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(NCRESET-24)

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The papers in the book consist of the conference mentioned above. They reflected the authors opinions and their inclusion in the publication does no necessary constitute endorsement by the conference committee.

PREFACE

KGiSL Institute of Technology (KiTE), is started in 2008 by Padmashri Dr. G. Bakthavathsalam, MS, FICS, FCCP, FAMS, FMMC Founder-Chairman of KG Hospital. The college has been approved by the All India Council for Technical Education and is affiliated to Anna University of Technology, Coimbatore. The college offers Five Undergraduate Programmes and Two Post graduate Programmes in Engineering.

The National Conference on Recent Explorations in Science, Engineering and Technology (NCRESET'24) brings together the leading academic and industrial researchers, scientists, engineers, practitioners, faculty members and students in the field of Information and Communication Engineering. The purpose of this event is to provide a platform to address, exhibit and explore the knowledge on the emerging technologies,R&D in the field of Information and Communication Technology. All full paper submissions were peer-reviewed and evaluated based on originality, technical and/or research content/depth, correctness, relevance to conference, contributions and readability. At this juncture, we would like to appreciate our review committees for their valuable contribution and efforts in ensuring quality of the proceedings.

We would like to express our sincere thanks to Padmashri Dr.G. Bakthavathsalam, Founder-Chairman of KG Hospital, for providing us all the support for the conduct of this Conference. We also express our sincere gratitude to Dr. Ashok Bhakthavathsalam, Managing Director, KGiSL Group, for the support towards the Conference. We place our heartfelt thanks to our Chief Executive Officer Shri.R.Arvind Kumar. We gratefully acknowledge Dr. P Shankar, Director-Academics, for having shared his decades of experience in arranging this conference. We gratefully thank our secretary Dr.N. Rajkumar for his great suggestions. We extend our sincere thanks to Dr. S.Suresh Kumar, Principal, KGiSL Institute of Technology for his valuable ideas and support. We also render our gratefulness to Dr.N.Kathiravan, Dean, KGiSL Institute of Technology.

We sincerely thank Dr.N.Sankarram, Head of the Department of IT for his valuable guidance in making this conference a grand success. We express our thanks to all the technical and advisory committee members for their cordial relation during various process of the conference. We also thank all the students who gave their tremendous support towards the conference at all time.

NCRESET 2024 Abstract

SEGMENTATION OF RETINAL VESSELS USING SWITCHABLE NORMALIZATION WITH CROSS ENTROPY

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Abstract: The project presents a cutting-edge technique designed to significantly improve the precision in identifying vessels within CT scan imagery. At its core, this method introduces an automated system for the adjustment of pivotal parameters, notably the distortion probability and block size. These adjustments are made in real-time, based on the detection of overfitting signals, allowing the algorithm to maintain a perfect balance that safeguards against both overfitting and underfitting scenarios. This ensures that the model is neither too complex for the data it trains on nor too simplistic to capture the essential patterns. In an effort to further refine the model's capability to classify vessels accurately, the project integrates two sophisticated loss functions: Dice loss and cross-entropy loss. The synergy of these loss functions is expected to enhance the model's sensitivity and specificity in classification tasks, making it a powerful tool for medical diagnostics. Moving away from the traditional and often laborious manual optimization of these parameters, the project employs an automated, efficient strategy. This strategy is anchored in a performance-driven trial-and error methodology, meticulously guided by the outcomes of test dataset evaluations. By doing so, it leverages empirical evidence to fine-tune the model's parameters, ensuring optimal performance. The automation of this optimization process marks a significant leap towards enhancing both the accuracy and operational efficiency of vessel classification in CT imaging. It promises to expedite the diagnostic process, making it more reliable and less prone to human error. By streamlining this aspect of medical diagnostics, the project stands to offer substantial improvements in the speed and reliability of patient care, setting a new standard for precision in medical imaging analysis.

Keywords: CT imaging, vessel classification, dynamic parameter adjustment, Dice loss, cross-entropy, automated optimization, diagnostic accuracy.

BLOCKCHAIN-ENABLED ACCOUNTABILITY: REVOLUTIONIZING CLOUD SERVICES FOR TRANSPARENCY AND TRUST

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Abstract- Cloud services are becoming an essential component of our lives in the digital age because they make large volumes of data easier to store, process, and access. But as people depend more and more on these services, questions about their reliability, security, and transparency are becoming more and more pressing.

Block chain technology, which guarantees accountability and transparency in cloud services through the introduction of an irreversible, decentralised ledger system, presents a promising solution to the problems. This study investigates how block chain-enabled accountability could revolutionize cloud services. We start out by going over the drawbacks of conventional centralized cloud systems, such as problems with data privacy, security lapses, and a lack of transparency. Due to these drawbacks, there is an increasing need for creative solutions that can boost cloud trust and accountability. Because it is tamper-proof and decentralized, block chain technology presents a novel way to improve accountability in cloud services. Block chain reduces the risk of fraud, manipulation, and unauthorized access by enabling transparent and auditable procedures through the recording of transactions on a distributed ledger that is visible to all parties. Furthermore, the data integrity and trust are improved by the immutability of block chain, which guarantees that once data is recorded, it cannot be changed or removed.

Keywords- Block chain, Accountability, Centralized, Decentralized, Ledger System.

A STUDY OF AUGMENTED REALITY AND VIRTUAL REALITY

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Abstract: This study focuses on the fundamental concepts of Augmented Reality (AR) and Virtual Reality (VR), elucidating their respective functionalities and applications. It the delves into the transformative impact of these technologies across diverse sectors. Through an analysis of recent developments and case studies, it highlights the tangible benefits realized by Organizations integrating AR and VR into their

Workflows, ranging from enhanced training simulations and immersive customer experiences to streamlined designed processes and improved productivity. Further it addresses the key challenges and considerations inherent in the adoption of VR and AR such as technological limitations, cost implications, and user acceptance. It underscores the importance of interdisciplinary collaboration and iterative refinement in optimizing the efficacy and accessibility of AR and VR solutions for professional use cases. It encapsulates the multifaceted landscape of AR and VR in professional settings, underscoring their transformative potential and the imperative for organizations to strategically embrace these technologies to gain a competitive edge in an increasingly digitized world.

Keywords: Real-time Data Visualization, Spatial Computing, Human-Computer Interaction, Simulation-based Learning, Digital Twin Technology, Enterprise AR/VR Solution, Workforce Productivity.

AN EMPIRICAL AND ADAPTIVE STUDY ON SOFTWARE EFFORT ESTIMATION USING ENSEMBLE REGRESSION LEARNING

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Abstract*:* Software Evaluation (SEE) is an important activity in all software and development lifecycles. Many forecasting methods have been developed over the last 30 years, but the results are often inconsistent. Therefore, comparing performance estimates has emerged as one of the best methods when considering the best method for estimating performance for different types of projects. Unfortunately, these trials used different samples and measurement errors, making comparison with other studies difficult. Previous studies have focused on the use of clustering techniques and decision trees to produce locally consistent data to help develop local prediction models. However, due to limitations in finding good groups and processing popular data, this method may not be applicable for some reasons. In this case, consider the use of sampling and population models for forecasting. Integrated technology is a combination of several models. Aggregation methods used for forecasting include averaging, weighted average, volume, support, and stacking. Generalized linear models were used to combine analyzes and measure variables. The statistics used are mean error, root mean square error, and R-squared. The results show that the clustering method using random forest provides the best results compared to a single model using machine learning or deep learning algorithms and other combination methods.

Keywords: Decision Trees, Weighted averaging, Bagging, Boosting, Stacking, Generalized linear model, Mean absolute error, Root mean squared error, R-squared, Ensemble techniques, Random Forest Regression Algorithm

ECOMMERCE APPLICATION WITH WEB3 IMPLEMENTATION

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Abstract: In the rapidly evolving realm of ecommerce, the integration of Web3 technologies has emerged as a transformative force, revolutionizing traditional online transactions. Our project focuses on the implementation of Web3 within an ecommerce application developed using the MERN stack and leveraging the MetaMask API. We present a thorough examination of contemporary research and practices in this domain, with particular emphasis on the integration of blockchain technology, decentralized finance (DeFi) principles, and smart contracts. Key aspects explored include data processing methods for blockchain interactions, inference techniques for decentralized transactions, and comprehensive evaluation frameworks

for assessing system performance and user experience.

Through critical analysis, we highlight the strengths and potential challenges associated with adopting Web3 in ecommerce applications, emphasizing the need for robust solutions to address scalability, security, and usability concerns. Our findings underscore the immense potential of Web3 in reshaping the ecommerce landscape and advocate for continued exploration and innovation to realize its full transformative impact.

ENHANCING REMOTE SENSING OBJECT DETECTION THROUGH OBB STACKING

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Abstract: The OBB Stacking is an ensemble method specifically designed for remote sensing object detection. multiple object detection algorithms are combined to create a more accurate and robust detection system. Each algorithm may have different strengths and weaknesses, so by combining them, OBB Stacking aims to leverage the complementary nature of these algorithms to enhance overall performance. Aims to incorporate radical object detection techniques to achieve high accuracy. Project covers a variety of factors and algorithms, datasets and software hardware requirements used in the detection of objects.

Implementation of OBB stacking involves stacking multiple bounding boxes with varied sizes and orientations. - Superior performance of the proposed approach demonstrated, even in challenging conditions like occlusion and varying perspectives. Integration of OBB stacking into existing detection systems identified as a promising avenue for accuracy enhancement in remote sensing applications.

The method, termed OBB (Oriented Bounding Box) stacking, utilizes the concept of stacking multiple bounding boxes in a hierarchical manner to better encapsulate object shapes and orientations by incorporating orientation information into the bounding box representation, the proposed approach aims to address challenges posed by irregularly shaped objects and varying orientations commonly encountered in remote sensing imagery. Through experiments and evaluations, the paper demonstrates the effectiveness of OBB stacking in enhancing the accuracy and robustness of object detection tasks in remote sensing applications.

Keywords: Remote Sensing, Object Detection, Oriented Bounding Box (OBB), Feature Extraction, Robustness, Irregular Shapes, Orientation Information

FINE-GRAINED FUTURISTIC APPROACH AIR QUALITY PREDICTION USING LSTM AND SVR

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Abstract: The method you described sounds innovative and promising for estimating atmospheric relative humidity using wind profiler radar. By utilizing only I/Q or moment data from the profiler radar to generate an intermediate pressure profile, the approach streamlines the process and eliminates the need for temperature as an input feature. This not only simplifies the model but also reduces complexity and the number of required features. The evaluation of the proposed method using field data collected by the Hong Kong Observatory provides valuable insights into its effectiveness and real-world applicability. The fact that this is the first time a cascading machinelearning solution has been successfully applied to the humidity estimation problem underscores its novelty and potential impact on atmospheric science research.

Index Terms: Decision tree, ensemble tree, machine learning (ML), neural network (NN), profiler radar, relative humidity (RH)

TECHNICAL INTERVIEW PROCTOR AUTOMATION WITH CANDIDATE ETIQUETTE DETECTION

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Abstract: Automating the technical interview process is an enticing approach to enhance efficiency and scalability in the rapidly expanding realm of remote recruiting. However, completely eliminating human contact remains a challenging endeavor.

It makes sense to automate scheduling and logistics to streamline process, but using bots and algorithms alone won't guarantee a great candidate experience or uphold ethical standards. This brings us to the idea of "Candidate Etiquette Detection." This study presents a unique method that combines automated proctoring systems with AI-powered etiquette analysis to evaluate a candidate's professionalism, communication abilities, and general involvement during technical interviews.

Imagine doing away with time-consuming scheduling duties, automating briefings before to interviews, and even giving instant feedback on a candidate's communication style during the interview. However, what truly sets this system apart is its ability to detect occurrences of dishonesty, disengagement, or even attempted cheating through the scrutiny of subtle indicators such as body language, facial expressions, and vocal communication patterns. This state-of-the-art capability safeguards against bias and unjust assessments for both interviewers and candidates, upholding the integrity of the interview process. This

study examines the convergence of Natural Language Processing, computer vision, and machine learning techniques, thoroughly exploring the technical intricacies of developing such a system. This Project address the moral issues related to automated proctoring and manners detection, providing methods to reduce any biases and guarantee impartiality at all times. Lastly, This Project demonstrate the possible applications of this technology, imagining a time when recruiters would be able to use automation to perform technical interviews that are effective, objective, and consistently positive while maintaining essential human qualities like empathy and understanding. This study presents an engaging analysis of the future of technical interviews, where automation and Artificial intelligence (AI) coexist with human values to provide a smooth, effective, and morally compliant recruitment procedure that benefits both employers and candidates.

Keywords: Etiquette Detection & Technology. AI-powered Etiquette Analysis, Human-AI Collaboration

UTILIZING DEEP LEARNING AND MACHINE LEARNING TO IDENTIFY CYBER BULLYING

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Abstract: Cyberbullying is the term for when someone bullies another person online using information and technology. Although it has long been a problem, there has been an increase in recent years in awareness of how it impacts young people. Social networking platforms provide bullies a lot of area to manoeuvre, leaving teenagers and young adults who use them open to attack. Without making eye contact, people utilise technology used in information and communication to mock, humiliate, insult, give a poor name to someone or something, threaten, and to criticize others.

If nothing is done to curb cyberbullying, a whole generation of young adults will struggle with self-esteem and mental health issues. In most social networks, it appears in a textual format and takes on numerous forms. Bullies have turned social media into a virtual playground by picking on particular people or groups on Facebook, Instagram, WhatsApp, Twitter, and YouTube. Since the effects could have a negative impact on society, it is necessary to implement various models and methods that can identify and remove the cyberbullying content. Automation of this incident detection requires intelligent systems.

This study uses machine learning and deep learning techniques to present a novel hybrid model for identifying cyberbullying information in social media that is available in three different formats, including visual, textual and info graphic data. Through machine learning, we can find linguistic traits that bullies and their targets have in common. and we can create algorithms to quickly identify cyberbullying content. While some of these detection systems have limitations of conventional identification versions, others have produced effective identification of instances.

CRIME MANAGEMENT SYSTEM

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Abstract: The Crime Management System (CMS) is a sophisticated software solution designed to revolutionize the way law enforcement agencies handle crime-related data and processes. It offers a comprehensive suite of features including online crime reporting, investigation management, evidence tracking, case resolution, analytics, and seamless integration with existing systems. By providing a centralized platform for managing all aspects of criminal investigations, the CMS streamlines workflows, enhances collaboration among law enforcement personnel, and enables data-driven decision-making.

Key functionalities of the CMS include facilitating citizens' online crime reporting, assigning and tracking investigations, cataloging and tracking physical and digital evidence, managing case workflow from initiation to resolution, analyzing crime data to identify patterns and trends, and ensuring interoperability with other databases. This system not only improves operational efficiency within law enforcement agencies but also enhances transparency, accountability, and public trust. Overall, the Crime Management System represents a significant leap forward in the modernization of law enforcement practices. By leveraging technology and data analytics, it empowers law enforcement agencies to combat crime more effectively, allocate resources efficiently, and ultimately, enhance public safety in communities.

HEART DISEASE PREDICTION USING ECG IMAGES

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Abstract: Cardiovascular disease (CVD) represents a complex and multifaceted health concern that substantially burdens global healthcare systems and individuals. It encompasses a spectrum of conditions affecting the heart and blood vessels, including coronary artery disease, heart failure, arrhythmias, and more. ECGs provide a snapshot of the heart's electrical activity, offering invaluable insights into its rhythm, conduction pathways, and overall function. By recording the electrical impulses generated during each heartbeat, ECGs enable clinicians to detect abnormalities indicative of various cardiac disorders. Integrating machine learning into cardiovascular diagnostics represents a promising frontier in healthcare innovation. However, it also brings forth a host of challenges, including ensuring the robustness and generalizability of predictive models, addressing data privacy and security issues, and navigating regulatory considerations.

Nevertheless, with ongoing advancements in both ML algorithms and ECG technology, the potential benefits for improving heart disease detection and patient outcomes are immense. This paper delves into the intricate intersection of machine learning methodologies and ECG data analysis, exploring their synergistic potential in revolutionizing the landscape of heart disease prediction.

Keywords: Cardiovascular disease (CVD), ECG (Electrocardiogram), Machine learning, heart disease prediction, Diagnosis, Predictive models, Regulatory considerations.

MMI APPROACH FOR DIAGNOSING RESPIRATORY PROBLEMS

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Abstract: The COVID-19 pandemic has highlighted the need for innovative and efficient diagnostic tools. Traditional methods, relying on laboratory tests and imaging, can be resource-intensive and challenging to implement, especially in resource-constrained settings. Our project introduces the Multiple Mini-Interview (MMI) Approach for Diagnosing Respiratory Problems, focusing on COVID-19 detection. This structured interview format, typically used in medical education, is adapted to evaluate clinical reasoning and diagnostic skills related to respiratory health. We aim to revolutionize early detection by harnessing voice-based analysis. Vocal biomarkers in individuals with respiratory problems, including COVID-19, can be analyzed using advanced signal processing and machine learning. This analysis, based on a diverse dataset, will train algorithms to develop a model for distinguishing between individuals with and without COVID-19 infection based on their voice patterns.

Our goal is to develop a user-friendly web/mobile application that can analyze a user's voice sample and provide a probability score for COVID-19 infection. This tool could enable individuals to self-assess their risk and seek timely medical intervention, reducing the virus's spread.

Keywords: COVID-19, Diagnostic tools, Multiple Mini-Interview (MMI) Approach, Voice-based analysis, Public Safety.

RANSOMWARE DETECTION AND PREVENTION USING MACHINE LEARNING

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Abstract: Ransomware attacks continue to pose significant threats to individuals, businesses, and critical infrastructure worldwide. With their evolving sophistication and devastating impact, there is an urgent need for robust detection and prevention mechanisms. This article proposes a comprehensive multi-layered approach to enhance the detection and prevention of ransomware attacks. The proposed approach integrates

advanced machine learning algorithms, anomaly detection techniques, and behavior analysis to identify ransomware activities at various stages of the attack lifecycle.

Additionally, it leverages threat intelligence feeds and historical attack data to enhance the accuracy of detection and enable proactive mitigation strategies.

Keywords: Machine Learning, Anomaly Detection, Threat Intelligence, Defense-in-Depth, Cybersecurity

ELECTRICITY BILL MANAGING SYSTEM

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Abstract: The Electricity Bill Managing System (EBMS) is a comprehensive application designed to streamline the management of electricity bills and related services. The system incorporates innovative features including geo location tracking, online bill payment, and a user-friendly interface for lodging complaints. The geo location tracking feature allows users to identify their current location, facilitating accurate billing and service allocation based on geographical zones. This feature enhances efficiency by ensuring that billing and service delivery are tailored to specific areas. Moreover, EBMS offers a secure online bill payment platform, enabling users to conveniently settle their electricity bills from anywhere at any time. This feature eliminates the need for manual transactions and reduces administrative overhead. Additionally, the system provides a mechanism for users to submit complaints or service requests directly to authorized personnel.

Users can track the status of their complaints and receive updates on resolution progress, ensuring transparency and accountability in service delivery. Overall, the Electricity Bill Managing System aims to enhance customer experience, optimize operational efficiency, and promote transparency in electricity billing and service management through its innovative features and user centric design.

Keywords: Electricity bill management, Geo Location Tracking, Complaint management

RESILIENT CONNECT: EMPOWERING REMOTE REGIONS WITH INNOVATIVE EMERGENCY COMMUNICATION

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Abstract: In geographically challenging areas like hills and forests, traditional communication infrastructure can be limited and expensive. The network utilizes low-cost, user-friendly devices for voice, text, and emergency signals. At the heart of the network are cost-effective, user-friendly devices.

These devices will enable essential services such as voice calls, text messaging, and emergency alerts. This ensures accessibility even in the most secluded areas. Moreover, the network features offline messaging capabilities. Users can compose messages without connectivity, with the network sending them once a

connection is established. This enhances communication resilience during interruptions. Communication is not the exclusive goal. The network takes a proactive approach, including sensor technologies for continuous environmental monitoring. This permits early detection of possible threats, timely notifications to communities, and improved catastrophe preparedness. In addition, machine learning techniques improve the network's intelligence. These algorithms dynamically optimize resources in response to user behaviour and environmental variables. This paper seeking to provide a robust, sustainable, and life-saving communication infrastructure for isolated communities throughout the world by seamlessly combining renewable energy sources, cutting-edge communication technologies, and data-driven optimization.

Keywords: Solar-powered mesh network, Affordable devices, Early warnings, Machine learning optimization, Resilient infrastructure

CLASSCAPTURE: INTERACTIVE LECTURE RECORDER

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Abstract: Traditional methods of capturing educational content often lack engagement and depth. They rely heavily on labour-intensive processes like lecture recordings and motion tracking, leaving educators struggling to understand teaching dynamics while students lack interactive resources. To address these challenges, we propose automated solutions for capturing high-quality audio, video, and motion data.

By leveraging this data, we can develop immersive learning resources such as virtual reality simulations, augmented reality applications, and interactive multimedia content. These resources accommodate diverse learning styles, fostering engagement and deepening comprehension. Through this approach, we aim to revolutionize education, empowering both educators and students to excel in an ever-evolving, interconnected world.

A COSMETIC ADVISOR SYSTEM BASED ON SKIN HEALTH

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Abstract: Individuals often have trouble finding skincare products that work for their particular skin type, which results in trial and error and a waste of time and resources. Making decisions about skincare is made more difficult by the wide range of alternatives available, which frequently leads to disappointing results. Understanding suitable ingredients might make skin issues worse. With the use of advanced CNN algorithms, particularly the YOLO algorithm, our system analyzes users' skin conditions through image analysis and provides customized cosmetic product recommendations based on each user's goals, preferences, and profile. This strategy aims to enable users to effectively accomplish their skincare objectives. The system also makes it easier to schedule dermatological consultations, improving access to

expert skincare advice and care.

ROUTESYNC: OPTIMIZING LOCAL BUS TIMINGS FOR TRAVELERS

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Abstract: In this comprehensive article, we describe the Metropolitan Transport Tracker Framework, a creative structure aimed at transforming the metropolitan driving experience. Modern cities' arteries are their urban transportation networks, which enable millions of people to move around each day. However, these systems usually meet a variety of difficulties, such as congestion, delays, and a lack of real-time data. The Urban Bus Tracker System addresses these issues through cuttingedge technology, providing passengers and drivers with real-time bus tracking. Bus drivers are given the option to properly organize their travels by utilizing a smartphone application. The Driver Application provides a variety of features, including trip planning, course scheduling, and continuous area tracking. Secure QR code verification ensures that the primary permitted faculty may access the framework, protecting against unapproved usage. The solution allows drivers to optimize their operations and provide more dependable service to passengers by giving precise and up-to-date information about their timetables and routes. At the same time, travelers have access to a user-friendly application that allows them to browse for buses and track their whereabouts in real time. The Traveler Application makes use of GPS technology to display the current locations of transportation on a map interface, as well as estimated arrival times and other relevant information.

As a consequence, wait times are reduced and overall customer satisfaction increases since customers can make informed judgments regarding their travel arrangements.

Keywords: Metropolitan Transport Tracker Framework, urban transportation, congestion, delays, realtime data, Urban Bus Tracker System.

CROWD FUNDING SYSTEM

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Abstract: Traditional crowd funding platforms have revolutionized the way projects and ideas are funded, democratizing access to capital for entrepreneurs and creators worldwide. However, these platforms often face challenges such as lack of transparency, high fees, and security concerns. To address these issues, we propose the development of a blockchain-based crowd funding platform. Leveraging the immutable and decentralized nature of blockchain technology, our platform aims to provide a transparent, secure, and efficient ecosystem for fundraising and investment. Key features of our platform include smart contracts,

which automate the execution of crowd funding campaigns, ensuring that funds are released only when predefined conditions are met. This eliminates the need for intermediaries, reducing costs and increasing trust between project creators and bankers.

Additionally, our platform will utilize blockchain technology to provide transparent tracking of funds, allowing backers to trace the flow of their contributions and ensuring accountability from project creators. This transparency fosters trust and confidence in the crowd funding process. Furthermore, by tokenizing investments through blockchain-based assets, our platform enables fractional ownership and liquidity for bankers, allowing them to trade their investment stakes in a secondary market. Overall, our blockchain-based crowd funding platform aims to revolutionize the crowd funding landscape by providing transparency, security, and efficiency, thus empowering innovators and investors alike to participate in the creation of tomorrow's innovations.

Keywords: blockchain, bankers, crowd funding

COURSE RECOMMENDATION USING DEEP LEARNING

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Abstract: The variety of online learning platforms has increased the necessity of personalised course suggestions in today's digital world. To meet this demand, a Course Recommendation System (CRS) that employs machine learning techniques can offer a solution by using user data to recommend courses that are particularly matched to individual tastes, learning objectives, and ability levels. The goal of this project is to develop and implement a dependable CRS that combines machine learning techniques to improve the learning experience for users of online education platforms. This system will leverage a variety of data sources, including user profiles, course characteristics, user interactions, and feedback, to provide precise and reliable suggestions.

Keywords: Online Learning Platforms, Course Recommendation System (CRS), Course Characteristics, Reliable Recommendations, Ability Levels.

DRIVER'S DROWSINESS DETECTION USING CNN

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Abstract: Driver's Drowsiness Detection and Alerting System (DDDAS) integrates computer vision and machine learning to continuously monitor driver fatigue. Using a camera, it issues real-time alerts upon detecting drowsiness, aiming to prevent accidents caused by driver fatigue. This paper outlines DDDAS's design, implementation, and evaluation, including hardware setup and image processing algorithms. Experimental results confirm its effectiveness in accurately detecting drowsiness across diverse driving

conditions. By enabling timely alerts, DDDAS empowers drivers to combat drowsiness, thereby reducing the risks associated with drowsy driving and fostering safer roads globally.

Keywords: Driver drowsiness, Artificial Intelligence, Machine Learning, Road safety, Cyber security, Detection

LIVER TUMOR SEGMENTATION USING DEEP LEARNING

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Abstract: Liver tumors, including hepatocellular carcinoma and metastatic lesions, are a significant challenge in oncology, necessitating accurate diagnosis and timely treatment. Segmenting these tumors in medical imaging, especially with computed tomography (CT), is critical for diagnosis, treatment planning, and monitoring. Traditional manual segmentation is labor-intensive and prone to errors, driving interest in automated solutions. Deep learning, with its ability to learn complex patterns from large datasets, is revolutionizing medical image analysis. Convolutional neural networks (CNNs) and other deep learning models show promise for improving the accuracy and consistency of liver tumor segmentation. They leverage extensive data to precisely identify and delineate tumors. However, integrating deep learning into liver tumor segmentation has challenges, including model robustness, data privacy, and regulatory compliance. Ensuring models work across diverse patient groups and imaging environments is also crucial for clinical adoption. This paper explores deep learning-based liver tumor segmentation, discussing CNN architectures like DenseNet and 2D CNNs, data augmentation, transfer learning, and metrics like Dice similarity coefficient and intersection over union (IoU). It aims to demonstrate how deep learning can streamline liver tumor segmentation, ultimately leading to better patient outcomes and more efficient healthcare processes.

Keywords: Liver Tumor Segmentation, Deep Learning, Convolutional Neural Networks (CNNs), Computed Tomography (CT), Model Robustness, DenseNet

AGROCRAFT - AN E-COMMERCE WEBSITE FOR FRESH FARM PRODUCTS

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Abstract: Agriculture is the main occupation in India as it has major contribution in Indian economy as well as it is a primary source of livelihood of common masses. Farming contributes around 18% of the India's GDP and half of the population depends on it. Farmers are the backbone of the Indian economy, still they suffer from poverty, poor agricultural marketing, and many other problems. Our aim is to introduce the concept of digital marketing in the field of agriculture. We are trying to eliminate the role of middlemen

from agricultural marketing in order to insure fair price to farmers.

Though farmers try to sell their products on online platforms, due to quality and freshness issue many consumers did not buy them. Our proposed system will overcome both the problems of farmers as well as consumers

EV CHARGER MOBILE APPLICATION

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Abstract: Our mobile application provides a seamless and efficient solution for electric vehicle (EV) owners by providing real-time access to a network of charging stations. With an intuitive interface design, users can easily find nearby charging points, check availability and initiate charging sessions remotely. The app includes advanced features such as predictive analytics to optimize charging schedules and reduce waiting times. Enhanced security measures ensure safe transactions and user privacy. Integration with payment gateways enables convenient billing and transaction tracking. Additionally, the app promotes community engagement through user reviews and ratings, creating a dynamic platform for sharing experiences and feedback. By streamlining the EV charging process, our app accelerates the adoption of sustainable transportation solutions and contributes to a greener future.

Keywords: Seamless, Efficient, Availability, optimization

DEEP LEARNING-ENABLED MEDICAL IMAGE ANALYSIS USING EMBEDDED SYSTEM FOR ENHANCED DIAGNOSIS

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Abstract: Medical imaging plays a vital role in diagnosing and monitoring various diseases, but manual analysis by radiologists can be time-consuming and prone to errors. To address this, we propose a Deep Learning-Enabled Medical Image Analysis Embedded System for Enhanced Diagnosis.

This system leverages deep learning algorithms deployed on embedded systems to analyze medical images and provide automated disease diagnosis. By integrating advanced deep learning techniques with cloud connectivity, our system aims to improve the accuracy and efficiency of disease diagnosis in medical imaging. We present the design, implementation, and evaluation of the system, demonstrating its effectiveness in enhancing diagnostic capabilities and potentially revolutionizing healthcare delivery in the field of medical imaging and disease diagnosis.

Index Terms: Deep learning, embedded systems, medical imaging, disease diagnosis, ARM processor

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