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MID DRIVE MOTOR FOR TWO WHEELER

Arun Singh

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: The performance and efficiency of electric cars (EVs), which are in high demand. The mid drive motor is one such option that is attracting a lot of interest. The notion of mid drive motors, as well as its benefits and drawbacks are examined in this study paper. It also looks at how mid drive motors might affect the development of EVs in the future. The results show that mid drive motors have a number of advantages over conventional electric propulsion systems, including better handling, higher power delivery, and increased efficiency. For widespread implementation, however, issues with cost, complexity, and durability still need to be resolved. Mid drive motors have a lot of potential to revolutionize the EV market and hasten the shift to sustainable transportation.

A REVIEW OF BLDC HUB MOTOR FOR TWO WHEELER

Ashish Halder

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: The development of electric vehicles (EVs) and advancements in motor technology have sparked considerable interest in brushless direct current (BLDC) hub motors. BLDC hub motors are compact, efficient, and offer several advantages over traditional motor designs, making them suitable for various applications such as electric bicycles, scooters, and small electric vehicles. This review aims to provide an overview of BLDC hub motors, their working principles, design considerations, and their potential applications. The review begins with an introduction to BLDC hub motors, highlighting their key features and advantages. It then delves into the working principles of BLDC motors, explaining the role of permanent magnets, stator windings, and electronic motor controllers. The various types of BLDC hub motor configurations, the review explores the design considerations for BLDC hub motors, such as power requirements, torque characteristics, thermal management, and mechanical integration. The importance of motor control algorithms, sensor feedback, and regenerative braking systems is also highlighted, as they significantly impact the motor's performance and efficiency. Furthermore, the review examines the potential applications of BLDC hub motors, including electric bicycles, electric scooters, and small electric vehicles. The advantages of using BLDC hub motors in these applications, such as improved power-to-weight ratio, compactness, and simplified drive train design, are discussed. Lastly, the review concludes with a summary of the key findings and an outlook on the future trends and challenges in BLDC hub motor technology. The growing demand for electric mobility solutions and the continuous advancements in motor control systems and battery technology are expected to drive further innovation and adoption of BLDC hub motors. BLDC hub motors offer a promising solution for various electric mobility applications. Their compact design, high efficiency, and improved power delivery make them a viable alternative to traditional motor designs. However, further research and development are required to optimize their performance, enhance their integration with vehicle systems, and address challenges such as cost and reliability.

Keywords: *BLDC Hub Motor, Motor Controller, Battery.*



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ANALYZED THE ROTATIONAL PERFORMANCE OF DIFFERENT TYPE VAWT ROTOR BLADES

Ashish Jain

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: Among all energy sources, wind energy is the most readily available type of renewable energy. A wind turbine can capture wind energy, which may then be used to generate electricity using the right equipment. The approach described in this study may be utilized to efficiently transform the kinetic energy of wind into electrical energy. The cost of fabrication is quite low, and the method is fully environmentally benign. In this study, a vertical axis wind turbine has been created and intended to capture energy from the wind. The turbine has three twisting blades and is of the Darrieus type. An alternator was also built and connected to the turbine to convert the mechanical energy from the turbine into electric current. This document outlines the whole construction process for a basic wind power system with a vertical axis wind turbine and illustrates the system's performance in various wind conditions. This system's unique features include its incredibly straightforward setup and lack of any motion transmission.

INSPECTION OF INCREASED HYBRID PENETRATION

Ashok Kumar

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: In this century, problems such as the scarcity of fossil fuel resources and related environmental contamination have led to the emergence of new energy systems based on renewable energy resources. In this paper, an optimal planning approach is proposed based on a 100% renewable energy system (RES) for a residential house. With respect to renewable resources potential in the site location and electrical demand, the best combination of resources is chosen based on minimum energy supply cost and maximum reliability. Furthermore, different scenarios are suggested by considering different levels of capacity shortage (CSH) and unmet electricity load (UEL) percentage. As a case study, the real electricity consumption data for a single-family household is considered in Abu Road, India. The final optimal solution for this 100% RES with the objective function of cost minimization and reliability constraint includes 4 kW PV, 2 kW wind turbine, 4 kW converter, and 6 battery strings. This scenario with CSH of 1.1% and UEL of 0.9% has a net present cost of 20,527 \$ while having low cost, the reliability of this system is also good compared to other scenarios.



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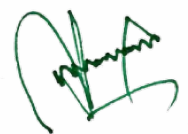
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A COMPREHENSIVE REVIEW OF GLOBAL ENERGY CHALLENGES AND INDIAN PERSPECTIVES

Avinash Gupta

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: Abstract- For decades, long-term changes in the production and consumption of energy resources have been the focus of energy economists' attention. Specifically, talking about uncertainties, energy markets have witnessed volatility since the 1970s. This volatility creates uncertainty and risk for producers, consumers and investors. The proposed study discusses the current status of global energy consumption and major sources of energy, emphasizing the need to transition towards cleaner energy sources. The research analyses India's current energy demand and supply scenario, challenges faced by the sector and policy measures being taken by the government to promote renewable energy and energy efficiency. Despite India's efforts to increase its renewable energy capacity, the country remains heavily dependent on coal for electricity generation. Challenges facing the energy sector include uncontrolled infrastructure and financing, slow progress towards energy efficiency, and the effects of climate change, which require urgent attention. This includes stressing the urgent need for a comprehensive and integrated approach to India's energy transformation, including addressing the challenges of the existing energy system, promoting the transition to renewable energy, and improving energy efficiency across all sectors. The study argues that such an approach would not only enable India to meet its energy demand in a sustainable manner but also contribute to global efforts to mitigate climate change. The research calls for urgent action to ensure a sustainable and equitable energy future for India and its people.



GLOBAL ENERGY SCENARIO AND INDIA ENERGY OUTLOOK

Avinash Maurya

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: Abstract- The goal of renewable energy is to provide the power that originates from natural resources such as sunlight, wind and other sources. Since the use of green energy enhances the environment and reduces global energy consumption the attention of researchers in this field has been focused on methods of developing green energy resources. The need for micro grid energy systems is increasing due to the use of natural resources. India's per capita consumption of energy and electricity is less than one-tenth of the urban versus rural per capita consumption of developed countries. The purpose of study is to inspect the energy landscape of renewable energy sources in India and the world as they are available in the market today and consider using renewable energy resources. The study gives a brief observation of the status of various RES in India and the world, the socio-economic influence of RES challenges associated with it, the future of RES in India and the world. Such a change in strategy requires a radical change in our development. Approach from a sustainable development oriented economic development an eco-friendly equitable development. since the three most serious Environmental problems (Global warming, Acid rain and Ozone layer depletion) has its origin in energy, it is in our national and global interest that we minimize 'energy requirement' without sacrificing 'energy requirement' for decent quality of life. a timely Planning is essential to move towards 'renewable' Energy dominant decentralized system' from existing 'non-renewable' energy centric, fossil fuel centric centralized.

CONVERSION OF PETROL CAR TO ELECTRIC CAR

Bhawna Sharma

Accurate Institute of Management & Technology, Greater Noida

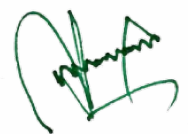
ABSTRACT: In the proposed work presented the project work based on converting petrol car in to electric car. To convert the entire system firstly remove the combustion engine and add battery, Controller and also electric motor. The aim of this article is to create a electric vehicle which has no carbon emissions for environment to initiate less greenhouse gases effect, and the maintenance cost will be Low. The gear ratio of the system 0.90:1 and the instrument by which torque and power to be analyzed with the help of Dynamometer. Electric vehicle energy consumption is AS 94.71 watt hour/km. By the help of computer program the calculation of input power torque and output power torque will be calculated. From the all these methods the electric vehicle get better air quality, fuel saving and also help in global warming. As per the research paper inside this, further studies carry out regarding this article.

Electronic Technology In Agricultural Sector Development

Dr. Pratibha

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: This paper presents an electronic technology based voice control robotic car which is designed by the combination of hardware and software. The electronic technology based control car system automatically operates by the command it gets without being manually controlled. The proposed work is accomplished by utilizing the revised version of arduino Uno(r3). The main focus is to control the motions of the robot by giving specific voice commands on what to do through an android Bluetooth application. The integration of control unit with Bluetooth device is made to detect and send commands in different modes (e.g., voice recognition, keypad, keyboard), through serial communication data to perform a particular task. The proposed systems can be executed in advanced stage that will be useful in agriculture and in rural areas.



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CIRCULAR MICRO STRIP PATCH ANTENNA WITH RING DGS FOR X-BAND APPLICATIONS

Dr. Praveen Kumar

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: A frequency reconfigurable circular micro strip patch antenna for X-Band Applications is presented for switching the frequency and to enhance the directivity of all the frequency bands. In the projected design, there is a circular micro strip patch antenna with, a circular slot in the ground plane. Two diodes are placed in the circular slot in the ground plane which produces four reconfigurable different frequency bands. Proposed antenna can be used in X-band applications including continuous-wave, pulsed, synthetic aperture radar and phased arrays. The antenna is simulated on Taconic RF-35 substrate, and permittivity of substrate; $\epsilon_r=3.5$ and thickness, (h) 1.525 mm. The projected structure is simulated using CST software. The simulated return loss for all the bands are less than -10 dB at different frequencies and VSWR is below 2 in desire frequency band.

DESIGN AND IMPROVEMENT OF RESIDENTIAL SOLAR DRYER

Dr. Rajesh Kumar

Accurate Institute of Management & Technology, Greater Noida

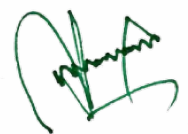
ABSTRACT: Mangoes were utilized as a reference product in this study, which describes the design, modeling, and optimization of a mixed-mode solar dryer based on meteorological data from Kigali. The model was run through a thermal analysis simulation using TRNSYS software, and the results were displayed on a graph that displays the practical temperature increase for drying. The outcomes were put to use in a simulation of sun drying to assess how well it performed in terms of drying rate; MATLAB was used in this. The graph clearly shows how mangoes' equilibrium moisture level for safe storage, 10%, is reached over time as their moisture content declines. The solar dryer was modified to create a greenhouse effect and raise drying temperature, further optimizing the model. The glass front wall of the drying chamber was used in this modification. A second simulation of solar drying was performed, and the drying period was clearly different this time, taking just 10 hours instead of 24 to remove the moisture content.

EV BMS WITH CHARGING MONITORING AND FIRE PROTECTION

Dr. Rakesh Dhar

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: The research paper in question offers a thorough examination of BMS (Battery Management System) initiatives for electric vehicles. BMS, which is essential for controlling battery performance and boosting an electric vehicle's overall efficiency, was developed in response to the growing demand for electric vehicles. This study looks at a BMS's essential parts and features, such as battery monitoring, cell balancing, temperature control, and interfaces. Furthermore, the paper evaluates the latest advancements in BMS technology. The paper also discusses the challenges faced during the development and implementation of BMS, such as cost, complexity, and safety concerns. Overall, this review paper provides a valuable resource for researchers, engineers, and industry professionals interested in BMS technology for electric vehicles. **Keywords—** State of charge (SOC), battery management system (BMS), and overall health (SOH), problem diagnosis, and control techniques.



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EV SPEED AND BATTERY MONITORING SYSTEM

Dr. S.P. Singh

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: The demand for electric powered automobiles (EVs) is growing hastily because of their environmental benefits and gasoline value savings. The challenge titled "EV Battery and velocity tracking device the usage of Brushless Controller" ambitions to design and put in force a tracking device for electric cars (EVs) that can screen the battery fame and the vehicle's velocity in actual-time. The system utilizes a brushless controller to control the speed of the motor and an Arduino microcontroller to procedure the statistics from the battery and velocity sensors. The battery monitoring machine includes a voltage and contemporary sensor, which gives the necessary information to display the battery's country of price (SOC), country of fitness (SOH), and the charging/discharging charge. the velocity tracking machine uses a hall effect sensor to locate the velocity of the motor and calculate the automobile's speed. The accumulated information is displayed on an liquid crystal display display screen, supplying the driver with records approximately the battery reputation, the speed of the automobile, and the last variety. additionally, the gadget consists of an alarm that signals the driving force when the battery is strolling low.

ELECTRIC BRUSHLESS DC HUB MOTOR DRIVE CONTROL FOR TWO WHEELERS

Dr. S.L. Rajpoot

Accurate Institute of Management & Technology, Greater Noida

ABSTRACT: Electric brushless DC (BLDC) hub motor drives have attracted significant attention in the field of electric two-wheelers due to several advantages such as high efficiency, compact size and improved power density. This paper presents a comprehensive overview of the control techniques employed for electric BLDC hub motor drives in two-wheelers. The control system plays an important role in ensuring efficient and reliable operation of the electric hub motor drive. Various control strategies and algorithms have been developed to address the challenges associated with BLDC motor control, such as torque ripple reduction, speed control, and regenerative braking. It focuses on the control of the paper. Brushless DC (BLDC) motor which is used to drive an electric two wheeler. The hardware implementation of the motor is developed and used an Atmega 328 microcontroller control the motor which provides speed control with current conversion. A 60V, 1000W BLDC hub motor is used to meet drive requirements. Mathematical Modeling of BLDC the motor is discussed with mathematical equations. Meaning simulation is developed and closed loop speed control done in Simulink. According to the PWM pulses generated from the MCU loaded to control the commutation sequence and K switch 3-phase inverter and in response to driver input (start/stop, accelerator, brake) the speed of the motor is dynamically varied.

AUTOMATIC RESCUE DEVICE FOR LIFTS

Dr. Shiwani Gupta

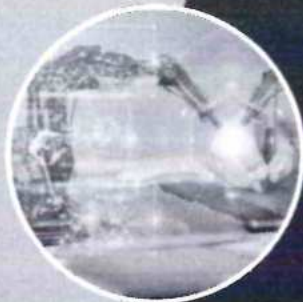
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ABSTRACT: Nowadays, power outages and buildings can be very harmful to the individuals living or working in that environment. To increase the safety of these individuals rescue devices are used. In order to prevent passengers from getting stuck in the lift due to blackouts the ARD system has introduced. So that the passengers can easily and automatically get to the nearest floor safely without any manual operations.



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3	EXPERIMENTAL INVESTIGATION OF EDM FOR SURFACE ROUGHNESS AND MRR IN MACHINING OF ALUMINIUM 2024	GAURAV RAJPOOT
4	REVIEW PAPER ON EFFICIENT PERFORMANCE OF SHELL AND TUBE HEAT EXCHANGER	GURPREET SINGH



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A REVIEW PAPER ON QUENCHING AND PARTITIONING

Faiyaz Khalid

Accurate Institute of Management & Technology

ABSTRACT

Quenching is the quick cooling of a workpiece in water, oil or air to acquire certain material properties. A kind of warmth treating, extinguishing jam undesired low-temperature cycles, for example, stage changes. It does it by decreasing the specified time during which these undesired responses are both thermodynamically great and dynamically worthy. While parceling manages the change starting with one period of the issue then onto the next at a specific temperature when the extinguishing is finished. The implications of a model created to comprehend and foresee the potential for example the augmentation of carbon dividing that happens between as extinguished martensite and held austenite are likewise examined. The new cycle is alluded to as extinguishing and dividing (Q&P) to recognize it from customary extinguishing and treating of martensite. In this, we look to sum things up about (Q&P) measure and furthermore attempt to take a gander at the significant explores the has been done in the field of (Q&P).



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EXPERIMENTAL INVESTIGATION OF EDM FOR SURFACE ROUGHNESS AND MRR IN MACHINING OF ALUMINIUM 2024

Gaurav Rajpoot

Accurate Institute of Management & Technology

ABSTRACT

Electrical discharge machining (EDM) process is a non-conventional and non-contact machining operation which is used in industry for high precision products. EDM is known for machining hard and brittle conductive materials since it can melt any electrically conductive material regardless of its hardness. The work piece machined by EDM depends on thermal conductivity, electrical resistivity, and melting points of the materials. The tool and the workpiece are adequately both immersed in a dielectric medium, such as, kerosene, deionized water or any other suitable EDM fluid. This project provides an important review on different types of EDM operations. A brief discussion is also done on the machining responses and time taken to finish the process. Al 2024 alloy is widely used in aerospace applications. The aerospace application required close tolerances and accuracy in the machined parts. Henceforth non-conventional machining processes are widely used for different machining operations such as drilling through holes. In the present study, the Electrical Discharge Machining (EDM) process is used to drill through holes in 2mm thick Aluminium 2024 alloy material. With the aim of getting high accuracy and finish of the metal different parameters necessary set accordingly. Three input parameters such as Peak current (IP), Spark Gap voltage (SV) and Pulse on time were selected and the input values were given on required bases.

Keywords :

ALUMINIUM (2024),ALUMINIUM PLATE,COPPER ELECTRODE,EDM MACHINE,
WORKING OF EDM, ROUGHNESS.




REVIEW PAPER ON EFFICIENT PERFORMANCE OF SHELL AND TUBE HEAT EXCHANGER

Gurpreet Singh

Accurate Institute of Management & Technology

ABSTRACT

This paper is based on review of performance of shell and tube heat exchangers. Starts with the introduction part of heat exchangers and is concerned with the factors like increase Overall in the efficiency, surface compactness, number of fluids, flow arrangements and applications. The study of shell and tube heat exchanger along with the comprehensive description of all the components of shell and tube heat exchanger is done in this paper. The factors affecting the performance of shell and tube heat exchanger is studied and its detailed discussion is given in this paper. Research work done by some of the researchers are studied in detail and then review from those papers and the conclusion is described in this paper.





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Comparative Analysis of Crop Diseases Detection Using Machine Learning Algorithm

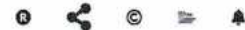
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- III. CHALLENGE IN PLANT AND CROPS DISEASES DETECTION
- IV. LITERATURE REVIEW
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Metadata

Abstract:

Nursery workers have a wide scope of diversity to select the reasonable crops. In any case, due to the absence of information, farmers are stunned by the effect of the diseases in farmland. Numerous farmers struggle and waste through a lot of their time harvesting diseased crops. Farming assumes an imperative part in the Indian economy. Farming is the major occupation across the globe. Nearly 70% of Indian population depends on agriculture. This article presents the different techniques and algorithm of crop disease detection. Also, presents a comparative analysis for the detection of crop diseases by using different algorithms and techniques with their obtained accuracy.

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Date of Conference: 02-04 February 2023

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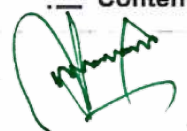
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I. Introduction



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Smart Walking Stick for Blind Integrated with SOS Navigation System

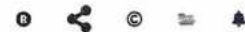
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- IV. Methodology
- V. Results and Discussion

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Abstract:

Blind people face many difficulties to interact with their nearby environment. The aim of this paper is to provide a tool which will help blind people to navigate as well as sense the obstacles. We plan to propose a working model which is Walking Stick with in-built ultrasonic sensor with a micro controller system. The ultrasonic sensor is used to detect obstacles using ultrasonic waves. On sensing obstacles the sensor passes the data to the microcontroller. The microcontroller then processes the data and calculates if obstacle is close enough. If obstacle is not close enough the circuit does nothing. If obstacle is close then microcontroller sends Alert signal to the blind person. In addition we also plan to embed e-SOS (electronic Save Our Souls) system. Whenever blind person feels any discomfort while navigating then he presses an e-SOS distress call button on the stick to give a video call to his family member. The video is streamed in an Android mobile via Android application. The Android application also shows the location of the blind person to his family member. In this way, Blind person is guided to move along the path by his family member via the Android Mobile Application.

Published in: 2018 2nd International Conference on Trends in Electronics and Informatics (ICOEI)

Date of Conference: 11-12 May 2018

DOI: 10.1109/ICOEI.2018.8553935

Date Added to IEEE Xplore: 02 December 2018

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Spatial Correlation Based Device Level Clustering for IoT

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- II. Related Work
- III. Problem Statement
- IV. Proposed Methodology
- V. Simulation and Results

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Abstract:

The advent of IoT has ushered an era of demands for new and intelligent schemes to manage the network without compromising on the network lifetime. Clustering of sensor notes in a network plays a vital role in IoT. Many research works are proposed for clustering the sensor notes based on the distance between each sensor notes to optimize the network lifetime. Moreover, recent advancements do not focus on spatial correlation information of a sensor note along with its location information. The authors propose a novel scheme for device level clustering in multi-modal IoT network which takes spatial information into account for clustering of devices. Thus the research work highlights the importance of clustering methodology based on spatial correlation. Further, standard correlation metrics like Pearson's, Kendall's and Spearman's correlation were used to evaluate the performance of the proposed scheme. A comparison of deviation in cluster member nodes is also done to show the effectiveness of the scheme in load balancing.

Published in: 2019 IEEE Conference on Information and Communication Technology

Date of Conference: 06-08 December 2019

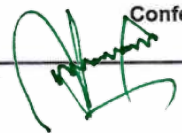
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Accurate and Decentralized Approach for Traffic Flow Prediction Using Federated Learning

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- IV. Proposed Approach
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Abstract:

Traffic prediction involves forecasting the density and flow of traffic, primarily aimed at efficiently managing vehicular movements in a highly congested urban environment. Its purpose is to offer valuable insights for reducing traffic congestion and devising optimal routes that minimize energy consumption and travel time. Nevertheless, conventional traffic prediction faces a significant challenge: the need to store data when making predictions, resulting in increased latency, pro-longed training time, and the consumption of expensive storage resources. Moreover, sharing such data for training may raise privacy concerns due to the potential inclusion of sensitive information. To address these issues, this paper adopts Federated Learning (FL) to train the prediction model closer to the data sources. To assess the effectiveness of the proposed approach, real-world traffic data from Arhus City has been employed. The proposed method's prediction accuracy has been evaluated compared to a centralized approach.

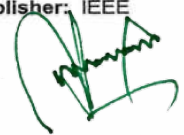
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Sound Event Detection using Federated Learning

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Abstract:

The study of sound event detection (SED) in environmental environments has gained popularity recently. However, significant logistical and privacy concerns exist because huge amounts of (private) home or urban audio data are needed. Federated learning (FL), which effectively distributes these duties, is a viable way to use enormous amounts of data without raising privacy issues. Although FL has recently gained much attention, only a few studies have been done on FL for SED. In this paper, we attempted FL for SED to fill this gap and encourage further study. This paper demonstrated the experiments on the URBAN and MNIST datasets to better understand the impact of data heterogeneity, optimizer, client participation, and communication round. Additionally, we run baseline outcomes for deep neural network designs on the datasets in an FL context. The CNN-M model is used for training and testing purposes; two datasets, namely URBAN and MNIST audio datasets, are used.

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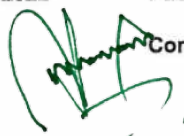
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Performance Analysis of UAV routing protocol based on mobility models

Pawan Kumar

Accurate Institute of Management & Technology

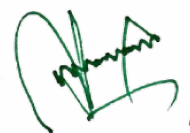
Abstract: The communication between the flying birds or unmanned aerial vehicles (UAVs) a.k.a. Flying Adhoc Network (FANET), where the most challenging task is to establish communication in an extremely vibrant environment. To overcome the problem of data dissemination in changed topology many routing protocols are investigated and modified. The stable path and congestion avoidance are the evolving area in FANET. This paper investigates preliminary UAV routing protocol with different mobility models to examine the factors such as latency, average end-to-end (E2E) delay, packet delivery ratio (PDR), etc. in dynamic environment with numerous node count and node speed variations. The simulation results presented here show that increasing the node count from 0 to 49 keeping constant velocity of 20m/sec, reflects that throughput of Optimized Link State Routing (OLSR) is 1.7kbps using Gauss Markov (GM) mobility model (MM) which is higher than throughput using Random Way-point (RWP) MM. For the same simulation condition, a lower average E2E delay of 0.44msec for OLSR is achieved using GM MM. However, by increasing the node speed in the range of 20 m/sec to 100 m/sec for 50 nodes, the average throughput for Ad Hoc On-Demand Distance Vector (AODV) protocol increased to 28 kbps at 75 m/sec which is higher than OLSR using RWP MM. The simulation achieves an end-to-end delay of 600 msec and 790 msec at 50m/sec for AODV protocol using RWP MM and GM MM respectively. Thus, the experiment demonstrates that GM MM with variable nodes and node speed performs better than RWP MM.

Evaluation of Lubricant Film Thickness in Helical Gear on Contact Line at Critical Points by Using Elastohydrodynamic Model and it's Comparison with Kisssoft Result

Prabhat Rana

Accurate Institute of Management & Technology

Abstract: Helical gears in pairs develop an elliptical shape in contact areas when they are in mesh. Major and Minor axis of these elliptical contact are large and sufficient to allow the entrance of lubricant. This usually goes through the minor axis of ellipse. Minor axis represents the direction of rolling and sliding. The critical path of the gear mesh is considered as contact line along with various activities takes place. It is important to find the lubricant film thickness on the contact line at critical points starting from start of active profile to end of active profile. This distributed the complete meshing line in five points which is the area of interest for this research. Elastohydrodynamic Lubrication (EHL) model is developed first and then it is solved by using Mathcad Prime software to find out the critical points oil film thickness. Oil film thickness at all the five points on contact line is determined. To perform this a sample case is considered. In order to ensure the accuracy of the EHL model KISSsoft software is used to calculate the oil film thickness at the above said five points and the results are compared



ABC Algorithm for Evaluating the Performance of the SVC and Optimal

Prabhat Tiwari

Accurate Institute of Management & Technology


Abstract: This paper examines the Artificial Bee Colony (ABC) method for solving optimum power flow (OPF) problems in power networks by employing a static VAR compensator (SVC). In this work, the Artificial Bee Colony (ABC) approach is investigated as a potential solution for optimum power flow (OPF) issues that arise in power systems through the utilisation of a static VAR compensator (SVC). By utilising SVC devices and making use of ABC, the system is able to bring down the overall generating costs of a power system, hence saving money. Also, it helps keep the voltage steady. The ABC is established predicated mostly on honey bees hunting activity in order to identify the proper nectors. The algorithm is a recently created optimization tool for use in power systems. To measure how well the proposed ABC approach performed, it was compared to other popular optimization algorithms on IEEE 11-bus and IEEE 30-bus systems. The findings indicate that ABC can be confidently accepted as a method for dealing with nonlinear issues in power systems; in fact, this method is extensively utilised in power systems. The results suggest that ABC may be strongly accepted for dealing with nonlinear problems in power systems, and it is frequently employed in power systems.

ELPDI: A Novel Ensemble Learning Approach For Pulmonary Disease Identification

Prachi Sharma

Accurate Institute of Management & Technology

Abstract: Artificial intelligence has been a revolutionary concept for the healthcare sector in recent years. Deep Neural Networks (DNNs) are subdomains of machine learning which is a vital tool for applications such as diagnostic and therapy suggestions. Pulmonary diseases have a significant impact on the quality of life of many people around the world and their ability to lead healthy lives. The present study uses an ensemble technique to detect Pulmonary Diseases. Here, lung sounds obtained by auscultation are transformed into spectrograms and classified using Convolutional Neural Networks (CNN) trained on various architectures. The proposed study shows an accuracy of 97.3%.



JAYA-Based Task Scheduling Algorithm in Cloud-Fog Environment Pranjal Shrivastava

Accurate Institute of Management & Technology

Abstract: In the new era of the Internet of Everything (IoE), where the data generated is vast and varied, sending it to the cloud generates latency, congestion increases delay, cost, and energy usage issues. As a result, fog and other related edge computing paradigms are becoming more widely used as complementary to the cloud. These computing paradigms execute real-time requests with minimal latency, location awareness, resource sharing, and mobility and prevent the cloud layer from overloading. Overall, it improves user experience, but resource management remains a bottleneck in these computing environments. In this research, we provide an optimization approach for task scheduling which plays a vital role in resource management, that reduces makespan in a fog-cloud environment using an easy yet effective optimization algorithm JAYA with improvement in the exploration phase. The proposed approach is experimented with the MATLAB simulator and outperforms the existing method in the average make-span time metric.

BLOCK-FEMF: Efficient Forensic Evidence Management Framework using Blockchain Technology

Premveer Singh

Accurate Institute of Management & Technology

Abstract: Blockchain Technology is a revolutionary, secure, and transparent decentralized digital ledger for recording and storing transactions across multiple computers. It is used to secure, track, and manage digital assets, protecting the data from tampering, revision, and deletion. It provides a secure, immutable, tamper-proof ledger to store digital evidence. Blockchain Technology can also track the provenance of digital evidence, ensuring that only authenticated and authorized individuals can access the evidence. Existing Evidence management systems lack features like authentic intermediate user access and migrating evidence access from one user to another. The existing system uses the Base32 Algorithm, which lacks storage capability, time delay, scalability, and throughput issues. To overcome these issues, in this paper, we propose a Base64 algorithm integrated with IPFS to enhance transaction performance, scalability, and throughput. The Base64 Algorithm encrypts the image evidence and stores it in the Blockchain. The IPFS stores images in a decentralized system to optimize the memory and enhance the throughput of transactions in the blockchain environment. The experimental results show that the proposed Base64 Algorithm optimizes memory utilization by 20% and gas utilization by 19.5 % and enhances transaction scalability by 20% compared to the existing Base32 Algorithm.



Bacterial Spot Classification in Bell Pepper Plants Based on Convolutional Neural Network Architecture

Priya Anmol

Accurate Institute of Management & Technology

Abstract: In the field of agriculture, classification of disease is an important problem, that needs more attention. There are many undergoing projects for the classification of diseases in plants. The traditional methods of classification required more effort and time at the same time the accuracy is too low, this leads to the problem in the production of yield. Nowadays, classification of diseases using computer vision gains so much attention among the government, researchers and farmers. The classification of diseases using computer vision technology provides an automation solution for the loss of yield. Identification of disease at its initial stage is very important to reduce the loss of yield. On the bell pepper leaves, machine learning and deep learning approach helps to classify the diseases at its initial stage. There are so much researches undergoing on machine learning for disease identification in plants, such as tomato, potato, apple and grapes. But the accuracy of this architecture is less as compared to deep learning architecture. This paper tries to explain the architecture of CNN such as google Net, Resnet 18, Resnet 50 and Resnet101. This paper also focuses on the performance of google Net, Resnet 18, Resnet 50, and Resnet 101 based on the classification of disease in bell pepper plants. Based on our study in classification of disease in bell pepper we found out that google Net shows better performance as compared to other architecture.

Prediction of Bone Mineral Density using AI to Detect Osteoporosis

Poornima Singh (AIMT)

Rati Varshney (Amity University)

Abstract: In this article, we provide a thorough overview of machine learning algorithms that may be used to improve an application of Python's intelligence and capabilities utilizing the dataset of bone mineral density. This paper discusses cutting-edge technology algorithms of python such as K-Means, KNN, Linear Bayesian Regression, Naive Bayes Regression, Multi Linear Regression, Theil Sen Regression, Polynomial fit, Random Forest Classifier, Decision Tree Regression, and certain graphical representations using tableau software on bone mineral density dataset. This data interpretation is entrenched from the bone mineral density dataset which reflects a non-linear coalition of serum uric acid levels concerning the risk of osteoporosis. This study represents python algorithms based on various supervised and unsupervised learning methodologies of machine learning with the help of a bone mineral density dataset.

On the depth of convolutional neural networks for image classification problems

*Samima Khatun (Aliah University);
Md Yousuf Ansari (Aliah University);
Sk Saidul Alam (Aliah University);
Ayatullah Faruk Mollah (Aliah University)*.*

Abstract: In this work, we studied the performance changes by increasing the depth of convolutional neural network with four models and four different image datasets. The datasets include MNIST handwritten digits, AUTNT scripts, AUTNT text vs non-text, and Dogs vs Cats. We started with a pair of convolutional layer and max pool layer and gradually expanded the depth by adding pair(s) of convolutional layer and max pool layer. Initially, the accuracy is found to improve with increasing depth up to three pairs for all the four datasets. After that, the accuracy of the models decreases for all datasets. The outcome is, therefore, given using three sets of convolutional and max pool layers. Such study will be useful in designing suitable CNN models for different visual object recognition problems.

A Modified Tilt Integral Derivative (MTID) Controller Design Using Direct Synthesis Approach

*Rammurti Meena (NIT Silchar)**

Abstract: In this study, direct synthesis (DS) technique for designing non-integer order (NIO) controllers for NIO processes is presented. Most prevalent method for setting of the proportional-integral-derivative (PID) controllers is the DS approach. However, NIO processes have not yet been subjected to this methodology. The DS approach is used in this study to take advantage of its simplicity. The resulting controllers are like the enhanced tilt-integral-derivative (TID) controller. To figure out the effectiveness and robust analysis of the proposed control law, simulation studies on DC servo system and Bio-reactors are performed and compared with state of art control laws. Simulations are done for the nominal models as well as perturbed process models. The analysis of robustness of the suggested control law is done by employing 10 percent variation in plant parameters. Lastly, a performance evaluation of different errors is also included.

A Novel Modified Semicircular Patch Antenna for Next Generation Communication

**Rahul Chauhan (AIMT)
Md Yousuf Ansari (Aliah University)**

Abstract: A neoteric semicircular antenna for improved wireless communication applications has presented in this work. The semicircular patch is printed on a 30 ×30 mm² FR-4 dielectric substrate of thickness 1.59 mm. Bandwidth ratio of the proposed antenna is 14.38:1 for a VSWR < 2 and operates between frequency range of 2.78 GHz and 40 GHz. Proposed semi-circular patch antenna's maximum gain is 5.61 dB. This antenna is suitable for Wi-Fi, GPS, internet of things applications, and other wireless technologies.

Prediction of Fatal Accidents in the Petrochemical Industry with Machine Learning

Rahul Kumar (AIMT)


Abstract: There is an urgent need for energy companies to understand why employees still suffer injuries/accidents. The full potential of historical incident data is mainly un-explored and unexpressed. This study aims to question some preconceptions and identify opportunities for the future by better understanding the causes of cata-strophic events, their effects, and the lessons that can be learned from them. In this paper, structured and unstructured data are taken to predict fatality. Structured data is analyzed with machine learning models and a combination of structured and unstructured data is analyzed with machine learning and deep learning mod-els. For the structured data, out of all models, XGBoost gives an accuracy of 81%. And, for the combination of structured and unstructured data, Naïve Bayes with TF-IDF vectorizer gives an accuracy of 92%. Hence, this paper concludes that the Naïve Bayes with TF-IDF can be considered to predict the fatality of accidents with reasonable accuracy for a combination of structured and unstructured data.

Panoptic Driving Perception using Deep Learning Techniques

Rajiv Kumar

Accurate Institute of Management & Technology

Abstract: The technology of autonomous driving allows vehicles to operate independently without the intervention of a human driver. This system relies on sensors and algorithms to execute driving functions, such as braking, steering, and accelerating, by interpreting the vehicle's environment and making decisions accordingly. A critical component of the autonomous driving system is the panoptic driving perception system, which offers a comprehensive understanding of the surrounding environment to the vehicle, leading to advancements in autonomous driving technology. We introduce, a panoptic driving perception network that performs drivable area segmentation, traffic object detection, lane detection, and distance computation concurrently. The model comprises an encoder for feature extraction and three decoders to perform specific duties. The model has delivered exceptional results on the demanding BDD100K dataset by achieving state-of-the-art performance in speed and accuracy for all four tasks, making it the first study to process these four visual perception tasks simultaneously while maintaining high precision. Traditionally, Ultrasonic sensors like HC-sr04 have been used to measure the distance of objects. However, this approach may not be practical when designing embedded devices requiring both object detection (via a camera) and distance measurement capabilities. Fortunately, there is an alternative approach to calculate the distance of an object from the camera by using the depth information utilized for object detection through bounding boxes.



Schistosomiasis prevention undermined by water point forecasting : An approach based on data fusion model

Rajkishor Tiwari

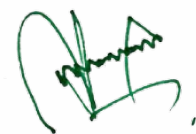
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Abstract: In this study, we present an approach for called \$FuMaIMMo\$ for Fusion of Machine learning and Mathematical Models. It is an approach based on data fusion which leverages information coming from different datasources to make a decision. The approach we present follows a "Y" pattern where in the left branch, there is a machine learning model in charge of forecasting the water quality of a water point. In the right branch, there is an epidemiological model responsible for making a forecast of the evolution of the density of parasites and snails causing schistosomiasis. In the middle branch, we rely on the theory of belief functions or evidence theory to combine the forecasts made by the two models in order to infer one day ahead the state of infestation of a water point with a precision of 0.75.

A Comparative Study of Classification Algorithms for the Prediction of Communication Effectiveness

Raksha Verma (AIMT)

Abstract: Machine learning is an essential element of the growing field of data science. The performance of communication prediction is crucial to understanding and identifying a student's level. In this Research, we are determining each student's communication level. After the outcome, teachers can give them proper training to improve their level. By discovering this level, we could recover and train the student before getting a suitable placement. Many students need to catch up every year because of a lack of proper advice and monitoring. A teacher can only monitor some students at a time if a system can help a teacher with the students, like which student needs which kind of help. Also, it'll be important and helpful for both preceptors and scholars. We compare their results and level in various Machine Learning Algorithms like Support Vector Machine (SVM), Random Forest Classifier, Logistic Regression, Naive Bayes and Decision Tree for accuracy. This exploration would be helpful for the scholars and preceptors.



A Dynamic Threshold Based Cognitive Radio Energy Detection Algorithm for Multi-Carrier Waveforms

Rina Chaudhary

Accurate Institute of Management & Technology

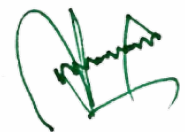
Abstract: The proper utilization of spectrum is one of the crucial problems in radio applications. It is estimated that around seventy percentage of spectrum is wasted, which need to be access for effective performance of cellular system. The use of cognitive radio (CR), is an advanced technique for obtaining the spectrum efficiently. Spectrum Sensing (SS) is most significant components of CR. In this work, we have designed a novel Energy Detection (ED) algorithm for an advanced waveform. The presented ED is compared with the conventional ED and Match Filter (MF). The results show that the proposed ED outclasses the conventional ED and MF algorithms and obtains significant throughput with low computational complexity.

COMPARISON OF DIFFERENT ALPHABATICAL SHAPED MICROSTRIP PATCH ANTENNAS IN S BAND USING HFSS

Sadanand Singh

Accurate Institute of Management & Technology

Abstract: Antennas are playing a very important role in our daily lives. Everything that we are using that makes our lives easier are connected to antennas such as telephones, mobile, television, security gadgets, even these antennas are important in military also. So, we need advancement in current available sources that can be helpful to invent something more productive. In this paper I'm comparing three micro strip patch antennas which I have designed in shape of "E", "H" and "U". This comparison helps to know about the characteristics of the three as individuals and also gives an overview that which amongst them is better. Although, many researches had been done, but this paper gives a comparison of three antennas and also we know better option for best results. The frequency which is used is 2.4 GHz and all three antennas have been simulated in HFSS 15.0 software.



Using MNIST Dataset for De-Pois Attack and Defense

Sanesh Kumar

Accurate Institute of Management & Technology

Abstract: Machine learning (ML) has grown into compelling element of diverse systems and applications. Recent researches have revealed that ML algorithms are at the risk of serious security vulnerabilities, notwithstanding the outstanding validity of ML algorithms in various signals and decision-making tasks. ML systems trained on user-provided data are vulnerable to various data poisoning attacks, by which attackers inject the malicious training dataset with the purpose of misconducting the learned model. For instance, in model extraction attacks, an attacker can steal the proprietary and secret data of ML models, and in model inversion attacks, they can obtain the private and sensitive data of the training dataset. The objective of this study is to build defence technique by using De-Pois to tackle attackers where they corrupt the ML models by data poisoning in training dataset. De-Pois is the only popular means of protection for poisoning attacks. It offers defence without information of any ML algorithms, kinds of poisoning attacks, and it may be applied to both classification and regression. Hence, De-Pois is a common defence system which will be able to stop all types of attacks. De-Pois approach is crucial for training mimic models, whose goal is to replicate the activities of the target model. The solution developed a De-Pois-based defence mechanism to combat attackers that damage ML models via data poisoning in the training dataset. De-Pois is the only and most popular means of poison defence. De-Pois is a security solution that can be used to safeguard both classification and regression workloads without the need for specialized understanding of ML methods or poisoning attack types.

Direction Detection of Select Stocks with Machine Learning

Shanidev Choudhary

Accurate Institute of Management & Technology

Abstract: Several research initiatives have been taken to predict stock market returns using historical data. Investors can find plenty of algorithms that detect the exact closing price of any stock but will not tell the direction of the closing price. During this proposed work, twenty-two years' price of the stock's daily close price is being utilized for direction detection. The objective of this paper is to get the right stock, perform exploratory data analysis for data preparation and then build the right models by using multiple modelling techniques to predict whether the price will move up or move down. Closing prices are being utilized as six different feature variables for building the classification model. The difference between the seventh and eighth day closing price is determined. The 0.7%, 1%, and 1.5% differences are different classes of direction to determine either positive, negative or no change. A similar process is again repeated for the feature variable increased to ten days and fourteen days respectively. Then momentum, trend, volatility, and volume indicators are utilized as feature variables and different classification models are built to determine upward direction detection. Random forest modelling has given the highest efficiency in direction detection. Logistic regression modelling done for percentage change in close price as 0.5% has given the highest efficiency for volume and momentum indicators whereas the extreme gradient boost classifier provided the best prediction performance for trend and volatility indicators. Therefore, various classification modelling techniques had been remarkably useful in direction detection for the stock under consideration.

