

Prevention of Financial System Vulnerability and Hazards in Real time using Fuzzy based Modified MCDM –TOPSIS Model

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Abstract:

The extensive use of networks in industrial control systems has created number of problems and, one of the most pressing being cyber security, or the information protection with the goal of preventing cyber-attacks. The proposed work provides a model that mixes fault tree analysis, decision theory, plus fuzzy theory help to recognize the current reasons of cyber attack prevention failures and assess the complete vulnerability scenarios. Fuzzy based Modified MCDM – TOPSIS model was used to analyse the cyber security risks associated with assaulting e-commerce platforms, and enterprise resource planning (ERP), as well as the potential effects of such assaults. We evaluate these effects, which include data dissemination, data alteration, data loss or destruction, and service disruption, in terms of criteria linked to monetary losses and time for restoration. The proposed findings show how effective it is and how much more susceptible e-commerce is to cyber security threats than websites or ERP, because of frequent operator access, credit transactions, and user authentication issues that are exclusive to e-commerce.

Keywords: Cyber Security, ERP, Fuzzy Theory, Decision theory, Data dissemination; Fuzzy Classifier.

ANALYSIS AND COMPARISON OF VARIOUS MACHINES LEARNING ALGORITHM FOR CREDIT CARD FRAUD DETECTION

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Abstract

Online shopping has become an integral part of our life. As card payment becomes the most prevailing mode of payment for both online as well as regular purchase, frauds related to it are also accelerating. Fraud detection in card payment is a crucial part of e-shopping. It includes monitoring of the spending behavior of customers in order to detect and avoid fraud. This paper uses Machine Learning Models which are built with various algorithms. It uses classification algorithms such as Decision Tree and Random Forest for better efficiency. Deep learning neural networks use feature extraction and Back propagation to improve accuracy of results from the training data. Random Forest is an ensemble learning approach which contains a combination of many algorithms. Random Forest uses training data to come up with a solution, it generates multiple decision trees and selects the decision trees which get to the best solution. The goal of this paper is to check the performance of Decision Tree, Random Forest and Deep Learning algorithms on highly skewed credit card fraud details. Based on precision, sensitivity, specificity and accuracy, the efficiency of the techniques is assessed.

Keywords: Anomalies , Data Mining, Fraud Detection, Neural Network

Prediction of Type 2 Diabetes Using Machine Learning Models

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Abstract:

Diabetes complications significantly affect patients' quality of life. Diabetes and the health problems associated with it can be prevented by early diagnosis and treatment. The purpose of this study is to determine the risk of diabetes among those who need treatment to prevent diabetes and its associated health problems. According to their lifestyle and family background, this study evaluates the risk of diabetes among individuals Type 2 Diabetes Mellitus (T2DM) is often detected too late in its clinical course with many patients presenting with complications of unrecognised T2DM at the time of diagnosis. **A machine learning approach offers more promise for making decisions and predicting clinical data.** Our proposed machine learning algorithms, including Random Forest, DT, Auto ML, XGBoost, and CatBoost are employed in this study to aid the healthcare sector and experts in detecting T2DM. A CatBoost model provided the optimal results with accuracy 0.96 respectively.

Keywords: Diabetes Mellitus, T2DM, HbA1c, Machine Learning and SHAP feature

A Quality Model for Knowledge Management Systems Architectural Design: Empirical Approach

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Abstract:

The Awareness about Product is Considerably increased among customers during the procurement of product from Market. Today almost all people are having internet in their hands and doing sufficient analysis before and after acquiring the product. Sufficient information/knowledge about the product in the Market includes its core information such as architecture, process, and maintenance about components rather than working method only. In present days software system users demands including Technology, Interface, troubleshooting method, testing authority, etc., therefore there is a need for knowledge system with effective architecture to cope with users demands. But there are various quality models to meet the requirement of customer with respective to system functionality. But there is no architecture specific quality model which can aims to “user-centric” instead of Technology-centric. Particularly, the knowledge systems users, there is no chance to be novice of technology. So, architecture quality model needs to be incorporated with system quality model to meet architecture expectation of knowledge users, since almost all components of knowledge systems such as knowledge, functionality and technologies are dynamic over time. so knowledge user requirements with respect to architecture is inevitable. This paper proposes the quality model for architecture of knowledge systems in user-centric perspective. The investigation includes the quality characteristic of knowledge system’s architecture and evaluates the proposed architectural quality model using Analytic Hierarchy Process (AHP) method. This research can help researchers as road map, who are interested in knowledge system architecture and effectiveness.

Keywords: Knowledge Management Systems, Architectural Design, User centric, Analytic Hierarchy Process, Key-Quality Indicators

Cardiovascular disorders Disease Prediction using Feature Transformation Techniques

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Abstract:

Cardiovascular disorders (CVD) are the major cause of mortality worldwide. More than three-quarters of CVD fatalities occur in low- and middle-income nations. It is critical to recognize the cardiovascular illness as early as possible in order to begin treatment with counseling and medications. The inclusion of cardiovascular disease management measures in universal health care packages is the key to reducing cardiovascular disease, yet in many countries, health systems require major investment and reorientation to successfully manage CVDs. Clinical data analysis is challenged by the prediction of cardiovascular diseases. **A machine learning and neural network approach offers more promise for making decisions and predicting clinical data.** Our proposed machine learning algorithms, including Random Forest, SVM, DT, K-NN, and ANN, etc., are employed in this study to aid the healthcare sector and experts in detecting heart-related disorders. The random forest was shown to be the best predictor, with an accuracy rate of 90%, followed by ANN and DT with AUCs of 89% and 88%, respectively.

Keywords: Machine Learning, Heart Disease, Cardiovascular Diseases, classifier Relief, feature selection, PCA

Identification of Mutational Genes in a Disease using Machine Learning Techniques

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Abstract:

Early identification of any disease makes a human to live longer. The majority of the populace is afflicting from various kinds of cancer diseases. If the regular functionality of any organ is disturbed then mutational genes will affect that organ which causes a disease. Main objective of this paper is to identify malignant genomics where actually changed qualities are going to increase tumor instigation and movement. Much of the exploration has been done to conquer the difficulties in experimental techniques while storing vast amounts of the data in different sequencing projects. As the facet of gene sequence variants, this leads to the tumor causes to increase. An early stage of disease detection is more important which helps in disease prevention at starting stage with small medications. So the classification of a disease places an important role in predicting mutational genes. Machine learning models place a vital role in predicting diseases accurately. In this work, a novel construction is designed and implemented on the somatic cancer datasets. In this work for accurate analysis of any organ gene mutational disease, novel Machine Learning algorithms- Artificial Neural Networks (ANN), Decision Trees, K-Nearest Neighbors (KNN) are used. Given data is classified and predicted with the help of these three optimized algorithms. Classification and prediction of disease is analyzed and compared among these algorithms. The accuracy results are produced by comparing these algorithms. Among these classification ML algorithms, Decision trees classifier has produced better results with 98% accuracy. This method can be evaluated based on various parameters such as Precision, Accuracy, Recall and F1-Score in disease prediction. From this framework, a person who is having high risk of chronic disease can be predicted and classified.

Keywords: Mutational Genes, Machine Learning, Artificial Neural Networks (ANN), Decision Trees, K-Nearest Neighbors (KNN).

Medical IOT Experiential Education for Affected Roles with Obdurate Diseases at Home

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Abstract:

Telemedicine for chronic illness management is now available in the home via medical equipment and ICT technology. Patients with incurable conditions, such as amyotrophic lateral sclerosis (ALS) and deadly neurological disorders, have gone home rather than remaining in hospitals. Reliable warnings for patients' health changes and burden reduction for their families are gaining roots as the cornerstones of telemedicine for patients with incurable illnesses. We spoke about how to give dependable alarms and what medical IoT features to expect for those patients. Following a change in the patient's condition, the patient's family has trouble determining appropriate life-support medical device parameters. In addition, caregivers and patients' families want tele alarm systems used at home to provide dependable alarms and reduce false alarms. By consistently monitoring patients, we can alleviate tension for patients' families and ensure their safety. In this study, we developed and implemented an alert delivery system for patients with incurable diseases and a prototype false-alarm reduction technique for highly-controlled medical device systems, such as an artificial ventilator. We spent a year researching a patient's warnings while working with the patient's family. We want artificial ventilators to have consistent alarm functions and hardware connections. We conclude with our continued work for patients suffering from many terminal diseases and the standardization of medical IoT networks.

Keywords: Artificial ventilator, crying wolf, false alarm, intractable disease, medical IoT, telemedicine

Machine learning classification framework for cloud-based medical databases in filter- basis

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Abstract:

In this work, a hybrid outlier detection and data transformation approaches are implemented on the cloud-based medical databases. Proposed data filtering module is applicable to high dimensional data size and feature space for classification problem. In the classification problem, an advanced boosting classifier is implemented on the filtered data in order to improve the true positive and error rate. Machine learning tools and techniques play a vital role in the medical field and cloud computing applications. Most of the traditional machine learning models use static metrics, limited data size and limited feature space due to high computational processing time. Experimental results are simulated on different medical datasets such as tonsil and trauma databases with different feature space size and data size. Simulation results proved that the proposed boosting classifier has better error rate and statistical accuracy than the conventional approaches.

Keywords: cloud computing; machine learning; medical databases

A Machine Learning Technique to Reduce Dimensional Space in Massive Datasets

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Abstract:

Massive datasets computing is a typical problem either to store or analyse the data to get successful result. The datasets consist hundreds of dimensions that create number of problems to mine the data. Though there are several techniques to mine the data, they will take additional time and memory to get the expected result. In this paper we analysed massive dataset using traditional algorithms to reduce the dimensions of the dataset without losing the useful information. Consequently, we present a novel machine learning method that reduces dimensions without loss of the useful information in massive datasets. In this process we have merged different similar datasets in to massive dataset and after that we applied Principal Component Analysis (PCA) and also used Extract, Transform and Load (ETL) on the dataset to train the machine. We have taken a case study with a typical massive dataset to verify the correctness of our proposed technique. We conducted various experiments and observed the results and it's proved our technique performance is working better than the existing techniques.

Keywords: Big Data, Massive Datasets, Dimensionality Reduction.

A Life Cycle Model for Knowledge Management Systems

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Abstract:

The Knowledge System is ruling almost all sectors in the modern era and acts as contemporary approaches to achieve expected goals since an organization cannot away from the knowledge-acquiring process for a long time to understand global perceptive. The capturing and sharing of knowledge in and around the organization is not an easy task, however improper management of knowledge can lead to a serious loss in an organization. The use of Life Cycle Model (LCM) is essential to alleviate the effectiveness of the Knowledge Management System (KMS) since LCM is all about process instead technical aspects. The effectiveness of KMS is dependence on its degree of acquired quality in associated process. However, existing software life cycle models are including certain part of KMS not as whole, since KMS is multidisciplinary aspects such as software, technology, knowledge, cognitive science, business etc. So, the LCM can help to knowledge workers to prescribe an effective quality assurance activity to perform and guarantee that the product meets the specified standard at specified phases. Therefore, there is a need of LCM for effective KMS since it is process-specific system. This paper proposes a KMS Life Cycle Model (KMSLCM) and presents the results of evaluation using reliability test. The finding of the research work can use as road map by researcher interested in KMS effectiveness and design quality.

Keywords: Software, Life Cycle Models, Knowledge Management Systems, Processes, Reliability test.

Medical IOT Experiential Education for Affected Roles with Obdurate Diseases at Home

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Abstract:

Telemedicine for chronic illness management is now available in the home via medical equipment and ICT technology. Patients with incurable conditions, such as amyotrophic lateral sclerosis (ALS) and deadly neurological disorders, have gone home rather than remaining in hospitals. Reliable warnings for patients' health changes and burden reduction for their families are gaining roots as the cornerstones of telemedicine for patients with incurable illnesses. We spoke about how to give dependable alarms and what medical IoT features to expect for those patients. Following a change in the patient's condition, the patient's family has trouble determining appropriate life-support medical device parameters. In addition, caregivers and patients' families want tele alarm systems used at home to provide dependable alarms and reduce false alarms. By consistently monitoring patients, we can alleviate tension for patients' families and ensure their safety. In this study, we developed and implemented an alert delivery system for patients with incurable diseases and a prototype false-alarm reduction technique for highly-controlled medical device systems, such as an artificial ventilator. We spent a year researching a patient's warnings while working with the patient's family. We want artificial ventilators to have consistent alarm functions and hardware connections. We conclude with our continued work for patients suffering from many terminal diseases and the standardization of medical IoT networks.

Keywords: Artificial ventilator, crying wolf, false alarm, intractable disease, medical IoT, telemedicine

A Comparative Analysis of Various Classifiers for the Attack Detection of DoH Traffic

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Abstract:

This paper explores the capabilities of different classifiers for detecting the malicious activities of DNS over HTTPS (DoH) traffic. Several research studies are conducted and presented the classification power of various classifiers for NIDS or HIDS through experimental evaluation using benchmark datasets. However, very few researchers have studied to explore the effect of various classifiers for attack detection of DoH traffic. It is necessary to investigate which particular classical classifier will fit to achieve high detection rate with a minimal computational overhead because certain security flaws of DNS and it is mostly targeted by the attackers. This paper address this problem by focusing on the main classification families related to distance, probability, tree, parameter and statistical models. To adopt the classical classification models for each family, kNN, Naïve Bayes, J48, SVM, Random Forest, SLR, and Logic Boost are considered respectively. The main objective of this paper is to provide a prior knowledge, about the capabilities of these classifiers using a benchmark dataset CIRA-CIC-DoHBrw-2020 by conducting experiments. For this purpose, a two-layered classification model is adopted. Finally a comparative analysis is carried out based on various performance measures and building time of various classifiers.

Keywords: classification, Machine Learning, DNS over HTTPS, DoH, malicious DoH.

A Survey on Detection of Brain Tumour with Feature Extraction and Tumour Cell Classification Model using Machine Learning

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Abstract:

The most efficient strategy to prevent brain cancer deaths is to detect it early and treat it. A brain tumour is a mass of unusually large cells present in the central nervous system of the brain. Brain tumours will be the leading cause of death for about 9 million individuals worldwide in 2020, according to WHO statistics. People of various ages can be affected by this dangerous tumour. Medical images may now be more easily interpreted to the rapid growth of image processing and soft computing technologies, which aids in early diagnosis and treatment. Brain tumours are classified into two types: malignant that are cancerous and benign that are not cancerous. Primary tumours are defined as those that begin in the brain and subsequently spread to other regions of the body, including the brain. Secondary tumours, also known as metastatic tumours, arise from primary tumours. This research work provides a brief survey about the feature extraction and tumour cell classification for the automatic detection and classification of brain tumours in MRI images. Because of technological improvements, the use of Computer-Aided Diagnostic (CAD) technologies for disease detection, prognosis prediction, and recurrence likelihood is increasing.

Keywords: Benign; Brain Tumour; Feature Extraction; Machine Learning; Malignant; Tumour Cell Classification

A Detailed Study on Resource Allocation in Cloud Computing

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Abstract:

There are numerous advantages of cloud computing, the most basic ones being **lower costs, re-provisioning of resources and remote accessibility**. Yet, an important problem that must be addressed effectively in the cloud is how to manage **QoS** and maintain **SLA** for cloud users that share cloud resources. A Resource allocation is an issue that has been addressed in many computing areas, such as operating systems, grid computing, and datacenter management, Resource Allocation System (RAS) in Cloud Computing can be seen as a mechanism that aims to guarantee that the applications' requirements are attended correctly by the provider's infrastructure. Two players in cloud computing environments, **cloud providers and cloud users**, pursue different goals; **providers** want to maximize revenue by achieving high resource utilization, while **users** want to minimize expenses while meeting their performance requirements. Many resource allocation schemes have come up in the literature of cloud computing. Researchers around the world have proposed and implemented several types of resource allocation schemes. A Markov process is essentially a random process in which if the current state of the system is given the history of this process will not be important. In the Markov process, if the state space is discrete, then it is called the Markov chain and is divided into two types of discrete-time Markov chain (DTMC) and continuous-time Markov chain (CTMC). In this paper a detailed analysis of the output process of finite capacity birth-death Markovian queues has been implemented and the results were obtained.

Keywords: Resource allocation, Loss systems, Queueing theory, CTMC, Markov Chain

QoS and QoE improved asset designation for remote video sensor networks utilizing half-and-half enhancement calculation

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Abstract:

Asset allotment is a portion of scant assets to exercises over the long haul. Issues of ideal asset allotment are persuaded by questions that emerge in project booking, creation arranging, PC control, broadcasting, steering information, support planning, and so on. Information transmission in ecological, security, and wellbeing observing requires both nature of administration (QoS) and nature of gear (QoE) mindful organization to guarantee proficient use of the assets and compelling access. In this paper, we propose an asset distribution conspire for remote video sensor organization (WVSN) utilizing half and half improvement (RAS-HO) calculation. The bunch arrangement, right off the bat, is performed by the adjusted creature movement advancement (MAMO) calculation, which upgrades the energy utilization. Furthermore, a productive asset distribution is performed by a glowworm swarm enhancement based direction (GSDM) calculation. Reenactment results show that the proposed plot accomplishes required assets better than existing plans as far as QoS measurements are energy proficient, postpone decency, throughput, and QoE measurements are top sign to commotion proportion (PSNR), underlying closeness (SSIM).

Keywords: QoS, routing, Network Mapping, IoT, Embedded System

A Survey on Large Learning Models(LLM) and their Applications

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Abstract:

Large Learning Models (LLMs) are a class of machine learning models that are capable of processing large volumes of data and generating accurate predictions. LLMs have become increasingly popular in recent years due to their ability to handle complex tasks, such as natural language processing, computer vision, and speech recognition. This proposed research aims to investigate the effectiveness of LLMs and their potential applications in various fields. The study will begin by reviewing the literature on LLMs and their applications in different domains. The research will analyze the latest techniques for training LLMs, such as transfer learning, semi-supervised learning, and unsupervised learning. The study will also explore the potential benefits of LLMs, such as improving accuracy, reducing training time, and enhancing model interpretability. The research will then proceed to evaluate the effectiveness of LLMs by conducting experiments on large datasets. The study will compare the performance of LLMs to traditional machine learning models and assess their ability to generate more accurate predictions and improve outcomes in various applications. Finally, the study will address the ethical and societal implications of using LLMs, such as concerns over data privacy, algorithmic bias, and fairness. The research will provide recommendations for best practices for using LLMs in different domains. The findings of this study will contribute to the growing body of research on LLMs and their applications in various fields. The results will be of interest to researchers, practitioners, and other stakeholders in the field of machine learning.

Keywords: Large Learning Model(LLM), Machine Learning, Data Privacy, Algorithmic Bias

Prediction of Software quality metrices using hybrid -FISHER filter Algorithm

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Abstract:

Quality has been a big setback for the developers. Different phases of qualitative test play a vital role in assessing its quality. Traditional testing mechanisms such as alpha-beta, black box and white box are used at different levels, which detects faulty code and be rectified to a level only. Though manual testing has upper edge over the others it is too expensive, time consuming and sometimes not feasible. Hence there is an urge for an hybrid fault prediction model that gives the reliability of the product, different metrices and identify the fault. This overall leads to reduction in threat for failure of software and leads to faster and qualitative software. The paper aims at design of a hybrid algorithm using Artificial Neural Networks and FISHER filter technique.

Keywords: ANN, FISHER filter, fault, prediction

Effective energy management for reducing cross layer attacks in cognitive radio networks

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Abstract:

In the cognitive radio framework, the primary clients (PCs), are approved to use the remote range, while Secondary clients (SCs), are not approved to utilize the remote range. SCs get to the remote range craftily when the range is inactive. There is a security problem in cognitive radio systems. This paper also describes cross layer attacks and mechanism for defense in trust fusion calculations which considers the analysing model to achieve QoS for cognitive networks including termination probability and finished traffic of SCs. While SCs utilize an inert channel, the occurrence that PCs return causes SCs to end their interchanges and exit the present channel. Hence, Qos(Quality of Service) is hard to be guaranteed for SCs.

Keywords : Cognitive radio; Energy; Primary clients; QoS; Remote range

Bibliometric Analysis of top cited article in Magnesium alloy/ AZ91E Mg alloy from Dimensions

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Abstract:

In this survey, top cited article is identified in Magnesium Alloy/ AZ91E Mg alloy from Dimensions data base (2014-2023). Top cited article is defined as the article which is cited more number of times than other articles since 2014. Results showed that 1264 publications with research categories Engineering (1128), materials engineering (785), manufacturing engineering (161), chemical sciences (93) and biomedical engineering (67) were published in the journal's list UGC journal's list Group II, ERA 2023, ERA 2018, ERA 2015, Norwegian register level 2, DOAJ, PubMed, J-STAGE between 2014 to 2023. "Magnesium Alloy or AZ91E Mg alloy" is the key word used to obtain the highest authored paper with 1463 citations.

Keywords: Magnesium alloys; AZ91E;Bibilometric analysis

Prediction of PH value of Fish Tank Water using IoT and ML Technique

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Abstract:

Sensors are arranged in the fish tank to get the PH values data continuously. The streaming data is massive data and it's converted in to system readable data and is stored in the cloud server. The machine is educated with train dataset and then the system takes data from the cloud server. The stream data is normalized before storing into the server. The machine can compute the data and produces the oxygen levels and PH values and also it can send the information to the aerator to maintain the dissolved oxygen levels to save the fishes in the tank. This is most useful technique to the aqua farmers that can reduce the losses. We have refined an Artificial Neural Network (ANN) algorithm in this paper to increase efficiency to compute the oxygen levels. The experimental results are showing the efficiency of our refined ANN algorithm comparing with the existing techniques.

Keywords: Sensors, Normalization, Neural Network.

Sentiment Analysis using Deep Learning: A Review

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Abstract:

Sentiment analysis is the process of extracting subjective information from text data, which can be useful for understanding consumer opinions, trends, and preferences. Deep Learning has emerged as a promising technique for performing sentiment analysis due to its ability to automatically learn complex features from data. This proposed research aims to explore the applications of Deep Learning in Sentiment Analysis. The study will begin by reviewing the literature on Deep Learning techniques for sentiment analysis. This will include an analysis of the latest approaches for training deep neural networks, such as Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs), for sentiment classification. The research will then evaluate the effectiveness of Deep Learning models for sentiment analysis by conducting experiments on large datasets. The study will compare the performance of Deep Learning models to traditional machine learning models and assess their ability to generate more accurate predictions. Finally, the study will address the ethical and societal implications of using Deep Learning for sentiment analysis, such as concerns over data privacy, bias, and transparency. The research will provide recommendations for best practices for using Deep Learning in sentiment analysis. The findings of this study will contribute to the growing body of research on Deep Learning and its applications in sentiment analysis. The results will be of interest to researchers, practitioners, and other stakeholders in the field of Natural Language Processing (NLP) and sentiment analysis

Keywords: Sentiment Analysis, Convolutional Neural Networks, Recurrent Neural Networks, Deep Learning, Natural Language Processing (NLP)

Performance Analysis and Anomaly detection of Power Distribution Insulators using Deep Learning Techniques

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Abstract:

In the field of Machine Learning, Deep Learning (DL) is a rapidly growing area and it uses Convolutional Neural Networks(CNN) for image classification as it gives the most accurate results. CNN has various pre-trained architectures available for every type of problem. A variety of insulator parts with various forms and construction materials are found in the overhead power transmission lines. These Electrical assets are continually exposed to environmental factors and operational circumstances, which could result in size, color, and structure variations. This work offers a reliable image classification methodology that seeks to identify insulator classes effectively regardless of the degree of degradation. Here, we used various classical classifiers and identified the insulator defect pieces. In order to use a previously trained CNN as a feature extractor for training new classifiers, it must first undergo a step of fine-tuning. To determine which type of classifier provided the best non-conforming component discrimination performance, a comparison study was done. By identifying non-conforming component classes with an overall accuracy of 96%, the suggested methodology significantly improved classification performance.

Index Terms: Deep Learning model-based Classification, CNN, ResNet, VGG, Power Distribution Isolators, Insulator datasets.

POSITION BASED SLEEP UPDATE RELIABLE ROUTING FOR EMERGENCY MESSAGE DISSEMINATION

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Abstract:

Nowadays the vehicular ad-hoc network prefers peer-to-peer cooperative emergency message transmission. The traditional routing protocols are not suited for emergency message forwarding due to the frequent changes in topology and routing table overhead. The position based redundant route sometimes leads to inefficient path selection. The route stability is the major concern during emergency message distribution. The proposed scheme recommended using the forecast moving prediction approach which predicts the future position over time. The system can be able to define the future position of the vehicle using the current attributes like speed, location, and direction of the node movement. The intrinsic attributes are received by each node by sending periodic control packets. The system uses the sleep update procedure to update the page table only when there is a change in table entry. The proposed approach provides efficient control over the efficient packet transmission and reduced end to end delay.

Keywords: Reliable route, sleep update, ad-hoc network, position based.

An Effective Survey on IOT Protocols and Applications

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Abstract :

IOT has made lives of humans comfortable by reducing the man efforts where the work to be done by humans will be done by machines. This paper presents an extensive survey on the communication protocols that are used in internet of things (IOT). The most buzzed word in the modern era is internet of things which connects almost all devices and humans in the world in the coming future. The protocols used in IOT are different in a way that they are light in weight compared to the protocols used by the conventional networking devices.

Keywords: AMQP; CoAP; Communication protocols; DDS; HTTP; IOT; MQTT

Improved Graphical Pattern Password Authentication for Sign-on Safety

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Abstract:

Nowadays web resources are protected by using strong passwords. Strong passwords with lower case and upper-case characters, numbers, and symbols are difficult to remember. Therefore, the alternative solution to enhance the authentication and easy remembering by using the graphical password. In a graphical password, the user should select the set of images as a pattern to authenticate. Whenever the user sets the right pattern order and count then the website or app is made available to the user. The probability of the password guess can be eliminated by increasing the size of the pattern. The order of the pattern is shuffled every time the page gets refreshed. The database can store multiple patterns and the designer have the choice of it. The number and the order of the pattern are also in the form of user-generated or emojis. The graphical password is easy to remember and guarantees security for your web resources. The pattern is depending on the attributes like the number, between time and choice of selection.

Keywords: Password, pattern, security, Intelligence

An Efficient Model of Accident Detection and Prevention Mechanism Using Artificial Intelligence Techniques with Internet of Things in large data set

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Abstract:

Drowsing and sleeping related problems can be challenging if our lifestyle does not support refraining from vehicle driving while fatigued. Many people do not get the necessary amount of sleep in today's 24/7 world due to the emphasis on job, longer commutes, and exponential growth of technology. Fundamental adjustments must be made to society standards, including attitudes about sleepy driving, in order to effectively address the problem of drowsy driving. However, there was not yet possible to estimate the exact number of crashes, injuries, and fatalities caused by drowsy driving. Investigators can search for signs that suggest tiredness played a role in a accident, but these signs aren't always obvious or conclusive. Hence, we created a system that would detect accidents, track location information via GPS, and transmit messages via GSM. It would also use seat belts and alcohol tests to prevent accidents. After the AI with IoT module detects the accident, all nearby emergency services, including the hospital, police station, mechanics, etc., are informed. While a driver is slowly drinking alcohol, the speed of the vehicle is controlled, and it will eventually come to a stop. By adding a camera to the controller module, which takes pictures of the accident site to facilitate tracking, this can be built.

Keywords: Accident Detection and Prevention, Artificial Intelligence Techniques, Track location information.

Cyber Bullying Detection using Machine Learning Techniques

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Abstract:

Modern youth have grown up in a time when new technologies predominate, pushing communications to a nearly real-time level and removing any barriers to forming interactions with other individuals or communities. However, because of the rapid pace of growth, young people are unable to distinguish between conscious permissible behaviours and possibly harmful ones. As a result, a brand-new issue known as cyberbullying is gaining ground and grabbing the interest of media outlets and educators. "Willful and repeated harm inflicted through the use of electronic devices" is what is meant by the term "cyberbullying". Using methods from NLP (Natural Language Processing) and machine learning, we suggest a potential solution in this research for the automatic detection of bully trails through a social network. In particular, we will create a model based on Growing Hierarchical SOMs that can efficiently cluster texts with bully traces and is based on the semantic and syntactic characteristics of textual sentences. In addition to testing the approach against other social networks like YouTube and Formspring, we adjusted it to function with the social network Twitter. Finally, we present our findings, demonstrating that the suggested unsupervised approach could be employed successfully and perform well in specific cases.

Keywords: Cyber Bullying detection, FormSpring, Twitter, GHSOM, NLP, Semantic analysis.

Morse Code Unlocking System(MCD) Using Computer Vision

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Abstract:

Human-computer Interaction has risen in this era. Computers and Technology are playing a major role in society. Artificial Intelligence has risen to the top-notch figures among all other technologies. This paper is one of the findings of artificial intelligence. Face recognition using OpenCV is already a widespread technology in the market in different ways. By going deeper into that, the finding was to detect eye blinks and use that as a language generally known as MORSE CODE. The idea is to build a system which can unlock a device using morse code, the same as a face unlock system [1]. This can also open doors to many other research works in this area like, eye blink detection can be used in driving mode and also it helps physically disabled people to speak with their eyes.

Keywords: Human-Computer Interaction, OpenCV, Morse code, Face detection, Eye-blink detection.

Blockchain and Its Methodologies: Future Digital Transformation

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Abstract:

Transformation the world with digitalization is today scenario for exchange of many activities of stakeholders for ease and portability. Converting this digitalization to other level in terms of currency or value and transforming securely will be a big challenge in future days. The terms of information sharing from one end to other end through multiple scenarios in confidential and authentication mode to be cent percent addressed. In this connection, the Blockchain will be address for all the questions arising in the way. Actually blockchain means a block that contains the information, which creates multiple repositories, in turn technology used for high- security purposes, which believes to be the next revolution of the internet. Blockchain stores information across the network's, not just decentralized but distributed, which cannot be easily modified and difficult to access without prior permission to update or corrupt it. The presentation of paper more focuses on how the blockchain will be addressing and used in many fields for future purposes but not limited too like hospitals records maintenance, balloting, banking transactions, e-commerce, m-commerce etc.;

Keywords: Block Chain Methodology, Text Analytics, Bitcoin, Ethereum, Cryptocurrency.

Classification Based Fashion Recommender System

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Abstract:

The popularity of online fashion and online fashion retail platforms, which has a visible impact on the shopping experiences of billions of customers, has led to the availability of millions of products in online catalogues. It eliminates the need to make physical journeys to several stores and wait in large lineups. The biggest mess with online shopping is that customers are not sure about the quality of fabric and size fitness until the product is received. In this research work, we have proposed a Fashion Recommender System that helps the customers to make their own design with their own thoughts. This system provides a list of designers, unique designs, fabrics, accessories etc. This allows the customers to select their own designer, share their thoughts and ideas with them and can have their own unique dress designed. The customers can be free to interact with designers and also with admin. Additionally our system allows the customers to learn about different fabrics, patterns, colors and sizes. As a result, our recommender system gains momentum by mining and diverse silos of products. Our objective is to provide a modern viewpoint on the advancements made in the field of our fashion industry recommender system.

Keywords: Fashion, Online shopping, Recommender System, Logistic model.

HPC-Driven Innovations in Network Management for Greater Efficiency and Productivity

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Abstract:

High performance computing (HPC) is generally a powerful computing system and software which is used to solve complex computational problems which the today's computing methods fail to solve. HPC systems use parallel processing methods, distributed computing, and specialized hardware like FPGA (Field programmable gate arrays) and GPU (Graphics processing unit) to get high level of performance. Developing of HPC systems has became rapidly evolving field, to bring out the new technologies of hardware and software for optimization techniques and managing to get better performance. HPC systems are used in wide range of machine learning, scientific and engineering applications including weather forecasting etc. We can also use HPC to run complex modelling problems such as nuclear physics, AI (Artificial Intelligence), climate modelling etc. It is applied to solve transaction processing, data ware houses like business uses. It will perform high number of operations in no time and completes the operations under a tight deadline. In this computing method we can solve many computational things parallelly. It is also known as Supercomputing which performs operations at highest rate on computers which can perform more than a quadrillion floating-point calculations per second. In this article we addressed the present and emerging application domains of HPC and the role of it in shaping the future of networking.

Keywords: Graphics processing unit, Field programmable gate arrays, High performance computing, machine learning.

AN EFFECTIVE LATENCY AWARE TASK SCHEDULING BASED ON HYBRID RPOA ALGORITHM IN CLOUD-FOG ENVIRONMENT

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Abstract:

Applications for the Internet of Things (IoTs) are now essential for improving people's lives. However, the resources of conventional cloud data centers are under strain due to the growing volume of data produced by IoT devices. Additionally, processing this large number of data quickly and efficiently is now a more critical requirement. Furthermore, handling this amount of computing processes demands a lot of processing and storage resources, increasing hardware costs. Also, in these systems, the most challenging problem is the task scheduling issue, which aims to determine the best distribution for maximizing resource consumption and minimizing reaction time. Therefore, this paper presents a latency-aware task scheduling method based on the Rat Pelican optimization algorithm (RPOA) for IoT applications in cloud-fog environments. Rat swarm optimization (RSO) and the Pelican optimization algorithm (POA) are integrated into this hybrid method to enhance RSO and POA's global and local search capabilities, respectively. The benefits of these methods will also accelerate the convergence to find the best solutions. The suggested method will be tested on the CloudSim toolkit with real workloads extracted from the Parallel Workload Archive, which includes workloads from NASA Ames's iPSC/860 and HP2CN. Then the results are compared with other state-of-art techniques in terms of various performance metrics.

Keywords: Internet of Things, RPOA, Latency, task scheduling, RSO, POA

Adopting an Optimistic Plan of Action Towards Crime Detection and Digital Forensics

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Abstract:

Digital forensic is a procedure to collect and analyse statistical and behavioural data. During a digital crime investigation, experts used several digital devices and tools by cyber forensic experts to collect and analysing data. Implementing an optimistic approach towards crime identification, detection and digital forensic techniques means having a positive and proactive approach towards using technology and investigative tools to resolve crimes and gather evidence. It involves recognizing the critical role that digital forensics plays in modern day investigations and embracing innovative techniques and technologies to enhance the effectiveness of crime detection. There are several digital forensics tools and techniques which being used in crime detection, and a high-level overview of digital forensic investigation. In addition, the categories of digital forensic science, and some latest algorithm used by digital forensic investigators also have to been implemented.

Keywords- Digital Forensics, Digital evidence, Emerging trend in Digital forensics.

MULTI-LANGUAGE: ENSEMBLE LEARNING BASED SPEECH EMOTIONRECOGNITION

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Abstract:

For the past few years, researchers have struggled to get accurate emotional responses from robots. With the development of technology, robots such as service robots can now communicate with people from many lingual backgrounds. The traditional technique to speech emotion recognition (SER) employs the same corpus for both classifier training and testing to identify accurate emotions, however this method cannot be adapted for multi-lingual(multi language) contexts, which is necessary for robots used by people all over the world. An ensemble learning (BANet and capsule neural network) is proposed in this paper employing a technique that utilize voting majority for a cross- corpus, multi-lingual speech emotion identification system. To test multi-language speech emotionrecognition, this study uses three corpora (SAVEE, Fujitsu and URDU) that provide variety of languages (English, Japanese and Urdu). The use of proposed ensemble learning approach improves emotion recognition with good accuracy. The effectiveness of proposed ensemble learning approach is compared with conventional Existing learning approaches. This study evaluates the effectiveness of a classifier for multi-lingual emotion recognition by testing its performance on data from a corpustrained on a different corpus. Experimental study shows that different classifiers provide the maximum accuracy for various corpora.

Keywords: speech emotion recognition (SER), multi-lingual, ensemble learning, BANet, capsule neural network.

A Secure Routing Protocol Enhancement to Improve WBAN's Network Throughput

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Abstract:

A collection of wearable computer devices or sensors that are fastened to a person's body make up a wireless body area network (WBAN). WBANs have become a promising tool for keeping track of health-related metrics and delivering healthcare in a more individualised and effective manner. In a WBAN, the sensors gather information on a range of physiological variables, including heart rate, blood pressure, and body temperature, and wirelessly transmit the information to a monitoring hub or a smartphone app. This enables continuous, real-time monitoring of the patient's health state, which may be utilised to enhance treatment regimens and give early warning of possible health issues. WBANs may be used to track people's performance and health in a variety of scenarios in the military, the military, and industrial sectors. However, there are still issues with power consumption, communication dependability, and security that need to be resolved before WBANs can be widely used. To overcome these obstacles and improve the efficiency of WBANs, continuing research is concentrated on creating effective communication protocols, power management schemes, and security procedures.

Keywords: Wireless Body Area Networks (WBANs), routing protocol, security, network throughput.

Identifying Keyloggers using String Match Algorithm

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Abstract:

Keyloggers are the tools used for getting the privacy data of a person. Keyloggers became very popular and used mostly among the peers to get their details secretly. There are many software's to detect keyloggers like "antivirus". But this antivirus are mostly need to be downloaded and needed to pay to use. So in this project we are developing a application where the keylogger can be detected without downloading the software and it can be free. The detecting of keylogger is done by using string matching algorithm. By this string match algorithm we take existing keyloggers and match with the file names present in the system, by this we can identify a keylogger is present or not. Keylogger is tool which is known as trojan. This trojan enters into the system and can't be seen normally. So we are developing this project to identify keylogger present in the system. Keyloggers are somewhat of a rootkit malware that catch made keystroke events out of the control center and save into log record, consequently, it can catch sensitive information, for instance, usernames, PINs, and passwords, as such imparts into malicious aggressor without pulling in the thought of clients. Keyloggers present a huge risk to arrangements and individual activities, for example, E-business, web banking, email talking, and structure data base. Antivirus programming that is normally used to recognize and kill known Keyloggers. In any case, it can't perceive dark Keyloggers. This paper presents a framework of Keyloggers programs, types, characteristics of Keyloggers and theory they use. Finally we will separate the ongoing disclosure methodology, and research a couple of proactive strategies.

Keywords: Virus, keylogger, string match, data privacy

Mesophilic anaerobic assimilation of food squander: Impact of warm pre-treatment on progress of anaerobic absorption process

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Abstract:

This undertaking is used to manipulate wastage ingredients in a beneficial way. Every day the human beings are losing masses of ingredients. So, we should lessen that meals wastage hassle thru online. If everyone has wastage ingredients, they're getting into their meals amount information and their deal within that software after which the admin keeps the information of meals donator. The donator can create the account and each time they're having wastage meals they could login and supply request to the admin. And the admin additionally keeps the buyer (orphanage, negative human beings,) information too. After the admin view the donator request and supply the alert message like time to return and acquire the meals. And the admin acquires ingredients from donator thru their close by agent then offer to nearest orphanages or negative human beings. After receiving the meals from the agent through admin and supply alert message to that donator. If the donator wishes any element approximately the orphanage with supporting notion, they could supply request to the admin and acquire the orphanage information. This undertaking is meals redistribution is a notably a success social innovation that tackles meals waste and meals poverty. The user's information is maintained exclusive as it keeps a separate account for every user.

Keywords: Waste Management, IoT Alert Notification, IoT Devices

Improving Network Security with Machine Learning Techniques

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Abstract:

In recent years, the threat of cyber-attacks has become increasingly prominent, with attackers using sophisticated techniques to gain access to sensitive information. Traditional security measures such as firewalls and antivirus software are no longer sufficient to protect against these attacks. Machine learning techniques have emerged as a promising approach to improve network security, by analyzing large amounts of data and detecting anomalous behavior. This paper presents an overview of the various machine learning techniques that can be used to enhance network security, including supervised and unsupervised learning, deep learning, and reinforcement learning. We also discuss the challenges associated with using machine learning in security, such as the need for high-quality training data, interpretability of results, and the potential for false positives. Despite these challenges, machine learning has the potential to significantly improve network security and provide better protection against cyber-attacks.

Keywords: attack, machine learning, antivirus, firewalls.

Employee Tracking System

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Abstract:

Each representative association, whether tremendous or little, has human asset difficulties to survive. Each association has different representative administration needs; accordingly, we plan selective worker the execute frameworks that are adjusted to your administrative necessities. This framework will ultimately allow you to help manage resources. One of the characteristics in employee management system is employees time tracking. Perfect employee tracking system saves both time and money for an organization. The System was developed by using data base management system i.e. SQL and testes for different scenarios.

Keywords: primary key, foreign key, relationship, SQL queries.

CLOUD COMPUTING LOAD BALANCING ALGORITHMS

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Abstract:

Cloud computing is immensely adopted in the modern age and the number of users is significantly increasing. Because of the substantial necessitate for the cloud services, the provision of quality services is becoming more challenging. The users interact with the cloud system and their requests are considered as jobs. The resources in cloud systems are heterogeneous and different scheduling heuristics are opted to map jobs for available resources. One of the important issues which need a major consideration of the researchers is balancing the load in cloud computing systems. Diverse algorithms for load balancing are suggested by eminent researchers. One of the Particle Swarm Optimization(PSO) ,Ant Colony System is adopted to develop Load Balancing Algorithm and tested for different Scenario's.

Keywords: cloud services, load balancing, scheduling

Enhancing Security in Internet of Things (IoT) Systems Using Blockchain Technology

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Abstract:

With the growing number of Internet of Things (IoT) devices, the need for enhanced security measures has become increasingly important. Traditional security methods such as firewalls and encryption techniques are not always sufficient to protect against the evolving threats facing IoT systems. This paper proposes the use of blockchain technology as a potential solution to enhance the security of IoT systems. Blockchain technology provides a decentralized, tamper-proof, and transparent method for securely storing and sharing data. By leveraging the blockchain, IoT systems can reduce the risk of malicious attacks, data breaches, and unauthorized access. The paper discusses the benefits and challenges of implementing blockchain in IoT systems and provides a case study of a blockchain-based IoT security solution. The results indicate that blockchain technology can improve the security of IoT systems by providing a robust, transparent, and immutable framework for data storage and sharing. However, there are still challenges to overcome such as scalability, interoperability, and the high computational requirements of blockchain technology. Overall, this paper highlights the potential of blockchain technology to enhance the security of IoT systems and provides insights into the key considerations for implementing such a solution.

Keywords: IoT, Blockchain, attacks, threat, transparent.

A Real-Time Object Detection and Measurement of its Size

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Abstract:

Now a days, real-time object detection and dimensioning of objects is becoming an important issue for the areas of industry. It is a vital topic of computer vision problems. This study presents an enhanced technique for detecting objects and computing their measurements in real time from video streams. We suggested an object measurement technique for real-time video by utilizing OpenCV libraries and includes the canny edge detection, dilation, and erosion algorithms. The suggested technique comprises of four stages: (1) identifying an object to be measured by using canny edge detection algorithm, (2) using morphological operators includes dilation and erosion algorithm to close gaps between edges, (3) find and sort contours, (4) measuring the dimensions of objects. In the implementation of the proposed technique, we designed a system that used OpenCV software library, Raspberry Pi 3 and Raspberry Camera. The proposed technique was nearly achieved 98% success in determines the size of the objects.

keywords: Edge detection, dilation, erosion alogrithms

Data security in cloud using CP-ABE

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Abstract:

Cloud computing creates a network-based environment vision to users, which paves way for the sharing of calculations and resources regardless of location. Cloud Computing is widely accepted and used paradigm for service providers as well as customers on internet. As user share their sensitive information on cloud, it has become the major concern of cloud service providers to make their environment more secure and trustworthy. The numbers of cryptographic algorithms are proposed by various researchers for this purpose. But still there are issues regarding privacy and security. So an Attribute Based Encryption technique is used to encrypt customer's data prior to its upload in cloud. The main objectives of Attribute Based Encryption (ABE) models are to achieve security and access control. And in Attribute Based Encryption the user attributes are identified as the main component and that are in both secret key as well as cipher text. When the attributes of secret key and cipher text are identical as threshold d , decryption occurs. Another significant feature of ABE is collision resistance. In ABE there are 2 notions, they are Key policy attribute-based encryption (KP-ABE), Cipher-text policy Attribute-Based Encryption (CP-ABE). In this model CP-ABE scheme in real world cloud setting with a novel chaotic hash technique which is integrated in Attribute Based Encryption model for cloud data security. Here the parameters such as hash key sizes are optimized and Hash time and Encryption time are measured and compared with the existing model. The results prove the proposed model has high computational accuracy compared to existing models in terms of integrity and encryption time on medical images.

Keywords: Cloud Computing, KP-ABE,CP-ABE

Ensuring Safe and Reliable Health Applications through Effective Software Risk Management: A Systematic Review

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Abstract:

Software risk management is an essential aspect of the development of health applications. Health applications, such as electronic health records and medical device software, are critical systems that must be designed, developed, and deployed with a high degree of quality and reliability. Software risk management is the process of identifying, analyzing, and mitigating risks associated with software development and deployment. There are several software risk management standards and frameworks that can be used in the development of health applications. The software risk management process involves several steps, including risk identification, risk analysis, risk mitigation, and risk monitoring. Risk identification involves identifying potential risks associated with the software development process and the application itself. Risk analysis involves analyzing the identified risks to determine their likelihood and impact. Risk mitigation involves developing strategies to reduce or eliminate the identified risks. Risk monitoring involves tracking the identified risks and the effectiveness of the risk mitigation strategies. Effective software risk management in health applications can help to ensure that these critical systems are safe, reliable, and effective. It can also help to minimize the risk of harm to patients and reduce the risk of litigation for healthcare providers. However, it is important to note that software risk management is an ongoing process that must be continuously monitored and updated throughout the development and deployment of the application.

Keywords: Risk, Mitigation, monitoring, identification, reliable, impact

A Deep Learning Model on Oral Cancer Classification

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Abstract:

One of the most prevalent tumours in the oral cavity, oral cancer destroys oral epithelial cells as a result of unchecked cell development. Oral cancer may be caused by smoking, chewing tobacco, or betel nut. Automated image classification, made possible by the development of deep learning (DL) in biological image classification, can help with the effective and early treatment of oral cancer. The technical elements and applications of Deep Learning methods in the search for oral cancer are covered in this study. In the research study, a comparison of numerous studies pertaining to oral cancer diagnosis and prediction are shown.

Keywords: Deep Learning, Image classification, oral cavity, Activation function, CNN network.

Robust Human Action Recognition Methodology Using Mobile IoT Sensors and 1-D CNN

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Abstract:

This research aims to find an accurate human action recognition system using accelerometer and gyroscope sensor values. Human action recognition is a crucial research topic to analyze human actions such as jogging, sitting, standing, upstairs, downstairs, walking, falling, etc., of humans by using multiple sensors available in intelligent mobile phones. Many studies and research are available to detect and predict human action recognition using various sensors, several types of cameras, and machine learning and deep learning techniques. Several sensors were implemented for human action detection and prediction, mainly working on the channel state information (CSI), giving less efficient results. This paper uses deep learning techniques to analyse human actions, specifically one-dimensional convolutional neural networks (1D-CNN). The system's main advantage is that it can be used as a wearable device. This paper will propose a one-dimensional convolutional neural network for human action recognition and an optimal solution for determining the magnitude of the accelerometer's X, Y, and Z coordinate values and gyroscope sensor values. From X, Y, and Z coordinate values, One-Dimensional Convolutional Neural Networks can be classified into various human actions such as jogging, sitting, standing, ups and downs, walking, and falling. The performance of the 1-D CNN has been compared with other methods such as SOM, SVM, and FCM. Our proposed methods (1D-CNN) outperformed other classification methods with a classification accuracy of 92.42 per cent.

Keywords: Human action recognition, acceleration, gyroscope, one-dimensional convolutional neural network, sensors.

Early Detection of Breast Cancer Stage using Descriptive and Decision Tree Methodologies

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Abstract:

Chronic diseases like Cancer and Cardiovascular disease are major causes of morbidity and mortality. In particular, Cancer is one of the most common and deadly disease worldwide. Among all the Cancer diseases Breast Cancer stands as one of the major concerns nowadays and is one of the most leading reasons of death among women as it is highly prevalent cancer type after lung cancer. Early detection of breast cancer helps to decrease death and improve the quality of life among patients. Hence, early detection should have an accurate and reliable diagnosis in order to differentiate between Benign and Malignant tumour. Many techniques and methods are constantly developed to achieve accurate and efficient diagnosis results. This work focuses on predicting the stage of cancer in two classes i.e. Benign and Malignant by making use of research work named as Breast Cancer Prediction System (BPS), Effective method Effective Method for Early Breast Cancer Prediction (EBPS) and Cluster based Effective Breast Cancer Prediction System (CEBPS) and further have a comparative study and analysis of the performance of these algorithms with the existing approaches in terms of Accuracy, Error rate and other performance metrics.

Keywords: Chronic diseases, Cancer, Cardiovascular disease, Morbidity, Mortality, Breast cancer Leading cause of death among women

"Eco-Friendly Waste Management through Mobile Application"

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Abstract:

"Eco-Friendly Waste Management through Mobile Application" is an innovative NGO project that aims to tackle the issue of waste management and promote environmental sustainability. In this project, we will develop a mobile application that facilitates eco-friendly waste disposal and recycling practices. The application will encourage individuals and communities to take an active role in reducing waste and promoting a cleaner environment. The project will develop a mobile application that facilitates eco-friendly waste disposal and recycling practices. The project will target individuals and communities who are interested in promoting environmental sustainability and reducing waste. The project will also provide educational resources and awareness campaigns to encourage behavior change towards sustainable waste management practices. The project will leverage partnerships with local waste management organizations and recycling facilities to ensure proper disposal and recycling of waste materials.

Keywords: Environmental sustainability, waste management, recycling

HARNESSING DEEP LEARNING FOR PRECISE BRAIN STROKE PREDICTION FROM NEURO IMAGES

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Abstract:

Early detection of stroke in the brain can enhance patient outcomes. MRIs are used to diagnose brain strokes. Neuroimaging data is complicated and delicate, making brain stroke prediction difficult. Deep learning, a sophisticated subset of machine learning, can predict brain strokes and other medical conditions. In this study, deep learning using neuroimaging data predicts brain strokes. We trained and tested our model using a huge dataset of neuroimages from stroke patients and healthy controls. MRI images were preprocessed to obtain intensity, texture, and shape data. We learned hierarchical features from neuroimages using a CNN tailored for picture data. To improve the CNN's performance, we used data augmentation and cross-validation on a labeled dataset. Our deep learning-based method predicts brain stroke using neuroimaging data with good accuracy, sensitivity, and specificity. The model detects complicated neuroimage patterns and predicts brain strokes early. The suggested technique may help radiologists and clinicians make early and informed decisions for brain stroke patients, improving patient outcomes. The model's robustness and generalizability should be tested on bigger and more varied datasets. Finally, deep learning using neuroimaging data may predict brain strokes. The suggested approach might help clinicians identify and treat brain strokes early, minimizing morbidity and death. This study adds to the literature on deep learning in medical imaging and shows its potential for stroke prediction and patient care.

Keywords: Image-based Prediction, Neurological Disorders, Brain Imaging, Precise Prediction, Neuroimaging Data

DATA SECURITY AND PRIVACY IN SMART GRID APPLICATIONS

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Abstract :

This is the latest electrical current infrastructure which has advanced communication along information technologies for optimize electricity production, transmission, sharing as well as obsorbing, It involves integration of various terminologies like sensors, meters, as well as latest controlling devices for to monitor as well as control in the flow of power. While this technology offers significant benefits, including improved reliability, energy efficiency, and reduced carbon emissions, it also poses significant data security and privacy challenges. Smart Grid applications collect as well as storing lot of information, including customer information, energy usage patterns, and billing data. This data is vulnerable to cyber-attacks, theft, and misuse, which can result in financial loss, privacy violations, and even physical harm. To address these challenges, Smart Grid applications must be designed with robust data security and privacy protections. This includes implementing encryption and authentication mechanisms for saving the data making them in ideal position, establishing secure communication protocols, and implementing data accessing for making them to access for data to correct people only for sensitive information. Privacy considerations also need to be taken into account in Smart Grid applications, including providing users with control over their data and implementing privacy-preserving techniques, such as data anonymization, to protect sensitive information. In addition, regulatory frameworks and standards need to be established to ensure that Smart Grid applications meet information privacy requirements. Overall, information privacy as well as security was critical considerations in Smart Grid applications. By implementing robust security measures and privacy protections, Smart Grid applications can realize their full potential while minimizing the risk of data breaches and privacy violations.

Keywords: Electrical current infrastructure, Advanced communication, Information technologies, Optimization of electricity production, Integration of sensors and meters, Improved reliability, Energy efficiency, Carbon emissions reduction, Data security, Privacy challenges