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Department of *Computer Science and Engineering* Presents

International Conference on

" Innovations and Recent Trends in Computer Science "

on 25th & 26th March 2022

ISBN:
978-81-953917-8-3

Editor in chief
Dr.P.Santosh Kumar Patra

Ranked 2nd by 'Wikipedia'

Ranked 3rd by Competition Success Review

8800 Research papers

National ranking by ARIIA

NIRF ranked

88 MOUs

161 patents

594 crores funding received

(ICIRTCS-22)

PROCEEDINGS

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Department of Computer Science and Engineering

Online "International Conference on Innovations and Recent Trends in Computer Science" (ICIRTCS-22)

Organized on 25th & 26th March, 2022

ISBN No: 978-81-953917-8-3

Sri. M. LAXMAN REDDY
CHAIRMAN

MESSAGE

I am extremely pleased to know that the Department of Computer Science and Engineering of SMEC is organizing Online **"International Conference on Innovations and Recent Trends in Computer Science"** (ICIRTCS – 22) on 25th and 26th of March 2022. I understand that the large number of researchers has submitted their research papers for presentation in the conference and for publication. The response to this conference from all over India and Foreign countries is most encouraging. I am sure all the participants will be benefitted by their interaction with their fellow researchers and engineers which will help for their research work and subsequently to the society at large.

I wish the conference meets its objective and confident that it will be a grand success.

M. Laxman Reddy

M.LAXMANREDDY
Chairman

Sri. G. CHANDRASEKHAR YADAV
EXECUTIVE DIRECTOR

MESSAGE

I am pleased to state that the Department of Computer Science and Engineering of SMEC is organizing Online International Conference on **"Innovations and Recent Trends in Computer Science"** (ICIRTCS – 22) on 25th and 26th of March 2022. For strengthening the "MAKE IN INDIA" concept many innovations need to be translated into workable product. Concept to commissioning is along route. The academicians can play a major role in bringing out new products through innovations.

I am delighted to know that there are large numbers of researchers has submitted the papers on Engineering and Technology streams. I wish all the best to the participants of the conference additional insight to their subjects of interest.

I wish the organizers of the conference to have great success.

G. CHANDRASEKHAR YADAV
Executive Director

Dr. P. SANTOSH KUMAR PATRA

PRINCIPAL

I am delighted to be the Patron & Program Chair for the **"International Conference on Innovations and Recent Trends in Computer Science"** (ICIRTCS – 22) organized by the Department of Computer Science and Engineering on 25th and 26th of March 2022. I have strong desire that the conference to unfold new domains of research among the Computer Science, Electronics, Information Technology and Electrical Engineering fraternity and will boost the knowledge level of many participating budding scholars throughout the world by opening a plethora of future developments in the field of Computer Science and Engineering.

The Conference aims to bring different ideologies under one roof and provide opportunities to exchange ideas, to establish research relations and to find many more global partners for future collaboration. About 200 research papers have been submitted to this conference, this itself is a great achievement and I wish the conference a grand success.

I appreciate the faculties, coordinators and Department Head of Computer Science and Engineering for their continuous untiring contribution in making the conference a reality.

(Dr. P. Santosh Kumar Patra)
Principal

CONVENER

The world is always poised to move towards new and progressive engineering solutions that results in cleaner, safer and sustainable products for the use of mankind. India too is emerging as a big production center for world class quality. Computer Science and Engineering play a vital role in this endeavor.

The aim of the **"International Conference on Innovations and Recent Trends in Computer Science"** (ICIRTCS – 22) being conducted by the Department of Computer Science and Engineering of SMEC, is to create a platform for academicians and researchers to exchange their innovative ideas and interact with researchers of the same field of interest. This will enable to accelerate the work to progress faster to achieve the individuals end goals, which will ultimately benefit the larger society of India.

We, the organizers of the conference are glad to note that more than 200 papers have been received for presentation during the online conference. After scrutiny by specialist 130 papers have been selected, and the authors have been informed to be there at the online platform for presentations. Steps have been to publish these papers with ISBN number in the Conference Proceedings and all the selected papers will be published in Scopus/UGC recognized reputed journals.

The editorial Committee and the organizers express their sincere thanks to all authors who have shown interest and contributed their knowledge in the form of technical papers. We are delighted and happy to state that the conference is moving towards a grand success with the untiring effort of the faculties of Department and Head of Computer Science and Engineering of SMEC and with the blessing of the Principal and Management of SMEC.

Dr. M. NARAYANAN
HOD - CSE

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PAPER ID: ICIRTCS-22-140

Smart Drainage Monitoring System

[1]Dr M. Narayanan, [2]Dr P. Santosh Kumar Patra
[1]Professor, [2]Principal & Professor
Department of Computer Science and Engineering,
St. Martin's Engineering College, Secunderabad – 500 100, India

Abstract – A smart drainage system is essential for municipal architecture. We can immediately identify blockage by using smart drainage system. The system uses Internet of things sensor technology. Whenever there is a block in drainage pipe, it is identified by temperature sensor, ultrasonic sensor, pressure sensor. A temperature sensor is a device which is used to measure the temperature. It measures temperature of solid, liquid and air. Ultrasonic sensor detects distance between the objects by using sound waves. Pressure sensor is used to calculate rate of flow. At the certain point the above-mentioned sensors read the values. The information is processed in IOT system and it is further stored in cloud system. Cloud system is the software application which is used to store data by accessing the internet. If the sensor identifies blockage in pipe, then it intimates to concerned authority that there is blockage in pipe. Based on the information status, the manual work is done. After the completion of manual work, again status of drainage pipe is identified through sensors and intimates that there is no blockage to concerned authority. Hence by using smart drainage system, the drainage pipe is checked frequently so that blockage is cleared.

Keywords: Monitoring system, Sensors, IoT System

PAPER ID: ICIRTCS-22-001

An Optimized Route Search Mechanism for Intrusion Detection using Machine Learning Technique in WSN

Dr. N. Satheesh
Professor, Department of Computer Science and Engineering,
St. Martin's Engineering College, Secunderabad – 500100, Telangana, India.

Abstract - Low cost, small size, and wide dissemination, wireless sensor networks (WSN) are a promising technology for a variety of real-time applications. WSN is a network of sensor nodes dispersed across a large area that collects the necessary information. However, sensor nodes are vulnerable to threats like as infiltration, hackers, malfunctioning hardware causing a physical event, and so on. As a result, protecting a sensor node from an incursion is required. If it is attacked next, the information supplied by the sensor may be erroneous, resulting in improper data analysis and unwanted results. Reinforcement Learning for Intrusion Detection (RLID) and Improving Optimal Route by Cuckoo Search are suggested to address these challenges. For identifying intrusions during route discovery, Reinforcement Learning employs recurrent node categorization. Reinforcement learning assesses sensor node behavior based on connection quality, which is calculated using sensor node packet forward rate and node residual energy. The repeated node classification approach was used in this case to classify the intrusion sensor based on node-link quality. As a result, it can significantly increase intrusion detection performance. Furthermore, the Cuckoo Search Technique (CST) is employed to choose the best forwarder for sending data from source to destination. The primary goal of this study is to provide efficient routing and data communication in WSN using standard sensor nodes. The simulation platform and the results produced are compared to the baseline procedure to demonstrate the efficacy of our suggested strategy.

Keywords: Wireless sensor network, Repeating node classification, Reinforcement Learning, Cuckoo search technique, Intrusion Detection.

PAPER ID: ICIRTCS-22-002

Towards Efficient Crowd Monitoring System for Prevention of Corona Virus Disease in Public Sectors

[1]P. Deepan, [2]P. Devasudha
[1]Assistant Professor, Department of CSE(AI&ML), St. Martin's Engineering College, Telangana
[2]Assistant Professor, Department of CSE, St. Martin's Engineering College, Telangana

Abstract - Corona virus (Covid-19) is one of the severe diseases that affects pneumonia and impacts our different body parts. Crowd is one of the transmission sources that can spread the virus to human. So, we have to follow the social distancing, it is one of the basic remedial measures for spreading the virus. But crowd management is difficult tasks in urban infrastructure areas such as bus stand, railway station, shopping mall and so on. The manual force is not sufficient to control the crowd in public sectors. So, in order to tackle this issue, we have introduced efficient Crowd Monitoring System (CMS) for prevention of corona disease with help of Convolutional Neural Network (CMS-CNN) model. This model, consist of nine convolution layer, five polling layer and uniformly distributed in five blocks. The experimental results demonstrated that the proposed CMS-CNN model obtained superior results than other state-art-of the models.

Keywords: crowd, corona virus, prevention, crowd monitoring, deep learning and convolutional neural network.

PAPER ID: ICIRTCS-22-003

Design of an Adaptive E-Learning System for Educational Institutions

[1]Dr. B.Rajalingam, [2]Dr. R.Santhoshkkumar, [3]N. Sivaranjani
[1, 2] Associate Professor, [3]Assistant Professor
[1,2] Department of Computer Science and Engineering, St. Martin's Engineering College
[3]Department of Computer Science and Engineering, Bharath Institute of Higher Education and Research

Abstract - In a time known as the general public of innovation and information, where long lasting learning is a lifestyle, it is significant that instructive foundations have as a need the objective of finding successful methods of giving new learning openings concurring to their current circumstance, understudy qualities, instructor preparing, monetary emergency and propelling innovation with an end goal to make learning more effective, impartial and inventive in higher instruction. At Guarda Polytechnic Institute, Portugal (IPG), we perceive the need and the occasions to make and create new e-instruction courses (e-Learning, mixed learning, portable learning) to connect with and spur understudies as per their necessities. Consequently, we have, in this last decade, created also, actualized a bunch of institutional targets concerning showing electronic courses which intend to give instinctive substance on the web, simple to get to anyplace in any spot. This paper presents the results and blends the bits of knowledge gathered since when we actualized a portable learning arrangement in Walk 2012. Be that as it may, the principle objective of this paper is to introduce our procedures, vision and objectives when we talk about electronic adapting autonomously of is geography. We accept that "cloud learning" is the following stage in the field of e-learning. This decade has instructed us that a portion of the parts utilized during the time spent e-Learning require more consideration than others in a manner to make new, fruitful and ground-breaking chances of learning.

Keywords: E-Learning, School of Training, ICT, LMS & Mobile Learning

PAPER ID: ICIRTCS-22-004

Cloud Based: A Dynamic Memory Allocation of Automated VM on Server

[1]Dr. R. Santhoshkkumar, [2]Dr. B. Rajalingam, [3]P. Deepan
[1, 2] Associate Professor, [3]Assistant Professor
[1,2,] Department of Computer Science and Engineering, St. Martin's Engineering College
[3]Department of CSE (AI & ML), St. Martin's Engineering College

Abstract - Modern VMMs keep memory using those four already been integrated into the mainline kernels. This version offers the consumer request to the server for the memory allocation. In this observe, we devise a mild weight framework based on the Xen balloon motive force to govern reminiscence within the server of the VM's. Our consumer which is going to manifest does no longer interfere with the VM's. We have types of scheduling one is GLOBAL and different one is SELF scheduling. In this scheduling the main idea is to "PROCESS MEMORY ALLOCATION". In this we're particularly going to use the ballon algorithm right here.

Keywords: Cloud, Virtual machine, Memory allocation

PAPER ID: ICIRTCS-22-005

Commercial Website for Student Training and Consultancy using MERN Stack

[1]Bolleypally Prathyusha, [2]Duriki Ashwitha, [3]Maryjane Namya, [4]Shubhankar Mahajan, [5]Dr.M. Narayanan, [6]Dr.P. Santosh Kumar Patra
[1,2,3,4] UG Scholar, [5]Professor, [6]Professor & Principal
Department of CSE, St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract - with the rise in demand for a larger workforce of engineers and technological experts during this era of technology, there has simultaneously been both an increase in the number of engineering students in our country, but also an unfortunate plummet in the quality of knowledge possessed by each of these students. We have developed a Learning Management System Website which aims to improve the knowledge of the users by not only encouraging users to self-learn their domain(s) of interest with relevant links that are provided to them, but to also test their knowledge and take on a self-improvement approach by also providing them a basic, statistical overview of their scores from all their previously attempted tests, which are segregated as per each domain.

Keywords: Knowledge, Learning Management System, self-learning, self-improvement, domain.

PAPER ID: ICIRTCS-22-006

A Characterization Study on Question Answering System Dataset

Dr. M.Vadivuakarassi
Associate Professor
Department of Computer Science and Engineering
St. Martin's Engineering College, Secunderabad, Telangana, India

Abstract - In Natural Language Processing, Question Answering (QA) system targets mainly the answers for the questions. A lot of QA reviews have been classified based on different criteria such as queries asked by users, features of databases used, nature of generated answers, question answering approaches and techniques. Recently, the number of publicly available datasets increases and that are released to speedup the research in question answering systems. In this paper, the two available datasets such as TWEETQA and SQuAD are surveyed and also presented a simple classification of those datasets. The most recent evaluation results of those dataset such as ROUGE-L, BLEU-1, METEOR, EM-L, F1 are also studied. The review of publicly available datasets used in QA research is presented and also provided a datasets whose release could benefit question answering research in the future. The background information about the way questions and answers in each dataset are studied. Moreover, the available online QA challenges as well as reported human performance values are surveyed. This characterization study of QA dataset is to be useful for the Information Retrieval and Natural Language Processing communities.

Keywords: Natural Language Processing, Question Answering, SQuAD, TWEETQA.

 ISBN No. 978-81-953917-8-3

PAPER ID: ICIRTCS-22-007

Depression detection from social media data using CNN and linguistic metadata features

[1]T. Jhaideep, [2]N. Hima Bindu, [3]D. Surya Prakash, [4]B. Krupa, [5]Dr. T. Saravanan
[1,2,3,4]UG Scholar, [5]Associate Professor
Department of Computer Science and Engineering, St. Martin's Engineering, Hyderabad, Telangana, India

Abstract - Depression contributes significantly to the global burden of mental disorders and is a leading cause of disability. Women are more likely than men to suffer from depression, according to research. Every year, over 700,000 individuals commit suicide. Suicide is the fourth highest cause of death among those aged 15 to 29 years old. In this study, we use numerous Machine Learning algorithms based on messages and postings on social media networks to target the early identification of melancholy. WORD2VEC, GLOVE, the Machine Learning algorithm LOGISTIC REGRESSION, and the neural network algorithm CONVOLUTIONAL NEURAL NETWORK(CNN) are trained and compared to classification-based user-level Linguistic information.

Keywords: Depression, Word2vec, Glove, Logistic Regression, Convolutional neural network, Linguistic Metadata.

PAPER ID: ICIRTCS-22-008

Neural Network based Medical Self-Diagnostic System using Artificial Intelligence

[1] Dr. Sai Prasad Padavala, [2] Smt. Sangeetha Tamilarasu, [3] Dr. Chandrashekar Boorugu, [4] Sri. Dinesh Kumar Ramalingam, [5] Dr. Kiran Sree Pokkuluri

[1] Associate Professor, [2,4]Assistant Professor, [3] Professor, [5] Professor & Head

[1]CSE Department, St. Martin's Engineering College (A), Secunderabad – 500 100, Telangana.

[2,3]CSE Department, Sri Venkateswara College of Engineering and Technology (A), Chittoor, A.P.

[4] CSE(AI&ML) Department, Sri Venkateswara College of Engineering and Technology(A), Chittoor, A.P.

[5]CSE Department, Shri Vishnu Engineering College for Women (A), Bhimavaram – 534 202, A.P.

Abstract - Diseases such as disorders in health condition among the people can be identified and diagnosed with the help of Artificial Intelligence techniques. Accurate predictions in the field of medical diagnosis in diversified fields are required by application of accurate algorithms. Earlier conventional practices of diagnosis were practiced manually which are prone to errors. Compared with human expertise practice utilization of predictive techniques of Artificial Intelligence (AI) supports auto diagnosis and it reduces the error rate. In this paper an analysis is made on various artificial intelligence techniques that are used presently such as Support Vector Machine (SVM), K-means algorithm, Fuzzy logic, neural network are considered and a optimized fuzzy logic based neural network method is designed. Observing the working model of current practices, a new technique is developed for obtaining accurate results by considering different parameters. Finally, future developments on research work are explained with the help of Artificial Intelligence based diagnosis system on the challenges faced in today's medical self-diagnostic system.

Keywords: Machine Learning, fuzzy logic, Artificial Intelligence, clustering, medical diagnosis, Clustering.

PAPER ID: ICIRTCS-22-009

Detection and Classification of Hepatocellular Carcinoma in CT Images Using Convolutional Neural Network

[1]S. Bavankumar, [2]A. Arockia Raj
[1,2]Assistant Professor
Department of Computer science and Engineering
St. Martin's Engineering College, Dhulapally, Secunderabad, Telangana.

Abstract - The goal of this paper is to create a technique for detecting hepatocellular carcinoma, or liver cancer, in CT (Computerized Tomography) images using deep learning, which is a type of AI (Artificial Intelligence). To begin, the learning and recognition algorithms were created with Python as a programming language and TensorFlow, a machine learning package offered by Google. The CT images of 30 clinical individuals were chosen from the DICOM format data given by Ehime University's Graduate School of Medicine. Then, in instances of hepatocellular carcinoma, 150 sets of CT scans were chosen, each consisting of two CT images for the early and late stages. In addition, in situations where hepatocellular carcinoma was not present, 150 sets of CT images were chosen. By rotating each original CT picture, 450 sets of CT images were produced for each of the 150 sets, for a total of 900 sets. As a result, 1,200 sets of CT scans (2,400 CT images overall) were utilised for learning. The validity and utility of the learning and recognition systems were then demonstrated by analysing the estimated outcomes. This time, hepatocellular carcinoma was diagnosed with a reasonably high sensitivity of 92.2 percent, despite the use of a modest quantity of learning data, namely 1,200 sets of CT scans.

Keywords: Artificial Intelligence, Deep Learning, Computerized Tomography, CT Image, Hepatocellular Carcinoma.

 ISBN No. 978-81-953917-8-3

PAPER ID: ICIRTCS-22-010

Advanced System for House Price Prediction using Linear Regression Algorithm

[1]Bisai Anil Kumar, [2]Bushapaga Anjaneyulu, [3]Madigela Sai Prakash, [4]Revelli Sai Srinath, [5]Dr.G.Govinda Rajulu
[1,2,3,4]UG Scholar, [5]Associate Professor
Department of CSE, St. Martin's Engineering College, Secunderabad

Abstract - This paper provides an overview about how to predict house costs utilizing different regression methods with the assistance of python libraries. The proposed technique considered the more refined aspects used for the calculation of house price and provided the more accurate prediction. It also provides a brief about various graphical and numerical techniques which will be required to predict the price of a house. This paper contains what and how the house pricing model works with the help of machine learning and which dataset is used in our proposed model.

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PAPER ID: ICIRTCS-22-011

Object Detection using YOLO Algorithm

[1]Lenkala Sanjana, [2]Challa Sai Kumar, [3] Jarapla Sai Kiran, [4]Gopu Babitha, [5]Dr.S. Saravanakumar
[1,2,3,4] UG Scholar,[5]Associate Professor
Department of CSE, St. Martins Engineering College, Secunderabad

Abstract - Deep learning has had a big impact on how the world has adapted to AI in recent years. Some of the most extensively used object identification approaches include Regionbased Convolutional Neural Networks (RCNN), Faster-RCNN, Single Shot Detector (SSD), and You Only Look Once (YOLO). The most accurate are faster-RCNN and SSD, although YOLO outperforms when speed is prioritised above accuracy. Deep learning combines SSD and Mobile Nets to more effectively execute detection and tracking. This approach swiftly and efficiently detects objects while maintaining a high level of performance.

Keywords: Single Shot Detector, YOLO.

PAPER ID: ICIRTCS-22-012

Cloud Based Health Care Management using QR Code

[1]Tadakala Sai Vamsi Goud, [2]Bandi Krishna Prasad, [3]Daram Sheshank, [4]Kankanala Mithileshwar Reddy, [5]B. Dhanalakshmi

[1, 2, 3 ,4] UG Scholar, [5] Assistant Professor

Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract - The project proposes an efficient Management and Prediction of Patient Health Records (PHRs). Patient Health Records (PHRs) provide the updated patient medical history in which the security of data can be done efficiently by storing PHRs. Our goal is to facilitate the doctors, admin and patients throughout the facility of storing, updating, accessing and sharing, regardless of existence of network connection in the area. Hospital Management System is divided into three modules which include admin, doctor, and patient. In order to achieve scalable and secure data access controls of the PHR's the complete control of the PHR is given to that patient itself by providing Medi card for each patient. Doctor and admin can access PHR using patient id. In an emergency situation Patient Health care is used for accessing PHR instead of patient id and also a person who is nearer to a patient can get the patient profile. In this project the role of admin is to create a staff and can view the patient record. The role of staff is defined as two category one is nurse and another one is doctor. The staff or nurse role is creating patient record and allocating patient to the particular doctor and the doctor's role is viewing the patient's record then uploading patients test records as image like x-ray, scan, etc. Then suggest the description for the particular patient for easy automation

Keywords: PHR, Medi Card, QR Code, records, sharing, (key words)

PAPER ID: ICIRTCS-22-013

Emotion Based Music Recommendation

[1]Anubha Mahapatra, [2]J Soumya Raj, [3]Samia Mahwish, [4]Golla Mounika, [5]G. Mallikarjun
[1,2,3,4] UG Scholar, [5]Associate Professor
Department of CSE, St. Martin's Engineering College, Dulapally, Kompally, Secunderabad, Telangana 500100.

Abstract - Most of the existing music recommendation systems use collaborative or content-based recommendation engines. However, the music choice of a user is not only dependent to the historical preferences or music contents. But also dependent to the mood of that user. This project proposes an emotion-based music recommendation framework that learns the emotion of a user from the signals obtained via facial expressions. Therefore, in this project emotion recognition problem is considered as arousal and valence prediction from multi-channel physiological signals. It is often confusing for a person to decide which music he/she must listen from a massive collection of existing options. There have been several suggestion frameworks available for issues like music, dining, and shopping depending upon the mood of user. The main objective of our music recommendation system is to provide suggestions to the users that fit the user's preferences. The analysis of the facial expression/user emotion may lead to understanding the current emotional or mental state of the user.

Keywords: SVM, Image Processing, Feature Extraction

PAPER ID: ICIRTCS-22-014

Intelligent Crime Inquisition Using Decision Tree and Suspect Prediction Algorithm

[1] Oruganti Amulya, [2] Puppala Lohita, [3] Gouri Uday, [4] Nalla Nelson Raju, [5] Dr.T.Poongothai
[1, 2, 3,4] UG Scholar, [5]Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract - We here propose an Intelligent Crime Inquisition system that tracks the investigation status of criminal cases with logs and also predicts primary suspects. The system is proposed to help agencies like CBI, CID and other such bureaus to speed up investigation process and track status of multiple cases at a time. The system keeps logs of a case which includes case summary, people involved, disputes, past criminal history of those involved, Items recovered on scene and other details. The system realizes the type of case, allows admin to update the status of investigation, upload more images of crime, items found on scene etc. This allows authorized officers to check case status and look into its status online and also update any important info as and when needed. The system also consists of a suspect prediction algorithm. Based on type of case, property, land, love or other entities involved the system studies past cases, it studies past criminal records of those involved and based on this data it provides suggestions of suspected persons in a logical order. The system is designed to aid investigation teams to work collectively on cases, coordinate and also speed up the process by suggesting logical suspects based on data provided.

Keywords: Inquisition, Logs, Authorized, Suspect prediction algorithm, Decision tree algorithm, Entities.

PAPER ID: ICIRTCS-22-015

Live Visitor Tracking in Ecommerce using SVM

[1]Velidandla Pranavi, [2]Yaragalla Prasanna Lakshmi, [3]Ravi Selshi Angel, [4]Dhiravath Harika, [5]Naresh Kashimalla
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
Department of CSE, St. Martins Engineering College Secunderabad, Telangana, India

Abstract - This paper mainly concentrates on tracking the details of visitor who are using the website where admin will get those details. The Interface contains the tracking system software. Programming language used is python with the flask framework and the system will work with the access of internet. Ecommerce is known as electronic commerce, which refers to buying and selling goods through internet. Ecommerce is often used to sell or buy physical products online. Online stores are open 24 hours a day and are accessible from any location with an Internet connection. In the era of internet, Ecommerce business is growing to a great extent. But there are many problems faced by ecommerce industries. Some of the problems faced are demand for products, online identity verification, maintaining customer's loyalty, competing against retailers and manufacturers. Visitor tracking system helps us to track all the visitors visiting the site, which products they are more interested in. Ecommerce requires a visitor tracking software which will help the retailers to know more about the user behavior on their site, their interests which can be implemented using Support vector machines. The live visitor tracking system will help retailers to manage pricing and sell more products. It also cleans-up the old visitors records automatically which have two modules namely, Admin and User. Admin can add products, view the products, live visitors, and feed. Users can view the on-demand products and add product to cart, also track the order and view history.

Keywords: Product Reviews, Visitors Tracking, Support Vector Machines, Product Rating

PAPER ID: ICIRTCS-22-016

CNN Based Intelligent Currency Recognising System using Image Processing

[1]D. Nithish, [2]CH. Badrinath, [3]P. Ajay, [4]B. Harish, [5]Dr. T. Poongothai
[1,2,3,4] UG Scholar, [5]Professor
Department of Computer Science and Engineering, St. Martin's Engineering College, Secunderabad

Abstract - In this model, we propose a system for automated CNN-based currency recognition using image processing techniques. The proposed method can be used for recognizing both the country or origin as well as the denomination or value of a given banknote. Only paper currencies have been considered This method works by first identifying the country of origin using certain predefined areas of interest, and then extracting the denomination value using characteristics such as size, color, or text on the note, depending on how much the notes within the same country differ.

Keywords: CNN Algorithm, Python.

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PAPER ID: ICIRTCS-22-017

Mutual Authentication of Digitally Stored Medical Data

[1]Sai Venkata Hema Priya Botta, [2]Bodolla Sai Kiran, [3]Shaik Karishma, [4]Musku Ruthwik Reddy, [5]Pole Laxmi Devi
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
Department of CSE, St. Martins Engineering College Secunderabad, Telangana, India

Abstract- Security and privacy are the major concerns in cloud computing as users have limited access on the stored data at the remote locations managed by different service providers. These become more challenging especially for the data generated from any organization as it is highly sensitive and heterogeneous in nature. Hence, in this project, we propose a new cloud-based user authentication scheme for secure authentication of medical data. After successful mutual authentication between a user and any healthcare maintenance system, both establish a secret session key that is used for future secure communications. As the medical data is stored up the cloud, there can be easy access to the data, i.e., there can be easy retrieval, updating, deletion, easy mobility etc. The extensively used Real-Or-Random (ROR) model based formal security analysis and the broadly accepted Automated Validation of Internet Security Protocols and Applications (AVISPA) tool based formal security verification show that the proposed scheme provides the session-key security and protects active attacks. The proposed scheme is also informally analyzed to show its resilience against other known attacks.

***Keywords*:** Authentication, key generation, medical data, security, cloud computing.

PAPER ID: ICIRTCS-22-018

Rainfall Prediction using Multiple Linear Regression

[1]Nikhil Saini, [2]Thum Yeshwanth, [3]Singhu Rushika, [4]Palthya Gawtham, [5]Dr.B.Rajalingam
[1, 2, 3, 4]UG Scholar, [5]Associate Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract— Meteorological scientists always try to find means to understand the atmosphere of the Earth, and to develop accurate weather prediction models. Several methods have been used in weather prediction. Recently, machine learning methods are assumed to be accurate techniques and have been widely used as an alternative to classical methods for weather prediction. The rainfall rate is one of the essential phenomena in the weather system, which has a direct influence on the agriculture and biological sectors. This paper aims to develop a multiple linear regression model in order to predict the rate of precipitation (PRCP), i.e., rainfall rate, for Khartoum state. It is based on some weather parameters, such as temperature, wind speed, and dew point. The data used in this research has been provided from the website of the National Climatic Data Center. A Python code using the PyTorch library has been written to develop the model, which applies Artificial Neural Networks. The efficiency of the model has been measured by comparing the average value of the mean square error of the training data with the test data. The obtained results show that the average of the mean square error has been improved by 85% during test time, when the same amount of data is used during the training and test phases. However, it drops to 59% when the amount of data at the test phase exceeds the amount of training phase data.

***Keywords*:** Weather Prediction, ANN, Rainfall, Machine Learning, Linear Regression, NCDC (National Climate Data Center).

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PAPER ID: ICIRTCS-22-019

Digitalization of Anti-Corruption Management System

[1]Shruti Yadav, [2]Vadla Divya, [3]Vijaya Sahara Adithi, [4]Vangeti Sai Kishan Reddy, [5]D Srinivas
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
Department of Computer Science and Engineering, St. Martins Engineering College
Secunderabad, Telangana, India

Abstract- with the rapid development of cloud services, huge volume of data is shared via cloud confidentiality in cloud computing, current mechanisms cannot enforce privacy concerns over cipher text associated with multiple owners, which makes co-owners unable to appropriately control whether data disseminators can actually disseminate their data. Because of the exponential development in the cloud infrastructure, vast amounts of data are exchanged via cloud computing platforms. Cryptographic techniques are used to protect data privacy in cloud computing, but these techniques cannot handle privacy distress over multi-owner related cipher text, which prohibits co-owners from managing the dimension, whether data disseminators may actually disseminate their data.

Moreover, three policy aggregation strategies, including full permit, owner priority and majority permit, are provided to solve the privacy conflicts problem caused by different access policies. The security analysis and experimental results show our scheme is practical and efficient for secure data sharing with multi-owner in cloud computing.

***Keywords*:** digitalization, Cloud computing, policy aggregation

PAPER ID: ICIRTCS-22-020

A Novel Approach to Identifying Bird Species using Deep Learning

[1]Uttam Matukumalli, [2]A N Dasavanth, [3]Ashish Prajapathi, [4]M Jessica, [5]Ms. P. Devasudha, [6]Dr.B Rajalingam, [7]Dr.M Narayanan, [8]Dr. P Santosh Kumar Patra
[1,2,3,4] UG Scholar, [5]Assistant Professor, [6]Associate Professor,[7]Professor & HOD, [8]Professor & Principal
Department of Computer Science and Engineering St. Martin's Engineering College, Dhulapally, Telangana.

Abstract- Birdwatching is a common hobby but to identify their species requires the assistance of bird books. To provide birdwatchers a handy tool to admire the beauty of birds, Bird images were learned by a convolutional neural network (CNN) to localize prominent features in the images. First, we established and generated a bounded region of interest to refine the shapes and colors of the object granularities and subsequently balanced the distribution of bird species. Then, a skip connection method was used to linearly combine outputs of the previous and current layers to improve feature extraction. Finally, we applied the softmax function to obtain a probability distribution of bird features. The learned parameters of bird features were used to identify pictures uploaded by mobile users. The proposed CNN model with skip connections achieved higher accuracy of 99.00% compared with the 93.98% from a CNN and 89.00% from the SVM for the training images. As for the test dataset, the average sensitivity, specificity, and accuracy were 93.79%, 96.11%, and 95.37%, respectively.

***Keywords*:** Bird image recognition, convolutional neural network, deep learning, mobile app.

PAPER ID: ICIRTCS-22-021

Stress Detection in IT Sectors using Image Processing and KNN Algorithm

[1]Kamal Jangid, [2]K. Srinath, [3]Burugu Akshay Sagar, [4]Vishal Khichi, [5]B. Dhanalaxmi, [6]Dr. M. Narayanan, [7]Dr. P. Santosh Kumar Patra

[1,2,3,4] UG Scholar, [5]Associate Professor, [6]Professor,[7]Professor & Principal

Department of CSE, St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract- The main concept of this paper is to detect stress in the IT professionals with the help of Machine learning and Image processing techniques. This paper is an upgraded version of the old stress detection systems which excluded the live detection and the personal counselling but this paper comprises of live detection and periodic analysis of employees and detecting physical as well as mental stress levels in his/her by providing them with proper remedies for managing stress by providing survey form periodically. This paper mainly focuses on managing stress and making the working environment healthy and spontaneous for the employees and to get the best out of them during working hours.

***Keywords*:** Stress, Image Processing, KNN Classifier, Training Datasets.

PAPER ID: ICIRTCS-22-022

Aspect Based Sentiment Analysis using Machine Learning Techniques

[1]Dibyani Khandual, [2]Shirisha Trasula, [3]Nandini Soma, [4]Yenugula Usharani, [5]Dr.G. JawaherlalNehru
[1, 2, 3,4]UG Scholar, [5]Associate Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract -Aspect based sentiment analysis is a very popular concept in the machine learning era which is under the research domain still at the movement. This research mainly consists of the way of exploring the sentiment analysis based on the trained data set to provide the positive, negative and neutral reviews for different products in the marketing world. Most of the existing approaches for opinion mining are based on word level analysis of texts and are able to detect only explicitly expressed opinions. In aspect-based sentiment analysis (ABSA) the aim is to identify the aspects of entities and the sentiment expressed for each aspect. The ultimate goal is to be able to generate summaries listing all the aspects and their overall polarity. For this research mainly natural language and machine learning techniques are used. Here we used POS tagging which is a supervised learning approach which means classifying the words into their parts of speech which are known as words classes or lexical categories.

***Keywords*:** POS tagging, Aspect-Based Sentiment Analysis (ABSA) Sentiment Analysis, Lexical Categories, Data pre-processing, SVM.

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PAPER ID: ICIRTCS-22-023

Digitalization of Anti-Corruption Management System

[1]Valluri Harshita, [2]Mamuduri Vandana, [3]Mandapuram Shashivardhan, [4]Hybanth Reddy, [5]Siddamalla Swarajyam
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
[1,2,3,4,5] Computer Science and Engineering, St. Martins Engineering College
Secunderabad, Telangana, India

Abstract- This project concentrates on the implementation next generation police and law enforcement reporting tools and setting up an intelligence platform that allows the citizen to file complaints. To do one must have a user-friendly interactive system. Since once young age the word corruption has been one of the most frequently used words, we have come across. So, what exactly is corruption? Corruption is a form of dishonesty or a criminal offence which is undertaken by a person or an organization which is entrusted with an authority, to attain benefit for personal gain. We have seen may online web applications that have been implemented to help the citizens/users in their day-to-day activities. From online booking to online payments, we have Digitalized every application which can be easy accessed through one's personal mobile phones or laptops. Similarly, corruption can be reduce by corruption prevention initiative such as an Online platform which uses the concept of database integration for government agencies which is considered to be the most realistic scenarios which benefits the reduction of average cycle time by 34.20%,faster bid evaluation process, and eliminating face-to-face processes to prevent collusion, strengthening E-Tendring supervision with Self-Monitoring, Analysis, Reporting Technologies (SMART) making it ideal for long-term projects. This project makes sure that the user can file a complaint without any hesitation as the information provide by them during the registration such as contact number, address, email id is encrypted making sure that the users identity is kept confidential.

***Keywords*:** Digitalization, Anti-Corruption, Analysis

PAPER ID: ICIRTCS-22-024

Fraud Find: Financial Fraud Detection in the approach of Continuous Audit Process

[1]Shanmukha Srija G, [2]Dadisetty Akhila Devi, [3]Madireddy Madhavi, [4]Sonaila Bhuvan, [5]Kishor G
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
Department of CSE, St. Martins Engineering College Secunderabad, Telangana, India

Abstract - This project focuses on detecting fraud which could be performed internally in an organization. Financial fraud is commonly represented as the use of illegal practices where from the senior managers until payroll employees in an organization can intervene, becoming a crime punishable by law. Fraud is a worldwide phenomenon that affects public and private organizations, covering a wide variety of illegal practices and acts that involve intentional deception or misrepresentation. The fraud triangle theory of Donald R. Cressey is associated with this classic financial audit model. In order to perform this task, a survey of the related works was carried out, with the purpose of establishing our own framework. In this context, Fraud-Find, a conceptual framework which allows to identify and outline a group of people inside a banking organization who try to commit fraud, supported by the fraud triangle theory is established. Fraud-Find works in the approach of continuous audit that will be in charge of collecting information of agents. It is based on semantic techniques applied through the collection of details of the users for later analysis i.e., to identify if there was any fraudulent activity observed in the user's transactions history. This proposal encourages to contribute in the field of Cybersecurity which supports in the reduction of fraudulent cases related to financial fraud.

***Keywords*:** Financial fraud, Cybersecurity, semantic techniques

PAPER ID: ICIRTCS-22-025

A novel approach to analyse Collaboration Rating to predict Recommendation

[1]Kambhampati Lalitha Sri, [2] Mallam Tharunmai, [3]Pendimukkula Nishitha Goud, [4]Kalakoti Vamshi Krishna, [5]Dr.N. Satheesh
[1, 2, 3, 4] UG Scholar, [5]Professor
Department of CSE, St. Martins Engineering College Secunderabad, Telangana, India

Abstract- Recently, collaborative filtering combined with various kinds of deep learning models is appealing to recommender systems, which have shown a strong positive effect in an accuracy improvement. However, many studies related to deep learning model rely heavily on abundant information to improve prediction accuracy, which has stringent data requirements in addition to raw rating data. Furthermore, most of them ignore the interaction effect between users and items when building the recommendation model. To address these issues, we propose DCCR, a deep collaborative conjunctive recommender, for rating prediction tasks that are solely based on the raw ratings. A DCCR is a hybrid architecture that consists of two different kinds of neural network models (i.e., an auto encoder and a multi-layered perceptron). The main function of the auto encoder is to extract the latent features from the perspectives of users and items in parallel, while the multi-layered perceptron is used to represent the interaction between users and items based on fusing the user and item latent features. To further improve the performance of DCCR, an advanced activation function is proposed, which can be specified with input vectors. The extensive experiments conducted with two well-known real-world datasets and performances of the DCCR with varying settings are analysed. The results demonstrate that our DCCR model outperforms other state-of-art methods. We also discuss the performance of the DCCR with additional layers to show the extensibility of our model.

***Keywords*:** collaboration, filters, analysis

PAPER ID: ICIRTCS-22-026

Personalized Human Activity Recognition Based on Wearable Sensors Using Convolutional Neural Networks

[1]Manideep Malyala, [2]Marigela Bhavana, [3]Pranav Rao Parvathaneni, [4]Sathvika Vegesna, [5]P Deepan
[1,2,3,4] UG Scholar, [5]Assistant Professor
Department of Computer Science and Engineering, St. Martin's Engineering College, Hyderabad, India.

Abstract: Human action recognition is one of the most important emerging trend technologies. It has wide applications such as surveillance (behavior analysis), security (pedestrian detection), control (human-computer interfaces), content-based video retrieval, etc. Many researchers have introduced vision based human action recognition methods. The development of vision based human activity recognition systems has some issues such as Illumination changes in human activity recognition, inter class similarity between scenes, Environment and record setting and temporal variation. In order to tackle this issue, we have to capture or sense human action with the help of any wearable sensor, wearable device or IoT device. Human Activity Recognition is the research of recognizing physical human activities using sensor data, especially one-dimensional time series data. The purpose of this research is to present a novel method for recognizing human activity that employs 1D-Convolutional Neural Network (CNN) models. In this dissertation, the publicly available Wireless Sensor Data Mining (WISDM) dataset, is used to train and test 1D- CNN model. The accuracy of the CNN model is 95.2%, which is better than traditional and existing techniques.

***Keywords*:** Human Activity, CNN, Data Mining

PAPER ID: ICIRTCS-22-027

Location Prediction of Tweets using Decision Tree Technique

[1]Mahesh Morem, [2]Preethi Kandukuri, [3]Paisa Ruchitha, [4]Dr.B. Rajalingam
[1, 2, 3] UG Scholar, [4]Associate Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract - Location prediction of users from online social media brings considerable research these days. Automatic recognition of location related with or referenced in records has been investigated for decades. As a standout amongst the online social network organization, Twitter has pulled in an extensive number of users who send a million of tweets on regular schedule. Because of the worldwide inclusion of its users and continuous tweets, location prediction on Twitter has increased noteworthy consideration in these days. Tweets, the short and noisy and rich natured texts bring many challenges in research area for researchers. In proposed framework, a general picture of location prediction using tweets is studied.

***Keywords*:** CSV file, Term Frequency, Data-Pre-processing, Machine Learning, SVM, Decision Tree, Naïve Bayes, API.

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PAPER ID: ICIRTCS-22-028

Detection of Helmet and License Plate Recognition using Convolutional Neural Networks

[1]Aindla Surya Teja Reddy, [2]Bandi Mithun Goud, [3]Binula Bhavisha, [4]Kontham Sai Roshan Reddy
[1,2,3,4] UG Scholar
Department of CSE, St. Martin's Engineering College, Secunderabad, Telangana 500 100, India

Abstract- Motorcycle accidents have been rapidly growing through the years in many countries. In India more than 37 million people use two wheelers. Therefore, it is necessary to develop a system for automatic detection of helmet wearing for road safety. Therefore, a custom object detection model is created using a Machine learning based algorithm which can detect Motorcycle riders. On the detection of a Helmetless rider, the License Plate is extracted and the License Plate number is recognized using an Optical Character Recognizer. This Application can be implemented in real-time using a Webcam or a CCTV as input.

***Keywords*:** Automatic License Plate Recognition (ALPR), Deep Neural Network (DNN), Helmet Detection, Machine Learning, Mean Average Precision (mAP), Optical Character Recognition (OCR), You Only Look Once (YOLO).

PAPER ID: ICIRTCS-22-029

Identifying Fake Profiles on Social Media Networks using Artificial Neural Network

[1]Aitipamula Vijay Chary, [2]Battini Sandeep Kumar, [3]D. Sravanthi, [4]Jayakrishna Reddy Sanikommu
[1,2,3,4] UG Scholar,
Department of Computer Science and Engineering,
St. Martin's Engineering College, Secunderabad, India

Abstract - In this paper, we use machine learning, namely an artificial neural network to determine what are the chances that a Facebook friend request is authentic or not. We also outline the classes and libraries involved. Furthermore, we discuss about ReLu function and how the weights are determined and used. Finally, we consider the parameters (technically, features or attributes) of the social network page which are utmost important in the provided solution.

***Keywords*:** Artificial Neural Networks, ReLu, Identify Fake Profiles, social media, Malicious users, Bots

PAPER ID: ICIRTCS-22-030

Stock Market Trend Prediction Using K-Nearest Neighbor (KNN) Algorithm

[1]Sri Priya D, [2]Maneesha S, [3]Premika G, [4]Sri Priya B, [5] Mr. Krishna D.
[1,2,3,4] UG Scholar, [5]Assistant Professor,
Department of Computer Science and Engineering, St. Martin's Engineering College, Secunderabad, India

Abstract- This project work examines a hybrid model which combines a K-Nearest Neighbor (KNN) approach with a probabilistic method for the prediction of stock price trends. The KNN algorithm is a simple, easy-to-implement Machine learning supervised algorithm with a low computational cost. There's no need to build a model, tune several parameters, or make additional assumptions. The KNN algorithm assume that similar things are near to each other. It is also necessary to construct enhanced model that integrates KNN with a probabilistic method which utilizes both centric and non-centric data points. The embedded probabilistic method is derived from Bayes' theorem. Bayes' theorem allows you to update predicted probabilities of an event by incorporating new information. It is often employed in finance in updating risk evaluation.

***Keywords*:** K-Nearest Neighbor (KNN), Machine Learning, Bayes theorem, Stock Market Prediction

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PAPER ID: ICIRTCS-22-031

An Effective Email Spam Filtering using Hybrid Machine Learning Approach

[1]Erugudalla Sriram Kumar, [2]Yeshala Durga Prasad, [3]Balguri Nikitha, [4]Mittapally Sushanth Kumar, [5]Mrs.E. Soumya, [6]Dr.M. Narayanan, [7]Dr.P. Santosh Kumar Patra
[1,2,3,4] UG Scholar, [5]Assistant professor, [6] Professor, [7] Professor & Principal
Department of CSE, St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract - In recent times, unwanted commercial bulk emails called spam has become a huge problem **Abstract -** on the internet. Machine learning methods of recent are being used to successfully detect and filter spam emails. It presents a systematic review of some of the popular machine learning based email spam filtering approaches. It covers survey of the important concepts, attempts, efficiency and the research trend in spam filtering. The preliminary discussion in the study background examines the applications of machine learning techniques to email spam filtering process of the leading internet service providers like Gmail, Outlook and Yahoo email spam filters. The project compares the accuracy, precision and recall of the machine learning approaches in spam filtering.

***Keywords*:** ANN, CNN, KNN, Naïve Bayes, Multilayer Perceptron.

PAPER ID: ICIRTCS-22-032

Machine Learning Framework using LSTM Algorithm for Crime Prediction and Analysis

[1] **Shaik Ruksana,** [2] **Vanga Deena Reddy,** [3] **Vemulapalli Tagore Venkata Sai Teja,** [4] **Ealpula Swathi,** [5] **Dr. S.Saravanakumar,** [6] **Dr.M.Narayanan,** [7] **Dr.P.Santosh Kumar Patra**
[1,2,3,4] UG Scholar, [5] Associate Professor, [6] Professor, [7] Professor & Principal
Department of CSE, St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract - Crime is one of the biggest and dominating problem in our society and its prevention is important. task. Daily there are huge numbers of crimes committed frequently. This require keeping track of all the crimes and maintaining a database for same which may be used for future reference. The current problem faced are maintaining of proper dataset of crime and analysing this data to help in predicting and solving crimes in future. The objective of this project is to analyse dataset which consist of numerous crimes and predicting the type of crime which may happen in future depending upon various conditions.

***Keywords*:** Energy, Booster, Vitamin, Fiber, Types, Quality, Ripening, Dataset.

PAPER ID: ICIRTCS-22-033

An Efficient Framework Recommendation for Books

[1]Dyda Annie Vineetha, [2]Kothinti Amulya, [3]Rangewar Kaushik, [4]Vaanapalli Pavan Satya Kalyan, [5]Mr. C. Yosepu, [6]Dr.M. Narayanan, [7]Dr.P. Santosh Kumar Patra
[1,2,3,4] UG Scholar, [5]Associate Professor, [6] Professor, [7] Professor & Principal
Department of CSE, St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract - Recommendation systems are used for the purpose of suggesting items to purchase or to see. They direct users towards those items which can meet their needs through cutting down large database of Information. A various techniques have been introduced for recommending items i.e. content, collaborative and association mining techniques are used. This paper solves the problem of data sparsity problem by combining the collaborative-based filtering and association rule mining to achieve better performance. The results obtained are demonstrated and the proposed recommendation algorithms perform better and solve the challenges such as data sparsity and scalability.

***Keywords*:** Collaborative filtering, Association rule mining.

PAPER ID: ICIRTCS-22-034

Operating Target Defense Mechanism against DDOS using Greedy Algorithm

[1]Mallak Vaishnavi, [2]P. Rashmith Reddy, [3]Teppala Sahithi, [4] M. Aravind Kumar, [5] Dr. K. Gurunadha Gupta, [6]Dr.M. Narayanan, [7]Dr.P. Santosh Kumar Patra
[1,2,3,4] UG Scholar, [5]Associate Professor, [6]Professor, [7]Professor & Principal
Department of CSE, St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract- —Distributed Denial of Service (DDoS) attacks still pose a significant threat to critical infrastructure and Internet services alike. In this paper, we propose MOTAG, a moving target defence mechanism that secures service access for authenticated clients against flooding DDoS attacks. MOTAG employs a group of dynamic packet indirection proxies to relay data traffic between legitimate clients and the protected servers. Our design can effectively inhibit external attackers' attempts to directly bombard the network infrastructure. As a result, attackers will have to collude with malicious insiders in locating secret proxies and then initiating attacks. However, MOTAG can isolate insider attacks from innocent clients by continuously "moving" secret proxies to new network locations while shuffling client-to-proxy assignments. We develop a greedy shuffling algorithm to minimize the number of proxy re-allocations (shuffles) while maximizing attack isolation. Simulations are used to investigate MOTAG's effectiveness on protecting services of different scales against intensified DDoS attacks.

Keywords: —DDoS; Moving Target Defence; Secret Proxy; Insider; Shuffling

PAPER ID: ICIRTCS-22-035

Location Based Privacy Preserving Access Control for Relational Data

[1]Ch Chandana, [2]Bogaram Akanksha, [3]Gade Prathyusha, [4]Syed Abdul Mannan H Hashmi,
[5]Dr. M. Narayanan, [6]Dr. P. Santosh Kumar Patra
[1,2,3,4] UG Scholar, [5]Pofessor, [6]Professor & Principal
Department of CSE, St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract - Rapid expansion of network and internet services enabled users to use and share large amount of data on a massive scale. Once the information is combined, it becomes the wealth information which can be used for research. Researcher directly applies data mining techniques and algorithm on the original dataset to fetch information, which may lead to leakage of privacy data. Large amount of data leads to exposure of identity. To meet this privacy concern, unique identity is removed from the original data before applying publishing data for research. Even though individual identity is disclosure by linking different datasets. To protect privacy, privacy preserving mechanism (PPM) is used. In this paper, we suggested new method to get desired level of privacy stored in both local and distributed environment. Our methodology for privacy includes anonymization technique applied to grouped data so as to get more accuracy. In this proposed method, we applied generalization privacy technique to selected quasi-identifier by setting range values as min-max. Further published data contains only two records of each group with their respective counts, instead of publishing repetitive records, in order to increase the performance in the distributed environment. In addition to that for extra Security, access control is achieved by the location.

***Keywords*:** anonymization; access control; privacy-preservation; access control mechanism; generalization

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PAPER ID: ICIRTCS-22-036

Analyzing Imperfect Information for Business Opportunity Evaluation by Data-Driven Entrepreneurs

[1]Snidhi Reddy Gudoor, [2]Pinipe Priyanka, [3]Manoj Reddy Rikkala, [4]Yedida Bhavani, [5]N. Satheesh
[1, 2, 3,4] UG Scholar, [5]Professor
Department of CSE, St. Martin's Engineering College, Hyderabad, Telangana, India

Abstract - Business opportunity assessment with an information-driven method may not be a simple or direct procedure. The accomplishment of the business opportunity is dependent upon outer market factors, including economic situations for businesspeople when all is said in done and administrative systems influencing access to customer and work markets and fund.

The ideal speculation portfolio adjusts the exchange off between expected returns and market data and is furtherly directed by the businessperson's hazard inclination and operational deficiencies. The proposed somewhat watched Markov choice procedure (POMDP) model sets up a probabilistic connection between a noticeable and the shrouded advertise process by means of the business visionary's venture portfolio. At that point the model recognizes a probabilistic data measure to evaluate the association between the perceptible and undetectable procedure to all the more likely comprehend the condition of the market for the business opportunity. With the probabilistic data measure, the business visionary at that point could develop and test new speculation portfolios that are most appropriate for the market concerning businessperson hazard inclination and operational deficiencies.

***Keywords*:** Business, Business Opportunity Assessment, Businessperson

PAPER ID: ICIRTCS-22-037

COVID-19 face mask detection using CNN

[1]Akshaya Samala, [2]Manideep Bheemanathi, [3]Samuel Panuganti, [4]Parasuramuni Pavani Ankitha, [5]Dr.B. Rajalingam
[1, 2, 3,4] UG Scholar [5]Associate Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract - COVID-19 pandemic has rapidly affected our day today life disrupting the world trade and movements. Wearing a protective face mask has become a new normal. In the near future, many public service providers will ask the customers to wear masks correctly to avail of their services. Therefore, face mask detection has become a crucial task to help global society. This paper presents a simplified approach to achieve this purpose using some basic Machine Learning packages like TensorFlow, Keras, OpenCV and Scikit-Learn. The proposed method detects the face from the image correctly and then identifies if it has a mask on it or not. As a surveillance task performer, it can also detect a face along with a mask in motion. The method attains accuracy up to 95.77% and 94.58% respectively on two different datasets. We explore optimized values of parameters using the Sequential Convolutional Neural Network model to detect the presence of masks correctly without causing over-fitting.

***Keywords*:** Tensor flow, keras, OpenCV, Convolutional Neural Network

PAPER ID: ICIRTCS-22-038

Intelligent Intrusion Detection System Using DNN

[1]Balimidi Jahnavi, [2]Enugandhula Rani, [3]Kamuni Supriya, [4]Kilaru Nikhil Chowdary, [5]Dr.K. Srinivas, [6]Dr.P. Santosh Kumar Patra
[1,2,3,4]UG Scholar, [5]Associate Professor, [6]Professor & Principal
Department of Computer Science and Engineering, St. Martin's Engineering College,
Dhulapally, Telangana, India

Abstract - Machine learning techniques are being widely used to develop an intrusion detection system (IDS) for detecting and classifying cyber-attacks at the network-level and host-level in a timely and automatic manner. However, no existing study has shown the detailed analysis of the performance of various machine learning algorithms on various publicly available datasets. In this project, deep neural network (DNN), a type of deep learning model is explored to develop flexible and effective IDS to detect and classify unforeseen and unpredictable cyber-attacks. The continuous change in network behaviour and rapid evolution of attacks makes it necessary to evaluate various datasets which are generated over the years through static and dynamic approaches. Finally, we propose a highly scalable and hybrid DNNs framework called Scale-Hybrid-IDS-AlertNet (SHIA) which can be used in real time to effectively monitor the network traffic and host-level events to proactively alert possible cyber-attacks.

Keywords: Intrusion Detection system, Machine Learning, Deep Learning, Deep Neural Networks, cyberattacks.

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Predicting the Stages of Banana Ripeness by CNN

[1]Chigullapally Akhil Gupta, [2]Vittala Sharvan, [3]Bodakunta Apoorva, [4]Mohammed Meraj Kashif, [5]Mr. J. Sudhakar, [6] Dr.M.Narayanan, [7]Dr.P.Santosh Kumar Patra
[1,2,3,4] UG Scholar, [5]Associate Professor, [6]Professor,[7]Professor & Principal
Department of Computer Science and Engineering, St. Martin's Engineering College, Dhulapally, Telangana

Abstract - Bananas are one of the most consumed fruits globally. Banana is the great source of energy; it provides fullness in the body. The banana is an energy booster in every sport. They are the healthy source of fiber, potassium, vitamin B6 and vitamin C. Many types and sizes exist, their colorusually range from green to yellow. It is one of the most inexpensive fresh fruit. Ripeness in banana fruit generally affects the eating quality and the market price. This paper is intended to predict the ripening levels of banana such as unripe, ripe, overripe. The classification of the banana will complete accuracy and precision would have not been possible without the invention of the convolutional neural network.

***Keywords*:** Energy, Booster, Vitamin, Fiber, Types, Quality, Ripening, Dataset.

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Machine Learning for Plant Disease Detection and Classification

[1]G. Sanath, [2]DN Saketh, [3]Shanmukha Priyaa, [4]Mr. J. Manikandan
[1, 2, 3] UG Scholar, [4]Associate Professor
Department of CSE, St. Martin's Engineering College Hyderabad, Telangana, India

Abstract - The project presents plant disease detection using image processing techniques for automated vision system used at agriculture field. In agriculture research of automatic plant disease detection is essential one in monitoring large fields of crops, and thus automatically detects symptoms of disease as soon as they appear on plant leaves. For this approach, color transformations, masking green pixels, segmentation are used for classification based on learning with some training samples of that category. Finally, the simulated result shows that used network classifier provides minimum error during training and better accuracy in classification.

Plant disease is an ongoing challenge for smallholder farmers, which threatens income and food security. The recent revolution in smartphone penetration and computer vision models has created an opportunity for image classification in agriculture. Convolutional Neural Networks (CNNs) are considered state-of-the-art in image recognition and offer the ability to provide a prompt and definite diagnosis. In this paper, the performance of a pre-trained ResNet34 model in detecting crop disease is investigated. The developed model is deployed as a web application and is capable of recognizing 7 plant diseases out of healthy leaf tissue. A dataset containing 8,685 leaf images; captured in a controlled environment, is established for training and validating the model. Validation results show that the proposed method can achieve an accuracy of 97.2% and an F1 score of greater than 96.5%. This demonstrates the technical feasibility of CNNs in classifying plant diseases and presents a path towards AI solutions for small holder farmers

Keywords: Machine Learning, CNN, ANN

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Image Based Age Group and Gender Prediction using CNN

[1]M. Amitha Reddy, [2]M. Vishal, [3]M. Dixitha, [4]L. Vamsi Sai, [5]Dr. G. Govinda Rajulu
[1, 2, 3,4] UG Scholar, [5]Associate Professor
Department of Computer Science and Engineering, St. Martin's Engineering College
Hyderabad, India

Abstract: Since the growth of social platforms and social media, automatic age and gender classification has been relevant to a growing number of applications. Existing approaches' performance on real-world photographs, however, is still woefully inadequate, especially when contrasted to the enormous leaps in performance recently reported for the related task of facial recognition. We show in this project that using deep-convolutional neural networks (CNN) to learn representations can result in a significant improvement in performance on certain tasks. To achieve this, we offer a simple convolutional net design that may be employed even when learning data is scarce. On the recent Adience benchmark for age and gender estimation, we show that our method outperforms current state-of-the-art methods significantly.

Keywords: Convolutional Neural Network, Adience, regression, classification, hyperplane, RSMT, auto encoder.

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Smart Traffic Control using Canny Edge Detection Algorithm

[1]Archana Shakkari, [2]Anand Mankena, [3]Srinivas Mulapudi, [4]Dr. R. Santhoshkumar
[1, 2, 3] UG Scholar, [4]Associate Professor
Department of CSE, St. Martin's Engineering College, Secunderabad, Telangana- 500100.

Abstract- As the problem of urban traffic congestion intensifies, there is a pressing need for the introduction of advanced technology and equipment to improve the state- of-the heart of traffic control. The current methods used such as timers or human control are proved to be inferior to alleviate this crisis. In this project, a system to control the traffic by measuring the real time vehicle density using canny edge detection with digital image processing is proposed. This imposing traffic control system offers significant improvement in response time, vehicle management, automation, reliability and overall efficiency over the existing systems. Besides that, the complete technique from image acquisition to edge detection and finally green signal allotment using four sample images of different traffic conditions is illustrated with proper schematics and the final results are verified by hardware implementation.

Keywords: Smart Traffic Control: Density based Traffic Control: Edge Detection: Image Processing in traffic Control.

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Prediction of Stock Prices using SVM

[1]Namrata Mishra, [2]Vanam Kaushik, [3]Shetker Naresh, [4]Dr.B. Rajalingam
[1, 2, 3] UG Scholar, [4]Associate Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract- Stock market or Share market is one of the most complicated and sophisticated way to do business. Small ownerships, brokerage corporations, banking sector, all depend on this very body to make revenue and divide risks; a very complicated model. However, this presentation proposes to use machine learning algorithm to predict the future stock price for exchange by using open-source libraries and pre-existing algorithms to help make this unpredictable format of business a little more predictable.

Keywords - CSV file, Term Frequency, Data-Pre-processing, Machine Learning, SVM, Decision Tree, Naïve Bayes, API.

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Crop Yield Prediction Using Decision Tree Algorithm

[1]Juttukonda Akhil Kumar, [2]Jatin Ramchandani, [3]Jangam Shiva Prasad Yadav, [4]Kosli Praneeth Kumar, [5]Mr. S. Bavankumar
[1,2,3,4] UG Scholar, [5]Assistant Professor
Department of Computer Science and Engineering, St. Martin's Engineering College, Secunderabad

Abstract- Agriculture is the field which plays an important role in improving our countries economy. Agriculture is the one which gave birth to civilization. India is an agrarian country and its economy largely based upon crop productivity. Hence, we can say that agriculture can be backbone of all business in our country. Selecting of every crop is very important in the agriculture planning. The selection of crops will depend upon the different parameters such as market price, production rate and the different government policies. Many changes are required in the agriculture field to improve changes in our Indian economy. We can improve agriculture by using machine learning techniques which are applied easily on farming sector. Along with all advances in the machines and technologies used in farming, useful and accurate information about different matters also plays a significant role in it. The concept of this paper is to implement the crop selection method so that this method helps in solving many agriculture and farmers problems. This improves our Indian economy by maximizing the yield rate of crop production.

Keywords: Crop Yield Prediction, Machine Learning, Decision Tree.

PAPER ID: ICIRTCS-22-045

Filtering Instagram Hashtags through crowd tagging and the HITS Algorithm

[1] Abhishek Tripathi, [2] Angad Singh, [3] Atulya Chauhan,[4] Nithin Bharadwaj, [5] Dr.K.Srinivas
[1,2,3,4] UG Scholar, [5]Associate Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract- Instagram is a rich source for mining descriptive tags for images and multimedia in general. The tags– image pairs can be used to train automatic image annotation (AIA) systems in accordance with the learning by example paradigm. In previous studies, we had concluded that, on average, 20% of the Instagram hashtags are related to the actual visual content of the image they accompany, i.e., they are descriptive hashtags, while there are many irrelevant hashtags, i.e., stop-hashtags, that are used across totally different images just for gathering clicks and for searchability enhancement. In this project, we present a novel methodology, based on the principles of collective intelligence that helps in locating those hashtags. In particular, we show that the application of a modified version of the well-known hyperlink induced topic search (HITS) algorithm, in a crowd tagging context, provides an effective and consistent way for finding pairs of Instagram images and hashtags, which lead to representative and noise free training sets for content-based image retrieval. As a proof of concept, we used the crowdsourcing platform Figure-eight to allow collective intelligence to be gathered in the form of tag selection (crowd tagging) for Instagram hashtags. The crowd tagging data of Figure-eight are used to form bipartite graphs in which the first type of nodes corresponds to the annotators and the second type to the hashtags they selected. The HITS algorithm is first used to rank the annotators in terms of their effectiveness in the crowd tagging task and then to identify the right hashtags per image.

Keywords: Automatic Image Annotation, Hashtags, Crowd tagging, Figure-eight, HITS, Algorithm, Deep CNN, Bipartite Graph.

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Multi-Keyword ranked Search Scheme using Ranking based Filter Over Encrypted Data

[1]Bheemanathula Navyasri, [2]Varsha Narra, [3]Bobbali Rakesh, [4]Pochampalli Gagan Adithya Reddy, [5]Kasumuru Sucharitha
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
Department of Computer Science and Engineering,
St. Martins Engineering College Secunderabad, Telangana, India

Abstract - Cloud computing has become a popular approach to manage personal data for the economic savings and management flexibility in recent year. However, the sensitive data must be encrypted before outsourcing to cloud servers for the consideration of privacy, which makes some traditional data utilization functions, such as the plaintext keyword search, impossible. To solve this problem, we present a multi-keyword ranked search scheme over encrypted cloud data supporting dynamic operations efficiently. Our scheme utilizes the vector space model combined with TF × IDF rule and cosine similarity measure to achieve a multi-keyword ranked search. However, traditional solutions have to suffer high computational costs. In order to achieve the sub-linear search time, our scheme introduces Ranking based filter (bloom filter) to build a search index tree. Our scheme can support dynamic operation properly and effectively on the account of the property of the Ranking based filter (bloom filter), which means that the updating cost of our scheme is lower than other schemes. We present our basic scheme first, which is secure under the known ciphertext model. Then, the enhanced scheme is presented later to guarantee security even under the known background model. The experiments on the real-world dataset show that the performances of our proposed schemes are satisfactory.

Keywords: search scheme, bloom filter, web mining

PAPER ID: ICIRTCS-22-047

Graphical Password Authentication System Using CCP Model

[1]Kanigiri Manishwar, [2]Kapdi Jemish, [3]Kommata Praneeth, [4]Atla Vamshi Reddy, [5]Mrs. S. Sravanthi
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract- In this we are implementing graphical images as a password where in daily bases we use classical 8 characters passwords. Authentication want to compromising confidentiality and integrity. Alphanumerical usernames and password are the most common method of computer authentication. His method has many drawbacks. Usually people use passwords that can be easily guessed, so that it does not becomes hard to remember. Hence to encounter this problem, researchers have developed graphical password authentication methods that use pictures as passwords. Graphical password is an alternative to text-based passwords where user is asked to recall an image instead of a word. Looking at the success of this system, using graphical password as input and grid lines for image point verification and enrich it to provide security using normal login and graphical password. This system can be used in the field such as banking application, military application, civilians, forensic labs, etc.

Keywords: graphical password, CCP Model, authentication by pictures, authentication

PAPER ID: ICIRTCS-22-048

An Effective Diabetes Diagnosis with 5G Smart Diabetes in Healthcare Big Data Clouds

[1]Mahesh Morem, [2]Preethi Kandukuri, [3]Paisa Ruchitha, [4]Dr.B. Rajalingam
[1,2,3] UG Scholar, [4]Associate Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract: Recent advances in wireless networking and big data technologies, such as 5G networks, medical big data analytics, and the Internet of Things, along with recent developments in wearable computing and artificial intelligence, are enabling the development and implementation of innovative diabetes monitoring systems and applications. Due to the lifelong and systematic harm suffered by diabetes patients, it is critical to design effective methods for the diagnosis and treatment of diabetes. Based on our comprehensive investigation, this article classifies those methods into Diabetes 1.0 and Diabetes 2.0, which exhibit deficiencies in terms of networking and intelligence. Thus, our goal is to design a sustainable, cost-effective, and intelligent diabetes diagnosis solution with personalized treatment.

Keywords: diabetes, data clouds, artificial intelligence

PAPER ID: ICIRTCS-22-049

An efficient Android Malware Detection using GA, SVM and ANN

[1]Medikonda Naveen Babu, [2]Abhijeet Prakash Yadav, [3]Pasupuleti Krishna Tejasvi, [4]Rapole Manish, [5]Dr. K. Srinivas
[1, 2, 3,4]UG Scholar, [5]Associate Professor
Department of Computer Science and Engineering,
St. Martins Engineering College, Secunderabad

Abstract- Android platform due to open-source characteristic and Google backing has the largest global market share. Being the world's most popular operating system, it has drawn the attention of cyber criminals operating particularly through wide distribution of malicious applications. This project proposes an effectual machine-learning based approach for Android Malware Detection making use of evolutionary Genetic algorithm for discriminatory feature selection. Selected features from Genetic algorithm are used to train machine learning classifiers and their capability in identification of Malware before and after feature selection is compared.

Keywords: CSV file, Term Frequency, Feature Selection, Machine Learning, SVM, Genetic Algorithm, ANN.

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PAPER ID: ICIRTCS-22-050

Prediction of Web Attacks using Deep Learning

[1]Akash Sharma, [2] Bingi Ramya Sri, [3] BV Anirudh Gota, [4] Niranjan Vinod Jangid, [5] Dr.K.Srinivas
[1,2,3,4]UG Scholar, [5]Associate Professor,
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract - Web applications are popular targets for cyber-attacks because they are network-accessible and often contain vulnerabilities. An intrusion detection system (IDS) is a system that monitors network traffic for suspicious activity and alerts when such activity is discovered. While anomaly detection and reporting are the primary functions of an IDS, some intrusion detection systems are capable of taking actions when malicious activity or anomalous traffic is detected. Existing implementations of intrusion detection systems usually extract features from network packets or string characteristics of input that are manually selected as relevant to attack analysis. This paper provides various contributions to the study of autonomic intrusion detection systems. An unsupervised/semi-supervised approach is used for web attack detection. It is based on the Robust Software Modelling Tool (RSMT), which autonomically monitors and characterizes the runtime behaviour of web applications. RSMT trains a stacked denoising autoencoder to encode and reconstruct the call graph for end-to-end deep learning, where a low-dimensional representation of the raw features with unlabelled request data is used to recognize anomalies by computing the reconstruction error of the request data. The results of empirically testing RSMT on both synthetic datasets and production applications with intentional vulnerabilities. The results show that the proposed approach can efficiently and accurately detect attacks, including SQL injection, cross-site scripting, and deserialization, with minimal domain knowledge and little labelled training data.

Keywords: Web security, Deep learning, Application instrumentation.

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PAPER ID: ICIRTCS-22-053

Super-agent: a customer service chatbot for e-commerce websites

[1]D. Krishnamalathi, [2]L. Sriharsha, [3] P.Dastagiramma, [4] G.Saibhargavi, [5] S.Bavankumar
[1, 2, 3,4]UG Scholar, [5]Assistant Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract - This Project introduces a chatbot for selling physical goods and also services. This Chatbot is applicable to direct and indirect Marketing. It is designed and implemented for telegram and uses its API, but can be implemented on any messaging platform with an API such as Facebook messenger. Today's E-Commerce websites contains a wide range of products in each of its category which results in vast and complex database user visiting an E-Commerce website may look for a specific product or generally browse in website. In this business environment, it is extremely important to respond to the client immediately. Chatbot can be used as an "assistant" to a live agent. It presents a new way for individuals to interact with computer systems; A Chatbot allows a user to simply ask questions in the same manner that they would address a human. A simple chatbot can be created by loading an FAQ [Frequently Asked Questions] into chatbot software.

Keywords: Super-agent, chatbot, e-commerce

PAPER ID: ICIRTCS-22-054

Detecting Fraudulent activities in Credit Card using Adaboost and Majority Voting

[1]Damera Sai Kumar, [2]Erraboina Sandeep, [3]Abdul Majeed, [4]Ch Abhijit, [5]M Manohar
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
[1,2,3,4,5] Computer Science and Engineering, St. Martins Engineering College
Secunderabad, Telangana, India

Abstract - Credit card fraud generally happens when the card was stolen for any of the unauthorized purposes or even when the fraudster uses the credit card information for his use. In the present world, we are facing a lot of credit card problems. To detect the fraudulent activities the credit card fraud detection system was introduced. This project aims to focus mainly on machine learning algorithms. The algorithms used are random forest algorithm and the Adaboost algorithm. The results of the two algorithms are based on accuracy, precision, recall, and F1-score. The ROC curve is plotted based on the confusion matrix. The Random Forest and the Adaboost algorithms are compared and the algorithm that has the greatest accuracy, precision, recall, and F1-score is considered as the best algorithm that is used to detect the fraud.

Keywords: Credit card fraud, fraudulent activities, Random Forest, Adaboost

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PAPER ID: ICIRTCS-22-055

An Effective Biometric Authentication using Electrocardiogram

[1]Chintollu Keerthana, [2]Sammeta Tirumala Sahithi, [3]Yadla Angel, [4] Mr. M. Raghavendra Rao
[1, 2, 3] UG Scholar, [4]Assosiate Professor
Department of CSE, St. Martin's Engineering College, Hyderabad, Telangana, India

Abstract - This paper introduces a framework for how to appropriately adopt and adjust machine learning (ML) techniques used to construct electrocardiogram (ECG)- based biometric authentication schemes. The proposed framework can help investigators and developers on ECG-based biometric authentication mechanisms define the boundaries of required datasets and get training data with good quality. To determine the boundaries of datasets, use case analysis is adopted. Based on various application scenarios on ECG-based authentication, three distinct use cases (or authentication categories) are developed. With more qualified training data given to corresponding machine learning schemes, the precision on ML-based ECG biometric authentication mechanisms are increased in consequence. The ECG time slicing technique with the R-peak anchoring is utilized in this framework to acquire ML training data with good quality. In the proposed framework four new measure metrics are introduced to evaluate the quality of the ML training and testing data. In addition, a Mat lab toolbox, containing all proposed mechanisms, metrics, and sample data with demonstrations using various ML techniques, is developed and made publicly available for further investigation. For developing ML-based ECG biometric authentication, the proposed framework can guide researchers to prepare the proper ML setups and the ML training datasets along with three identified user case scenarios. For researchers adopting ML techniques to design new schemes in other research domains, the proposed framework is still useful for generating the ML based training and testing datasets with good quality and utilizing new measure metrics.

Keywords: biometric, Machine learning, ECG

PAPER ID: ICIRTCS-22-056

MEDBOT: A System based on ML and NLP For Supporting Women And Families During Pregnancy

[1]Annarapu Manideep, [2]Katamareddy Rishitha Reddy, [3]M V Sri Harsha, [4]Padmam Bhavani Vidhmahe, [5]Mr.G. Mallikarjun

[1, 2, 3,4] UG Scholar, [5]Assistant Professor

Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract - Artificial intelligence is transforming healthcare with a profound paradigm shift impacting diagnostic techniques, drug discovery, health analytics, interventions and much more. In this paper we focus on exploiting AI-based chatbot systems, mainly based on machine learning algorithms and Natural Language Processing, to understand and respond to needs of patients and their families. In particular, we describe an application scenario for an AI-chatbot delivering support to pregnant women, mothers, and families with young children, by giving them help and instructions in relevant situations.

Keywords: eHealth, mHealth, Chatbot, Artificial Intelligence, Machine Learning, Natural Language Processing.

PAPER ID: ICIRTCS-22-057

A Comprehensive study on Cloud Computing: Models, Security, Privacy Issues and Threats

[1]Muthakshi.S, [2]Mahesh.K,
[1,2]Department of computer Applications,
Alagappa University, Karaikudi, India

Abstract - Cloud computing has risen dramatically in recent years as a result of resource scalability, and it now appears to be a fast-growing part of the IT industry. It offers a variety of benefits, including ease of use, near-infinite storage, minimal maintenance, easy utilization, backup and recovery, continuous availability, quality of service, automated software integration, scalability, flexibility, and reliability, easy access to information, elasticity, quick deployment, and a lower barrier to entry. Performance and resource management in cloud computing is tough due to the rising demand for services by users in a multitenant environment. Furthermore, because different businesses use different cloud services, data privacy is a major risk in the cloud. Security is the most severe concern with cloud computing, and it is a major impediment to people embracing cloud computing systems. This study looks at the entire design of cloud computing architecture, including deployment strategies, service models, cloud components, and cloud security. There are many Cybersecurity dangers that have led to the creation of the nature of cloud computing administration conveyance techniques are explained greater in this study.

Keywords: Cloud attributes, Cloud Models, Privacy issues, Security, Threats.

PAPER ID: ICIRTCS-22-058

Credit card fraud detection using predictive models

[1]K. Snehitha Reddy, [2]G Vedha sri, [3]D Siddhu Srinivas Raju, [4]A Sandeep, [5]M Vishnuvardhan Reddy
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
[1,2,3,4,5] Department of Computer Science and Engineering, St. Martins Engineering College
Secunderabad, Telangana, India

Abstract - Fraud is one of the major moral issues in the credit card industry. Credit card fraud detection is presently the most frequently occurring problem in the present world. This is due to rise both online transactions and e-commerce platforms. The fundamental points are, right off the bat, to distinguish the distinctive kinds of Credit card smart, and, furthermore, to survey elective strategies that have been utilized in fraud recognition. It is critical that credit card companies are able to recognize fraudulent credit card transactions so that customers are not charged for items that they did not purchase. Crédit card fraud generally happens when the card was stolen for any of the unauthorized purposes or even when the fraudster uses the credit card information for his use.

To detect the fraudulent activities the credit card fraud detection system was introduced. This project aims to focus on machine learning algorithms. The algorithms used are Random Forest algorithm, Local Outlier Factor, K nearest neighbor means and decision tree. The datasets contain exchanges made by charge cards in September 2013 by European cardholders. This dataset presents exchanges that happened in two days, where we have 492 frauds out of 284,807 exchanges. The results of the two algorithms are based on accuracy, precision, recall and F1 score. The algorithms are compared and the algorithm that has the greatest accuracy, precision, recall and F1 score is considered as the best algorithm that is used to detect the fraud.

Keywords: credit card, fraud detection, predictive models

PAPER ID: ICIRTCS-22-059

Perceptual Organization and Background Recognition Technique for Segmenting the Outdoor Scene Images

[1]N. Balaraman, [2]Mr. J. Venkata Rangan
[1,2]Assistant Professor
Department of Computer Science and Engineering, St. Martins Engineering College
Secunderabad, Telangana, India

Abstract - A novel outdoor scene image segmentation algorithm based on background recognition and perceptual organization is used to recognize the background objects such as the sky, the ground, and vegetation based on the color and texture information. For the structurally challenging objects, which usually consist of multiple constituent parts, a developed perceptual organization model that can capture the non-accidental structural relationships among the constituent parts of the structured objects and, hence, group them together accordingly without depending on a priori knowledge of the specific objects. The experimental results shows that the proposed method outperformed two state-of-the-art image segmentation approaches on two challenging outdoor databases (Gould data set and Berkeley segmentation data set) and achieved accurate segmentation quality on various outdoor natural scene environments.

Keywords: Boundary energy, image segmentation, perceptual organization.

PAPER ID: ICIRTCS-22-060

Enhanced Quality and Resource Management in OTT Platform – A Survey

[1]Mrs. N. Menaka, [2]Dr. Jasmine Samraj
[1]Research Scholar (Ph.D.), [2]Research Supervisor,
[1,2]PG and Research Department of Computer Science,
Quaid-E-Millath Government College for Women (Autonomous), Chennai.

Abstract- Through this (Covid-19) Pandemic Lockdown, the growth rate of OTT platform subscribers/viewers has reached an all-time high, since this growth is based on major technology breakthroughs that are assisting OTT providers in bringing high-quality content to home screens over the Internet. In OTT detecting the user preference and recommending is a challenging task. Advertising/Marketing has become a part of life as every brand chooses a right place to use their products advertisement. As there are several streaming videos choosing a correct platform and playing the brand ads are more challenging task. For more accurate recommendation, to find the user preference and optimizing the most viewed video some techniques are used. Some of the previously used techniques Quality of Experience (QoE), Collaborative QoE management, PLS – SEA (Partial less squares structural equation Approach) analysis is discussed in the survey. This survey paper is a novel approach to understand the user profiles and preferences from an advertising perspective.

Keywords: OTT, advertisement, marketing, Recommendation, Collaborative QoE Management, PLS-SEA analysis.

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Enhanced Quality of Learning (QOL) Via Secured Recommendation and Sentimental Analysis in Online Classes

[1]Grace Inbavathi. M, [2]Dr. Ananthi Sheshasaayee,
[1]Ph.D. Research Scholar, [2]Associate Professor & Head,
PG & Research Department of Computer Science, Quaid-E-Millath Government College for Women (Autonomous), Chennai–600002, Tamil Nadu, India

Abstract - Nowadays online classes have become the main source of students learning. In order to achieve this, students' interaction is required. Basically, Cloud can provide more learning and interaction among the students and teachers (faculty). If teachers are good students are creating problem, if students are good and teachers are not so. In order to sort out all these things, complete monitoring is required. In case if a proper recommendation with guidance is provided then it will be easy for student to cope up and will be easy for the teachers to validate the students' progress. The proposed system provides a deep learning Recommender System knowing the capability of the students. Here, the quality of learning is enhanced by predicting the student/teacher's emotion via sentimental analysis. Recommender system is best for this. If the researchers proceed accordingly, novelty will be good, and also useful to create recommendation algorithm. A classification algorithm is set, to classify the students' progress, stress level, and teacher's activities. The system also uses LSTM (Long Short-Term Memory Algorithm) to predict the students' activities and prefer recommendation according to their progress. This system helps student for developing their career and notice the teachers' activities for controlling the stress level of the students. By this way the students' creativity will increase and stress will be reduced. The system further provides more security with proper experimental analysis.

Keywords: Recommender System (RS), Sentimental Analysis (SA), LSTM (Long Short-Term Memory Algorithm), Security.

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PAPER ID: ICIRTCS-22-062

Multisecret Sharing for Industrial Big data using Block Chain System

[1]Kothlapuram Lakshmi, [2]Pilli Shireesha, [3]Mr. J. Manikandan
[1, 2] UG Scholar, [3]Assistant Professor
Department of Computer Science and Engineering,
St. Martin's Engineering College, Secunderabad

Abstract - Blockchain is an emerging technology that promises many exciting applications in various fields, including financial, medical, energy, and logistics management. However, there are still some limitations in the existing blockchain framework that prevents its widespread adoption in the commercial world. One important limitation is the storage requirement, wherein each blockchain node has to store a copy of the distributed ledger. Thus, as the number of transactions increases, this storage requirement grows quadratically, eventually limiting the scalability of a blockchain system. Moreover, the public ledger in a blockchain framework allows anyone in the network to audit the transaction, which may not be favourable in some privacy-sensitive applications. In this project, a secret-sharing scheme is proposed to reduce the size of the blockchain transactions. Each transaction block is divided into t parts, and the size of each part is 1/t size of transaction block. We use the secret-sharing mechanism to share t parts into n shares. Hence, each node stores not one transaction but one share in the blockchain system. The proposed scheme can eventually reduce the storage cost of a blockchain transaction by 1/t without introducing an additional recovery communication cost. Meanwhile, the proposed scheme was more efficient and secure compared to other state-of-the-art schemes that aim to reduce blockchain storage for industrial big data.

Keywords: Multisecret Sharing, Industrial Big data, Block chain

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PAPER ID: ICIRTCS-22-063

Women Safety in Indian Cities using Machine Learning based on Sentimental Analysis on Tweets

[1]Sowmya Shaga, [2]Raveena Ailapuram, [3]Srilatha Pendota, [4]Dr.M. Narayanan
[1,2,3] UG Scholar, [4]Professor,
Department of Computer Science and Engineering
St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract - Women and girls have been experiencing a lot of violence and harassment in public places in various cities starting from stalking and leading to Sexual Harassment or Sexual assault. This paper basically focuses on the role of social media in promoting the safety of women in Indian cities with special reference to the role of social media websites and applications including Twitter platform Facebook and Instagram. On the twitter, users will share their opinions and perspective in the tweets section. From the tweet, the sentiment behind the message is extracted. This extraction is done by using Sentimental analysis procedure. For the twitter data that includes millions of tweet and messages every day, machine learning algorithm helps to perform analysis. SDC algorithm, linear algebraic are some of the algorithms which are effective in analyzing the large data and convert into meaningful datasets.

Keywords: Women, Safety, Sexual Harassment, Sentimental Analysis.

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PAPER ID: ICIRTCS-22-064

An Improved Version of Playfair Cipher using 8x8 Matrix

Dr. S. Sathappan
Professor, Department of Computer Science and Engineering,
St. Martin's Engineering College, Secunderabad, India.

Abstract - This paper deals with the modification of Playfair cipher. The original 5x5 matrix Playfair cipher is modified to 8x8 matrix Playfair cipher in which digits 0 to 9, special characters such as " # " and " * " and small characters are included. By using, 5x5 matrix the no. of cells available were only 25 whereas the English alphabet contains 26 letters. To The addition of these symbols in the matrix creates one-to-one correspondence between the plaintext and the cipher text, which makes the encryption and decryption easy and unambiguous. The text is more unreadable when these symbols appear in the resulting cipher text. The proposed method can be used to encrypt and decrypt the messages of any natural language by taking a proper size matrix.

Keywords: Playfair cipher, cryptography, plain text, cipher text, encryption algorithm, decryption algorithm, symmetric key, asymmetric key

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PAPER ID: ICIRTCS-22-065

Bridge Between Investors and Farmers

[1]Kotnal Nikhil, [2]Maddi Naveen Goud, [3]Pothraju Rakesh, [4]N.Nikhil Sagar, [5]Mr.A.Mruthyunjayam
[1,2,3,4]UG Scholar, [5]Associate Professor
Department of Computer Science and Engineering, St. Martin's Engineering College, Secunderabad

Abstract - Website application and services make things simpler fulfilling our daily needs for information, communication, entertainment or leisure. Website applications have bought a new revolution. This provides one such website application, which can lead to a healthy life. It is a website application built keeping the farmers in mind and also a common man who wants to invest money in agriculture. It keeps a farmer updated with all the information related to crop, shareholder's details, financial sector etc. It provides detailed information about the farmer, the landlord, the shareholders. Government of India is spending millions of moneys to make improvement in agricultural but the hindrance is the literacy of farmers internet being a common thing now, with this application we aim it friendly for farmers.

***Keywords*:** Bridge, Investors, Farmers

PAPER ID: ICIRTCS-22-066

Fake Product Review Monitoring and Removal for Genuine Online Reviews

[1]Jundu Shiva Kumar, [2]Thadipathri Naveen, [3]K. Veeresh, [4]Mr. B. Madhava Rao
[1,2,3] UG Scholar, [4]Assistant Professor
Department of CSE, St. Martin's Engineering College, Hyderabad, Telangana, India.

Abstract: In today's world reviews on online websites play a vital role in sales of the product because people try to get all the pros and cons of any product before they buy it as there are many different options for the same product as there can be different manufactures for the same type of product or there might be difference in sellers that can provide the product or there might be some difference in the procedure that is taken while buying the product so the reviews are directly related to the sales of the product and thus it necessary for the online websites to spot fake reviews as it's their own reputation that comes into consideration as well, so a Fake Review Detection is used to spot any fraudulent going on because it's not possible for them to verify every product and sale manually so a program comes into the picture that tries to detect any pattern in the reviews given by the customers.

***Keywords*:** Fake Product, Monitoring, Online Review

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Monitoring Covid-19 Social Distancing using YOLO V3 and DEEPSORT Techniques

[1]Bandam Veena, [2]Banoth Umesh Kumar, [3]Eittadi Praneel Reddy, [4]Sasani Datta
[1,2,3,4] UG Scholar,
Department of CSE, St. Martin's Engineering College, Hyderabad, Telangana, India

Abstract - The rampant coronavirus disease 2019 (COVID-19) has brought global crisis with its deadly spread to more than 180 countries, and about 3,519,901 confirmed cases along with 247,630 deaths globally as on May 4, 2020. The absence of any active therapeutic agents and the lack of immunity against COVID19 increases the vulnerability of the population. Since there are no vaccines available, social distancing is the only feasible approach to fight against this pandemic. Motivated by this notion, this article proposes a deep learning based framework for automating the task of monitoring social distancing using surveillance video. The proposed framework utilizes the YOLO v3 object detection model to segregate humans from the background and Deepsort approach to track the identified people with the help of bounding boxes and assigned IDs. The results of the YOLO v3 model are further compared with other popular state-of-the-art models, e.g. faster region-based CNN (convolution neural network) and single shot detector (SSD) in terms of mean average precision (mAP), frames per second (FPS) and loss values defined by object classification and localization. Later, the pairwise vectorized L2 norm is computed based on the three-dimensional feature space obtained by using the centroid coordinates and dimensions of the bounding box. The violation index term is proposed to quantize the non-adoption of social distancing protocol. From the experimental analysis, it is observed that the YOLO v3 with Deep sort tracking scheme displayed best results with balanced mAP and FPS score to monitor the social distancing in real-time.

***Keywords*:** Cross-site Scripting (XSS), XSS attacks detection and prevention, social networking services.

PAPER ID: ICIRTCS-22-068

Diabetic Retinopathy Detection from Eye Fundus Images using CNN

[1]Alluri Vaishnavi, [2]Mary Teresina Richard, [3]K Shushanth Reddy, [4]N Shiva Prasad Yadav
[1,2,3,4] UG Scholar,
Department of CSE, St. Martin's Engineering College, Hyderabad, Telangana, India.

Abstract - Automated Diabetic Retinopathy (DR) detection, screening and diagnosis are critical to save vision loss of patients and assist the ophthalmologists in mass screening. DR screening aims at early treatment of the disease by detecting it before the stage progresses. Present DR analysis systems use digital fundus images for diagnosis reducing the high cost of manual computation. Researchers are continuously persisting for automated screening systems which can reduce the subjective interpretation and screening burdens for ophthalmologists. This paper proposes different Convolutional Neural Network (CNN) architectures with parameter tuning for DR classification. The proposed approach overcomes the class imbalance problem by fine tuning the network parameters. Different filter size variations are considered in the design and their altering response are analysed at the classification output layer on a benchmark retinal image dataset. CNN model proposed in this paper provides an accuracy of 87.5% with cross entropy loss of 0.6370 with processing time of 1 minute and 23 seconds. Maximum accuracy improvement of 13% is achieved by the proposed approach over state-of-the-art methods demonstrating its pre-eminence in fundus image classification.

***Keywords*:** Diabetic Retinopathy, Automated DR Detection, Convolutional Neural Network, Class Imbalance Problem, Fine Tuning, Network Parameters.

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PAPER ID: ICIRTCS-22-069

A Factoid Dialogue System in Malayalam Language for Health Care Using Word Embedding and BERT

[1]Liji S K, [2]Muhamed Ilyas P
S S College, Malappuram,Kerala

Abstract – Dialogue systems are one of the major applications of Artificial Intelligence and Natural Language Processing. Which is used to automatically deliver relevant answers for user's queries. Here we proposed a Malayalam factoid Dialogue system on health domain. The system will answer users' queries related to their health problems. The proposed system uses a Transformer model Bidirectional Encoder Representation from Transformers (BERT) for the implementation of the dialogue system. In this study we used a pre-trained BERT model and fine-tuned it for our dialogue system. Here we used our own annotated SQUAD form Malayalam health data set for fine tuning of the model. The system achieved an F1 score of 85 %.

***Keywords*:** Dialogue System, Bidirectional Encoder Representation from Transformers (BERT), Word Embedding, Question Answering, Information Retrieval.

PAPER ID: ICIRTCS-22-070

Deep-COVID: Predicting COVID-19 from chest X-ray images using Deep transfer learning

[1]Kalidindi Athyuha, [2]Varsha Kadari, [3]G. Manoj Kumar, [4]N. Rushikesh
[1,2,3,4] UG Scholar,
Department of Computer Science and Engineering
St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract - The COVID-19 pandemic is causing a major outbreak in more than 150 countries around the world, having a severe impact on the health and life of many people globally. One of the crucial steps in fighting COVID-19 is the ability to detect the infected patients early enough, and put them under special care. Detecting this disease from radiography and radiology images is perhaps one of the fastest ways to diagnose the patients. Some of the early studies showed specific abnormalities in the chest radiograms of patients infected with COVID-19. We first prepare a dataset of 5000 Chest Xrays from the publicly available datasets. Images exhibiting COVID-19 disease presence were identified by board-certified radiologist. Transfer learning on a subset of 2000 radiograms was used to train four popular convolutional neural networks, including ResNet18, ResNet50, SqueezeNet, and DenseNet-121, to identify COVID-19 disease in the analysed chest X-ray images. We evaluated these models on the remaining 3000 images, and most of these networks achieved a sensitivity rate of 98% (± 3%), while having a specificity rate of around 90%. Besides sensitivity and specificity rates, we also present the receiver operating characteristic (ROC) curve, precision-recall curve, average prediction, and confusion matrix of each model. We also used a technique to generate heatmaps of lung regions potentially infected by COVID-19 and show that the generated heatmaps contain most of the infected areas annotated by our board-certified radiologist. While the achieved performance is very encouraging, further analysis is required on a larger set of COVID19 images, to have a more reliable estimation of accuracy rates. The dataset, model implementations (in PyTorch), and evaluations, are all made publicly available for research community at https://github.com/shervinmin/DeepCovid.git

Keywords: Prediction, COVID-19, X-ray images, deep transfer learning

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PAPER ID: ICIRTCS-22-071

Drug Prediction for Diseases using Machine Learning

[1]Kanapuram Bhanu Prakash, [2]Jitti Sandeep, [3]Asutosh Kumar, [4]Mohammed Sohaib, [5]Mrs. P.Sabitha Reddy,
[1,2, 3, 4] UG Scholar, [5]Assistant Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract- In today's period, every person on earth relies on allopathic treatments and medicines. This project provides an application programming interface to recommend drugs to users suffering from a particular disease which would also be diagnosed by the framework through analyzing the user's symptoms by the means of machine learning algorithms. We utilize some insightful information here related to mining procedure to figure out most precise sickness that can be, when professional is accessible in the territory. Algorithms would be used on the disease that would result in recommending drugs to the user by taking into account various features in the given datasets. The experimental results can also be used in further research work and for healthcare tools.

Keywords: CSV file, Data-Pre-processing, Machine Learning, SVM, Logistic Regression, Drug.

PAPER ID: ICIRTCS-22-073

Predicting the Top-N Popular Videos via a Cross-Domain Hybrid Model

[1]Bharath Raj Lendalay, [2] Ashwini Samala, [3] Naikoti Sunil Kumar, [4]Dr.T. Saravanan, [5]Dr. M. Narayanan, [6]Dr. P. Santosh Kumar Patra
[1,2,3] UG Scholar, [4]Associate Professor, [5]Professor, [6]Professor & Principal
Department of Computer Science and Engineering
St. Martin's Engineering College, Dhulapally, Telangana, India

Abstract- Predicting the top-N popular videos and their future views for a large batch of newly uploaded videos is of great commercial value to online video services (OVSs). Although many attempts have been made on video popularity prediction, the existing models has a much lower performance in predicting the top-N popular videos than that of the entire video set. The reason for this phenomenon is that most videos in an OVS system are unpopular, so models preferentially learn the popularity trends of unpopular videos to improve their performance on the entire video set. However, in most cases, it is critical to predict the performance on the top-N popular videos which is the focus of this study. The challenge for the task are as follows. First, popular and unpopular videos may have similar early view patterns. Second, prediction models that are overly dependent on early view patterns limit the effects of other features. To address these challenges, we propose a novel multifactor differential influence (MFDI) prediction model based on multivariate linear regression (MLR). The model is designed to improve the discovery of popular videos and their popularity trends are learnt by enhancing the discriminative power of early patterns for different popularity trends and by optimizing the utilization of multi-source data. We evaluate the proposed model using real-world YouTube data, and extensive experiments have demonstrated the effectiveness of our model.

***Keywords*:** Prediction, Top-N Popular Videos, Cross-Domain Hybrid Model

PAPER ID: ICIRTCS-22-074

A Collaborative and Intelligent NIDS Architecture for SDN-based Cloud IoT Networks

[1]Talari Bhanu Teja, [2]Gadde Vamshi, [3] Eaga Ravinder Reddy, [4] Shambayagari Ganesh,[5]K. Krishna
[1, 2, 3,4] UG Scholar, [5]Assistant Professor
Department of Computer Science and Engineering,
St. Martins Engineering College, Secunderabad

Abstract - The explosive rise of intelligent devices with ubiquitous connectivity has dramatically increased Internet of Things (IoT) traffic in cloud environment and created potential attack surfaces for cyber-attacks. Traditional security approaches are insufficient and inefficient to address security threats in cloud-based IoT networks. In this vein, Software Defined Networking (SDN), Network Function Virtualization (NFV) and Machine Learning techniques introduce numerous advantages that can effectively resolve cybersecurity matters for cloud-based IoT systems. In this paper, we propose a collaborative and intelligent network-based intrusion detection system (NIDS) architecture, namely Search, for SDN-based cloud IoT networks. It composes a hierarchical layer of intelligent IDS nodes working in collaboration to detect anomalies and formulate policy into the SDN-based IoT gateway devices to stop malicious traffic as fast as possible. We first describe a new NIDS architecture with a comprehensive analysis in terms of the system resource and path selection optimizations. Next, the system process logic is extensively investigated through main consecutive procedures, including Initialization, Runtime Operation and Database Update. Afterwards, we conduct a detailed implementation of the proposed solution in an SDN-based environment and perform a variety of experiments. Finally, evaluation results of the Search architecture yield outstanding performance in anomaly detection and mitigation as well as bottleneck problem handling in the SDN-based cloud IoT networks in comparison with existing solutions.

***Keywords*:** Collaborative and Intelligent NIDS, SDN, Cloud IoT Networks

PAPER ID: ICIRTCS-22-075

An Efficient Framework for Construction Site Accident Analysis Using Natural Language Processing Techniques

[1]Palugulla Nikhitha, [2]Banda Sahithi, [3] Sarvigari Sanhith Reddy, [4] Motamarry Shashank,

[5]Dr. M. Narayanan

[1, 2, 3,4]UG Scholar [5]Professor and Head,

Department of Computer Science and Engineering,

St. Martins Engineering College, Secunderabad

Abstract - Workplace safety is a major concern in many countries. Among various industries, construction sector is identified as the most hazardous workplace. Construction accidents not only cause human sufferings but also result in huge financial loss. To prevent reoccurrence of similar accidents in the future and make scientific risk control plans, analysis of accidents is essential. In construction industry, fatality and catastrophe investigation summary reports are available for the past accidents. In this study, text mining and natural language process (NLP) techniques are applied to analyse the construction accident reports. To be more specific, five baseline models, support vector machine (SVM), linear regression (LR), K-nearest neighbour (KNN), decision tree (DT), Naive Bayes (NB) and an ensemble model are proposed to classify the causes of the accidents. Besides, Sequential Quadratic Programming (SQP) algorithm is utilized to optimize weight of each classifier involved in the ensemble model. Experiment results show that the optimized ensemble model outperforms rest models considered in this study in terms of average weighted F1 score. The result also shows that the proposed approach is more robust to cases of low support.

Keywords: CSV file, Term Frequency, Data-Pre-processing, Machine Learning, SVM, Decision Tree, Naïve Bayes, API.

PAPER ID: ICIRTCS-22-076

Brain Tumour Image Segmentation using Deep Networks

[1]Peddigari Sai Varshith, [2] Shrigire Naresh, [3] Syed Ehtesham Ahmed, [4]Thanneru Pranay, [5] Mrs. P. Swetha
[1, 2, 3,4] UG Scholar, [5]Associate Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract- Automated segmentation of brain tumour from multimodal MR images is pivotal for the analysis and monitoring of disease progression. As gliomas are malignant and heterogeneous, efficient and accurate segmentation techniques are used for the successful delineation of tumours into intra-tumoural classes. Deep learning algorithms outperform on tasks of semantic segmentation as opposed to the more conventional, context-based computer vision approaches. Extensively used for biomedical image segmentation, Convolutional Neural Networks have significantly improved the state-of-the-art accuracy on the task of brain tumour segmentation. In this paper, we propose an ensemble of two segmentation networks: a 3D CNN and a U-Net, in a significant yet straightforward combinative technique that results in better and accurate predictions. Both models were trained separately on the BraTS-19 challenge dataset and evaluated to yield segmentation maps which considerably differed from each other in terms of segmented tumour sub-regions and were ensembled variably to achieve the final prediction. The suggested ensemble achieved dice scores of 0.750, 0.906 and 0.846 for enhancing tumour, whole tumour, and tumour core, respectively, on the validation set, performing favourably in comparison to the state-of-the-art architectures currently available.

Keywords: Deep Learning, BraTS, Medical imaging, Segmentation, U-Net, CNN, ensemble.

PAPER ID: ICIRTCS-22-077

Machine Learning Technique for Detecting Anomalies in Bank Video Surveillance Systems

[1]Dr.K. Rajalakshmi, [2]Dr.L. Visalatchi
[1] Assistant Professor, [2] AssociateProfessor
[1]Department of Computer Science, [2] Dept.of.Information Technology
[1]Montfort College Bengaluru,Karanataka
[2]Dr.Umayal Ramanathan College for Women Karaikdi,Tamilnadu

Abstract- One of the most significant goals in video surveillance research and applications is the detection of unusual events. In order to improve public safety, surveillance cameras are increasingly being employed in public spaces such as streets, crossroads, banks, and shopping malls. Unusual incidents, such as traffic accidents, crimes, or unlawful activity, are one of the most important tasks in video monitoring. In comparison to typical activities, abnormal events occur infrequently. As a result, anomaly detection can be thought of as a high-level visual knowledge that separates abnormal patterns from regular ones. Once an anomaly has been identified, classification techniques can be used to categorise it into one of the specialised activities. The purpose of this paper is to provide an overview of anomaly detection in the context of banking operations applications. Banking operations encompass a wide range of daily, weekly, monthly, and ad hoc activities and transactions involving or influencing a wide range of stakeholders, including staff, customers, debtors, and external entities. Anomaly detection based on time series is used to detect people in unwelcomed time. To recognise normal and abnormal occurrences, a machine learning-based anomaly detection technique is used in this work. In banking, a machine learning technique is utilised to detect anomalies. In this research, two machine learning algorithms are employed to identify movement detection in a picture as well as to locate the face detection procedure. It will recognise the person's image and send the facial images to the mail.

Keywords: Anomaly detection, Machine learning technique, abnormal events, image/face detection.

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PAPER ID: ICIRTCS-22-078

Malware Detection Techniques using Visualization and Feature Extraction

[1]M.V. Vamsi Chaitanya Varma, [2]Vishal varma, [3]S. Sai Charan, [4]Y. Shelisha, [5]Dr. K Srinivas
[1, 2, 3,4] UG Scholar, [5] Associate Professor
Department of Computer Science and Engineering, St. Martins Engineering College, Secunderabad

Abstract - Malware is today one of the biggest security threats to the Internet. Malware is any malicious software with the intent to perform malevolent activities on a targeted system. Viruses, worms, trojans, backdoors and adware are but a few examples that fall under the umbrella of malware. The purpose of this research is to investigate techniques that are used in order to effectively perform Malware analysis and detection on enterprise systems to reduce the damage of malware attacks on the operation of organizations. Malware analysis experiments were carried out using the two techniques of malware analysis which are Dynamic and Static analysis on two different malware samples. A Portable executable and Microsoft word document files were the two samples that were analyzed in an isolated sandbox lab environment. The results from the experiments disclosed the behavior, encryption techniques, and other techniques employed by the malware samples. The results showed that Dynamic analysis is more effective than Static analysis. The study proposes the use of both techniques for a comprehensive malware analysis and detection.

Keywords: CSV Malware Visualization, Malware classification, Image texture.

PAPER ID: ICIRTCS-22-079

Combining data owner-side and cloud-side access Control for encrypted cloud storage

[1]Rudarkshi Venkatesh, [2]Chagantipati Sai kiran, [3]Kummari Sampath Kumar, [4]Thaviti Uday Sai, [5]Mr. N. Balaraman
[1,2,3,4] UG Scholar,[5]Assistant Professor
[1,2,3,4,5] Department of Computer Science and Engineering,
St. Martin's Engineering College Secunderabad, Telangana, India

Abstract - People endorse the great power of cloud computing, but cannot fully trust the cloud providers to host privacy-sensitive data, due to the absence of user-to-cloud controllability. To ensure confidentiality, data owners outsource encrypted data instead of plaintexts. To share the encrypted files with other users, Ciphertext-Policy Attribute-based Encryption (CP-ABE) can be utilized to conduct fine-grained and owner-centric access control. But this does not sufficiently become secure against other attacks. Many previous schemes did not grant the cloud provides the capability to verify whether a downloader can decrypt. Therefore, these files should be available to everyone accessible to the cloud storage. A malicious attacker can download thousands of files to launch Economic Denial of Sustainability (EDoS) attacks, which will largely consume the cloud resource. The payer of the cloud service bears the expense. Besides, the cloud provider serves both as the accountant and the payee of resource consumption fee, lacking the transparency to data owners. These concerns should be resolved in real-world public cloud storage. In this paper, we propose a solution to secure encrypted cloud storages from EDOS attacks and provide resource consumption accountability. It uses CP-ABE schemes in a black-box manner and complies with arbitrary access policy of CP-ABE. We present two protocols for different settings, followed by performance and security analysis.

Keywords: Ciphertext-Policy Attribute-based Encryption (CP-ABE), access control, public cloud storage, accounting, privacy-preserving

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PAPER ID: ICIRTCS-22-080

An Overview of Slotted MSPA for 5G Applications

[1]Nagaraju P, [2*]Imran Khan, [3]H V Kumaraswamy, [4]Lokeshkumar M, [5]K R Sudhindra
[1,2,5]Associate Professor, [3]Professor, [4]PG Scholar
[1,3] Department of Electronics & Telecommunication Engineering, RVCE, Bengaluru-560074, India
[2]Department of Electronics & Communication Engineering, Government Engineering College, Ramanagara- 562159, India
[4,5] Department of Electronics & Communication Engineering, BMSCE, Bengaluru-560019, India.

Abstract - In recent decades, research on antenna has advanced significantly. Microstrip patch antennas, in contrast to traditional type of antenna, are essentially considered in the advancement of the latest communication mechanisms becausethey offer the advantages of being low profile, as well as inexpensive manufacturing procedures. The conventional patch antennas were limited by its narrow bandwidth, single band operation and a dimension of half a wavelength. Due to the advent of new standards and compact wireless devices in recent times, there has been a need to reduce size of patch antennaswhile also achieving multiple operating bands and expanding bandwidth. This study discusses some principal techniques forachieving the aforementioned qualities that have been reported in the literature, these techniques include loading slots, adding parasitic elements, using patches with specific shapes like spiral or bow-tie, utilizing stacked patch configuration, use of metamaterials, and fractal-based geometry.

Keywords: Slots, Parasitic Elements, Stacked Patch, Fractal, Metamaterials.

PAPER ID: ICIRTCS-22-081

Secure File Storage in Cloud using Cryptography for College Voting System

[1]Jagana Tulasi Kumari, [2]Taragaturi Priyanka, [3]Jungem Nandini, [4]Charan Godke, [5]Chaitanya P
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
[1,2,3,4,5] Department of Computer Science and Engineering, St. Martins Engineering College
Secunderabad, Telangana, India

Abstract - This project manages files holding the votes of students in a college election, in an encrypted format and de-crypted for secured access. This project involves Principal, Departments, Users, where the Users vote for their desired Candidate. The Departments encrypt the votes in a file and transfers to the College Principal. Principal collect, download, and decrypt the files from various departments of the College. Result of the Election is released in the R studio Tool by Graphical display. The aim is to securely store information into the cloud by splitting data into several chunks and storing parts of it on cloud in a manner that preserves data confidentially, integrity and ensures availability.

Keywords: file storage, cloud, cryptography

PAPER ID: ICIRTCS-22-082

Tamil Lemmatization using Hybrid Approach

[1]M. Balamurugan, [2]S. Kannan
[1]Department of Computer Science, Sri Kaliswari College, India
[2]Department of Computer Applications, Madurai Kamaraj University, India

Abstract - Stemming and Lemmatization are the pre-processing tasks before to perform the Natural Language Processing tasks such as Information retrieval, Text classifications, Machine Translation, etc,. Stemming is the process of getting the stem word (root) from the inflectional words in which some stem words may not give exact meaning. But in the Lemmatization, Lemma should give the dictionary meaning which retrieves the lemma from the inflectional words. Since a lot of approaches are only available to process the stemming of the Tamil language. This is the first attempt to perform the lemmatization for Tamil language. Our hybrid approach, mixing of rule based and brute force approach which extract the lemma from the inflectional words. Semantic approach is the only way to perform the Natural Language Processing tasks with actual output. Here our proposed Lemmatization approach tested on entam corpus which gives the good performance and is also capable of handling any kind of inflectional words in the Tamil language.

Keywords: Stemming, Lemmatization, Morphology.

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PAPER ID: ICIRTCS-22-083

An Error Analysis of English to Tamil and Tamil to English Machine Translation produced by Google and Microsoft Translators

[1]M. Balamurugan, [2]S. Kannan
[1]Department of Computer Science, Sri Kaliswari College, India
[2]Department of Computer Applications, Madurai Kamaraj University, India

Abstract - Machine translation is the art of communication between Human and Machine. Google and Microsoft are the popular translators which are available for text, speech translation. Both are using the neural network models for machine translation. Among most translators, google translator is widely used by more than 100 billion users for machine translation because of its brand value and free availability. Google and Microsoft translators give easy and accurate access. These translators are facing some common errors also. Translation errors define the quality of machine translation. Here discussion of common errors occurs in English to Tamil and Tamil to English machine translation of both machine translators and some of individual translator errors occur in translation itself.

***Keywords*:** Google Translator, Microsoft Translator, Machine Translation.

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PAPER ID: ICIRTCS-22-084

Review on Smart Solar Grass Mower using Microcontroller

[1]Ratan Priya Mall, [2]Anshuman Singh, [3]Md Sherajuddin Ansari, [4]Irshad Ali, [5]Ms Preeti Dhiman
[1,2,3,4] UG Scholar, [5] Assistant Professor,
Electrical Engineering
Galgotia's College of Engineering &Technology, Greater Noida, India

Abstract - In This paper provides an overview of numerous research initiatives undertaken in this subject over time to emphasize the many intricacies and technical expertise contained inside the Automated Solar Grass Cutter. In today's society, automation is a critical component of the innovation process. At the moment, manually operated lawn mowers are the most widely used for cutting the grass on the lawn. As a result, the environment is polluted and energy is lost. The previous grass cutters must be replaced with an automated lawn cutter with a system that can guide and identify obstacles and is powered by a rechargeable battery. A solar panel will be installed on the robot's roof to cope with the issue of excessive power use. In this work, we attempt to analyses many daily-use robots that use a variety of technologies and are capable of doing tasks such as cutting the grass in the yard while utilizing infrared sensors, ultrasonic sensors, and other sensors to identify obstacles.

***Keywords*:** Grass Mover, Automatic Systems, Low Cost, Low Power, Arduino.

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PAPER ID: ICIRTCS-22-085

Energy Saving and Intrusion Prevention System in Mobile Ad Hoc Networks

S. Suganthi Devi
Lecturer, Department of Computer Engineering, Srinivasa Subbaraya Polytechnic College, Puthur, Sirkali (T.K) Mayiladuthurai District, Tamil Nadu, India.
[Deputed from Department of Computer Science and Engineering, Annamalai University]

Abstract - A huge number of powered mobile nodes are used in the Mobile Ad Hoc network (MANET), but always the network has been suffered from limited power resource problems due to the mobility nature of nodes. MANET is mainly dependent on individual security problems from each mobile node so centralized security control is difficult to implement in it. The nature of ad hoc networks makes the node vulnerable to various forms of attacks, so these kinds of systems need an essential protection layer. An artificial intelligence-based enhanced leach (E-LEACH) routing protocol is proposed to focus on the least power utilization and construct a hybrid neurosoft computing technique for this security dilemma. The proposed solution is efficient in resolving the power resource problem coupled with trust management in MANETs. This design has been found as the best suitable solution to the route optimization problem using energy-efficient neuro genetic leach (EENG LEACH) protocol and its framework. Various performance metrics such as packet delivery ratio (PDR), bit error rate (BER), congestion and energy consumption have been assessed to validate the proposed method.

***Keywords*:** MANETs, IDS LEACH, EENG LEACH

PAPER ID: ICIRTCS-22-086

High payload capacity-based Video Steganography using Grasshopper algorithm

[1]Sahil Gupta, [2]Naresh Kumar Garg

[1] Maharaja Ranjit Singh Punjab Technical University, Electronics and Communication Engineering, Bathinda, Punjab.

[2] Maharaja Ranjit Singh Punjab Technical University, Computer Science and Engineering, Bathinda, Punjab.

Abstract - With the expansion of technology, the possibility of purloining multimedia information is also growing in daily life. This paper provides a security algorithm using the Grasshopper optimization algorithms (GOA). The GOA is used to find the optimal value of the scaling factor to enhance the imperceptibility, whereas data hiding using the SVD approach enhances the robustness. The simulation is carried out on Matlab and various performance metrics i.e mean square error (MSE), peak signal to noise ratio (PSNR), and structural similarity index (SSIM) were calculated. The selection of the optimal scaling factor shows that the proposed algorithm has achieved better imperceptibility along with large embedding capacity when compared with other state of art methods. The value of the correlation coefficient (CC) is near to one which shows that the proposed algorithm is also robust against the image processing attacks.

***Keywords*:** SVD, Steganography, Grasshopper Optimization, Peak Signal to Noise Ratio.

PAPER ID: ICIRTCS-22-087

Accurate Tracking of Patient E-Health Records through Enhanced Text Mining Technique

[1] K. Manikandan, [2]Ramalingam Sugumar,
[1] Ph.D Research Scholar, [2]Professor & Head,
Department of Computer Science, Christhu Raj College, Panjapur, Trichy, Tamil Nadu.

Abstract - The detection of patients and the evolution of Breast Cancer (BC) issues, particularly in Electronic Health Documents (EHDs), have gradually recognized information on key methods that can be used for medical science and quality control. The knowledge provided in the physician's open text records is not available under current coding methods. The study suggested that Text Mining (TM) could be used as a possible opposition. EHD key terms were included in the TM method that also explored the context of restriction phrases. The word analysis method's validity was tested via directly verifying the EHDs of 100 randomly selected patients suspected of having BC for diagnosis and manifestation and comparing results to the TM method's results. The method of message analysis has a reactivity of 96.4 percent and a generality of 93.3 percent in the detection and identification of BCs after analysis 100 to health information. The method had a high sensitivity (80%-82%) and high precision80%-82%) for detecting potentially life-threatening sensitivity (97%-97%). Consequently, the report describes the use of Natural Language Processing (NLP) and message analysis to extract useful information from unstructured medical data requests. For two-level segmentation of questions, the computer automatically identifies important words, clinical terminology, topics, and attitudes, and using unstructured analytical models. The results of the NLP were studied using a graphical analysis platform and revealed some unclear findings, focusing on the benefits it could bring to influence product strategy.

***Keywords*:** Text mining method; medical keywords; NPL; visualization techniques; e-health documents.

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PAPER ID: ICIRTCS-22-088

Era of Green Cloud Computing

B. Pushpa,
Department of Computer and Information Science,
Annamalai University

Abstract - It is evident that Cloud Computing has been a substantial model used in developing on-demand network enabled for different shared computer components that may be configurable and convenient in nature. It is capable of creating new hazards at the global level that assists in studying and practicing of designing, manufacturing, using and disposing computing resources with minimal environmental damage. This technology has a wide range of request authorities because it provides adaptability, is reliable and dependable, and provides from top to bottom presentation at a reasonable price. The technology has capability to perform forecasts on defensive and social and security benefits. The amount of carbon emissions and electronic wastes are reduced dure to the improvising techniques that enhanced the ability to improve efficiency of the energy. This also makes possibilities for converting cloud computing to green computing technologies on the basis of these typographies. In this study, various major breakthroughs in green computing were examined with a brief overview on the cloud computing methods and the impact of various advancements that assists in handling different environmental issues of green computing. This study will pursue to deliver upcoming trends in green cloud computing, green information and communication technology, environmental preservation, and sustainability are all terms that come to mind when thinking about green cloud computing.

***Keywords*:** Pattern Recognition, AI, ML, data, traditional programming. Green cloud computing, Global hazards, Social and Security benefits, Environmental issues, Green Information and Communication.

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PAPER ID: ICIRTCS-22-089

An empirical study on investment intentions towards cryptocurrency by Gen Z individuals

[1]Dr. Garima Joshi, [2]Ms. Deeksha Joshi, [3]Ms. Shagufa Ali, [4] Mr. Devesh Chand, [5]Mr. Ankit Aggarwal
[1]DNS College of Engineering and Technology, Amorha, Uttar Pradesh, India
[2,3,4,5]Graphic Era Hill University Haldwani Campus
Uttarakhand, India

Abstract - This empirical study uses the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to ascertain the reasons for Generation Z individuals in India's behavioural intents to invest in cryptocurrency. The study constructs were measured through establishes inventories. Data was collected using a Google form from 276 students. The theory model was tested using a structural modelling approach, and it was discovered that perceived usefulness has highest impact on BI, but price value has a negative impact.

Keywords: Generation Z, Cryptocurrency, investment intentions, Perceived usefulness, Trust, Hedonic Motivation

PAPER ID: ICIRTCS-22-091

Strategic Prototype for Natural Habitat Management and Preparedness Using Machine Learning and Image Processing Techniques

[1]Asha.K, [2]Krishnan.R
[1]Assistant Professor, Department of Advanced Computing, School of St. Joseph's Institute of Information Technology, St. Joseph's College (Autonomous), Bangalore
[2]Associate Professor, Department of Computer Science and Applications, St. Francis College, Bangalore

Abstract - India is home for around 27,000 wild elephants and another 2,500 in captivity. Nearly two-thirds of the Asian elephant population lives close to human-dominated landscapes. As per the sections of wildlife protection act, several suspects are being interrogated and no stone unturned to ensure the maximum punishment to the offenders. The human population propelled by agricultural and industrial growth has led to the conversion of the forest lands into human settlements. There has been severe man-elephant conflict resulting as elephant populations are diminishing at an alarming rate. In this paper, the main focus is on wildlife monitoring and preparedness through two approaches. The development of TinyML systems, through the combination of sensor technologies and ML techniques together tackles the challenges found in effective monitoring and control of elephants. ML models could fix on to small little devices to figure out if the elephants were moving into a high-risk area and send real-time notifications to park rangers to keep them safe. The park rangers could react immediately and to make sure that the elephants go away from that danger zone. This prototype proposes intensity-based elephant detection and counting with an accuracy of 97%.

***Keywords*:** TinyML framework, IOT, Artificial Intelligence, Machine Learning, Deep learning, Effective monitoring and control, Animal detection.

PAPER ID: ICIRTCS-22-092

A Domain Analysis Method Approach to Refactoring and Reuse a Software System

Dr. S. Malathi
Lecturer in Computer Engineering (Deputed from Annamalai University)
Srinivasa Subbaraya Govt Polytechnic College-Puttur.

Abstract - Refactoring is the process of changing a software system in such a way that it does not alter the external behavior of the code yet it improves the internal structure. It makes code cleaner, clearer, simpler or in other words, clean up the code. It also improves code quality, reliability and maintainability through software lifecycle. Refactoring has become renowned concept in several major software engineering conferences. It is a top-level menu in many popular Integrated Development Environment (IDE). Researches on refactoring technique has improved now a day. Beyond that, this particular technique is used to improve different functions of application software. It mainly speeds up the function and helps to get the output much faster. In this proposed work Domain Analysis method is created used for refactoring approach based on a chemical reaction optimization meta heuristic approach to find the suitable refactoring for reuse a software system.

Keywords: Refactoring, Restructuring, Reuse, Domain Analysis.

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PAPER ID: ICIRTCS-22-093

An Enhanced Data Access Control and Privacy Preserving Mechanism in Cloud Computing Using New Encryption and Decryption Algorithm

[1]Srinivasan Thiruvengadam, [2]Ramalingam Sugumar,
[1] Ph.D Research Scholar, Department of Computer Science,
[2] Professor & Head, Department of Computer Science,
Christhu Raj College, Panjapur, Trichy, Tamilnadu.

Abstract - Cloud computing is the changing pattern that delivers the services in which cloud clients can remotely save their data into the cloud and access the on-demand high-quality applications. Security is an essential aspect in cloud computing for guaranteeing clients data is placed on the secure mode in the cloud. The main problems in cloud computing are security for the information stored in the cloud is not directly maintained by the user. While sending the end users data through the internet some unauthorized user can change the data\access it. To overcome the security problems various cryptography algorithm is proposed. Through cryptographic encryption approaches, one can avoid a third party from understanding transmitted raw data over unsecured channel during transmission. This paper offerings the proposed cryptographic new encryption and decryption algorithm used to address this issue.

Keywords: Cloud, Security, encryption, decryption, cryptographic, algorithm, remotely.

PAPER ID: ICIRTCS-22-096

Data Security with DES, RSA, AES, and LSB Steganography

[1]Dr Govinda Rajulu.G, [2]Dr. Kalvikkarasi.S, [3]Dr. Santosh Kumar Patra
[1]Professor in CSE Department, St. Martin's Engineering College
[2] Professor in ECE Department, Podhagai College of Engineering & Technology
[3] Principal & Professor in CSE Department, St. Martin's Engineering College

Abstract- Data Security is the foremost concern in diverse type of applications from Data storing in clouds to sending messages using chat. In order to provide security for data in cloud there many categories of techniques which are already proposed like AES, DES and RSA but in existing method most of the time only single type of encryption was used either AES or DES, or RSA based on us requirement but in this system main problem is each encryption is done using encryption keys if these keys are exposed in any case entire methods are used but three methods will be used. While End user uploads data will split into three parts. First part will be encrypted using AES, second part will be encrypted using DES, third part will be encrypted using RSA and these three encrypted files will be stored in cloud and keys used for AES, DES and RSA are stored in image using LSB. When use want to download total data from cloud first keys are used for decrypting data again by using AES, DES and RSA and final data is combined and stored in file. This method provides more security for data.

***Keywords*:** data security, DES, RSA, AES, and LSB steganography

PAPER ID: ICIRTCS-22-097

The Future of Natural Language Processing

[1]Veer Sudheer Goud, [2]Dr. Korra Srinivas
[1]Assistant Professor, [2]Associate Professor
Dept. of CSE, St. Martin's Engineering College

Abstract - Natural Language Processing (NLP) is a technique that allows machines to become more human, narrowing the gap between humans and machines. In a nutshell, NLP allows humans to converse with machines more readily. NLP has a wide range of applications that have been developed during the last few decades. The majority of these are really useful in everyday life, such as a machine that takes voice commands. Many research organizations are working on this problem in order to produce more practical and usable solutions. Natural Language Processing has a lot of potential for producing computer interfaces that are easier to use for people, because they will be able to communicate with the computer in their own language rather than having to learn a specialist language of computer commands. However, the use of a formal programming language is required for programming. It has always been assumed that connecting with a computer is easy granted. We would like to put this assumption to the test. We believe that current Natural Language Processing (NLP) is the way to go. The use of natural language to communicate can be made possible by a variety of ways convey programming ideas, resulting in a significant increase in the Programming is accessible to non-expert users. To illustrate Natural Language's viability this paper looks at what is thought to be the most difficult aspects of programming. Steps and loops are two of the more difficult instances.

***Keywords*:** Computational linguistics, grammar, languages, transformational grammar, parsing.

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PAPER ID: ICIRTCS-22-098

Comparative Analysis of Deep CNN and LSTM - RNN for Multi-Accent Malayalam Speech Recognition

[1]Rizwana Kallooravi Thandil, [2]Dr.Muhamed Basheer K.P
Sullamussalam Science College, Areekode

Abstract - Speech is the very primitive and the most common mode of exchanging thoughts, ideas, and emotions. Automatic Speech Recognition (ASR) equips a machine to act upon the commands given as a voice. It is the innovation that converts expressed words into text and much more, which is quite possibly the most provoking task these days because of variety in language and fluctuation in speech qualities articulated by speakers. The addition of the accent attribute to the speech signals makes the task very complicated. The majority of the languages have so many accents which depend upon the geographical distribution where it is spoken. Here in this paper, we discuss the experiments done in the Accented Malayalam language which is also a low resource language that makes this work relevant and challenging at the same time. Here, in the proposed work we have used isolated words for experimenting. The proposed methodology comprises three distinct stages as Dataset Preparation, feature extraction, classification, and hence constructing machine learning models that recognize the accent-based spoken sentences in the Malayalam Language. Mel-frequency Cepstral Coefficient (MFCC) algorithm is used to extract features from the speech signals which are then used for training and then constructing the speech model using Long Short-Term Memory (LSTM) a Recurrent Neural Network (RNN). The speech spectrogram is constructed and used for constructing the ASR model with Deep Convolutional Neural Network (DCNN). The result of the experiment shows that LSTM based RNN outperforms DCNN in the proposed dataset that has been constructed in the natural recording environment.

Keywords: Automatic Speech Recognition (ASR), Long Short-Term Memory (LSTM), Deep Convolutional Neural Network (DCNN), Mel-Frequency Cepstral Coefficients (MFCCs), Malayalam

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Customized Datamining and Part of Travelogue Tagging of Malayalam Texts for a Recommender Model

[1]Muneer V.K, [2]Mohamed Basheer. K.P
[1,2] Research Department of Computer Science, Sullamussalam Science College, University of Calicut, Kerala.

Abstract - Natural Language Processing (NLP) is an active domain of research in almost all languages across the globe. Among NLP, natural language text processing is one of the most emerging segments that require huge attention from research. Regional language processing with the advent of Artificial Intelligence brings umpteen opportunities, especially in the Indian context as a large number of languages were spoken in different parts of the Country. Here in this paper, we propose a Recommender Model in the Travel and tourism domain using unsupervised machine learning techniques in the Malayalam Language. Malayalam is a low-resource and highly inflected language that possesses a greater chance for ambiguity. Data for experimenting have been collected from the online repositories and social media, where the accessibility is limited and predefined, which may pose a scarcity of data for the researchers and academia. Here, this paper focuses on discussing methodologies to develop a customized travel-related data scraping algorithm from Facebook.com written in the Malayalam Language. The proposed work then focuses on pre-processing of data that is being scraped with the help of NLP techniques. A deep-level Travelogue Tagger has been specially constructed as part of the experiment. Here in this paper, we propose a recommender system based on traveller reviews using Collaborative filtering and Cosine similarity methods. The experiment succeeded with high precision.

***Keywords*:** Natural Language Processing, Web Scraping, social media, Part of Travelogue Tagger.

PAPER ID: ICIRTCS-22-100

Conceptive Analysis of Convolution Neural Networks (CNN) in Computer Vision for Image Recognition and Classification in Education Domain

[1]Rafath Zahra, [2]Dr. Ananthi Sheshasaayee
[1,2]PG and Research Department of Computer Science
Quaid-E-Millath Government College for Women
Chennai, India

Abstract - Technology is increasingly using computer vision systems for inspection and process control. Today, implementing these types of systems is a technological challenge due to more demanding requirements. In the area of image recognition and classification, convolutional neural networks have proved extremely effective. Besides handling vision in robots, Convolution Neural Network (CNN) has been successful in identifying objects, faces, and many minute details. This paper demonstrates the process involved in the CNN architecture of image recognition. CNNs typically are thought to be able to recognize objects as it can learn complex parts of images and shapes. The process involves classifying image textures. Image texture plays a great role in image recognition. This paper gives the evidence of the same by giving the comparison of the effectiveness of CNNs and human observers in evaluating conflicting hypotheses. It is shown that the CNNs are influenced more by the texture and sometimes does not value the shape of the image. CNN in Computer vision can be used to increase the performance of students in the classroom by providing a customized learning skills based on their specific potentials and drawbacks.

Keywords: Digital Image, Computer Vision, Convolution Neural Network, Feature Learning.

PAPER ID: ICIRTCS-22-103

Hybrid Machine Learning Approach for Twitter Sentiment Analysis

[1]Mr. Koteswara Rao Dasari, [2]Dr. Srinivasa Rao Pendela, [3]Mr. Nageswara Rao Itikala, [4]Dr. Sai Prasad Padavala, [5]Dr. Kiran Sree Pokkuluri
[1,3]Assistant Professor, [2,4]Associate Professor, [5] Professor & Head
[1]IT Department, NRI Institute of Technology, Guntur – 522 438, A.P, India,
[2]Data Science and IT Department, NRI Institute of Technology, Guntur – 522 438, A.P, India
[3]Data Science and IT Department, NRI Institute of Technology, Guntur – 522 438, A.P, India
[4]CSE Department, St. Martin's Engineering College (A), Secunderabad – 500 100, Telangana, India
[5]CSE Department, Shri Vishnu Engineering College for Women (A), Bhimavaram – 534 202, A.P, India

Abstract: The Sentimental Analysis is an analysing process that analyses the text written by writer for identifying and classifying the opinions from the text and to describe the writer views on the topic whether it is negative, positive or neutral. Since many researchers have been using Machine Learning (ML) algorithms in sentiment analysis, however resulted demonstrated that previous ML methods do not obtains better results in sentiment classification. Thus ensemble ML techniques are required for improving the results in sentimental analysis fields. Hence in this paper hybrid machine learning approach for twitter sentiment analysis is presented. In this approach, n-gram IDF (Inverse Document Frequency (IDF) is implemented first for feature representation to extract positive, dataset-specific, software-engineering related, negative and neutral n-gram expressions. Then hybrid ML which combines the Support Vector Machine (SVM) with Naïve Bayes (NB) classifier is utilized for implementing the enhanced sentiment classification on twitter data. Finally, accuracy, F1 score, precision and Recall evaluation metrics will be utilized to evaluate the Hybrid ML method investigational results. This approach can demonstrate that using n-gram IDF with Hybrid machine learning model will increases the accuracy of classification.

***Keywords*:** Sentiment classification, Machine learning, N-gram IDF, SVM, NB, Hybrid ML

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PAPER ID: ICIRTCS-22-104

Hotel Performance Analysis based on Reviews

[1]Donthu Preethi, [2]Gadhiya Jahnavi, [3]Polemoni Manasa, [4]Atla Laxma Reddy, [5]K Priti
[1, 2, 3, 4] UG Scholar, [5]Assistant Professor
[1,2,3,4,5] Computer Science and Engineering, St. Martins Engineering College
Secunderabad, Telangana, India

Abstract - Using online consumer reviews as electronic word of mouth to assist purchase-decision making has become increasingly popular. The Web provides an extensive source of consumer reviews, but one can hardly read all reviews to obtain a fair evaluation of a product or service.

A text processing framework that can classify all the reviews would therefore be desirable based on the user's emotion i.e. whether the given review is positive or negative review. This type of classification helps businesses to understand their flaws, strengths and customers in a better way. We propose a business model that allows customers to recommend posts to other customers, to order items they like, and also, they can write their reviews on the items. The product admin can view the items and users' data and also product admin can see the classification of reviews into positive or negative. This classification helps businesses understand what customers think about them and where they lack.

***Keywords*:** hotel performance, analysis, reviews

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PAPER ID: ICIRTCS-22-105

Identification of Malicious Injection Attacks in Dense Rating and Co-visitation Behaviours

[1]K. Krishna, [2] Sravanthi Sallaram
[1,2] Assistant Professor, CSE Department, St. Martin's Engineering College, Dhulapally-500100

Abstract- Personalized recommender systems are pervasive in different domains, ranging from e-commerce services, financial transaction systems to social networks. The generated ratings and reviews by users toward products are not only favourable to make targeted improvements on the products for online businesses, but also beneficial for other users to get a more insightful review of the products. In reality, recommender systems can also be deliberately manipulated by malicious users due to their fundamental vulnerabilities and openness. However, improving the detection performance for defending malicious threats including profile injection attacks and co-visitation injection attacks is constrained by the challenging issues: (1) various types of malicious attacks in real-world data coexist; (2) it is difficult to balance the commonality and speciality of rating behaviors in terms of accurate detection; and (3) rating behaviors between attackers and anchor users caused by the consistency of attack intentions are extremely similar. In this paper, we develop a unified detection approach named IMIA-HCRF, to progressively discriminate malicious injection behaviors for recommender systems. Extensive experiments on both synthetic data and real-world data demonstrate that the proposed IMIA-HCRF outperforms all baselines on various metrics. The detection performance of IMIA-HCRF can achieve an improvement of 7.8% for mixed profile injection attacks as well as 6% for mixed co-visitation injection attacks over the baselines in terms of FAR (false alarm rate) while keeping the highest DR (detection rate). Additional experiments on real-world data show that IMIA-HCRF brings an improvement with the advantage of 11.5% FAR in average compared with the baselines.

Keywords: Malicious Injection, Attacks, Dense Rating, Co-visitation Behaviors

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PAPER ID: ICIRTCS-22-106

Secure Multi Hand Information Retrieval in a Private Cloud using Conflict – Free Consistency Algorithm

D. Ramalingam
Assistant Professor, Department of Computer Science and Engineering,
St. Martin's Engineering College, Dhulapally, Secunderabad, India.

Abstract- For private information retrieval from private cloud, distributed private cloud towards Secure Multi Hand Information Retrieval is proposed with fast access which is provided by distributing data on multiple databases. For secure retrieval of data, parallel queries are used. A client is allowed to retrieve bits of data from a database, without the server inferring any information about the queried bit using Computational Private Information Retrieval (cPIR) protocols. The database is distributed to a number of peers by using a striping technique. The distributed peers parallel y processes the cPIR queries. Multiple peers got the query equally distributed to them which enhances the private information retrieval process. Through co-operative peers, computation of data is distributed. In order to maintain consistency among distributed data, an algorithm called Conflict-free Consistency algorithm is proposed.

***Keywords*:** Privacy, private information retrieval, databases, distributed systems, consistency.

PAPER ID: ICIRTCS-22-107

An Innovative Agriculture Based IOT Enabled Weed Controller

[1]Dr K Gurnadha Gupta, [2]M Vishnuvardhan Reddy
[1,2] Assistant Professor, Dept. of CSE
St. Martin's Engineering College, Secunderabad-500 100, Telangana, India

Abstract- In India, agriculture is the primary source of income for more than half of its citizens. One of the most challenging aspects of farming is keeping weeds under control amid the plantation crops. In order to keep weeds at bay, farmers are either physically eradicating them or spraying weedkillers/herbicides across their fields. Chemicals are sprayed on plantation crops as well, making this strategy useless and harming the environment and human health in the process. In order to enhance the training model, we might include subject-oriented data that has been stored on the server. Because of the selective herbicide, less herbicide will be used, which is better for the environment and human health. Pesticides that harm plant development and pose significant health concerns are the focus of our study in order to achieve this aim. IOT-enabled smartweed management has been created to prevent these crucial human consequences. Use a weed controller to identify and eradicate unwanted plants from the field. Weeds can be controlled in real time using the IOT-enabled controller, according to several field tests conducted.

***Keywords*:** Innovative Agriculture, IOT, Weed Controller

PAPER ID: ICIRTCS-22-108

Machine Learning Techniques for Classification of Plant Leaves: A review

[1]Asha M S, [2]Dr. Yogesh H K
[1]Asst.Professor, CSE Department,
Dayananda Sagar Academy of Technology and Management, Bengaluru, Karnataka
[2]Professor, ISE Department,
Ramaiah Institute of Technology, Bengaluru, Karnataka

Abstract - In an agricultural field identification and classification of disease in the vegetable plants plays a very vital role. If proper care is not taken in advance with this, it causes the serious effect on the vegetable plants. The plants which are affected by the disease reflect on the quality and quantity of the production as well as the economy of the country. Some advanced technologies are necessary to detect the disease in the plant leaves at an early stage itself. Image processing and machine learning techniques plays a very good role in this. Where Machine learning methods can be used to classify the leaf images. This paper presents general hierarchy to detect the diseases in the plant leaves and relative study on machine learning classification methods for detecting the diseases in the plants.

Keywords - Feature extraction, SVM, ANN, RF, DT, KNN, DL.

PAPER ID: ICIRTCS-22-109

An Intrusion Detection and Block Chain Application in the Cloud: Approaches and Challenges-A Review

[1]Jasmine Samraj, [2]Abirami.K
[1,2]PG & Research Department of Computer Science,
Quaid-E-Millath Government College for Women (A), Chennai.

Abstract- Intrusion detection systems that have evolved emerging growth in the current scenario. They are knowledgeable to identify diverse malicious attacks in wireless communication networks. However, the approaches that are employed in current circumstances contain various challenges in detecting system interferences that can affect Operating performance of the prediction model and impair the complete network performance. Blockchain technology is an important technological Optimum impact in technical Developments today. Blockchain creates way for effective revolution and transformation. It is considered as the connectivity of blocks Contents animus trust in the network of an individual. Recently, blockchain has been incorporated into intrusion detection systems for improving the overall performance of detection schemes in wireless environments. The proposed paper discusses the Demerits and related learning in the areas of cloud systems, intrusion detection and blockchain applications with respect to cyber-attacks. This work aims to analyze the mutual anomaly detection systems for determining the internal & and the external attacks from cloud centers. During the review, a brief investigation on cloud computing and its effect on blockchain is carried out, especially regarding their performance improvements that could be afforded by the cloud computing system in blockchain technology.

***Keywords*:** Intrusion detection, Blockchain technology, cloud computing, cyber-attacks, cloud centers.

PAPER ID: ICIRTCS-22-110

New approach to using large data tools to replace unstructured databases

[1]P. Swetha, [2]K. Sucharitha
[1,2]Assistant Professor, Department of CSE,
St. Martins Engineering College, Secunderabad-500100.

Abstract- Data warehouse and big data have become the trend to help organise data effectively. Business data are originating in various kinds of sources with different forms from conventional structured data to unstructured data, it is the input for producing useful information essential for business sustainability. This research will navigate through the complicated designs of the common big data and data warehousing technologies to propose an effective approach to use these technologies for designing and building an unstructured textual data warehouse, a crucial and essential tool for most enterprises nowadays for decision making and gaining business competitive advantages. In this research, we utilised the IBM BigInsights Text Analytics, PostgreSQL, and Pentaho tools, an unstructured data warehouse is implemented and worked excellently with the unstructured text from Amazon review datasets, the new proposed approach creates a practical solution for building an unstructured data warehouse.

***Keywords*:** Data Mining, Big Data tools, Data warehouse, Text Analytics, PostgreSQL.

PAPER ID: ICIRTCS-22-111

A Designing of Secure Hostile free Social Network for Contingency and Commutation

[1]M. Raghavendra Rao, [2]K. Ram Mohan Goud
[1,2]Assistant Professor, Department of CSE,
St. Martins Engineering College, Secunderabad-500100.

Abstract: Encounter-based social network and encounter-based systems link users who share a location at the same time, as apprised to the traditional social network model of joining users who have an offline friendship. The new access presents provocations that are basically different from those social network designs tackled by earlier. In this paper we survey the functional and security requirement for the new scheme, such as possibility, safety, and secrecy, for building secure encounter-based social network present several design options. For highlight the challenges we analyse one recently implemented encounter based social network design and match it to a set of idealized security and service requirements. We show that it is ready to many attacks, including imitation, complicity, and secrecy breaching, even though it was designed clearly for security. Attentive of the possible trap, for secure encounter-based social networks we construct a flexible framework; we derived two construction examples for this framework in terms of the ideal exigency. Comparing to previous work our new designs meet more exigencies in terms of system security, reliability, and privacy. Analysis highlights for encrypting and decrypting data we use DES- Algorithm, with that concept the secure data will never take or corrupt by neither some one other nor leakage of data.

***Keywords*:** Social network, Location-based services, Privacy.

PAPER ID: ICIRTCS-22-112

Detecting Spam messages in Short Message Service (SMS) using Machine Learning Techniques and NLP

[1]Deepa Y, [2]Abhishek K L, [3]Manjunath T N, [4]Yogish H K,
[1]Associate Professor Department of Computer Science (AI&ML) Don Bosco Institute of Technology Bangalore, India
[2]Assistant Professor Department of MCA Ramiah Institute of Technology Bangalore, India
[3]Professor Department of ISE, BMS Institute of Technology Bangalore, India
[4]Professor, Dept.of ISE Ramiah Institute of Technology Bangalore, India

Abstract: Short Message Service (SMS) is a kind of text message service available on mobile phones. Due to the increase in the number of mobile users, SMS traffic also increased drastically as a result of which the spam messages also increased. Hence the detection of spam messages has become a major issue in mobile communication due to which message communication via mobile phones is insecure. In order to provide a better solution to this issue a precise and accurate method is needed. Spam SMS messages are undesirable for receivers which can be dispatched to the customers without their earlier permission. Introduction of Spam SMS detection, will efficaciously remove the danger of private statistics like card details, username, password, etc. the proposed system uses machine learning approaches to detect spams in SMS. The Spammers attempt to send junk mail or spam text messages for financial as well as business benefits like marketing, credit score card information, lottery ticket promotion, etc., hence special attention is required for the classification of spam. In the proposed system various Machine learning (ML) techniques are applied like Sas K-NN, SVM and Multinomial Naïve Bayes, accomplished 99% precision which is high as contrasted with other existing models by adding techniques such as the removal of stop words, punctuation, tokenization and lemmatization.

***Keywords*:** Spam messages, SMS, Machine Learning, NLP

PAPER ID: ICIRTCS-22-113

Detecting False Statements of Public Figures Using Artificial Intelligence

[1] Ediga Lingappa, [2] G Kishor, [3] Dr. M.Narayanan,
[1,2]Assistant Professor, [3]Professor,
St. Martin's Engineering College, Dhulapally, Secunderabad,500100, TS, India.

Abstract— Research demonstrates an approach using artificial intelligence to identify misrepresentations of public figures. Several approaches have been implemented as software systems and tested on assertion datasets. The best-achieved result for binary classification tasks (true or false statements) is 86%. Results can be improved in several ways, which are also described in the article. With the advancement of modern information technology, access to information has never been greater. Find answers to your questions in seconds. The presence of mobile devices is much more convenient for users. This factor has drastically changed the way people receive news information. Each major media outlet has its own online portal, Facebook account, Twitter account, social media, so people can access news information very quickly.

Keywords: False Statements, Public Figures, Artificial Intelligence

PAPER ID: ICIRTCS-22-114

Experimental work on Data Clustering using Enhanced Random K-Mode Algorithm

P. Krishna Reddy,
Assistant Professor, Dept. of CSE, St. Martins Engineering College, Secunderabad, Telangana, India.

Abstract: Clustering the uncertainty data is not an easy task but an essential task in data mining. The traditional algorithms like K-Means clustering, UK Means clustering, density-based clustering etc, to cluster uncertain data are limited to using geometric distance-based similarity measures and cannot capture the difference between uncertain data with their distributions. Such methods cannot handle uncertain objects that are geometrically indistinguishable, such as products with the same mean but very different variances in customer ratings. Because of its complexity, the clustering takes high execution time resulting in high computational cost. In this we propose a Enhance Random K-Mode algorithm which is also called as ERK-Mode to cluster the uncertainty data. The K-mode concept classifies the dataset and separates as certain and uncertain data from the whole dataset. Again, enhanced random K-Mode is used to cluster the uncertainty data. The Weather data values are taken in to the account for experiments. The experiment shows that the proposed algorithm is very efficient with fast execution time and low complexity.

Keywords: Uncertainty Clustering, Weather dataset, Random K-Mode, Probability Density Function

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Deep Learning Techniques on Text Classification in Social Health Network

[1]Dr. S. Jothi Shri, [2]Dr. G. JawaherlalNehru, [3]S. Nagamani, [4]N. Kireeti, [5]P. Ashish, [6]R. Mounika
[1]Associate Professor, Head of the Department, SBIT, Khammam
[2]Associate Professor, St. Martins Engineering College, Secunderabad.
[3]Associate Professor, SBIT, Khammam.
[4,5,6]Dept. of CSE, SBIT, Khammam.

Abstract: Text classification technique used for classifying the unstructured and structured data available abundantly in social health network. Using the deep learning techniques, text classifier can label the text into different classes with a good accuracy. Text classifier uses different techniques available in deep learning namely, CNN (Convolutional Neural Networks) and RNN (Recurrent Neural Networks). The existing model has immense data which is not arranged properly, and also contains many unstructured forms of data, which is a quite difficult one for analysing. The proposed model uses Deep Learning (DL) RNN (Recurrent Neural Network) technique consist of yielding good results by using the models of pattern recognition for social healthcare networks. The main intention of text classification model is to provides an insight for training the data and to classify the text by analyzing and extracting the raw input and produce the output. Overall, the purpose of text classification model is to enhance the performance of the text classifier based on effectiveness to improve accuracy and text processing speed by using a suitable methodology in order produce the promising results in the future.

Keywords: Deep Learning (DL), RNN (Recurrent Neural Network), CNN (Convolutional Neural Networks).

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A Study of Data Mining and Machine Learning Techniques for Cyber Security Intrusion Detection

[1]Siddamalla Swarajyam, [2]K Priti,
[1,2] Assistant Professor,
St. Martin's Engineering College, Dhulapally, Secunderabad,500100, TS, India.

Abstract: This survey paper describes a focused literature survey of machine learning (ML) and data mining (DM) methods for cyber analytics in support of intrusion detection. Short tutorial descriptions of each ML/DM method are provided. Based on the number of citations or the relevance of an emerging method, papers representing each method were identified, read, and summarized. Because data are so important in ML/DM approaches, some well-known cyber data sets used in ML/DM are described. The complexity of ML/DM algorithms is addressed, discussion of challenges for using ML/DM for cyber security is presented, and some recommendations on when to use a given method are provided.

Keywords: Cyber analytics, data mining, machine learning.

PAPER ID: ICIRTCS-22-117

C-Medoids Suggestive Clustering for Multi-Feature Data Stream Evaluation and Exploration

[1]**E. Soumya,** Assoc. Professor, Dept of CSE, St. Martins Engineering College, Hyderabad
[2] **G. Sushma**, Assistant Professor, Dept of CSE, CVR college of Engineering, Hyderabad

Abstract: Data clustering is an important and complicated process in artificial intelligence-related applications such as bio-medical and bioinformatics. Prototype-based clustering is a logical and straightforward way to define and assess data that can be thought of as a non-vertical representation of relational data. Maintaining and updating the structure of the cluster with different data points in bio-medical relational data is still a tough issue due to the Barycentric space included in prototype clustering. As a result, in this research, we suggest and introduce A Novel Optimized Evidential C-Medoids (NOEC), which is a family o prototype-based clustering strategy for medical relational data updating and proximity. To allow similarity services with different features for relational update cluster medical data, we apply the Ant Colony Optimization technique. Apply our method to a variety of biomedical-related synthetic data sets. With comparison of several parameters in terms of accuracy and time with processing of medical relational data sets, experimental results of the proposed approach produce better and efficient outcomes.

Keywords: Data clustering, bioinformatics, artificial intelligence, and prototype-based clustering, c-medoids and ant colony optimization.

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PAPER ID: ICIRTCS-22-118

A QR Code Based Robust Digital Watermarking Technique

[1]Alina Dash, [2] Kshiramani Naik
[1,2] Department of Information Technology,
VSSUT, Burla, Odisha

Abstract: Copyright protection, copy protection and protection of intellectual property has become very difficult to be implemented now a days due the massive use of digital content on the internet. For a number of reasons, digital watermarking and other data concealment techniques can be employed to embed data into a signal. A QR code-based robust watermarking technology is proposed in this paper, which boosts the onboard data's prolonged use and the verification application's adaptability. The usage of the QR code assures expanded simplicity of use, while the application-specific watermark data allows the verification application to be adaptable. The QR code is created at the end of the watermarking process, and by scanning it, one may locate a connection to the host picture where the secret text is placed, and high-frequency structural components employ a unique text to identify detrimental interference by intruder. Because of the key-based approach to attack resistance and the domain of integration, this method is resistant to visually invariant attacks. The results of the testing reveal that the approach is in accordance with all of the proposed aspects.

Keywords: Robust watermarking, QR code, Digital watermarking, DCT, DWT.

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PAPER ID: ICIRTCS-22-120

Quantum Computing- Fundamentals, key challenges and design Issues

[1]Marineni Vamsi Krishna, [2]Yampati Venkata Rajesh, [3]Thimmapuram Hima Sekhar Reddy, [4] Guntupalli Pavan Kumar

[1,2] Department of Electronics and Communication Engineering, [3,4] Department of Computer Science and Engineering,

[1,2,3] Bharath Institute of Higher Education and Research, Chennai, India

[4]Vellore Institute of Technology, Vellore, India

Abstract: Quantum computing is a new revolution that, by utilising quantum-mechanical phenomena like as coherence and aggregation which specifically has the ability to provide considerable processing advantages over traditional classical computing. Nevertheless, the articulation of quantum excellence is a critical milestone in the Noisy Intermediate Scale Quantum (NISQ), after the next obvious progression constituting quantum advantage, in which quantum computers handle real-world problems far more effectively than conventional computers. Quantum decoherence and qubit interconnection are two most significant difficulties to achieving quantum superiority in the NIVQ generation as quantum technologies are likely to continuously rapid increase in the next years. Quantum computing is a hotly debated and rapidly evolving field of study, with considerable steady advancement in all areas. A rigorous examination of the relevant research on quantum entanglement will be beneficial in understanding the present status in this burgeoning subject and identifying research directions for the computational complexity community to address in the future years. This article provides a detailed survey of the literature on quantum mechanics and offers a quantum information taxonomy. We discussed regarding the software, key issues and different security-based issues in this work. The essays discuss and identify important open difficulties and possible future avenues for quantum computing technology and development.

Keywords: Quantum computing, Nonlinear Inter Volume Quantum, Post-quantum encryption.

PAPER ID: ICIRTCS-22-121

An Efficient Spatial Query Recommendation System Using Hierarchical Clustering

[1]Sudhakar J, [2] Venkata Ramana Reddy Busireddy, [3]Subhash Chandra N
[1]Research Scholar, Computer Science and Engineering, JNTUH, Hyderabad, India &
Assistant Professor, Computer Science and Engineering,
St Martin's Engineering College, Dhulapally, Secunderabad, India.
[2] Professor, Department of Computer Science and Engineering,
KSRM College of Engineering, Kadapa, Andhra Pradesh, India
[3]Professor, Department of Computer Science and Engineering,
CVR College of Engineering, Pocharam, Telangana, India

Abstract: Huge amount of Geographic data have been and continue to be collected with modern data acquisition techniques such as global positioning systems (GPS), high-resolution remote sensing, geographic information system (GIS). The stored data is to be explored and analysed by various users in order to make best decisions. SOLAP users interactively navigate a multidimensional spatial data cube by launching spatial queries to analyse the spatial data. Users might overlook what part of the cube contains the relevant information and what the next query should be. This affects their exploitation. To address these challenges, spatial data mining and geographic knowledge discovery has emerged as an active research field, focusing on the development of theory, methodology, and practice for the extraction of useful information and knowledge from spatial data-warehouse. This paper presents a method to recommend high quality of spatial queries by embedding spatial and semantical measure with clustering on SOLAP server query log. The proposed system supports the development of recommendation approach. Experiments are performed on sample query logs, and the results confirm the effectiveness of our approach in suggesting queries. The results demonstrate that the performance of our query recommendation system is superior to those of other existing query recommendation systems.

Keywords: Spatial Query Recommendation, Spatial Queries, Query Recommendation, Clustering, Hierarchical Clustering, SOLAP

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An Overview of the importance of Big Data and IOT in CRM

[1] Manohar Manchala, [2] M. Naga Triveni
[1,2] St. Martin's Engineering College, Dhulapally, Secunderabad. India.

Abstract: Big data is often described in the three V's — volume, velocity, and variety. CRM software provides a centralized location to store, view, and organize customer information. Big Data refers to the enormous amount of information businesses collect from online and offline sources. Significant data sources include websites, social networks, mobile apps, software, documents, computer logs, sensor networks, etc. The benefit of Big Data is to do with driving action and value out of data by applying algorithms and predictive models to solve specific business problems. CRM software is also a reporting tool for tracking the health of sales pipelines and accounts. When used correctly, CRM helps small, medium, and large businesses in several ways. Big data is often described in the three V's — volume, velocity, and variety. CRM software provides a centralized location to store, view, and organize customer information. Big Data refers to the enormous amount of information businesses collect from online and offline sources. Various big data sources include websites, social networks, mobile apps, software, documents, computer logs, sensor networks, etc. The benefit of Big Data is to do with driving action and value out of data by applying algorithms and predictive models to solve specific business problems. CRM software is also a reporting tool for tracking the health of sales pipelines and accounts. When used correctly, CRM helps small, medium, and large businesses in several ways. However, this explosion of data is not necessarily significant because of its size but what it can do. CRM is used mainly by salespeople. CRM process can be automated using open-source software. CRM systems were developed to help sales representatives be more efficient and spend more time selling.

Keywords: Big data CRM, IoT CRM, Data mining in CRM, small business CRM

PAPER ID: ICIRTCS-22-123

Decentralized Cryptocurrency Exchange on Ethereum Blockchain

[1]Alina Dash, [2] Pratyush Ranjan Bohidar
[1,2] Department of Computer Science and Engineering,
VSSUT, Burla, Odisha

Abstract: The successful application of mobile, IoT (Internet of Things), social media, analytics, and cloud technology to develop models for better judgments has led to increased efficiencies, more innovative goods, and closed customer interactions all around the world. Blockchain is a new technology that has revolutionized the digital world by offering a fresh perspective on system security, reliability, and efficiency. Blockchain is a stable foundation for cryptocurrencies, and it was made famous by Bitcoin. It allows for the secure exchange of any goods, service, or transaction. Increased regulation, cybercrime, and fraud are hindering progress, yet trusted alliances are becoming increasingly crucial in industrial growth.

Keywords: Blockchain, Ethereum, ERC-20 Token, Decentralized Application, Solidity, Cryptocurrency

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PAPER ID: ICIRTCS-22-124

An Improved FER-11 Net Model for Facial Emotion Recognition of Human using Deep Learning Techniques

[1]K. Fathi Mary, [2] Dr. L.R. Sudha
[1]Research Scholar, [2]Associate Professor
[1]Division of Computer and Information Science, [2]Department of Computer Science and Engineering,
[1,2]Annamalai University, Chidambaram, India

Abstract: Human facial emotion recognition (FER) has gained a lot of attention in the scientific community because of its potential uses. Face-to-emotion recognition (FER) is the primary focus of the study. Emotion recognition and feature extraction are the two main components of the traditional FER. The Convolutional Neural Network (CNN), in particular, is commonly utilised in FER because of its intrinsic ability to extract features from images.

The Convolutional Neural Network (CNN), a type of Deep Neural Network, is widely used in FER because of its inherent ability to extract features from images.

Many works have been reported on CNN that use only a few layers to fix FER issues. Feature extraction from high-resolution images using standard shallow CNNs with simple learning schemes. In this work, we have developed FER-11 Net model for identification and recognition of human emotions. The experimental findings demonstrate that the proposed system is capable of identifying emotions, and that it performs significantly better than previous conventional CNN systems.

Keywords: facial expression, emotion recognition, deep learning and traditional model.

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PAPER ID: ICIRTCS-22-125

Enhanced Random K-Mode algorithm for Experimental work on Data Clustering

[1]Kashimalla Naresh, [2]Pavuluri Mahesh
[1,2]Assistant Professor,
St. Martins Engineering College, Secunderabad, Telangana, India.

Abstract: Clustering the uncertainty data is not an easy task but an essential task in data mining. The traditional algorithms like K-Means clustering, UK Means clustering, density-based clustering etc, to cluster uncertain data are limited to using geometric distance-based similarity measures and cannot capture the difference between uncertain data with their distributions. Such methods cannot handle uncertain objects that are geometrically indistinguishable, such as products with the same mean but very different variances in customer ratings. Because of its complexity, the clustering takes high execution time resulting in high computational cost. In this we propose a Enhance Random K-Mode algorithm which is also called as ERK-Mode to cluster the uncertainty data. The K-mode concept classifies the dataset and separates as certain and uncertain data from the whole dataset. Again, enhanced random K-Mode is used to cluster the uncertainty data. The Weather data values are taken in to the account for experiments. The experiment shows that the proposed algorithm is very efficient with fast execution time and low complexity.

Keywords: Uncertainty Clustering, Weather dataset, Random K-Mode, Probability Density Function

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An Analysis of Stock Market Based Data Mining Using Machine Learning Techniques

[1]Dr. Ananthi Sheshasaayee, [2] Nivetha S
[1,2] PG & Research Department of Computer Science
Quaid-E-Millath Government College for Women, Chennai, India

Abstract: The data prediction and the retrieval process integrate the similarity estimation and arrangement of optimal features in the combined data mining system. There are several methods in the existing for combined data mining system to manage the multi-level prediction process in the data formation. In this paper, the survey of different mining approach based on the feature representation and the clustering model to estimate the similarity between the query data with entire database. The overall work was implemented for the application of financial / stock marketing-based mining process. In this, the dataset was indexed and grouped to form as cluster based on the arrangements of database structure which can reduce the computation complexity of the retrieval of query relevancy. This can also have analysed for the neural network-based retrieval process for the enhanced structure of optimal feature selection and the prediction model. From the result analysis, the performance of the different data mining model and the classification system for the financial data validation are analysed. This was justified by the evaluation of statistical parameters for the classification result of overall model that are compared with other state-of-art methods.

Keywords: Financial Data Collections, stock market, Neural Network architecture, Data Clustering, Feature optimization and Recommendation system.

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PAPER ID: ICIRTCS-22-127

A Survey of Image Texture based Feature Extraction and Learning Model for Melanoma Image Prediction

[1]R. Pavithra, [2]Jasmine Samraj
[1,2] Dept. of Computer Science
Quaid-e-Millath Government college for women, Chennai, India

Abstract: The texture image classification and analysis increase the accuracy of pattern identification in the image. By considering that, the paper work analyses the various pattern extraction model that are based on the different directionality identification of pixel difference. This type will enhance the prediction model to represent the depth of object that are present in the image. This paper presented a survey of different texture-based feature extraction techniques and the various types of convolution model related to the Gabor pattern for feature learning process. Based on the directionality changes and the increase in neighbouring prediction improves the performance of image classification. The neural network-based classification models were used for the prediction of texture features of the image to recognize the abnormality of melanoma image. The result was analysed and compares with the different texture pattern method and the neural network-based classification models by preparing the confusion matrix and statistical report from the classified result.

Keywords: Computer Aided Diagnosis (CAD), Cellular Automata, Image Texture Pattern, Deep Learning and Melanoma Image Classification.

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Container Technology and Virtual Machines in Cloud Environment – A Comparative Analysis

[1]Dr. M. Nester Jeyakumar, [2]Dr. Jasmine Samraj
[1]Assistant Professor, Department of Computer Science,
Loyola College (Autonomous), Chennai.
[2]Associate Professor, PG and Research Department of Computer Science,
Quaid-E-Millath Government College for Women (Autonomous), Chennai.

Abstract: Container Technology has received much interest and emerged as a potential option in contrast to virtual machines. Container technology has major drivers for enterprise adoption including the ease of encapsulating and deploying programmes, efficiency, lightweight virtualization and flexibility in resource sharing. Containers are a valid software component that can run worldwide, both on the desktops as well as in the cloud, and they require the application code, and also libraries and dependencies, to be packaged. The Container as a Service (CaaS) method is growing rapidly and is expected to really be a popular cloud service paradigm in the future. It is indeed a classic scheduling difficulty to put container instances on virtual machine instances. Its presence has a great effect on the performance and implementation of multi-tier distributed systems. Container technology can help reduce the complexity of replicating experiments in systems research if used correctly. CaaS is a type of container-based virtualization in which a cloud service provider provides users with container engines, orchestration, and the fundamental compute resources as a service. CaaS providers include Google Container Engine, AWS, Azure, and Pivotal. This paper describes about the study of container technology in cloud and also includes a comparative analysis of container with virtual machines.

Keywords: Container Technology, Virtual Machines, Container as a Service (CaaS), Cloud Service Provider, Container Engines.

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Identification Of Brain Tumor Using Convolution Neural Network Classification

[1]Avinash seekoli, [2]Nagaraj Rathod, [3]Akkala Abhilasha
[1,2,3]Assistant Professor,
[1,2]St. Martin's Engineering College, Dhulapally, Secunderabad,500100, TS, India.
[3]Geethanjali college of engineering and technology.

Abstract: Patients with brain tumours are among the most frequent and aggressive patients, which means they have a very short life expectancy if they are at their most advanced stage. In order to improve patients' overall quality of life, treatment planning is critical at this point of the operation. Tissue imaging methods including CT, MRI, and ultrasound are often used to check tumours in the brain, lung, liver, breast, prostate, and other parts of the body. MRI scans are used to identify brain tumours in this case. However, due to the large quantity of data collected by an MRI scan, it is not feasible to manually distinguish between tumour and non-tumor at a particular moment.it has several restrictions, such as the ability to produce exact quantitative measurements for only a limited number of photos, which is a drawback. Having a system that can be trusted and that can be employed automatically would help save individuals from losing their lives. This is due to the fact that there is so much diversity in the space and structure of the region around a brain tumour that it makes automated categorization of brain tumours very difficult. In this paper, offer a novel method for detecting brain tumours. Convolutional Neural Networks (CNN) are used to categorise the data. In this section, tumours are divided into three categories: glioma tumours, meningioma tumours, Pituitary tumour and no tumour at all. Small kernels are utilised to create the architectural design for the deeper layers of the system. A record-keeping rate of 99.5 percent accuracy has been shown in trials, making the CNN superior to all other current-generation techniques. Additionally, it has a minimal degree of complexity.

Keywords: CNN, Glioma, Meningioma, Pituitary tumours

PAPER ID: ICIRTCS-22-130

Credit Card Fraud Detection using Computational Algorithms

[1]C. Yosepu, [2]K. Ganapathi Babu
[1,2] Assistant Professor, Department of Computer Science and Engineering
[1,2] St. Martin's Engineering College, Dhulapally, Secunderabad. India.

Abstract: People are increasingly turning to online purchasing and transaction in today's environment, resulting in an increase in the count of credit card users globally. As a consequence, fraudsters are discovering additional chances for fraudulent activity. If these crimes go unnoticed, the credit card firms would suffer a significant loss. There is a necessary for a reliable fraud identification technique that can identify these scams and alert banks so that the fraud does not occur. Several scholars have developed models to address this issue. To forecast credit card fraud, these models employ Data Science, Machine Learning, or Deep Learning algorithms, or a mix of the three. This study presents a detailed analysis of the numerous fraud identification approaches utilised in the detection techniques provided by numerous researchers, as well as the datasets utilised in their research and the various investigation criteria utilised by them to evaluate the performance of their models. Also, highlight the difficulties encountered throughout the fraud identification procedure.

Keywords: Credit card fraud, online transaction, e-commerce, computation algorithms, and classification.

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PAPER ID: ICIRTCS-22-131

A Review on Social Distance Monitoring using Learning Techniques

[1]Dhanya G Nair, [2]Dr.K.P. Sanal Kumar, [3]Dr.S. Anu H Nair
[1]Research Scholar, [2,3]Assistant professor
[1]Department of Computer and Information Sciences, Annamalai University, Chidambaram, India.
[2]PG Department of Computer Science, R.V Government Arts College, Chengalpattu, India.
[3]Department of CSE, Annamalai University, Chidambaram, India [Deputed to WPT, Chennai].

Abstract: Despite the fact that the COVID-19 pandemic recently touched millions of people around the world, the number of people affected is on the rise.Several unprecedented preventive steps are being taken by various countries in order to deal with the worldwide pandemic situation and prevent the virus from spreading. Social distance is one of the most important measures for preventing viral infection. The goal of this research survey is to offer a social distance framework based on deep learning architecture as a preventative measure for maintaining, monitoring, managing, and reducing physical interaction between persons in a real-time top view environment.

In order to recognise humans in the images, we utilized various deep learning detection models like R-CNN, Fast R-CNN, Faster-RCNN, YOLO and SSD. The architecture is trained on the top view human data set because the human's look differs greatly from top to bottom. After that, Euclidean distance is used to estimate the pair-wise distance between people in an image. The centre point of a single detected bounding box is measured using the information from the detected bounding box. A violation threshold is established, which is based on distance to pixel information and assesses whether two persons are violating social distance.

Keywords: Social distance, Coronavirus, disease, monitoring system, detection model and deep learning.

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Credit Card Fraud Detection and Prevention Using Machine Learning Algorithms

[1]N. Krishnavardhan, [2]Dr.M. Govindarajan, [3]Dr.S.V. Achutha Rao
[1]Research Scholar, Dept. of CSE, Annamalai University
[2]Associate Professor, Dept. of CSE, Annamalai University
[3]Professor, Dept. of CSE, SIET

Abstract: The Cyber Crime involves stealing credit card information of a user either through computer malware or through phishing attacks and making heavy purchases using the credit card data. The credit card frauds in online payment increases dramatically that pushes e-commerce organization and banks to apply automatic fraud detection and prevention system based on machine learning techniques on transaction logs. The credit card fraud detection and prevention include modelling of the past credit card transactions which are the ones transformed as fraud that recognize whether new transaction is fraudulent or not. The main objective is to detect the fraudulent transactions while minimizing the incorrect fraud classifications. Machine learning techniques such as Support Vector Machines, Decision Trees, Logistic Regression, Rule Induction techniques and Artificial Neural Networks. Several methods are combined or standalone methods were used to form hybrid model for detection and prevention. Imbalance classification has minority class consists of small number of data instances compared to data instances in majority class in dataset. The problem is defined as data skewed distribution and extremely imbalance dataset. The ratio of criminal or fraudulent activities is considerably smaller than genuine and legitimate ones. The present research work reviewed the existing models that were used for credit card fraudulent detection that discussed about the problems of the existing machine learning models. The objectives for further researches to overcome the problems are discussed in the present research.

Keywords: Credit Card Frauds, Cyber Crime, Imbalance classification, machine learning techniques.

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A survey on Human Pose Estimation using Learning Techniques

[1]Kamaladevi, [2]Dr.K.P. Sanal Kumar, [3]Dr.S. Anu H Nair
[1]Research Scholar, [2,3]Assistant professor
[1]Department of Computer and Information Sciences, Annamalai University, Chidambaram, India.
[2]PG Department of Computer Science, R.V Government Arts College, Chengalpattu, India.
[3]Department of CSE, Annamalai University, Chidambaram, India [Deputed to WPT, Chennai.

Abstract: Human Pose Estimation (HPE) is a technique for identifying landmarks on the human body (e.g., body skeleton) in images and videos. It has received a lot of attention over the last few decades, and it has been used in a lot of different things, such human-computer interface, animation, motion analysis, augmented reality, and virtual reality. Human pose estimation is divided into single person and multi-person pose estimation, as well as estimated human poses in crowded places and in videos. Depending on the application, the output of pose estimation can be in 2D or 3D coordinate format. In 2D, joint angles are used to calculate 3D pose estimation. Small and scarcely visible joints, powerful articulations, occlusions, clothes, and lighting changes all make judging position more challenging.

In order to tackle the issues, deep learning-based CNN models have made significant progress in the field of human pose estimation. The purpose of this survey study is to give a systematic study and comparison of current deep learning-based solutions for both 2D and 3D pose estimation based on their input data. In this paper, we have surveyed more 50 papers related to different post estimation models for single person and multi-person pose estimation.

Keywords: human pose, pose estimation, single person pose, pose detection and multi person pose.

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Cloud Task Scheduling Using Machine Learning algorithm for Load balancing

Prabhakar Reddy G
Assistant Professor
Department of Computer Science and Engineering, St. Peter's Engineering College, Hyderabad

Abstract: In the present era, cloud computing has earned much popularity, mainly because of its utilities and relevance with the current technological trends. It is an arrangement which is highly customizable and encapsulated for providing better computational services to its clients worldwide. In cloud computing, scheduling plays a pivotal role in the optimal utilization of resources. Prevalent priority-based job scheduling strategies are silent in deciding scheduling scheme for tasks with the same priority and strive hard in appropriately allocating jobs to virtual machines. In the recent years, despite of much research in this field, these scheduling algorithms are unable to provide optimal solution and are lacking in one way or the other in their performance and efficiency. Work pertaining to the use of four criteria/credits for deciding priority, with modified K-means clustering technique is scant. Therefore, to eliminate the drawbacks of the prevalent or existing system and to enhance the performance and efficiency of cloud computing, a new credits-based scheduling algorithm has been rendered. The proposed system considers four real time parameters/factors namely Task-Length, Task-Priority, Deadline and Cost, as credits and uses Modified K-means Clustering technique for categorizing the cloudlets and virtual machines (VMs). Results indicate that the suggested scheduling algorithm has excelled existing priority-based scheduling strategy and it has been empirically proven with experimental/simulated results in this paper. CloudSim 3.0.3, a Cloud Simulation Tool has been used to implement and test the proposed algorithm.

Keywords: Priority Based Scheduling, Multiple Credits Based Scheduling, Scheduling Strategies in Cloud Computing, Modified K-Means

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Integration of Data Mining Classification Techniques to Enhance the Classification Accuracy

[1]**G.Rajasekaran**, Research Scholar, SCSVMV University, Kancheepuram
[2]**Dr.G. Gunasekaran,** Professor, Dr.MGR Educational and Research Institute, Chennai

Abstract: A classification model is a data mining technique containing all the concepts extracted from the training dataset to differentiate one class from other classes existed in data. The primary goal of the classification model is to provide a better result in terms of accuracy. However, in most of the cases we cannot get better accuracy particularly for huge dataset and dataset with several groups of data. When a classification model considers whole dataset for training then the algorithm may become unusable because dataset consists of several group of data. The alternative way of making classification useable is to identify a similar group of data from the whole training data set and then training each group of similar data. In our paper, we first split the training data using k-means clustering and then train each group with Éclat Classification algorithm. In addition, we saved each model to classify sample or unknown or test data. For unknown data, we classify with the best match group/model and attain higher accuracy rate than the conventional Naive Bayes classifier.

Keywords: Classification, Clustering, Classification Accuracy, Naive Bayes, K-means, Éclat

PAPER ID: ICIRTCS-22-136

Hardware Design For IOT-Based Vehicle Tracking And Theft Detection

G. Murali

Asso Professor, HOD, Computer Science & Engineering Department, BVSR Engineering College, Chimakurthy, Prakasam (Dist), AP, India

Abstract

The present generation requires information time to time. The use of technology have been increasing day by day. So, we are planning for the combination of the present technology with the requirement of information transmission, we planned for the creative approach of a "Vehicle Tracking System using GPS and IOT". To overcome the drawbacks of the previous methods of paper-based and we introduce a project to track a vehicle using GPS and IOT. This Vehicle Tracking System can also be used for Accident Detection Alert System, Soldier Tracking System and many more, by just making few changes in hardware and software and widely in tracking Cabs/Taxis, stolen vehicles, school/colleges buses etc. Nowadays security of a vehicle is up most important to everyone. Everyday hundreds of vehicle is being stolen in a city. It is necessary to include a system to avoid theft of vehicles. To provide that an efficient vehicle tracking system is designed and implemented for tracking the movement of any equipped vehicle from any location at any time. The proposed system made good use of a popular technology that combines a Smart phone application with a micro controller. The designed in-vehicle device works using Global Positioning System (GPS) and Global system for mobile communication / General Packet Radio Service (GSM/GPRS) technology that is one of the most common ways for vehicle tracking. The device is embedded inside a vehicle whose position is to be determined and tracked in real-time. A microcontroller is used to control the GPS and GSM/GPRS modules. The vehicle system uses the GPS module to get geographic coordinates at regular time intervals. The GSM/GPRS module is used to transmit and update the vehicle location to a database. A Smartphone application is also developed for continuously monitoring the vehicle The Google Maps API is used to display the vehicle on the map in the Smartphone application. Thus, users will be able to continuously monitor a moving vehicle using the Smartphone application and determine the estimated distance and time for the vehicle to arrive at a given destination.

Keywords: IoT, Vehicle Tracking, Theft Detection, Global Positioning System (GPS).

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EDS - Emergency Patient Admission based on Data Mining Prediction

[1]**Chanakya Reddy Katipally,** [2]**Baddam Neha,** [3]**Baddam Amanvardhan Reddy,** [4]**S Manil Reddy**
UG Scholar, Department of Computer Science and Engineering, St. Martin's Engineering College, Secunderabad – 500100, Telangana.

Abstract: Crowding within emergency departments (EDs) can have significant negative consequences for patients. EDs therefore need to explore the use of innovative methods to improve patient flow and prevent overcrowding. One potential method is the use of data mining using machine learning techniques to predict ED admissions. This project uses routinely collected administrative data from two hospitals to compare contrasting machine learning algorithms in predicting the risk of admission from the ED. We use three algorithms to build the predictive models: 1) logistic regression; 2) decision trees; and 3) gradient boosted machines (GBM). The GBM performed better than the decision tree and the logistic regression model. Drawing on logistic regression, we identify several factors related to hospital admissions, including hospital site, age, arrival mode, triage category, care group, previous admission in the past month, and previous admission in the past year. This paper highlights the potential utility of three common machine learning algorithms in predicting patient admissions. Practical implementation of the models developed in this paper in decision support tools would provide a snapshot of predicted admissions from the ED at a given time, allowing for advance resource planning and the avoidance bottlenecks in patient flow, as well as comparison of predicted and actual admission rates. When interpretability is a key consideration, EDs should consider adopting logistic regression models, although GBM's will be useful where accuracy is paramount.

Keywords: Emergency Departments, Gradient Boosted Machines, Decision Trees, Logistic Regression, Triage category

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Content analysis of messages in social networks and identification of suicidal types

[1]P. Sai Lahari, [2]S. Avinash
[1]UG Scholar, [2]Assistant Professor
[1,2]Department of CSE, St. Martin's Engineering College, Secunderabad, Telangana- 500100.

Abstract: This article describes content analysis of text with to identify suicidal tendencies and types. This article also describes how to make a sentence classifier that uses a neural network created using various libraries created for machine learning in the Python programming language. Attention is paid to the problem of teenage suicide and «groups of death» in social networks, the search for ways to stop the propaganda of suicide among minors. Analysis of existing information about so-called «groups of death» and its distribution on the Internet. The study Experience of content analysis of suicidal statements on the Internet of persons with different levels of suicidal activity collects data from the pages of people who have actually committed suicide or are potential suicides. By analysing the collected information.

Keywords: suicidal tendencies, libraries, social network, internet, information, propaganda

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Design and Implementation of Object Motion Detection using Telegram

S. Anil Kumar
Assistant Professor, Computer Science & Engineering Department, BVSR Engineering College, Chimakurthy, Prakasam (Dist), AP, India

Abstract

The need for Internet application development is now extremely strong. As a result, the internet of Things (IoT) is a significant technology that allows us to create a variety of valuable internet applications. The Internet of Things (IoT) is an excellent and clever method for reducing human effort and providing simple access to physical objects. With the assistance of different current technologies, these gadgets collect valuable data and exchange it with other devices. Home Automation Systems, for example, utilize Wi-Fi or Bluetooth to transmit data between different home gadgets. Many a time's working parents have to worry about their young children left out alone at home but with advancement in technology it is easier to monitor and transmit information within seconds. Either its about monitoring actions of their children inside house or about visitors at the door it can all be monitored easily with the help of Internet of Things. This hardware-based implementation aims at child safety and home security by detecting motion and sending photos on telegram bot helping in detection of any anomaly activity in the absence of owner and with the help of photo it provides the user the opportunity to aware the children at home and, they don't need to open the door for the visitor. This paper gives a overview about the Core implementation Details and the deployment of wireless based control system and accessibility inside a home for authorized people only. When visitor motion is detected at Door, Camera module interfaced to ESP32-CAM used to capture images, save it on system and send it as Telegram alert via TCP/IP. Only authorized user can see the images and can even alert the members inside house. This hardware-based design helps in monitoring in place of the owner and helps in saving time of seeing long video clips of CCTV in order to check any unusual activity. The entire control system is built using an ESP32-CAM microcontroller and tested for actual use in a home environment.

Keywords: IoT, Motion detection, Telegram, CCTV.

Artificial Intelligence Enabled Security Technologies for 6G Wireless Communications

[1]Dr. K. Jayarajan, [2]Dr. T. Poongothai
[1]Professor, Department of IT, Malla Reddy Engineering College for Women, Secunderabad, India.
[2]Professor, Department of CSE, St. Martin's Engineering College, Secunderabad, India

Abstract: With the rapid proliferation of intelligent terminals and the incredible development of Artificial Intelligence applications require the services of 6G networks. The scope of 5G is limited it is not possible to meet the performance of industrial applications. The oceans and deserts are not covered by the 5G base stations and those areas not having network signals. Many applications require greater connection density, greater transmission bandwidth, lower end-to-end latency, higher reliability and certainty, and a smarter network. Smart factories are expecting the delay of less than 1ms or even microseconds. 5G networks are not able to provide such services with less delay and other capabilities. Therefore, the applications are looking for the services of 6G networks. When compared to 5G, 6G networks are smarter and has a greater coverage area with low latency. The advancement of new technologies will allow 6G to connect all elements of human activity to the network, but this will also provide a significant security risk. 6G era is closely related with intelligent network and management. The Artificial Intelligence plays a significant role in 6G networks for providing solution to security issues. This paper examines the underlying concepts of 6G security, explores key technologies linked to 6G security, and discusses a variety of 6G security issues with AI and machine learning.

Keywords: 6G, Artificial Intelligence, Machine Learning, 6G Security, Deep Learning

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IoT and Machine Learning based Smart Agri -Farming System

[1]Pole Laxmi Devi, [2]B Dhana Laxmi
[1] Assistant Professor, Department of CSE (AI&ML),
[2] Assistant Professor, Department of CSE

Abstract: In the topical age of competition and risks in markets, advancements in technology are a must for better feasibility and growth. In the same way, it applies to the agriculture industry. Based upon their yield and quantity every farmer experience high spike on the crop. At present, maintenance of farm is a very hot issue that needs to be apparatus at utmost propriety by rising water issues and proper methodologies. Automation of farms is proposed in this research. The suggested solution is based on the Internet of Things (IoT), which would be an inexpensive and more accurate solution to farm needs. The main purpose of the monitoring system is to solve over-irrigation, crop- specific irrigation and soil erosion problems will be evolved to ease and efficiently manage all the irrigation problem. The main well-known fact in agriculture is water scarcity and over wastage of essential resources should be reduced. The proposed solution will be developed by the setup of Wireless Sensor Network (WSN) so that every farmer will be getting some sensor modules that will be transmitting data on the common server. These scenarios will be supported by Machine Learning (ML) algorithms based on the prediction for irrigation patterns. So, such a comfortable approach to irrigation is provided in this paper.

Keywords: Agriculture; IoT; Machine learning; Farming; Soil;

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Smart Control of Traffic Lights Using Artificial Intelligence

Y. Dasaratha Rami Reddy
Professor, Computer Science & Engineering Department, BVSR Engineering College, Chimakurthy, Prakasam (Dist), AP, India

Abstract

Now-a-days due to increasing number of vehicles it's becoming difficult to manage traffic efficiently which leads to longer duration journey and maximum petrol consumption and to avoid this problem standard techniques was introduced such as manual traffic control which require more number of traffic person, static time traffic control which is not effective as it will use same timer for all lanes with heavy and light traffic and sensor based traffic management but this require heavy budget of sensor deployment to sense and manage traffic based on density. To overcome from above issues author of this paper is utilizing traffic cameras and YOLO object detection algorithms to estimate traffic density at all lanes and then adjust red and green signal time. Cameras will take snapshot of all lanes every five seconds and then estimate traffic at lanes and based on density green and red signal time will be adjusted. In proposed paper author has used PYGAME technique to simulate traffic environment and the used YOLO real environment to detect and count traffic from real traffic videos. To implement this project, we have designed following modules. Run Traffic Simulation: using this module we can start PYGAME traffic simulation where you can see traffic control based on traffic density. Run Yolo Traffic Detection & Counting: using this module we will upload traffic videos and then YOLO will detect traffic vehicles and estimate their density with speed.

Keywords: AI, YOLO, PYGAME, Traffic lights.

ABOUT CONFERENCE

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