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International Conference on Multidisciplinary Perspectives in Engineering & Technology (ICMPET) 02-April-2023:(Google Meet)

Shobhit University
Gangoh,Uttar Pradesh
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PROCEEDINGS

ICMPET- 2023

International Conference on Multidisciplinary Perspectives in Engineering & Technology (ICMPET) (Google Meet): 02- April-2023

Technical Program

02 – April - 2023

Organized By

Shobhit University, Gangoh, Uttar Pradesh

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About Shobhit University

Shobhit University, Gangoh, Saharanpur has been notified by the Government of Uttar Pradesh vide Shobhit Vishwavidhaylaya, Uttar Pradesh Adhiniyam, 2011 (U.P. Act No.3 of 2012) passed by Uttar Pradesh Legislature and assented by the H.E. Governor of Uttar Pradesh. The University is established under section 2(f) of the University Grant Commission (UGC) Act, 1956. (Notification)

Shobhit University, Gangoh was established by the legislative bill of Uttar Pradesh Government vide Shobhit University Uttar Pradesh Act, 3 in 2012. It has since emerged as one of the very few universities that are rural-based in the sense they are deeply entrenched in the rural ambience of culture, environment, market and aspirations while technologically resting on the great shift on the continuum of Tradition and Modernity.

The University translates its vision into reality on the path of achieving excellence in engineering, technology and management, based on the fundamentals of 21 century education to conform and serve basic human needs, for overall development and inclusive growth.

About ICMPET- 2023

The primary objective of **The International Conference on Multidisciplinary Perspectives in Engineering & Technology (ICMPET-2023): 02-April-2023: (Google Meet)** is to bring together the academicians and leading industry authorities in the areas of Education, Research, and Technology in a common forum, to help them remain at the forefront of their respective fields. The conference goes over the importance of being constantly alert, keeping up with the most advanced inclinations, recognizing the most urgent challenges, and carrying out independent research.

This extraordinary conference will cover subjects as significant as special guidance, policy guidelines, and leadership in education, inductive thinking, and lots more. This event is bound to be an engaging conference on education andlearning that will cover the latest trends in the fields of engineering & tech, as well as the most effective ways of addressing typical challenges.

Editorial Board Members

THE INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY PERSPECTIVES IN ENGINEERING & TECHNOLOGY (ICMPET):02-APRIL-2023

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MEGALA J, LEKHASHREE M, R PRABHAVATHI
DEPARTMENT OF INFORMATION TECHNOLOGY, SRI SAI RAM INSTITUTE OF TECHNOLOGY, TAMIL NADU

Abstract:

Soil is the foundation of life on Earth and the primary source of income and employment in India is still agriculture, despite advancements in the service industry. One way to determine the appropriate amount of nutrients to apply to soil based on crop requirements and soil fertility is through soil testing, which analyzes key soil properties such as available phosphorus, available potassium, organic carbon, boron, and pH. By using an Extreme Learning Machine (ELM) classification technique, this study categorizes and forecasts soil factors for each village, reducing unnecessary fertilizer spending, increasing profitability, and saving time for professionals in chemical soil analysis, while promoting environmental quality and enhancing soil health. The ELM technique uses a variety of convolution layers, including the hard limit, triangular basis, hyperbolic tangent, sine-squared, and gauss radial basis. With an accuracy rate of over 80%, these activation functions perform well in four of the five classification tasks. The highest performance was achieved with the hyperbolic radial basis function for the final Ph classification task, with an accuracy rate of nearly 90%, and the Gaussian radial basis function performing moderately.

SU – ICMPET - 2023 - 002

SMART BLIND STICK WITH GPS TRACKING

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Abstract:

A blind person faces many problems in day-today life whether it is outdoors or indoors. A normal stick is inefficient in many aspects. In the view of helping blind people a smart stick is designed. This paper proposes a modification to traditional sticks by using ultrasonic sensor, buzzer and vibration motor for obstacle detection and alert the individual for his safety. GPS and GSM module will be used in this stick in case of an accident an alert call and message will be sent to the person whose number is given in the sim.

SU - ICMPET - 2023 - 003

WRAP DISEASE DETECTION USING NEURAL NETWORK ARCHITECTURE

YOGA PRIYA D, KANTHIMATHI V, DEVI BALA J, MRS REKHA C
DEPARTMENT OF INFORMATION TECHNOLOGY, SRI SAI RAM INSTITUTE OF TECHNOLOGY, TAMIL NADU

Abstract:

Inherited macular diseases cause severe visual impact in children. As wrap is a genetic disease, it primarily affects the pupil which slowly causes symptoms such as slippage of words while reading, blur vision, irritation in eyes, redness in pupil etc. Since wrap is an genetic disease, diagnosis become challenging. This disease undergoes clinical testing of various risk patterns includes infants or young children. This paper presents novel clinical methods, proposing a system using segmentation by means of ImageNet, MobileNet. The distinct ImageNet, MobileNet process that are used for efficient classification of data.

Therefore, an alternative strategy is required, one that makes use of chromatic pupillometry, a method that is becoming more frequently employed to evaluate both the outer and the inner retina's functions. By combining the segmentation process results in resizing of images thereby increasing efficiency of the output generated by ImageNet and MobileNet. This invoke with satisfactory performance by achieving 0.941 accuracy, 0.962 sensitivity and 0.812 specificity.

SU – ICMPET - 2023 – 004

IOT-ORIENTED GESTURE AUTOMATION WITH MESH DETECTION THROUGH OPENCV AND PYFIRMATA PROTOCOL USING RESNET-MEDIAPIPE

ANU REKHA S, HARTIKA NK, P SHARMILA
DEPARTMENT OF INFORMATION TECHNOLOGY, SRI SAI RAM INSTITUTE OF TECHNOLOGY, TAMIL NADU

Abstract:

In this paper, we propose the gesture automation hybrid model and an Internet of things (IoT) control system that was designed for fully functional real world product that efficiently translates the movement of the hand into electrical signals which can control the home appliances. In the process of designing the workflow, we improve the AI gesture based automation with mesh detection through opencv for object detection and recognition on python and pyfirmata protocol to integrate it with Mediapipe to improve recognition speed and accuracy. Besides, we formulated an algorithm trained to access the loads with precise data from hand gestures. Experiments show that ResNet-Mediapipe can capture hand position in a variety of situations in a minimal space area with a pretrained environment and recognize gestures in real-time with an accuracy rate of over 98.5% and recognition speed up to 45 fps, which is more accurate and faster than other gesture recognition methods. The new gesture-controlled IoT system we propose is equipped with hardware that includes AVR Atmega 328p Microcontroller, NodeMCU ESP8266 wifi-based module Microcontroller, 5v relay switch and various IoT devices is used for the working of the system. This system can realize gesture recognition based on ResNet-Mediapipe and control numerous IoT devices. Besides, we proposed system that has the advantage of low power consumption, simple hardware, hand gestures, ease of operation and this system can be implemented in human-computer interaction since gestures are desired to play an important role with minimal latency. This project provides a convenient way for differently abled people to interact and control their electrical appliances with gestures more easily.

Keywords—ResNet-Mediapipe, Pyfirmata protocol, IoT system, gestures recognition, human-computer interaction.

SU - ICMPET - 2023 - 005

SECURING DATA TRANSFER THROUGH HUMAN BODY

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Abstract:

In this modern age of communication, everyone prefers to be interconnected and also requires the information to be accessible at fingertips. This can be made possible through better innovations in networking and communication technologies. Usually networks are been classified as: Wide Area Networks: also known as WAN, it remotely connects all servers and terminals. Local Area Networks: also known as LAN allows a common wireless and communication link for the computers and devices associated. Human Area Networks: also known as HAN, it is a technology that can change human body surface into a data transmission path with speeds of upto 10 Mbps between any two points of the body. Redaction technology is a better and innovative Human Area Networking technology that helps to turn any human body surface to a fast network transmission path.

SU - ICMPET - 2023 – 006

DEEP LEARNING ANTI-FRAUD MODEL FOR INTERNET LOAN PREDICTION

PRADEEP P, ALEN A, KING DINAKARAN R K, MRS S SUBHASHINI
DEPARTMENT OF INFORMATION TECHNOLOGY, PAAVAI ENGINEERING COLLEGE, TAMIL NADU

Abstract:

Internet finance is increasingly popular. However, bad debt has become a serious threat to Internet financial companies. The fraud detection models commonly used in conventional financial companies is logistic regression. A large public loan dataset, e.g. Lending club, for example, to explore the potential applying deep neural network for fraud detection. An XGBoost algorithm is employed to select the most discriminate features. After th we propose to use a synthetic minority oversampling technique to deal with the sam imbalance.

SU – ICMPET - 2023 – 007

IMPROVEMENT OF ELECTRIC AUXILIARY POWER UNIT WITH RESPECT TO BATTERIES

ARUNKUMAR V, MOHAMMED RABIK M
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Abstract:

In transportation sector, auxiliary power units (APUs) are used to provide extra power to vehicles, aircraft, tanks, trains, trailers. An APU's power output is supplementary to a vehicle's primary source and is usually activated when the primary engine is not in use. Depending on the application, an APU may have a multiple purposes and single purpose. In order to power onboard climate control, APUs are frequently used. The system supplies air heater to make the cabin heat. One or more electric heating elements will be present in the air heater. APU heaters will operate within the limits of the auxiliary power electrical system's power requirements. Air flow, safety, temperature, and physical dimensions are extra design. To heat the air in an APU climate control system, we design and construct APU heaters. To cool the air evaporators are used, In this project we need to improve the efficiency of the APU with respect to batteries, so currently Lead Acid Batteries are used in APU we are proposing to replace the Lead Acid Batteries with Sodium ion Batteries, according to the research the sodium ion batteries are more reliable, lower cost and environmentally safe with improved efficiency when compared with the Lead acid battery.

SU - ICMPET - 2023 – 008

MONITORING AND ASSISTING SYSTEM FOR ALZHEIMER PATIENT

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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN, TAMIL NADU

Abstract:

The aim of this Project is to develop a prototype that provides physiological support to Monitor and Assist the Alzheimer patient. Information can be investigated by a family member to protect the person with Alzheimer's Diseases. By using specific sensors, the data will be captured and compared with a configurable threshold via microcontroller which is defined by a relevant person who follows the patient. In any case of emergency a short message service (SMS) and emergency call will be sent to the relevant mobile number along with the emergency text message and call through GSM module. Thus GPS provides the Position Information of the monitored person who is under surveillance all the time. Which provide the ability to track, trace and save patient's life at appropriately time is an essential need for mankind. EEG sensor and LM35 sensors are used to monitor the brain activities and monitor the body temperature of the patient respectively. .In additionally Buzzer was added to the device. Which is used as remainder to take food and medicine for the patient. The reachable Battery provide the power to the whole device.

SU – ICMPET - 2023 – 009

AN OVERVIEW: SECURITY CONCERNS IN CLOUD COMPUTING

MR VINOD KUMAR, DR MAHIPAL SINGH, MS SUMIKA JAIN
DEPARTMENT OF COMPUTER SCIENCE, SHOBHIT UNIVERSITY, GANGOH, UTTAR PRADESH

Abstract:

The word Cloud computing is the most prominent word in the contemporary world of information technology. This model has changed the entire domain of computing due to its reliability, validity, and economic nature. Over the last decade, cloud computing has given the pace to Information Technology. With this rapid growth in this sector, various security issues have been addressed and getting concerns regarding the security of information. As more and more information of individuals and companies are placed in the cloud, there is a growing concern about the safety of information. Due to these security concerns, there is a lack of investment inclination in this sector from the organizations.[1] The present review article examines the key security concerns in cloud computing with the suggestive interventions in this regard.

SU - ICMPET - 2023 – 010

SUPPRESSION OF FUNGAL PATHOGENS OF RICE BY BENEFICIAL BACTERIAL STRAINS ISOLATED FROM PADDY FIELDS

MONIKA SAINI, DR RAJIV DUTTA
DEPARTMENT OF BIOSCIENCE, SHOBHIT UNIVERSITY, GANGOH, UTTAR PRADESH

Abstract:

Paddy is one of the most important staple crops in the world, providing food and livelihoods for millions of people. India after china is the second-largest producer of rice in the world (117.47 million metric tons) in 2020-21.The productivity of rice in India has been steadily increasing over the years. The country known as the largest consumers of rice in the world, with an estimated per capita consumption of 65 kg in 2020. Apart from that a remarkable yield loss reported over the year in the country. Various fungal, viral and mycoplasma infections majorly effect the production and quality of paddy crop. Fungal infections can indeed cause significant damage to rice crops in Uttar Pradesh and other parts of India. Dirty panicle disease (Seed discoloration) and false smut (green smut) are the common disease of rice caused by Aspergillus niger and Ustilaginoidea virens respectively in the rice growing region of Uttar Pradesh. It can cause lodging and yield losses of up to 60%. PGP microbes (Plant Growth-Promoting microbes) are a group of beneficial microorganisms that can enhance plant growth and productivity by promoting nutrient uptake, improving soil structure, and suppressing pathogenic microorganisms. Pretreatment of seed or seedling root tip with bacteria may be a beneficial alternative against chemical control. In the present study a number of PGPRs such as Azotobacter, Azospirillum, Bacillus, Enterobacter, Klebsiella, Pseudomonas, and Serratia, have been isolated from paddy fields of Uttar Pradesh. Further, all of them are identified on the basis of their cultural and biochemical methods. Two non-pathogenic strains of Pseudomonas and Bacillus were selected on the basis of their antagonistic ability against different rice fungal pathogens under in vitro conditions. The per cent inhibition of mycelial growth of rice fungal pathogens Aspergillus niger and Ustilaginoida virens by Pseudomonas was 41.12% and 58.72% respectively. Bacillus gave mycelia inhibition 35.24% and 33.15% against Aspergillus niger and Ustilaginoida virens. It is observed that Pseudomonas sp. has more ability to suppress rice fungal pathogens.

Keywords: Pseudomonas, PGPR, Biological control, Rice, Dirty panicle disease and False smut

SU - ICMPET - 2023 – 011

PREDICTION SYSTEM FOR RESIDENTIAL ENERGY MANAGEMENT BASED ON MACHINE LEARNING

AKSHAYA J, EZHILARASI S, DHARANI K, DEEPIKA G, MS G RAJESWARI
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING,
VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN, TAMIL NADU

Abstract:

One of the main issues many nations throughout the world are currently dealing with is the energy problem. For a significant portion of the market for the use of energy in industrial development has greatly grown. Many methods are offered, such as the Energy monitoring and prediction system, which is effective for keeping an eye on the equipment found in a home or business and alerting users to any unusual activity. This study focuses on anticipating the electric energy use of household appliances in a low energy residence. Due to inhabitants' longer stays throughout the week and on weekends, there is a change in the demand for electric energy. An innovative Internet of Things (IoT)-based system for intelligent energy management is being implemented in this project. Via the IOT-based Android application and the web server, users may view their status. One of the main issues many nations throughout the world are currently dealing with is the energy problem. For a significant portion of the market for the use of energy in industrial development has greatly grown. Many methods are offered, such as the Energy monitoring and prediction system, which is effective for keeping an eye on the equipment found in a home or business and alerting users to any unusual activity. This study focuses on anticipating the electric energy use of household appliances in a low energy residence. Due to inhabitants' longer stays throughout the week and on weekends, there is a change in the demand for electric energy. An innovative Internet of Things

(IoT)-based system for intelligent energy management is being implemented in this project. Via the IOT-based Android application and the web server, users may view their status. Our solutions make it possible to bring in behavioral changes which bring in awareness amongst users and our sophisticated analytics, give insights on managing the energy better. There are several types of penalties that can be levied, some are hidden in the energy bills and might go unnoticed. There are also possibilities to gain incentives for consuming power in sustainable ways. Our tool helps you take advantage of the incentives and avoid the penalties well in advance.

Keywords: Machine learning, (IoT)-based system, Data visualization.

SU - ICMPET - 2023 – 012

IMPACT OF BUSINESS INTELLIGENCE ON BUSINESS ACTIVITIES

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Abstract:

Business intelligence (BI) has been applied in different areas to take better choices and it gives distinctive degree of data to its partners as per the data needs. The motivation behind this paper is to introduce a writing audit on ongoing works in BI. The model of Business Intelligence (BI) have proved itself as a main concern of chief information officer for some last years, besides this a very little concern has taken this that how to effectively work with those models past the usage stage. The volumes of information obtained by most major corporations is steadily developing. This demands the use of technologies by enterprises to see, evaluate, and, of course, obtain information. Supervisors at varying tiers, and also investigators and steadily more subordinate staff, are clients of the following information. Their work requires them to see properly what is going on in one part of the organization. Staff members want precise large amounts of data which can be promptly evaluated and followed up on.

SU – ICMPET - 2023 - 013

ANALYSIS ON URBAN PEDESTRIAN ENVIRONMENT IN TAMBARAM

RUFUS MATTHEW VARDHANAPU, ALAVALAPATI SATHVIK REDDY, JAYANTH KAKANI, A ARUN KUMAR
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Abstract:

In this paper urban pedestrian environment for Tambaram in Chennai, Tamil Nadu was studied. Urban pedestrian environments refer to the spaces and infrastructure designed for pedestrians in urban areas. This can include sidewalks, crosswalks, street furniture, lighting, and other features that affect the safety and accessibility of the area for pedestrians. Analysis of urban pedestrian environments typically involves evaluating factors such as walkability, accessibility, safety, and aesthetic appeal, in order to identify areas for improvement and inform the design of new pedestrian infrastructure. This include conducting surveys, observing pedestrian behavior, and using data on pedestrian traffic and accidents to inform recommendations for changes on the environment. The analysis of urban pedestrian environment includes: Identifying the study area, collecting data, analyzing data, identifying recommendations, and communicating the results. Overall, the analysis of urban pedestrian environment provides valuable information that can be used to improve the safety, accessibility, and overall quality of life for pedestrians in urban areas.

SU – ICMPET - 2023 - 014

ANALYSIS OF MUNICIPAL WASTE MANAGEMENT OF COCHIN CITY

COLLIN P GEORGE, BHARATH KRISHNAN, PRANAY KUMAWAT, DR ARUN KUMAR A
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Abstract:

Considering the case of Kochi City (Ernakulam, Kerala), Solid waste management is a major issue. This report analyses solid waste management in Kochi City, evaluates existing practices, and proposes strategies for improvement. It assesses waste generation patterns, collection, transportation, and disposal methods, and their environmental and economic impacts. Recommendations include community engagement, decentralized waste management, resource recovery, and capacity building initiatives. A comprehensive and integrated approach is necessary to achieve sustainable development goals. We have also conducted a google survey regarding the current solid waste management system, along with the mapping of waste generated in different regions of Kochi using Google Earth and GIS software.

SU – ICMPET - 2023 - 015

BLOCKCHAIN BASED SECURE PHOTO SHARING FRAMEWORK FOR CROSS SOCIAL NETWORK

EZHUMALAI M, ANBARASAN N, KISHORE M, MR B VENKATESAN
DEPARTMENT OF INFORMATION TECHNOLOGY, PAAVAI ENGINEERING COLLEGE, TAMIL NADU

Abstract:

The privacy of online photos is often protected carefully by security mechanisms. In recent years, there are some research works to address this privacy issue, yet they do not always focus on providing the normal social network services for users, such as data sharing, data retrieval and data access services.

In this paper, we propose Photo Chain, a Blockchain-based secure photo sharing framework that provides powerful dissemination control for cross-social network photo sharing. Combined Blockchain, Gaussian Blurr for Face Masking, and PreHash Algorithm for Photo integrity verification and Access Control.

SU – ICMPET - 2023 – 016

ADVANCED AI SYSTEM FOR FRUIT QUALITY DETECTION

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DEPARTMENT OF INFORMATION TECHNOLOGY, SRI SAI RAM INSTITUTE OF TECHNOLOGY, TAMIL NADU

Abstract:

Food plays a significant role in a hygienic lifestyle. Distinct fruits have more nutrients and minerals to enrich our human body. So that people are given higher priority to consume fruits. Even so, fruits are grown both organically and inorganically. The inorganically grown fruits have fewer nutrients and poor quality. Since it is essential to detect the quality of the fruit. The proposed solution is to develop a model to detect the quality of the fruit by using quality monitoring apparatus. These quality monitoring apparatuses keep an eye on environmental factors such as temperature, humidity, and the gases emitted from the fruits. An AVR At mega 328p Microcontroller with 10-bit ADC channel, AI Thinker ESP8266 Node MCU, LCD 16x02 Display, I2C driver, MQ-135, and DHT-11 are the hardware apparatus used in our project. These apparatuses are built on the GPCB board. The ESP8266 Node MCU is a stand-alone microcontroller and it contains a Wi-Fi communication module. Sensors are interfaced with this module such as DHT-11 to detect the temperature and humidity and the MQ-135 sensor is used to detect the different gases emitted from the fruits. As a result, the data from the sensors are displayed offline through LCD, and on the Blynk IoT server which is online. The significance of our proposed work aims to improve people's hygiene by classifying fruits, evaluating their freshness and rotten stage, and calculating their expiration days based on the threshold values of the fruit.

SU – ICMPET - 2023 – 017

BLOOD FLOW MEASUREMENT SYSTEM WITH NONLINEAR FOR BAD PATIENT

BALAJI D, MATHAN M, SABARINATH R, SATHISH K, MR SENTHAMIL S
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Abstract:

The system can be used to check the health condition of the patient by using three device such as Blood flow device, ESP8266 device and pressure device and also to monitor the saline droplet condition of patients in each patient's bed in rural public hospital. By installing the measuring modules in all patients' beds, the system will show saline droplet status of each patient principle. Each of us requires a periodic monitoring of vital parameters and correct treatments based on this data. These processes become even more crucial when people reach a certain age and are not capable to follow their health condition properly without a special medical personnel or sophisticated equipment to perform the monitoring. Therefore, a particular interest is focused on continuous monitoring techniques. For continuous monitoring, Atmega328 microcontroller is used. In this case several device unit is considered. Namely, ESP8266 device, Blood flow rate device, human Blood pressure device. All of devices are used only for sensing purpose. If the sensed value is equal to normal value, it stops further process. Otherwise it sends control signals to patient via Actuator.

SU – ICMPET - 2023 – 018

HANDWRITTEN TEXT RECOGNITION USING DEEP LEARNING

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Abstract:

The world is moving towards Digitalization. Conversion in to readable digital format from handwritten information reduces the difficulty. Deep learning algorithm is used in the project. In the Existing System they have used Convolutional Neural Network (CNN) Model to predict the real time handwritten digit. This proposed system is to predict handwritten text using Optical Character Recognition (OCR) Algorithm in Convolutional Recurrent Neural Network (CRNN) Model. To classify the handwritten text IAM dataset is used for training the model. The dataset consist of images with text that is given as input to the model and it gives recognized text as an output.

Keywords: Optical Character Recognition (OCR), Convolutional Neural Network (CNN), Recurrent Neural Network (RNN).

SU – ICMPET - 2023 – 019

AN APPROACH TO FORECASTING MULTIPLE DISEASES UTILIZING MACHINE LEARNING ALGORITHMS

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Abstract:

Today, machine learning is applied in all fields. Machine learning plays an important part in healthcare. "An Approach to forecasting multiple diseases utilizing machine learning algorithms" system is based on predictive modelling that predicts the user's disease based on the symptoms that the patient enters into the system. Many existing machine learning applications for health analytics focus on only one disease. There is no unified system where one model can predict more than one disease. This article proposes a system that predicts several diseases in a single system. This publication offered to analyze diabetes analysis and heart disease. This project proposes a support vector machine (SVM) as the backbone of computational diagnostic tools instead of Naïve Bayes algorithm for more accurate prediction of heart disease risk levels. SVM modelling is a promising classification method to predict medication adherence in cardiovascular disease (CVD) patients. Bagging and boosting methods using Decision Tree Boosting (DTB) algorithms were applied to experimental data to predict early diabetes risk. Random forest classifications were chosen for the bagging method. Later, other diseases such as skin diseases, fever analysis and many other diseases can be included. In the analysis of several diseases, machine learning algorithms were used to analyze all disease-causing parameters to identify the maximum effect caused by the disease. This approach can help many people because the condition of people can be monitored, and necessary precautions can be taken which will increase the life expectancy.

SU – ICMPET - 2023 – 020

HYBRID SOLAR - WIND INVERTER

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Abstract:

This project focuses on creating an environmentally friendly solution for energy production by implementing a new system configuration of the front-end converter stage for a hybrid wind/photovoltaic energy system. The main objectives of the project are to extract as much energy from wind and solar sources as possible and to supply high-quality electricity to the load. This hybrid system ensures that the system stays connected to the main grid even in the event of a voltage disturbance in distribution. The project utilizes a cuk-SEPIC fused converter, which inherently does not require additional input filters to filter out high-frequency harmonics. The closed-loop mechanism of the cuk and SEPIC converter is described, and simulated results are presented. The configuration allows the two energy sources to supply the load separately or simultaneously based on their availability. Overall, the project aims to contribute to the effort of mitigating the negative impact on the environment and ensuring a sustainable energy source for the future.

SU – ICMPET - 2023 – 021

GENETIC ALGORITHM WITH TABU SEARCH FOR FLOW SHOP SCHEDULING PROBLEM TO REDUCE MAKESPAN

SUMIKA JAIN, VINOD KUMAR, JITENDRA KUMAR SAINI, DR TARUN KUMAR SHARMA
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, SHOBHIT UNIVERSITY, GANGOH, UTTAR PRADESH

Abstract:

This paper combines a genetic algorithm with a new partial opposed-based population initialization method to reduce the makespan of the tabu search process. Manufacturing is one of many industries that can benefit from the substantial scheduling variance known as flow shop. Numerous academicians have created strategies to address it because it is regarded as an NP-hard problem. The problem of output ordering has been addressed by a number of methods, most notably evolutionary algorithms. The genetic algorithm is now the most frequently used evolving algorithm for handling production schedules due to its ability to produce accurate, quick, and efficient results while investigating challenging solution spaces (global search). Nevertheless, when conducting exploitation (local search), it yields meaningless results because it is simply confined in the ideal small area. The local optimal of genetic algorithms can be avoided by using taboo search, which works better than local search. Combining these two methods creates the initialization method, a new programme that balances queries and produces better results. 120 issue examples were tested using the recommended strategy in order to assess the method's effectiveness. In 115 out of 120 cases, the created technique beats the six currently used hybrid algorithms, according to the actual data.

SU – ICMPET - 2023 – 022

WIRELESS CHARGING SYSTEM FOR ELECTRIC VEHICLE

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Abstract:

The majority of electric vehicle systems are built around a number of modules that are intended to guarantee the high power and stability of the car on the track. The charging mechanism is connected to the bulk of these parts. Dynamic wireless power transfer can help alleviate range anxiety in electric vehicles and lower the price of onboard batteries in this regard. Pure electric vehicles have long used wireless recharging, which enables charging even while the car is moving. Yet, due to the complexity of this method's working philosophy and the presence of numerous variables and parameters, analysis is challenging. Also, a number of characteristics, including the vehicle speed and the sizes and dimensions of the coil receivers, are determined by the condition of the vehicle, whether it is in motion or stationary. This study proposes a brand-new technique for enhancing dynamic wireless recharge system performance. By providing a dynamic mathematical model that can describe and measure source-to-vehicle power transfer even while it is in motion, receiver coils have been added to the proposed system to maximize charging power. All of the physical parameters of the model were presented and addressed in the suggested mathematical model. The outcomes demonstrated the viability of the suggested model. . Also, the experimental trials supported the reliability of the simulation outcomes attained by placing two coil receivers under the car.

SU – ICMPET - 2023 – 023

STUDY ON SOLID WASTE MANAGEMENT AND IMPLEMENTATION OF SMART CITY SOLUTIONS IN CHENNAI

LEAH SAJU JACOB, SRIKAR PRASAD KAMBHAMPATI, SRIVAS REDDY, DR ARUN KUMAR A
DEPARTMENT OF CIVIL ENGINEERING, VIT UNIVERSITY, TAMIL NADU

Abstract:

The project is aimed to take a comprehensive look at the current state of solid waste management in Chennai and identify the key challenges and issues that both the public and local authorities face. To gather the necessary data, a survey was conducted to collect information from households located in different parts of the city. This information will be used to gain a better understanding of the current practices and procedures for solid waste management and to identify areas for improvement. Our research will also focus on understanding the attitudes and behaviors of the public and the role they play in contributing to waste management. Once the data has been collected and analyzed, potential solutions were developed for the existing issues. One of the key areas that we will focus on is the implementation of the internet of things (IoT) and other emerging technologies to ensure more effective and sustainable waste management practices. By leveraging these technologies, we hope to streamline the process of waste collection and disposal, reduce the environmental impact of waste, and ultimately help to make Chennai a cleaner and healthier place. Our ultimate goal is to create a roadmap for the future of solid waste management in Chennai that takes into account the needs of both the public and local authorities and ensures that the environment is protected from pollution to the greatest extent possible.

SU – ICMPET - 2023 – 024

SMART BIN SYSTEM WITH WASTE TRACKING AND SORTING MECHANISM

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Abstract:

One of the most important environmental problems of the present is efficient waste management. To reduce the risk to nature, the isolation, care, transportation, and transfer of refuse must be properly supervised. When waste is separated, it can be estimated most effectively. The traditional technique requires more humane effort, takes longer, and costs more money to physically isolate the waste. In order to monitor garbage waste, this study suggests a waste tracking system with an integrated waste sorting mechanism. The goal is to detect the trash into glass, plastic, and metallic categories. The tracking device tells the server how much waste in trash after segregation. In this regard, an effective with appropriate waste management operations, a framework for waste management is created helpful for recycling practices for better environmental cleaning eco-systems. The goal of this paper is to suggest a new framework that can be seamlessly incorporated into the future smart city, not to undermine the efforts being made by the Ghanaian government to address waste management problems. The growth of the economy and the development of the country go hand in hand with the quick advancement of science and technology. The development of WSN systems and wireless communication systems has given creators and experts who build Sensor networks for socially significant initiatives a lot of new opportunities. As a result of this development, many people are starting to depend quite heavily on technology in terms of many areas, including effectiveness, usability, and anonymity. New emerging technologies and gadgets, like smart phones and the intelligent connected house, are starting to be adopted by people. The Internet of Things (IoT) enables everyone and everything to be intelligent and communicate with the rest of the community online. Smart Cities, which allude to anything that is connected to the network and run by research and technology, are a result of the Internet of Things.

One of the most significant digital components of a smart city is smart waste management. The correct handling of waste is a significant barrier to the development of Smart Cities because sanitation and wellness add to a prosperous and safer environment. A device called the Smart Garbage Bin was created to address the issue of garbage disposal. The entire system will make use of level detectors to determine the actual state of the container and send the trash collector accurate alerts. This enables container overspill is prevented by the trash collector keeping track of the container and picking it up when it is filled. In addition, the bin enables automated garbage fertilization in case the trash collector is unable to pick it up. The bin's lids automatically unlock when it is full, letting trash descend into the second chamber. The second chamber can quickly turn trash into compost by applying fertilizer using

its fertilizer application feature. The remainder of the paper is devoted to a review of related works and an explanation of the suggested method, which specifically lays out how to design and execute the different subcomponents. The system's test results are presented in the following part, and conclusions and suggestions are made in the final section.

SU – ICMPET - 2023 – 025

AUTOMATED VEHICLE SPEED CONTROLLER USING ZIGBEE

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Abstract:

This wireless communication system will automatically reduce the speed of the vehicle with accordance to the predefined speed limit using Zigbee wireless technology and also it works with GPS to point the location .So ,if the vehicle crossing the predicted zone like school zones or highways ,the LED will display the output and automatically it will slow down. Once this technique is implemented, the accidents will be reduced on a large rate and save lives. In future, this system may develop into small chip and placed in vehicles.

SU – ICMPET - 2023 – 026

"CARNATIC MUSIC": A SOUND THERAPY WITH MEDICINAL BENEFITS

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Abstract:

Music Therapy is the use of selected music to achieve the same expected changes and hormonal alterations in the body, which is played continuously for a period of time to achieve the desired positive effect. In this project, we attempt to use a computerized composition of Carnatic music to treat ailments. Many people are becoming aware that ragas can supplement or even be a safe alternative to many medical interventions. To accomplish this, a system that can generate music based on the user's needs and specifications must be designed. Our project aims to put this idea into action by taking raga swears as input and using a genetic algorithm to generate pleasant music. This application can be used by medical practitioners by selecting a raga to play after entering the patient's information and disease. Creating fitness criteria that satisfy coherency, variety, harmony, rhythm, and reduce redundancy is a herculean task. The therapy history should also be saved so that it can be used as a constraint for fitness evaluation. Java was used to create this application. JFugue, a Java API, is used to support music programming.

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FLOOD MANAGEMENT SYSTEM FOR EASHWARI NAGAR SUBWAY, PALLAVARAM USING GIS, AUTOCAD AND SWMM

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Abstract:

Over the past decade, floods have become a troublesome period for the people of Chennai. According to Quint, the Chennai Corporation, in the year 2022, has extended its storm water drain up to 200km. Despite this massive effort, some parts of Chennai, such as Pattalam, General Patterns Road, Vadapalani, Kolathur, etc., seemed to be flooded. The city's main drains are the Adyar and Cooum, but the drainage paths to these rivers have been blocked with silt and garbage. The drainage system currently present in Chennai was constructed about four decades ago with slight modifications since then. Around 5500 hectares of wetlands have been encroached upon for infrastructure. Chennai receives an average annual rainfall of about 140cm. Chennai particularly experiences heavy rains once every 10 years (1969, 1976, 1985, 1996, 1998, 2005, 2015). We have chosen Eashwari Nagar in Pallavaram as our study area. A subway connecting east and west Pallavaram has been continuously affected for the past 15 years, and still no proper remedy has been proposed. Apart from this, if the Pallavaram lake gets filled, there is a risk of the entire area of Pallavaram getting flooded. The lake is located along the flanks of the 200 feet radial road. Our main aim here is to analyze the problem and propose a design that could solve it and make Pallavaram and Eashwari Nagar stormwater-resilient zones. ArcGIS was used to analyze the water flow patterns and the elevation of the locality. From here, we devised a plan that could transport the storm water and prevent flooding in the area. Then Strom Water Management Model (SWMM) software was used to understand whether the plan is suitable for the particular study area. The initialization of perforated pavements proposed in this study shows that the subway can be entirely prevented from flooding anytime of the year. Past rainfall records have been used to simulate the atmosphere. Hence, we can guarantee the results of this design. With this, we can propose a stormwater-resilient design for the pressing cause that has been left unrecovered over the years.

SU – ICMPET - 2023 – 028

A MODEL FOR DISSOLVED OXYGEN PREDICTION FOR ENHANCING WATER QUALITY IN INTENSIVE AQUACULTURE

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Abstract:

An important measure of water quality in an aquaculture environment is the amount of dissolved oxygen. Because of its nonlinearity, dynamics, and complexity, dissolved oxygen content prediction presents difficulties for established approaches in terms of accuracy and speed. This paper offers a hybrid model that combines the Light Gradient Boosting Machine (LightGBM) with the Bidirectional Simple Recurrent Unit to address these problems (BiSRU). Then, to identify important characteristics, linear interpolation and smoothing were applied. The relevance of dissolved oxygen is then determined by the LightGBM algorithm by removing unimportant variables and forecasting dissolved oxygen in intensive aquaculture. Lastly, the weighting and learning parameter matrices were mapped using the attention approach, allowing the BiSRU's hidden states to be given various weights.The results demonstrated that the proposed prediction model can forecast the varying trend of dissolved oxygen over a 10-day period with accuracy of 96.28% in just 122 seconds. It takes the least time to compare the model impacts of LightGBM-BiSRU, LightGBM-GRU, LightGBM-LSTM, and BiSRU-Attention.

SU – ICMPET - 2023 – 029

CRYPTOCURRENCY PRICE PREDICTION USING REGRESSION ALGORITHM IN DEEP LEARNING.

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Abstract:

Cryptocurrency is a type of digital currency similar to dollars, euros, and yen. The difference is that instead of the backing of a nation or federal bank, it uses an online ledger with strong cryptography to secure online transactions. Through cryptocurrency exchanges, one can buy and sell cryptocurrencies. It can also be "mined." The popularity of cryptocurrencies skyrocketed in 2017 as a result of several months of exponential growth in their market capitalization. With increasing geopolitical and economic issues over the last two years, global currency values have fallen, stock markets have had a bad run, and investors have lost wealth. This has rekindled interest in digital currencies. Unlike traditional paper currency which can be printed as per market needs, Cryptocurrency has a limited supply. This is in order to ensure that printer inflation does not occur and the currency does not get devalued. However, due to the limited supply of cryptocurrency and with 80% cryptocurrencies already mined by mid-July 2018, it is anticipated that the remaining of the 21 million worth of cryptocurrencies will take a large amount of time to mine and in order to perform such large computations, relative infrastructure will also be required with the possibility of a low return in the future.

The system aids in cryptocurrency price prediction using machine learning. Using machine learning, this program helps in forecasting cryptocurrency prices. In an effort to more accurately predict bitcoin prices quantitatively. Experimental results shows that the proposed system provide high level accuracy in cryptocurrency price prediction using machine learning algorithm named as LSTM algorithm.

SU – ICMPET - 2023 – 030

ADVANCED ONLINE PROCTORING SYSTEM USING AI

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Abstract:

Significance of online education can be seen especially during the Covid-19 when going to seminaries or sodalities isn't possible. So, validity of online examinations should also be maintained with respect to traditional pen- paper examinations. Still, absence of an invigilator makes it easy for the examinees to cheat during the test. Though there are formerly numerous systems for online proctoring, not all educational institutes can use them as the systems are veritably precious. In this paper, we've used eye aspect estimation as the main features to design our online proctoring system. Thus, the purpose of this paper is to use these features to produce an online proctoring system using computer vision and machine literacy and prevent cheating attempts in examinations by using AI questions. And, also we have added a feature in order to capture the candidate in the dark environment or dim light by using a modified camera to reduce the impersonation and increase the security and quality of education.

SU – ICMPET - 2023 – 031

REAL TIME INDIAN SIGN LANGUAGE RECOGNITION USING YOLO V5

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Abstract:

Communication plays a crucial role in everyone's life because it is the key to speaking and thinking. Because everyone is imperfect and normal, some people may find it difficult to express their thoughts and feelings because they may be physically unable to do so. People who are deaf or mute may have trouble integrating into society. People expect their own regional sign gestures because sign languages include hand gestures and facial expressions for recognizing the signs and tracking and identifying them for complete recognition. Due to the inclusion of hand signals made with both hands, it is possible for sign language recognition systems to be more robust in terms of recognizing a greater number of signs when the left and right hands are detected separately. Even though there are a lot of different models of object detection techniques and methods, it's important to choose the most effective model with the best accuracy. For classification, the HNN Hierarchical Neural Network, AlexNet, and VGG16, a stack of convolutional layers, are utilized. For the purpose of hand detection, we use YOLO (You Look Only Once) version 5 to train and test with a robust Indian sign language dataset containing various hand positions.

SU – ICMPET - 2023 – 032

AN END-TO-END SYSTEM FOR REMOTE SENSING IMAGE DEHAZING BASED ON LOCAL EXTREMA CNN

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Abstract:

Haze may affect the quality of optical remote sensing images, thus limiting the scope of their application.

•Remote sensing image dehazing has become important in remote sensing image preprocessing, promoting the use of remote sensing data and the precision of target recognition.

•Existing remote sensing dehazing methods based on simplified atmospheric degradation models are not suitable for the removal of heterogeneous haze that exist in remote sensing images.

•For this purpose, this study proposes an end to-end convolutional neural network based on attention mechanism, in which the residual block structure combines both channel and spatial attention mechanisms, and establishes a synthetic high-resolution haze image dataset for full training.

SU – ICMPET - 2023 – 033

REAL TIME SECURITY SYSTEM USING YOLO TECHNOLOGY

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Abstract:

The main aim of this project is to develop a device for the security purpose. Many people who may or may not know us, are accessing the personal workplace because of this. There are many issues such as losing of documents and valuable possession. Even the latest technology such as fingerprint sensor lock can be unlocked with ease. So to overcome this problem, we will implement AI based security room and locker system using face recognition

SU – ICMPET - 2023 – 034

A REVIEW ON COMPARATIVE ANALYSIS OF PHARMACOLOGICAL STUDIES AND PHYTOCHEMICAL OF ANGELICA GLAUCA AND FUMARIA INDICAOMOUS), TAMIL NADU

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Abstract:

The current review is concerned with preserving, cultivating, and promoting some of Uttarakhand's endangered plants. Angelica glauca and Fumaria indica are medicinally significant and endangered plants of Uttarakhand. Whereas Angelica glauca is restricted to the higher altitudes of the Himalayas, Fumaria indica can be found in both the lowlands and higher altitudes of Uttarakhand. While coming from different families, they have a similar impact. As each of these therapeutic plants contains a phytochemical with a similar effect, it may be concluded by comparing their closeness that they may be used interchangeably or that they both can be used as food enhancers, have nutraceutical potential, be blood purifiers, treat skin diseases, immunity boosters, and also have laxative effects. Secondary metabolites include alkaloids, fixed oils or fats, glycosides, phenols, steroids, terpenes, carbohydrates, flavonoids, tannins, and reducing sugars are present in both Angelica glauca and Fumaria indica. Fumaria indica and Angelica glauca's medicinal significance is increased by their pharmacological potential, including anti-inflammatory, antioxidant, antibacterial, and antifungal actions, among other qualities.

SU – ICMPET - 2023 – 035

REAL TIME NOISE SUPPRESSION USING DEEP LEARNING

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Abstract:

As the pandemic evolved, online meetings have become a crucial part of our daily lives. However, the audio quality of these meetings is often disrupted by background noise, making it challenging to communicate effectively. In this project, we propose a real-time noise suppression technique using machine learning to remove the background noise in online meetings. Our approach involves preprocessing the audio signal using a spectral algorithm to extract relevant features, followed by training an autoencoder using the Tensorflow API. The autoencoder learns to map the noisy audio signal to a noise-free representation. We then incorporate the autoencoder as a preprocessing step for a recurrent neural network (RNN) that predicts the noise-free audio signal in real-time. The proposed technique can be easily integrated into existing online meeting platforms like Zoom, Google Meet, and others. We evaluate the effectiveness of our approach using both objective and subjective metrics. Our results demonstrate that our proposed technique significantly reduces the background noise and improves the audio quality of online meetings. In conclusion, our proposed technique provides a practical solution to the problem of background noise in online meetings. By integrating our technique into existing online meeting platforms, we can enhance the audio quality and improve the communication experience for users.

SU – ICMPET - 2023 – 036

ANDROID MALWARE DETECTION USING EXTREME GRADIENT BOOSTING ALGORITHM

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Abstract:

With the rise of Android devices, protecting against the surge of malicious applications has become a critical concern for device security, making Android malware detection an essential safeguard against potential security threats like malware, viruses, and hacking attempts. Traditional machine learning algorithms, such as logistic regression and Naive Bayes, have been utilized for Android malware detection. However, these algorithms may not be sufficient in detecting complex and diverse malware types. To address this issue, the utilization of the XGBoost algorithm, a renowned gradient boosting decision tree algorithm, is proposed for Android malware detection. An experiment will be conducted on a dataset comprising of more than 10,000 Android applications, containing both benign and malware samples. The efficacy of the XGBoost algorithm in accurately detecting Android malware will be demonstrated through the experiment. The proposed algorithm can assist in the early detection and prevention of Android malware, ensuring the security of Android devices is crucial to protect the privacy and data of users and to prevent any unauthorized access or malicious activity on the device.

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