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Track VII

AI based Software Engineering for Software Maintenance

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Abstract:-
AI-based Software Engineering can be used in various areas of software development, including software testing, code generation, and software maintenance. By leveraging Machine Learning algorithms, AI-based Software Engineering can help identify potential bugs and errors in software code and automate the process of testing and debugging software. Additionally, Natural Language Processing techniques can be used to analyse and understand user requirements, allowing developers to generate more accurate and efficient code. Proper documentation is very essential in software maintenance. In most of the legacy systems, proper documentation is not there. To understand the code and maintain it, summary of the code is required. This paper introduces a method to automatically generate the summary for the given source code which is very essential when we must do maintenance work of legacy systems. In this method, Abstract Syntax Tree is used to capture the syntactic information and code token features for the semantic information. Transformer based deep learning architecture is used for the comment generation. This achieves 87% of accuracy and good METEOR score. AI-based Software Engineering has the potential to transform the software development process by improving efficiency, scalability, and quality. As AI technology continues to advance, we can expect to see even more innovative applications of AI in Software Engineering in the future.

Keywords: AI based SE, Transformers, Software Maintenance, Abstract Syntax Tree

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Track VII

Workflow Allocation Strategy Using Fusion Fission-based optimization Algorithm in Cloud Computing

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Abstract:
Cloud computing technology offers a pay-per-use framework to address complex scientific and commercial workflow applications. Each of these workflow applications is subject to the quality of service parameters requirement from service level agreements. Scheduling a workflow is thus turning into a critical research subject and is considered NP-hard. This paper proposes a fusion fission-based optimization (FFOA) to minimize the makespan of workflow tasks submitted from cloud users, in order to solve the scheduling problem. FFOA is a metaheuristic algorithm that simulates the tendency of nuclei to increase their binding energy and achieve higher levels of stability. The workflow allocator is implemented in MATLAB for the performance analysis. The experimental findings demonstrate that the proposed method performs better than its peer in terms of fitness value (makespan) and convergence rate under study.

Keywords: Cloud Computing, Metaheuristic Algorithm, Workflow Scheduling, Fusion Fission based optimization

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Track VII

Improving the Performance of Routing Protocols in MANETS: A Mathematical model for Evaluating Intermediate Bottleneck Nodes

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Abstract:
This project analyses an intermediate bottleneck node's performance using a random poison process mathematical model to solve Mobile Ad-Hoc Networks (MANETs') battery life problem. The goal is to make routing protocols in MANETs work better by dealing with the problem of bottleneck nodes and reducing packet loss. In MANETs, a bottleneck node is a node that has to forward packets from multiple sources, which causes packet loss. This paper gives a mathematical model for figuring out how well bottleneck intermediate nodes in MANETs work by figuring out the average length of the queue at the input buffer and the average delay time in the buffer. This evaluation tells if a node will become a bottleneck. This evaluation also decides whether or not the node should be added to the route. So, this model is used to make routing protocols in MANETs work better by getting rid of the problem of bottleneck nodes and cutting down on packet loss.

Keywords: Intermediate Bottleneck Node, Random Poison Process, Mathematical Model, Mobile Ad-Hoc Networks (MANETs), Battery Life, Routing Protocols, Packet Loss, Average Length of Queue, and Average Delay Time.

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Track VII

Empowering Women Through Digital Literacy: A Holistic Approach

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Abstract:
The project "Empowering Women Through Digital Literacy: A Holistic Approach" is an innovative NGO initiative that aims to bridge the gender digital divide by providing women in rural and underserved areas with the necessary skills and resources to access and utilize digital technologies. The project adopts a holistic approach that focuses not only on technical training but also on addressing the social and cultural barriers that prevent women from fully participating in the digital economy.

Key words: Undeserved areas, face gender-specific barriers technical training, mentor ship, and community engagement activities.

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Track VII

Brain Tumor Detection And Classification Using CNN

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Abstract—
Brain cancer or tumor is one of the fastest spreading disease. Detecting brain tumor at initial stage is the main key for avoiding death scenario. MRI is the common practice to identify the current scenario of tumor in a human brain. Collection of images from MRI scan and classifying them for detecting tumor is a very big task. Detection becomes difficult because of the large number of images produced after MRI Scan. Applying large set of images and trying to detect tumor is very tough task. In this paper, we represented classification of collected MRI Images and detecting tumor scenarios in that images using deep learning techniques especially using convolutional neural networks (CNN). This survey will help further researchers to detect and diagnose brain tumor effectively and accurately.

Keywords— Magnetic Resonance Image,(MRI),CNN, Classification

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Track VII

DESIGN AN EFFECTIVE PADDY LEAF DISEASE PREDICTION AND CLASSIFICATION SYSTEM USING AN OPTIMIZATION-BASED YOLOv5 MODEL

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ABSTRACT:
It is crucial to identify crop diseases early to educate farmers on how to stop the spread of diseases in their crops. However, the agriculture sector's output is impacted by the emergence of numerous crop-related diseases. Multiple methods for predicting paddy leaf diseases have been created, but they still suffer from overfitting, poor detection, and classification issues. To overcome these issues, design a novel Ant Lion-based YOLO-V5 (AL-YOLOv5) system to improve the system's functionality to detect paddy leaf disease. Paddy leaf photos were initially gathered from the internet and trained in the system. Brown spot, Leaf blast, Healthy, and Hispa are the four paddy leaf diseases the proposed model intends to classify better and identify. The dataset's noise is removed during the preprocessing stage, and the GrabCut algorithm is used to segment the impacted areas based on the pixels. The Grey-Level Co-Occurrence Matrix (GLCM), which extracts form, texture, and color features, is also used for feature extraction. Finally, utilize a YOLOv5 network to find and categorize the crop's affected diseases. The created model uses ant lion fitness to forecast paddy leaf diseases correctly. By achieving improved performance metrics, the experimental findings demonstrate the effectiveness of the designed model, and the obtained results are validated with other traditional models in terms of accuracy, precision, recall, F-score, and error rate.

Keywords: Disease Prediction, optimization

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Track VII

Spider Monkey based Portfolio Optimization Model Optimizing Sharpe Ratio of the Portfolio constructed from Bombay Stock Exchange

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Abstract:
To optimize expected return and the portfolio risk by select best combination of stocks is one of the most concern issues in the portfolio selection. In this paper, a novel portfolio selection model using Spider Monkey Optimizer (SMO) approach has been suggested with the aim of maximizing sharp ratio. SMO [7] is a swarm intelligence approach inspired by modelling the haunting behaviour of the Spider monkey for solving portfolio selection problem. To conduct the performance evaluation, an experimental study has been conducted with a comparative study of proposed SMO model with Genetic Algorithm (GA) by using dataset (30 stocks) of the S &P BSE Sensex of Indian stock exchange. Study reveals the better performance of proposed strategy than GA on account of convergence rate, execution time and obtained optimal value of the objective.

Keywords: Portfolio Selection, Portfolio Constraints, Portfolio optimization, Spider Monkey Optimizer, Swarm Intelligence

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Track VII

PREDICTION OF HAND GESTURESFOR IMPAIRED PERSONS BY USING OPENCV APPROACH

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Abstract—
To equip the mute and dumb, several technology breakthroughs and substantial work have been made. Technology and neural learning are two tools that can be used to encourage greater cause. Due to its adaptability and user-friendliness, Recognition of mannerisms is among them active study areas in the field of human-computer interface. The technology of gesture recognition is used to create a system that can be used to communicate with people who are impaired or to operate a product. Sensing kinesics for human-machine interaction has increased significantly in recent years. There are numerous different gestures, including arm, hand, and face motions, however hand gestures convey more insightful information than other gestures do. There are numerous methods for recognizing hand gestures, including the use of colour markers, vision-based methods, glove-based methods, and depth-based methods. A action recognition organization's main goal is to create an efficient system that can identify human hand motions. despite the reality that not all individuals learns sign language, it can be very helpful for deaf and dumb people to communicate with others. Further, this can be stretched to making automatic editors that enables customers to effortlessly type using only hand signals. Connecting to individuals who have loss of hearing may prove challenging. Normal individuals have trouble deciphering the hand signals generated by Deaf and Mute people when they use hand gestures to communicate. Inventions that can interpret different signs and alert ordinary folks are thus required. As someone speaks, they frequently make gestures with their hands, arms, or other body parts to accentuate or highlight certain points. To put it another way, gestures are physical actions that convey meaning. For instance, waving your hand in greeting is a standard gesture.

Keywords: Segmentation, Feature Extraction, Classification Tools, Neural Networks, Human Computer Interaction (HCI) with hand stance and emotion.

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Track VII

Exploring the Principles of Blockchain Technology and Its Applications in HealthCare

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Abstract:
Satoshi Nakamoto first put forth the concept of bitcoin as a peer-to-peer electronic cash system in 2008. A distributed system for controlling digital transactions is described. The blockchain concept has developed in the last ten years based on this notion. A distributed ledger is used. All user nodes can access and share the immutable ledger. I Data decentralisation, (ii) Security, (iii) Reliability, and (iv) Trust are the four main characteristics of blockchain. There are various uses for blockchain because of these characteristics, notably in healthcare and education. This essay examines the blockchain technology and its possible uses in a variety of industries, with a focus on the healthcare industry. The benefits and difficulties of implementing blockchain technology are covered in detail, along with applications in the field of healthcare. Despite the fact that blockchain technology applications in the healthcare industry are still in their infancy, the disruptive and revolutionary character of the blockchain makes it a powerful force in other industries as well as the healthcare one in the near future.

Keywords- bitcoins, blockchain, block chain in healthcare, blockchain applications, distributed ledger

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Track VII

TB detection using Deep Learning techniques

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Abstract:
Identifying weather a patient has disease of particular from medical image is a complicated process. Deep learning (DL) methods have been employed to assist clinicians in overcoming these limitations and in making informed and correct decisions in disease diagnosis. Many research papers involving the use of machine learning for disease diagnosis have been increasingly getting published. Hence, to determine the use of DL to improve the diagnosis in varied medical disciplines, a systematic review is conducted in this study. To carry out the review, kaggle competition TB dataset is taken. popular deep learning techniques VGG16 and VGG19 are applied on the datasets with preprocessing and normalizing the images. due to dataset imbalance bias in detection has happened. To overcome this imbalance problem data augmentation techniques used and found good diagnosis results.

Keywords: Deep learning, medical image diagnosis, disease diagnosis, machine learning, systematic review, Kaggle competition, TB dataset, VGG16, VGG19

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Track VII

The Comparative Evaluation of Machine Learning Algorithms for Classification of Alzheimer's Disease

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Abstract:
Transcriptomics, proteomics, and metabolomics are just a few of the multi-omics data sets that may now be understood because to recent technological breakthroughs. In identifying multi-omics data, machine learning techniques have demonstrated promising results. This study's goal is to assess how well machine learning algorithms identify transcriptomics data for people with Alzheimer's disease (AD) and healthy controls (HC). The data was classified using four machine learning classifiers: naive Bayes (NB), k-nearest neighbor (k-NN), support vector machine (SVM), and random forest (RF). On a powerful machine, the simulation was run utilizing a parallel processing strategy. For high-dimensional data, NB performed better than k-NN, SVM, and RF based on the error rate and F-measure. SVM using a radial basis kernel (RBF) kernel, on the other hand, only outperformed NB when the sample size was greater than 100 for each group across all dimensions. The outcome implies that NB, in particular, may successfully classify transcriptomics data for AD patients using machine learning techniques. The better choice for big sample numbers is SVM with RBF kernel. Future research on the classification of transcriptomics data using machine learning algorithms will benefit greatly from the knowledge provided by this study.

Keywords: Transcriptomics, proteomics, metabolomics, multi-omics data, machine learning techniques, Alzheimer's disease, healthy controls, naive Bayes, k-nearest neighbor, support vector machine, random forest

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Track VII

Identification of diseases using interventional medicine

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Abstract:
Surgical data science plays an important role in interventional medicine to improve the quality of interventional healthcare through the capture, organization, analysis and modeling of data. In the recent works, many researchers found number of diseases that is very difficult to cure patients in time. There are number of diseases like heart, liver, kidney using interventional medicine in clinical field. For this reason,we need to identify a particular disease by using some classification technique. The main intention is to identify particular disease and to cure patient in right time. Further enhancements are done using efficient machine learning techniques to cure patients in right time.

Keywords: interventional medicine, machine learning, healthcare, clinical field

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Track VII

Data Analytics for Sensor Data for Smart Cities

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Abstract:
Data Analytics involves analyzing different data in hand. We consider the analysis of data which we can extract from or generated by the sensors here. Smart cities involves the installation of sensors in the city under consideration. Programming Language features like Machine Learning(ML) allow us to build the systems for Smart Cities. We also can view and analyze the data from sensors. Smart Cities makes human businesses flexible and secure. Sensors package in python helps in sparse placement of sensors, either for reconstruction or classification tasks.

Keywords: Classification, Python, Smart Cities, Machine Learning

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Track VII

Pneumonia detection using Deep Learning techniques

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Abstract:
Identifying weather a patient has disease of pneumonia from medical X-ray image is a complicated process. Deep learning (DL) and Machine Learning techniques have been employed to assist clinicians in overcoming these limitations and in making informed and correct decisions in pneumonia diagnosis. Many research papers involving the use of machine learning for disease diagnosis have been increasingly getting published. Hence, to determine the use of DL to improve the diagnosis in varied medical disciplines, a systematic review is conducted in this study. To carry out the review, kaggle competition Pneumonia dataset is taken. we applied different preprocessing and normalization techniques, popular deep learning techniques VGG16 and VGG19 are applied on the datasets with preprocessing and normalizing the images. due to dataset imbalance bias in detection has happened. To overcome this imbalance problem data augmentation techniques used and found good diagnosis results.

Keywords: Pneumonia, medical X-ray image, deep learning, machine learning, systematic review, Kaggle competition, dataset, preprocessing, normalization, VGG16, VGG19, dataset imbalance, bias, data augmentation, diagnosis results.

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Track VII

A Process to Identify Humans Based on their Gait by using Genetic Algorithm

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Abstract:
Finding people who use gait is the goal of this study. Every person has a distinctive walking style, which includes variations in step length, hip angle, foot angle, and other intrinsic and extrinsic characteristics. This recognition is founded on this assumption. Biometrics is one approach for identifying a person. The identification of a person's bodily movement is done via gait recognition, another biometrics technology. Gait recognition can verify people in a matter of seconds, while biometric methods like fingerprint, iris, and face recognition need the physical attention of people to work [1]. For instance, fingerprint recognition uses fingerprints to distinguish individuals from one another, but gait recognition uses a person's walk to swiftly, accurately, and without the help of a human, identify individuals. Systems with great confidentiality, accuracy, and 3D recognition are all produced by it [2]. With the development of computer vision capabilities, one less popular but very reliable biometric identification method is called "gait recognition," which uses a subject's walking pattern to identify them. There are many other ways to identify a person. A number of source or capture devices, including video cameras, motion sensors, and other gadgets, can be used to distinguish people even when they are far away [4]. This can be achieved by identifying the subject in the video frame, extracting the pertinent features using segments of silhouette in the video, and categorising the outcomes using the database.

Keywords: genetic algorithm, identification process

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Track VII

Identification of Diseases in Non-Immunity and Immunity of Plants based on Gene Sequencing using Reinforcement Learning

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Abstract:
Indian's main resource of income is farming and with its associated sectors, is unquestionably the leading source of revenue contributor. Information and communication technologies provide a lot of information to farmers about their fields. Data compilation and the rate at which inputs are processed that helps for plant vigor and victuals safety. Plant health and food safety are extremely very much associated. Plant health is a phrase that is used a lot but not very well defined. It is probable to say that image dispensation is a type of gesture dispensation. If you are functioning with images, you can situate the input in the appearance of a portrait or capture. The outcome of representation dispensation will be moreover a single image or a group of features or metrics that are related to the representation that was sent in for processing. This method is used to get important information from the raw images that were taken from different places.

Keywords: Gene Sequencing. Immunity, dispensation. and RNN

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Track VII

Identification and classification of toxic comment using machine learning methods

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Abstract :
Due to the ongoing pandemic, the penetration of internet usage has grown exponentially in the past four months. This has enabled a large number of active new and old clients to use the web for a variety of services, including academic, entertainment, industrial, monitoring, and the emergence of a new trend in corporate life called work-from-home. The number of cunning people has increased as a result of this unexpected increase in the number of people utilizing the internet. Every internet platform provider's top priority nowadays is to maintain inclusive and positive interactions. Twitter, a platform for online media where users may express their opinions, serves as the best example that can be used. This site has already attracted many users.

Keywords: machine learning, classification

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Track VII

A ONE-DIMENSIONAL RESIDUAL DEEP CONVOLUTIONAL AUTO-ENCODER MODEL BASED ON THE ECG IS USED TO CLASSIFY HEART DISEASES.

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Abstract:
Patients with cardiac disorders have a lower mortality rate thanks to timely heart disease prognosis made possible by automated systems. However, because the ECG signal contains minute fluctuations that are difficult for the human eye to see, diagnosing cardiac illness is one of the most challenging tasks. Many methods have been developed to efficiently classify the variance in beats in order to address this issue. However, those methods have a large mistake rate and are unable to learn spatiotemporal characteristics, which negatively impacts accuracy performance. To accurately categorise the heartbeats, this research introduces a novel hybridised DL approach. In this study, pre-processing, data augmentation, feature extraction, and classification are all taken into account. The signal from the raw dataset is smoothed during the pre-processing stage to improve accuracy performance. To prevent over-fitting concerns, the pre-processed data are then balanced using the synthetic minority oversampling (SMOTE) technique. Then, using a brand-new hybridised DL-based One-Dimensional Residual Deep Convolutional Auto-Encoder (1D-RDCAE) approach, spatiotemporal features are extracted. In order to successfully classify the ECG heartbeats, an extreme gradient boosting (XGB) classifier based on machine learning is introduced. The MIT-BIH arrhythmia dataset is used to process the suggested approach, which is implemented in Python. Accuracy, sensitivity, specificity, and false negative rate are some of the performance metrics that are examined and contrasted with current methods. The proposed approach achieves accuracy and specificity of 99.9% and 99.8% in the experimental part, respectively.

Keywords: Electrocardiogram heart beat signal, deep learning, heart disease classification, One-Dimensional Residual Deep Convolutional Auto-Encoder, flamingo search optimizer, signal smoothening.

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Track VII

Bar Code Enabled Smart Packaging System

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Abstract:
The growth of e-commerce has created an enormous demand for efficient and reliable packaging systems. The traditional packaging systems have certain limitations, such as high manual intervention and human errors. This project proposes a barcode-enabled packaging system that leverages machine learning algorithms to automate the packaging process and improve overall efficiency. The proposed system incorporates barcode scanning technology to capture product information, which is then used by the machine learning algorithm to determine the most suitable packaging material and size. The algorithm utilizes historical data to learn and improve over time, ensuring accurate and optimized packaging decisions. The system comprises a barcode scanner, machine learning algorithm, and packaging machine. The barcode scanner captures the product information and transmits it to the machine learning algorithm, which analyzes the data and determines the best packaging option. The packaging machine then uses this information to package the product.

Keywords: package, analysis

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Track VII

Machine Learning Regression For Rainfall Prediction

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ABSTRACT:
Predicting rainfall is an essential task for many industries, including agriculture, water management, and climate research. Machine learning regression techniques provide a powerful tool for building predictive models that can forecast the amount of rainfall given historical data on relevant features such as temperature, humidity, wind speed, and pressure. The steps involved in building a regression model for rainfall prediction include collecting and pre-processing data, splitting the data into training, validation, and test sets, choosing a regression algorithm, training the model, tuning hyperparameters, evaluating the model's performance, and deploying it to make predictions on new data. While predicting rainfall accurately is a challenging task, machine learning regression models can provide valuable insights for planning and decision-making purposes.

Keywords: Machine Learning, Rainfall Prediction

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Track VII

IOT-based Household Electronic Waste Management Systems for Electronic Waste Collection in Andhra Pradesh.

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Abstract:
Due to the harmful compounds and heavy metals inherent in it, managing used electronic and electrical equipment (e-waste) has become a vital component of solid waste management. E-waste also includes priceless metals like gold and copper, emphasising the significance of efficient waste treatment techniques. Although industrialised nations have introduced cutting-edge household e-waste management strategies, Andhra Pradesh has not yet finished implementing its household e-waste legislation framework. It's crucial to effectively manage home e-waste in Andhra Pradesh if we want to encourage smarter cities. In this study, a smart collecting system is suggested for Andhra Pradesh's household e-waste management and recycling. The solution includes a smart collecting box with sensors that measure the level of electronic waste and record disposal information. When the collection box is 80% full, an automated back-end server is established to notify and arrange for e-waste collectors to be dispatched and collect electronic waste. Public end customers can also dispose of their domestic e-waste via a mobile application. The proof-of-concept for the smart system was established successfully and can help Andhra Pradesh gather domestic waste and consumer electronics better.

KEYWORDS: harmful,framework, e-waste

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Track VII

Autonomous Weed Detection Rover Using Image Processing

Karri Aruna Bhaskar
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Abstract:
The autonomous weed detection rover is an innovative solution to the problem of weed management in agriculture. This project aims to design a rover that can move autonomously and use image processing algorithms to detect weeds in real-time. The rover is equipped with a camera and a computer that processes the images captured by the camera.The project involves collecting training data by capturing images of weeds and non-weeds in different lighting conditions and angles. The images are used to train a machine learning algorithm, such as Convolutional Neural Networks (CNNs), to differentiate between weeds and non-weeds accurately. Once the algorithm is trained, it is implemented in the rover, which captures images and processes them in real-time to detect weeds. The rover can autonomously navigate through the field, and the image processing algorithm can identify the location of weeds, making it easier for farmers to manage and remove them. There are several existing models for weed detection rovers using image processing. WeedSeeker is a commercially available weed detection system that uses near-infrared light to detect weeds. The system is mounted on a sprayer and can detect weeds in real-time. It uses an algorithm to distinguish between plants and weeds based on the difference in their reflectance of near-infrared light. WeedMap is a weed detection system developed by the Australian Centre for Field Robotics. The system uses a combination of RGB and NIR cameras to detect weeds in real-time. The algorithm used by the system is based on machine learning techniques and can identify multiple weed species. WeedVision is a weed detection system developed by the University of California, Davis. The system uses a combination of RGB and NIR cameras mounted on a rover to detect weeds in real-time. The algorithm used by the system is based on machine learning techniques and can identify multiple weed species. Robotic Weed Control is a research project by the University of California, Davis. The project involves the development of a robotic platform that uses machine vision and machine learning techniques to detect and control weeds in crops. The system uses a combination of RGB and NIR cameras to detect weeds and a robotic arm to remove them. This project aims to reduce the use of harmful herbicides in agriculture and save time and resources for farmers. The autonomous weed detection rover can revolutionize the way we manage weeds in agriculture and make it more efficient and sustainable.

Keywords: detection, image processing

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Track VII

Drug Repositioning using improved k- Nearest Neighbor clustering based on the Personality traits

Supriya Maniyil Menon
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Abstract:
During recent times the world have witnessed a horrifying pandemic with covid-19 depriving thousands of lives due to unavailable and unpredictable treatment opportunities, prior to its symptoms being identified. The treatment opportunities failed to take charge immediately as the virus is novel and the clinical testing process for approval of new pharmaceutical drugs is more in terms of timeline and economic feasibility. Our work aims to address such scenarios where the disease-causing elements are novel but the symptoms are similar to existing diseases which have approved drugs prescribed. The proposed method uses improved k-nearest neighbor-based clustering to cluster groups of people with similar personality traits who successfully got treated with existing drugs. This aided in identifying the proper drug suitable for people with similar personality traits and thereby contributes drug repositioning before the actual drug enters the market satisfying all the clinical hurdles. Our Approach promises a novel and leveraged performance in terms of F-measure and Accuracy overriding the existing methods contributed.

Keywords: neighbor clustering, reposition, accuracy

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Track VII

Stress Detection in Women by Image Processing and Machine Learning

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Abstract:
People are experiencing a range of stress-related symptoms as a result of the quick growth of technology in modern life. Anxiety, sadness, and ADHD are among the many stress-related diseases that affect women. All of this is the consequence of several factors, such as food choices, societal pressure, economic pressure, and low self-esteem. Heavy workloads, strong social and economic pressure, and family responsibilities are other factors that contribute to rising levels of stress in people. Because of this, recognising and assessing stress early on might assist to reduce its negative consequences and risks. Due to advancements in technology, the medical business has become increasingly important in modern times. To better understand the different symptoms of stress and prevent them, as well as to make it easier to find treatments for them quickly. As a result, collaboration in machine learning is increasingly needed in bioinformatics. Today, a variety of machine learning techniques may be used to predict and evaluate early-stage stress in women. The main objective of our study is to spot indicators of stress in women using advanced machine learning and image processing techniques. To extract features and detect emotions from biological brain signals, one has to use sophisticated signal processing and feature extraction techniques. Existing techniques employ a range of methodologies to extract significant properties from a set number of electroencephalography (EEG) channels. This study's primary objective was to improve the capacity of brain signals to identify emotions by using an innovative and adaptive channel selection strategy that acknowledges that brain activity exhibits a characteristic pattern that varies with different situations.

Keywords: Image processing, machine learning

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Track VII

Spiritual Light Come Out From Dark By Using Image Steganography

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ABSTRACT:
In the modern day of the era, everyone is busy their full of stressful life & are forgotten about their mental health conditions which lead to suicide, anxiety, drug editions, etc. But these problems can be solved by giving the knowledge of the Bhagavad Gita (which is the Manual of life many people are unknown). The main objective of our project is to collect the reviews of different people about their life system & storing their information by using image steganography & give a solution by introducing the light of "Bhagvat Gita" through modern science .so that people can be accepted easily & practice their life as per the instructions of Bhagvat Gita. But we cannot practice our own mental speculation. So for that, we need a bona fide Spiritual master who guides us on how to follow these instructions by introducing the spiritual course "science of self-realization" where all language guides are available to guide how to practice the instruction of Bhagavad Gita.

Keywords: Steganography, Image processing

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Track VII

UTILISING A HYBRID GATED ATTENTION CURRENT NETWORK TO ANALYSE SENTIMENT ON TWITTER

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Abstract:
The most popular and actively pursued research in the area of data mining is sentiment analysis. There are several social media platforms available today, and twitter is one of the most useful for gathering and disseminating people's thoughts, feelings, and attitudes towards various entities. This made sentiment analysis in the field of natural language processing (NLP) intriguing. Different techniques have been developed for sentiment analysis, however there is still room for improvement in terms of accuracy and system effectiveness. To do this, the suggested architecture develops a deep learning-based sentiment analysis system and an efficient and effective optimization-based feature selection system. The sentiment 140 dataset is used in this study to analyse how well the suggested gated attention recurrent network (GARN) architecture performs. The initial pre-processing step involves cleaning and filtering the supplied dataset. In order to extract the sentiment-based features from the pre-processed data, a term weight-based feature extraction technique known as the Log Term Frequency-based Modified Inverse Class Frequency (LTF-MICF) model is used. A hybrid mutation-based white shark optimizer (HMWSO) is introduced for feature selection in the third phase. The GARN architecture, which combines recurrent neural networks (RNN) and attention mechanisms, is used to classify the sentiment classes, such as positive, negative, and neutral, based on the selected features. The proposed and current classifiers are compared in terms of performance last. Accuracy, precision, recall, and f-measure are the evaluated performance measures with accuracy, precision, recall, and f-measure being the acquired value for such metrics utilising the suggested GARN, respectively.

Keywords: Deep learning, term weight-feature extraction, a white shark optimizer, Tweets sentiment, gated recurrent attention network, natural language processing.

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Track VII

CROP DISEASE CLASSIFICATION BASED ON HYPER-SPECTRAL REFLECTANCE FEATURES

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Abstract:
India has a rich biodiversity and a complicated agricultural system. Similar to many other developing nations, Indie's economy is heavily dependent on agriculture. almost 50% of the nation's gross domestic output and more than 85% of the population. Cereals, legumes, oil seeds, roots and tubers, vegetables, fruit crops, coffee, spices, and cotton are the main crops produced. India produces over 75% of its food in the agricultural sector, which uses mainly traditional production techniques. The local plough is drawn by oxen, or manually operated hand tools are used, to prepare the ground for planting.Infections caused by bacteria, fungi, and viruses are the most prevalent crop diseases. Insect infestations often cause plant diseases and damage. A plant becomes infected and exhibits symptoms on many areas of the plant, which has a big agronomic effect.Early disease detection would allow for early intervention to control, stop the spread of infection, or alter crop management procedures before the entire crop becomes contaminated or harmed. The major goal is to use the Support Vector Machine (SVM) algorithm to the classification of crop diseases using hyper-spectral reflectance properties from remote sensing data. In order to effectively manage illnesses and lessen their negative effects on crop productivity and national food security, it is essential to thoroughly grasp their characteristics.

Keywords: India, biodiversity, agriculture, crops, traditional production techniques, crop diseases, bacteria, fungi, viruses, insect infestations, early disease detection, Support Vector Machine, SVM

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Track VII

Health care Monitoring system in IOT

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Abstract:
Healthcare monitoring systems at hospitals and other healthcare facilities have grown significantly, and portable healthcare monitoring systems using developing technologies are becoming a major issue for many nations across the world. Telemedicine has replaced in-person consultation in healthcare thanks to the development of Internet of Things (IoT) technology. In this study, a smart healthcare system for an Internet of Things (IoT) environment is proposed. This system would be able to continuously monitor a patient's vital signs and the state of the room in which they are currently located. Heart rate sensor, body temperature sensor, room temperature sensor, CO sensor, and CO2 sensor are the five sensors in this system that are utilised to collect data from the hospital environment. The developed scheme's error percentage is under 5% for each of the test cases.

Keywords: Healthcare monitoring system, Internet of things, Sensors, ESP32

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Track VII

Privacy Issues and Data Security in Cloud Computing

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Abstract:
The cloud offers numerous services. However, many cloud providers are still hesitant to implement cloud computing technology due to an inadequate security policies and protection measures, which leads to numerous challenges in cloud computing. Cloud services major use case is data storage. Cloud provides to the customer massive amounts of storage capacity.The goal of this survey is to identify the different cryptographic algorithms eventually ensure the cloud highly secure. The main objective of this survey is to prevent unauthorized data access and to provide data security in the cloud by proposing a homomorphic encryption algorithm. Cloud computing is an emerging field due to its high performance, high availability, and low cost.

Keywords: Cloud computing, Security policies, Protection measures, Data storage, Cryptographic algorithms, Unauthorized data access

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Track VII

Using a smartphone, recognise human activity

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Abstract:
This essay details all of the things that people who use mobile phones do. Using the phone, we used to record the actions. The primary goal of this essay is to provide a categorization model that is necessary for recognising human behaviours. This document is mostly used to solve problems involving several classifications. The only way we can solve an issue is by using mathematics, even when we may comprehend what the problem is by utilising a theoretical approach. If we solve the problem mathematically, we can obtain an extremely accurate solution. Here, we are determining the activities of people using mobile phones. A phone contains several sensors. The detectors in this are Accelerometer, Gyroscope. They are necessary for determining the person's activities. The results from this study are utilised to compare the terms' accuracy values. It employs a 3-dimensional accelerometer to gather the measured data, and we found that it included 31 values in all. The Nave Bayes Classifier, the support vector machine, and the neural networks are the machine learning techniques that were used to determine all of the activities that are now taking place. The result of the action determination using the necessary dataset is utilised to figure out how much less marking effort is needed to execute similar tasks using machine learning.

Keywords: Machine Learning, SVM, Naïve Bayes Classifier, Neural networks.

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Track VII

TEXT CLASSIFICATION INTO EMOTIONAL STATES USING DEEP LEARNING BASED BERTTECHNIQUE

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Abstract
Sentiment analysis, a branch of both critical thought and natural language processing, has grown in importance as our ultramodern lifestyles have becomemore dependent on social media (NLP). Actions, feelings, thoughts, and nonverbalsigns are all examples of emotional expressions. Modern techniques for processing text in natural languages (NLP) have their origins in machinelearning, and more specifically in statistical machine learning. In this research paper, this paper introduces BERT, an innovative approach for reading feelings into written language. This model is a synthesis of representations from motor Bidirectional Encoder Representations From Transformers (BERT). In order to develop its learning algorithm of word semantic representation, this model makes use of the BERT. In line with the language context, a comparison of models found that BERT outperforms the government foundationefficiency given by all the other models in the literature. Opinion mining is a branch of natural language processing that analyses public discourse to gauge public opinion on a product or topic.

Keywords — *Deep learning, emotion recognition, Text,* Bidirectional encoder Representations From Transformers (*BERT), Formal text, emotional states.*

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Track VII

A CRITICAL INVESTIGATION ON RAIN FALL PREDICTION USING MACHINE LEARNING ALGORITHMS

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Abstract
The accuracy in the prediction of rain fall can be considered as a very complicated issue in recent times because of the drastic changes and variabilities in the climate. The potentiality of classification algorithms in the aspect of predicting rainfall is flourished. This research study is motivated to using several algorithms like classification algorithms for the sake of prediction of rainfall in various zones and different geological zones. The classification algorithms include the algorithms like support vector machine, logistic regression, random forests and decision tree The dataset that consists of several attributes like climatic was sourced from different meteorological agencies. The functioning and performance of the classification algorithms was tested and trained on the basis of recall, precision, f1-score accuracy and execution time with several testing and training parameters. When it comes to time of execution of the models, decision tree can be considered as the fastest and MLP can be considered as the better option when it comes to run time.

Keywords: Agriculture, Rainfall, Kaggle, Machine Learning.

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Track VII

QoS-driven Power optimization in Heterogeneous Networks

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Abstract:
Millimeter wave communication suffers from static blockages such as trees, buildings and so on. Reconfigurable Intelligent Surfaces (RISs) has been adapted to solve this blockage problem and enable the urban environment user to choose mmW enabled small cells as their source transmitter or to choose macro cells in case of non-line of sight exists. RIS is a promising network technology to improve the quality of service parameters such as spectral efficiency and energy efficiency by artificially reconfiguring the propagation environment of electromagnetic waves. An indoor user can be connected with mmW band if the line of sight (LOS) link exists. Otherwise, the system utilizes RIS transmission model to have reliable and low-latency communication. It reflects the capability of RISs to enable enhanced communications in challenging environments. An optimization problem is formulated to maximize the sum data rate of an indoor user by phase shift optimization at the RIS. The outage probability of the proposed scheme is analyzed under Rician fading channel. The proposed RIS enabled method targets to enhance the overall performance in terms of average spectral efficiency and achievable data rate in the presence of blockages and system imperfections. The data rate is increased by three fold times than that of the transmission without RIS. The utility of this framework is discussed for both indoor and outdoor environments.

Keywords: Heterogeneous network, Millimeter wave, Reconfigurable Intelligent Surfaces, Blockage.

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Track VII

Data analysis of Lung Carcinoma using K-Means Clustering Algorithm in Image Processing

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Abstract:
Lung Carcinoma is the one source of cancer bereavements in equally male and female. Cigarette smoking is the primary risk issue for growth of lung carcinoma. Lung cancer is the progress of a tumor, referred to as a nodule that arises from cells lining the airways of the respiratory system. These cells are often in bright contrast in chest X-rays and take the shape of a round object.The general prognosis of lung cancer is poor because doctors tend not to find the disease until it is at an advanced stage. Five-year survival is around 54% for early stage lung cancer that is localized to the lungs, but only around 4% in advanced, inoperable lung cancer. However, these nodules that can be seen in a chest X-ray may not necessarily be a lung cancer; it can be due to some other disease such as pneumonia, tuberculosis or calcified granuloma. Lung cancer is the most common cancer in the world today (12.6% of all new cancers,17.8% of cancer deaths).Almost all lung cancers are carcinomas (other histologies comprise well under 1%).Tobacco smoking increases the risk of all major histological types of lung cancer, but appears to be strongest for squamous cell carcinoma, followed by small cell carcinoma and adenocarcinoma. In this paper, our aim is to analyze the statistical data for the lung cancer

Keywords: Inoperable lung cancer, Tuberculosis, calcified granuloma, pneumonia, squamous cell carcinoma,adenocarcinoma

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Track VII

An integrated learning framework for targeted advertising based on transfer learning and knowledge distillation

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While advertisers are unwilling to give information to protect their interests, the rise of customised advertising has resulted in frequent privacy data leaks. As a result, there are issues with isolated data islands and model heterogeneity. To deal with these problems, we have suggested a maximum average difference-based C-means clustering algorithm to enhance the assessment of the distributional difference between local and global parameters. Additionally, in order to lessen the effects of model heterogeneity, we have developed a novel dynamic selection approach that makes use of knowledge distillation and weight correction. Our approach was put to the test on multiple datasets, and metrics like accuracy, loss, and AUC (Area under the ROC Curve) were used to gauge how well it performed. The framework performed better than previous models in terms of higher accuracy & lesser loss.

Key Words: Heterogeneity, integrated learning, Targeted Advertising, Transfer Learning, Knowledge distillation

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Track VII

A Systematic Review on Algorithmic Analysis of Deep Learning & Machine Learning using Video captioning Studies

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Abstract:
The efficacy of the video captioning approaches has undergone significant revolutions as a result of recent advancements made in the research field. Deep learning and machine learning methods are both used in this context. However, it is difficult to trace the most recent studies and their impressive outcomes. There isn't a systematic study that uses the video captioning problem, despite the fact that many studies have been proposed using the ML and DL algorithms in several other areas. In order to create a thorough Systematic Literature Review (SLR) that offers a broad overview of the techniques utilised for video captioning, this study will analyse, assess, and synthesise the work. To identify the study topics where machine learning models were favoured over deep learning models in the SLR.

Key Words: Video Captioning, Machine LearningDeep LearningVideo

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Track VII

Impact of Heat Wave on Economics: A survey along with Opportunities in Climate Change

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Abstract:
Being the largest countries in the world still they are struggling with the impact of the external world i.e., the environment. Take the example of India, whose GDP is eaten by heat which is the Heat Wave. In this manuscript, we will discuss Heat wave impacts and concerns or solutions for their control. As heat waves can impact the economy. In this manuscript, we discuss 5 areas which majorly impacted by this climate emergency. 1) Agriculture 2) Pharmaceutical 3) Construction 4) Health and 5) Electricity. This paper also discusses a few possible solutions to manage this condition. 1. Urban Cooling 2. Shades by providing rooftops 3. Cooling infrastructure industry. The cooling infrastructure industry is having a pivot role in the economy. WHO (World Health Organization) insist every country should focus on the urban cooling and that necessary facilities should provide in both community as well as a responsible of Government. This manuscript summarizes the heat wave can impact individual financial health.

Keywords: Climate Change, Heat Wave, economy, infrastructure.

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Track VII

Safety in Clinical Trials: A case study on FHIR and openEHR for Clinical Trails

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Abstract:
Health is a key concern for individuals as well as for a nation. Medical emergencies during COVID-19 even exposed the faults in health policies and the lack of readiness for the pandemic in all nations. In this manuscript, the focus is on clinical trials using the tools like FHIR (Fast Health Interoperability Resources) by Google and OpenEHR (Open-source Electronic Health Resource) which is open source. Both FHIR and OpenEHR are following the HL7 standards. These tools are used to provide a platform for IT-based system analytics for solutions related to the healthcare domain. In this manuscript, we analyze the potential role of these tools in clinical trials. Electronic Health Records or Reports are trends nowadays, so we use these data for clinical trials rather than human concerns using IT. Using these FHIR and OpenEHR resource platforms to generate and manipulate reports for clinical trials. In this paper, we also take a sample case study on Cancer data using these tools to analyze of drugs. Human resource is a valuable resource in clinical trials, so by using these tools we can safeguard against all pitfalls found with physical trials. The best study we mentioned is finding the COVID-19 vaccine during COVID waves.

Keywords: Electronic health records, tools, reports, health platform systems, HL7.

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Track VII

A Modern Architecture for IoT-Enabled AI Smart Home with a Focus on Security Risks, Problems, and Solutions using LR Algorithm

S Kavitha
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Cloud computing (CC) offers online access to Network Services, in specific data collection and processing capability, with advanced, transparent user management. CC has become a more and more private and public data center set that provides the user with a shared Internet portal. A wide variety of smart devices can form an IoT network to collect and transmit massive data. Separate networks such as data collection, storage, and the handling of large data generate many analysis problems. The huge amount of resources present in the Cloud can be of great advantage to IoT, meanwhile, the cloud can acquire more attention to dynamize and transfer its restrictions with real artifacts. AI technologies are resource challenges that need careful adjustment to fit into a significant proportion of computing resources, especially integrated systems. Recently the Internet of Things (IoT) model has developed into an intelligent building environment application. In every smart IoT setting in the actual world, security and privacy are considered core concerns. IoT-based networks have security issues that generate security risks for smart environments. The strong learning capabilities of AI make the machine more reliable and efficient in identifying malicious attacks. This paper presents a modern architecture that will endorse many instances of IoT-enabled AI smart home use with a specific analysis of security risks, problems, and solutions using the LR algorithm.

Keywords: cloud computing, AI, IoT, Smart IoT

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Track VII

Enhancing Authentication and Authorization in IoT through Machine Learning and Fog Computing

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As more and more machines and smart devices are connected to the network, the vulnerabilities of IoT security are gradually exposed. IoT devices are more vulnerable to be attacked than computers or mobile phones, not only because of the surge in the use of IoT devices, but also on account of the complexity, diversity, and inherent mobility of such device application scenarios. At the same time, IoT has developed rapidly but has not yet matured. The privacy protection crises caused by the openness of the network and the mobility of data are less discussed and regulated. Comprehensive perception makes the data collected and exchanged by IoT more private and dangerous than the Internet. Fog computing was introduced to address most of the challenges of IoT [6]. However, authentication and authorization are still amongst the main issues of security due to limited computation, memory and power issues in end devices. Same may be addressed if new technologies of AI/ machine learning are used. In this , we present a comprehensive view on these machine learning algorithms that can be applied to enhance the intelligence and the capabilities of an application and security issues, authentication and authorization of IoT devices. Various solutions have been proposed in the past to address said concerns but most of the solutions are based on increasing the computational capacity, storage and power in IoT devices. This paper proposes use of machine learning in addressing the issues of authentication and authorization. Proposed solution is based on machine learning model reliance on computational capacity, storage or power of IoT devices.

Keywords: fog computing,machine learning,IoT

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Track VII

A Generic Technique for Efficient Detection of Code Clones

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Abstract:
Code cloning is a common practice that can significantly reduce the time and effort required for software development. However, it can also result in decreased software quality by reducing readability, changeability, and increasing maintenance costs. To address this issue, we propose a new generic technique for detecting code clones from various input sources (e.g., web, disk). Our approach involves segmenting the code into sub-programs, modules, or functions and efficiently identifying 1-type, 2-type, 3-type, and 4-type clones. Our technique aims to reduce the cost of software maintenance by efficiently detecting and managing code clones, which are a major risk to software development. We also propose a threshold-based approach to determine the similarity between code fragments and classify them as clones.

Keywords: clone; code and methods; Generic technique; threshold.

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Track VII

Application of Machine Learning algorithms for identification plant diseases

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Abstract:
The identification and early detection of plant diseases are crucial for ensuring the health and productivity of agricultural crops. Traditional methods of disease diagnosis often require manual inspection by experts, which can be time-consuming and error prone. With recent advancements in machine learning techniques, there is a growing interest in applying these methods to automate the process of plant disease identification. This paper presents an overview of the application of machine learning in the identification of plant diseases. It explores the use of various types of data, including images, sensor readings, and spectral information, to develop accurate and efficient disease detection models. The paper also discusses the challenges associated with dataset acquisition, annotation, and model training. Different machine learning algorithms, such as convolutional neural networks (CNNs), support vector machines (SVMs), and decision trees, are examined in the context of plant disease identification. The strengths and limitations of each approach are discussed, along with their potential applications in real-world scenarios. Furthermore, the paper delves into feature engineering techniques and the importance of selecting relevant features for disease classification. It explores the use of transfer learning and data augmentation to improve model performance and generalization. Additionally, the paper discusses the integration of machine learning models with mobile applications and smart farming systems, enabling real-time disease monitoring and early intervention. The evaluation of machine learning models for plant disease identification involves performance metrics, such as accuracy, precision, recall, and F1 score. The paper presents a comparative analysis of existing studies, highlighting the achievements and areas for improvement in the field. It also emphasizes the need for large-scale, well-curated datasets to foster the development of robust and reliable disease detection models. Overall, this paper demonstrates the significant potential of machine learning techniques in revolutionizing plant disease identification. By leveraging advanced algorithms and data-driven approaches, accurate and timely detection of diseases can be achieved, leading to improved crop management practices, reduced economic losses, and sustainable agricultural practices.

Keywords: Convolution Neural Networks, Support Vector Machines, Decision Trees, Plant Disease

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Track VII

Prediction of secondary structure of protein using Deep Learning Models

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Abstract:
Deep learning models have revolutionized the field of protein structure prediction, enabling accurate identification and classification of secondary structures. Secondary structures play a crucial role in understanding protein folding, stability, and function, making their prediction a key task in bioinformatics and structural biology. This paper presents a comprehensive review of deep learning models used for identifying protein secondary structures. The proposed models leverage advanced deep learning architectures, such as convolutional neural networks (CNNs), recurrent neural networks (RNNs), and transformer models, to capture intricate patterns and dependencies within protein sequences. These models are trained on large-scale datasets containing experimentally determined protein structures and their corresponding secondary structure annotations. We discuss various approaches for representing protein sequences, including one-hot encoding, position-specific scoring matrices (PSSMs), and embedding techniques that capture evolutionary information. Additionally, we explore strategies to handle imbalanced class distributions and address the scarcity of labeled data through data augmentation and transfer learning. Evaluation metrics and benchmark datasets commonly used in the field are presented, providing insights into the performance of different deep learning models. We also highlight recent advancements in attention mechanisms, graph neural networks, and ensemble techniques, which have further improved the accuracy and robustness of secondary structure prediction. Furthermore, we discuss the interpretability of deep learning models in the context of secondary structure prediction, emphasizing the importance of model explainability for gaining biological insights and aiding experimental validation. Overall, this review showcases the remarkable progress made in using deep learning models for identifying protein secondary structures. It highlights the potential of these models in advancing our understanding of protein biology, facilitating drug discovery, and enabling the design of novel therapeutics targeting specific secondary structure elements. Future directions and challenges in this field are also discussed, outlining potential research avenues to enhance the performance and applicability of deep learning models in protein structure prediction.

Keywords: Convolution Neural Networks, Recurrent Neural Networks, protein secondary structure, one-hot encoding.

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Track VII

Facial Expression Recognition using Minimal Facial Features and Dimensionality Reduction

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Abstract:
Facial expressions are an essential part of human communication and contain emotionally expressive behavior used to display emotional states. Recognizing emotional states using facial expressions has been the focus of many studies, with a primary focus on the six basic emotions: fear, anger, disgust, happiness, surprise, and sadness. In this paper, we propose a facial expression recognition approach that aims to extract the minimum number of facial feature vectors and reduce the dimensionality of the feature database to recognize emotion states. The proposed approach is tested on both homogeneous and heterogeneous facial databases, and the results are compared with state-of-the-art methods. Our experimental results demonstrate that the proposed approach achieves high accuracy in recognizing the basic six emotion state categories, even with minimal facial features. This paper contributes to the advancement of facial expression recognition technology by providing a simple yet effective approach for recognizing emotions in real-world scenarios.

Keywords: Facial Expressions, Emotion states, Homogeneous and Heterogeneous facial databases, facial feature extraction, Dimensionality reduction.

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Track VII

Dynamic Image Description Generation using VCG16 and LSTM

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Abstract:
There is a growing interest in natural language processing and computer vision research for automatically generating descriptive sentences for images. Successful image processing requires somaticized image knowledge and reliable, well-organized explanatory phrases. In this paper, we propose a dynamic program that uses the VCG16 platform to develop image descriptions and a long short-term memory (LSTM) to select appropriate words based on generated text keywords. We evaluate the usefulness of our NLP method using the Flickr8K dataset and demonstrate that our model achieves high accuracy compared to the Bleu metric, which is an automated system for measuring the performance of machine translation. Our results are validated with images that satisfy the NLP algorithm. This paper contributes to the advancement of image description generation technology and provides a promising approach for generating accurate and meaningful descriptions of images.

Keywords: DL; GPU; Image captioning; LSTM; TPU

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Track VII

AN AUTOMATED PREDICTION FRAMEWORK FOR CARDIOVASCULAR DISEASE PREDICTION USING DEEP LEARNING APPROACHES

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Abstract-
The prediction of cardiovascular disease shows huge significance in the medical field impendency with the rising need of healthy lifestyle. Various prevailing pathological methods for disease prognosis and prediction are either prone to misclassification. Thus, there is a need of modern automated tools based on deep learning approaches. The learning approaches intend to predict the occurrence of cardiovascular disease with information gathered from the patients based on the historical Electronic Health Records (EHR). Moreover, it is a complex task to choose appropriate features from the available EHR data and turns to be a huge challenge in attaining the robust and accurate results. This work concentrates on modelling an efficient end-to-end framework known as Risk prediction with Deep Residual Neural Network (DRNN) which not only acquires the most influencing features; but, also considers the time-based medical data to help the patients. The experimentation is done with online available Kaggle dataset for CVD prediction and the outcomes demonstrates that the anticipated model significantly enhances the prediction accuracy compared to various existing approaches. The proposed model establishes a better trade-off compared to other approaches.

keywords- High-risk prediction, deep residual neural network, cardiovascular disease, prediction accuracy, medical data

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Track VII

A systematic investigation of machine learning and deep learning approaches for Intrusion detection systems

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Abstract
Quick advances in the field of the web and correspondence have brought about an epic expansion of the components of affiliation and connection information. Thusly, a few extraordinary assaults are occurring and calls have been made to the security of the association to isolate the power outages precisely. Also, the presence of gatecrash that stick to different attacks inside the affiliation can't be overlooked. A Blocking Area Facility (IDS) is one such gadget that keeps the relationship from likely power outages by assessing the affiliation's traffic to guarantee its secret, dependability, and accessibility. In spite of immense endeavors by well-informed authorities, IDS is genuinely attempting to additionally advance identification exactness by lessening deluding discharge rates and perceiving new power outages. As of late, AI (ML) and profound learning (DL) based IDS structures are given true-to-form replies to productively isolate wide affiliation problems. This article at first gets a handle on the chance of IDS and afterward gives a consistent fix by considering the significant ML and ML techniques embraced in the association-based IDS structure (NIDS) plan. An exhaustive survey of new NIDS-based parts is introduced by looking at the qualities and obstacles of the proposed gatherings. Then, NIDS models in light of ML and DL and nonstop developments are given as far as the proposed perspective, assessment measures and choice of the data file. Utilizing the deficiencies of the proposed methodologies, we have presented some future assessment and exploration difficulties to further develop ML-and DL-based NIDS.

Keywords: Network intrusion detection system, Network security, Deep learning, Machine learning, Network anomaly detection

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Track VII

Addressing the Big Data Clustering Problem with Sampling-Based Crisp Partitions

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This research addresses the problem of cluster tendency in big data cluster analysis tasks through the derivation of sampling-based crisp partitions. Cluster tendency refers to the evaluation of data based on the number of clusters, and several visualization techniques exist for its detection, including VAT, SpecVAT, and iVAT. While these techniques have been successful for assessing cluster tendency in small datasets, bigVAT was developed for visualizing cluster tendency in big data. However, exploring data clusters for large volumes of data objects is challenging. The proposed method accurately predicts the cluster labels of data objects by deriving crisp partitions, thus addressing the clustering problem of bigVAT. This research uses big synthetic and big real-life datasets to demonstrate the performance efficiency of the proposed approach. Keywords associated with this research include cluster tendency, crisp partitions, data clustering, sampling, and visualization techniques.

Keywords : Cluster tendency; Crisp partitions; Data clustering; Sampling; Visualization techniques

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Track VII

Deceptive Review Detection in E-commerce Using Linguistic and Behavioral Methods

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Abstract:
With the increasing number of e-commerce websites, the reliance on reviews to judge the worth of a product or service has also increased. However, if these reviews are spam, it can have a significant impact on the business of sellers and mislead customers. Identifying spam reviews is challenging as fake reviewers often mimic genuine users. Previous studies have focused on sentiment analysis, neglecting the personal qualities of the reviewer. This project proposes two methods for deceptive review detection: the linguistic method and the spammer behavior method. The linguistic method considers the content of the review, lexical diversity, and feature selection to identify deceptive reviews. The spammer behavior method analyzes different behavioral features to calculate the percentage of deceptiveness and spam users. The proposed methods use datasets from platforms with high social interaction, such as Yelp or Amazon, to improve accuracy across a wide range of opinions and behavioral patterns.

Keywords: Behavioural features; Classification; Deceptive review detection; E-commerce; Machine learning

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A Hybrid Deep Learning Model for Medical Image Classification

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Abstract:
As computer technology continues to advance, medical image classification has become more feasible. However, traditional feature-based systems struggle to represent higher-level domain problems. Deep learning models have shown promise in their ability to generalize even with poor models, but limitations in medical image datasets and high resolution lead to computational costs. In this paper, we propose a hybrid deep learning model that combines Convolutional Neural Networks (CNN), Naïve Bayes, Support Vector Machine (SVM), and Multilayer Perceptron (MLP) models to consolidate high-level features extracted from a CNN and selected traditional features. The model development consists of three steps: first, a supervised CNN is trained to program raw pixel data into feature vectors representing high-level concepts. Second, traditional features are extracted based on prior knowledge of medical images. Finally, an efficient model that utilizes Neural Networks to fuse the different feature groups is proposed.

Keywords: Classification; Deep Learning; Feature extraction; Multilayer Perceptron; Naïve Bayes; Support Vector Machine

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