as heart of the system. The flex sensors are used in the system which is attached on to the gloves which convert the gesture into resistance which is further converted to the text through Arduino Nano. The flex sensors come from flexible sensors family, which are flexible enough. The output of the sensors i processed on Arduino Nano to get text as an output displayed on LCD. Further that text is sent to voice module. Further that data are converted into speech via predefined voice phrases. There is no such commercial system available in the market to convert sign language into speech. In addition to this we are adding heart rate sensor and SOS button to monitor the position of the person wearing the glove. whenever the person presses the sos button or heart beat increases the gps co-ordinates will be sent via gsm the corresponding attendent

Keywords: Smart Glove, Arduino Nano, LCD, SOS button

1. INTRODUCTION

An embedded system can be defined as a computing device that does a specific focused job. Appliances such as the air-conditioner, VCD player, DVD player, printer, fax machine, mobile phone etc. are examples of embedded systems. Each of these appliances will have a processor and special hardware to meet the specific requirement of the application along with the embedded software that is executed by the processor for meeting that specific requirement. The embedded software is also called "firm ware". The desktop/laptop computer is a general purpose computer. You can use it for a variety of applications such as playing games, word processing, accounting, software development and so on. In contrast, the software in the embedded systems is always fixed listed below: mEmbedded systems do a very specific task, they cannot be programmed to do different things. . Embedded systems have very limited resources, particularly the memory. Generally, they do not have secondary storage devices such as the CDROM or the floppy disk. Embedded systems have to work against some deadlines A specific job has to be completed within a specific time. In some embedded systems, called real-time systems, the deadlines are stringent. Missing a deadline may cause a catastrophe-loss of life or damage to property. Embedded systems are constrained for power. As many embedded systems operate through a battery, the power consumption has to be very low. Some embedded systems have to operate in extreme environmental conditions such as very high temperatures and humidity. Embedded systems often reside in machines that are expected to run continuously for years without errors and in some cases recover by themselves if any error occurs. Therefore the software

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AI-DRIVEN ALGORITHMS FOR LOAD FORECASTING IN SMART GRIDS

Dr. Narendra Kumar Yegireddy1, Dr. M N V S S Kumar2, Dr. Gottapu Santosh Kumar3, Dr.G. Prasanthi4

Abstract

This paper explores the integration of Artificial Intelligence (AI) in electrical engineering, focusing on its pivotal role in transforming load forecasting within smart grids. Accurate load prediction is crucial for the stable operation of electrical grids, especially with the growing adoption of renewable energy sources. AI-driven algorithms, employing machine learning and deep learning, are supplanting traditional statistical models due to their proficiency in handling complex, non-linear relationships. They analyse historical data, weather patterns, and demographic factors to offer precise load forecasts. Smart grids, equipped with advanced metering and bi-directional communication, provide a wealth of real-time data for AI algorithms to adaptively refine their models. Their scalability allows for accommodating diverse and dynamic load patterns across various regions and timeframes. Beyond operational efficiency, they facilitate informed resource allocation, grid expansion, and capacity planning. Moreover, they support seamless integration of renewable energy sources and enable demand-side management, enhancing the sustainability and resilience of the energy infrastructure. This paper investigates the advancements and applications of AI-driven algorithms for load forecasting in smart grids, evaluating their performance, addressing potential challenges, and outlining future research directions. By leveraging the potential of AI, we aim to spearhead the ongoing evolution toward a more intelligent, dependable, and sustainable energy future.

Keywords

Artificial Intelligence, Load Forecasting, Smart Grids, Renewable Energy Integration, Advanced Metering Infrastructure.

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HAND AND GESTURE TRACKING IN AUGMENTED REALITY: CHALLENGES AND SOLUTIONS

Dr. M N V S S Kumar1, Dr. Narendra Kumar Yegireddy2

Abstract

Augmented Reality (AR) has gained immense popularity in recent years as it offers immersive and interactive experiences that bridge the digital and physical worlds. One critical aspect of AR is the accurate and robust tracking of users' hand and gesture movements, as it forms the foundation for natural and intuitive interactions within the augmented environment. However, the challenges inherent in hand and gesture tracking pose significant barriers to achieving seamless AR experiences. This research paper explores these challenges and presents an in-depth analysis of the various solutions and techniques employed to address them. We begin by examining the challenges associated with hand and gesture tracking in AR, including issues related to occlusion, accuracy, and real-time performance. Subsequently, we delve into the diverse range of solutions and techniques, including hardware and sensor technologies, software and algorithms, and hybrid tracking approaches, that have been developed to overcome these challenges. We also discuss practical applications that showcase the implementation of hand and gesture tracking in real-world AR scenarios. In addition to providing an overview of the existing technologies and methodologies, we discuss the metrics and evaluation criteria used to assess the performance of hand and gesture tracking systems. Moreover, we identify future research directions and open challenges, emphasizing the need for further innovations in this field to enhance the user experience and enable new AR applications. This research paper aims to serve as a comprehensive resource for researchers, developers, and practitioners in the field of augmented reality by offering insights into the challenges, solutions, and promising avenues for advancing hand and gesture tracking in AR. By addressing these challenges, we can pave the way for more natural and seamless interactions in the ever-evolving world of augmented reality.

Keywords

Augmented Reality (AR), Hand and Gesture Tracking, Challenges, Solutions

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BIDIRECTIONAL ENERGY FLOW: UNLEASHING THE POTENTIAL OF VEHICLE-TO-GRID (V2G) SYSTEMS

Dr. Narendra Kumar Yegireddy1

Abstract

The integration of electric vehicles (EVs) into the energy grid has opened up new frontiers in sustainable energy management. Vehicle-to-Grid (V2G) systems, which enable bidirectional energy flow between EVs and the grid, represent a promising solution to address the challenges of energy storage, grid stability, and the widespread adoption of renewable energy sources. This paper delves into the multifaceted world of V2G technology, aiming to shed light on its potential benefits, challenges, and implications. In this comprehensive exploration, we review the historical evolution of V2G systems, analyzing their development from concept to practical implementation. By surveying the existing literature, we discern current trends and research gaps in the field. We also present an in-depth examination of the essential components of V2G systems, including EVs, charging infrastructure, and grid connections. V2G systems are poised to revolutionize energy management by offering a wide array of advantages, from grid support through demand response to cost savings for EV owners. However, challenges such as technical standards, regulatory hurdles, and market dynamics need to be addressed to unlock their full potential. Through insightful case studies, we highlight real-world applications of V2G technology and their outcomes. As V2G systems stand at the intersection of energy, transportation, and sustainability, they are poised to reshape our energy landscape. We explore their impact on the energy grid, delve into the policy and regulatory framework surrounding them, and offer a glimpse of the future trends that could redefine energy management. This paper concludes by emphasizing the significant role that V2G systems can play in advancing the transition to a more sustainable, interconnected, and dynamic energy ecosystem.

Keywords

V2G (Vehicle-to-Grid), Bidirectional Energy Flow, Electric Vehicles (EVs), Grid Integration

Full Text:

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SIGNIFICANCE OF COMPUTER APPLICATIONS IN THE FIELDS OF SCIENCE AND ENGINEERING

Dr. Narendra Kumar Yegireddy1, Dr. Gottapu Santosh Kumar2, Dr. M N V S S Kumar3, Dr.G. Prasanthi4
Author

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Abstract

A computer is a programmable device rooted in science. It functions based on a well-defined set of instructions and can carry out a pre-recorded list of tasks as a program. There are various computer models, including Personal Computers, Workstations, Minicomputers, Mainframes, and Supercomputers. This research manuscript highlights the pivotal role of computers in scientific research, their contributions to the film industry, art, and the advertising sector. It also explores their impact on engineering productivity, telemedicine, healthcare, music, hospitals, and military operations. The manuscript delves into various aspects, including prototyping, Product Data Management, Project Management, and CAD/CAM

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Towards Efficient Energy Solutions: MCDA-Driven Selection of Hybrid Renewable Energy Systems

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Journal of Research Administration
Society of Research Administrators International

SMART PROTECTION FOR INDUCTION MOTORS: FAULT MONITORING AT ITS BEST

Dr. Narendra Kumar Yegireddy1, Dr. M N V S S Kumar2
Author

Abstract

In the realm of electrical motors, a diverse array of faults can manifest, falling broadly into two categories: external and internal. External faults may stem from environmental conditions or other extraneous factors, whereas internal faults are typically rooted in circuit-related issues. This paper delves into the realm of fault mitigation, with a primary focus on ensuring the protection of motors against the perils of overheating, overvoltage, and under-voltage.

Overheating, a common motor issue, often arises from overloading. To ensure continuous monitoring of temperature, the DS1820 sensor is deployed, allowing for precise temperature measurement. Furthermore, well-defined upper and lower voltage thresholds are established to guarantee the motor's seamless operation. Regulating temperature and voltage levels within the motor is entrusted to the ARDUINO Nano controller, a sophisticated component known for its adeptness at temperature sensing and voltage monitoring. In the event that the sensors detect values that veer beyond the predefined operational limits, they promptly communicate with the ATmega328P microcontroller.

The ATmega328P, a robust 8-bit microcontroller boasting a 32KB Flash memory, belongs to the esteemed ATmega AVR MCUs series, developed by Atmel. It serves as the central decision-making hub for the motor's protective actions.

Keywords: Temperature sensor, Arduino-Nano.

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WIND-INTEGRATED EV CHARGING: HARNESSING THE POWER OF NATURE FOR SUSTAINABLE MOBILITY

Dr. Narendra Kumar Yegireddy
Author

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Abstract

As the global transition towards sustainable transportation gains momentum, the integration of renewable energy sources with electric vehicle (EV) charging infrastructure emerges as a crucial paradigm. This research paper delves into the synergistic potential of harnessing wind energy for EV charging, aiming to mitigate both transportation-related emissions and grid stress. The study outlines a comprehensive methodology encompassing data collection, wind energy source selection, and charging infrastructure design. Through rigorous simulation and modeling, we evaluate the performance of wind-integrated EV charging systems across various scenarios and highlight their potential environmental and economic benefits. The findings

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SERIES COMPENSATORS WITH HYSTERESIS CONTROL: A RELIABLE SOLUTION FOR VOLTAGE SAG MITIGATION

Dr. Narendra Kumar Yegireddy1, Dr. Gottapu Santosh Kumar2, Dr. M N V S S Kumar3, Budumuru Rajesh4

Abstract

Voltage sag is a pervasive issue in power systems, demanding effective solutions. Among the key technologies employed to combat voltage sags, the Dynamic Voltage Restorer (DVR) stands out. Positioned in series between the power source and the load, the DVR plays a vital role in mitigating voltage sags. To maximize its effectiveness, various compensating methods are available, including the pre-sag method, in-phase method, and in-phase advance compensation. One crucial aspect of DVR operation is the synchronization of the injected voltage with the phase of the supply voltage. This synchronization is pivotal for the DVR to accurately and swiftly compensate for voltage sags caused by short-circuit currents. To achieve this synchronization, the work described here employs the Discrete Fourier Transform (DFT) for phase detection, a critical step in DVR operation. Furthermore, the control strategy plays a significant role in the DVR's ability to mitigate voltage sags effectively. In this project, the hysteresis control technique is combined with Proportional-Integral (PI) control, and the results are compared with those obtained from a Proportional-Integral-Derivative (PID) controller. This comparative analysis provides valuable insights into the performance of these control strategies and their effectiveness in enhancing power quality by rectifying voltage sags. The findings of this study contribute to the optimization of DVR systems, offering improved voltage sag mitigation in power distribution networks.

Keywords

Voltage Sag Mitigation, Dynamic Voltage Restorer (DVR), Hysteresis Control, Discrete Fourier Transform (DFT)

Full Text:

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ALGORITHMS UTILIZING AI FOR LOAD PREDICTION IN INTELLIGENT POWER GRIDS

Dr. M N V S S Kumar1, Dr. Narendra Kumar Yegireddy2
Author

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Abstract

This in-depth research investigation explores the application of fundamental energy and exergy principles to evaluate the performance of a gas-fired steam power plant boiler located in Bangladesh. The power plant has a total installed capacity of 210 MW and comprises two generation units. The study focuses on comprehending the energy and exergy dynamics within the boiler to gain insights into its operational effectiveness. Throughout the research, a thorough analysis of both energy and exergy efficiencies of the boiler has been conducted. Additionally, the assessment quantifies the overall irreversibility within the boiler under various load conditions. The findings show that the energy efficiency of the boiler fluctuates in the range of 75% to 80% across different load conditions.

How to Cite

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