



ICIDA 2022

International Conference on Innovations in Data Analytics

Organized by

Eminent College of Management & Technology

in collaboration with

International Knowledge Research Foundation

Date: 29th and 30th November, 2022

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About the Conference

1st International Conference on Innovations in Data Analytics (ICIDA 2022) will be organized by International Knowledge Research Foundation in collaboration with **Eminent College of Management and Technology (ECMT)**, West Bengal, India on 29th and 30th November, 2022. It is technically sponsored by The **Sciences and Technologies of image and Telecommunications (SETIT)**, Sfax University, **Tunisia**, Scientific **Innovation Research Group (SIRG)**, **Egypt**, **CI2S lab**, Buenos Aires, **Argentina** and **Scientific Research Group (SRG)**, **Egypt**. The publication Partner is **Springer**. The Conference deliberations will be on the following themes are Data Mining, Data Analytics, Machine Learning, Smart Technology. The Conference is to bring together innovative academics and industrial experts in the field of Computing and Communication to a common forum.

Conference aims:

- Endow opportunities for academicians, scientists, and research scholars along-with professionals, decision makers, and industrial practitioners to deliver and confer their research contributions.
- Inspire young scholars to learn newly created avenues of research at an international academic forum.
- To churn out the hidden aspects of data science in the perspective of Make in India a successful project.
- The conference will provide opportunities for publishing research papers in different indexed journals.

We would like to specially invite you to the Keynote session of renowned professors of the world who have immensely contributed towards Computational Intelligence. We look forward to welcoming students, researchers, academics, research scholars and allied science and engineering professionals with interest in Data Mining, Data Analytics and beyond. We are pleased to present an interesting and engaging schedule to inspire the participants and we commend this conference program to you. Throughout the three days of the conference, you will have the opportunity to attend the keynote, plenary & invited talks and the special sessions or move freely among them.

ACKNOWLEDGEMENT

The theme and relevance of ICIDA 2022 has attracted more than 800 researchers/academicians around the globe, which enabled us to select good quality papers and serve to demonstrate the popularity of the ICIDA 2022 for sharing ideas and research findings with truly national and international communities. Thanks to all those who have contributed in producing such a comprehensive conference proceeding of ICIDA 2022.

The organizing committee believes and trusts that we have been true to their spirit of collegiality that members of ICIDA 2022 value even as also maintaining an elevated standard as we have reviewed papers, provided feedback and presented a strong body of published work in this collection of proceedings. Thanks to all the members of the organizing committee for their heartfelt support and cooperation. We have been fortunate enough to work in cooperation with a brilliant International as well as National Advisory, Reviewer, Program and Technical Committee consisting of eminent academicians. We would like to express our heartfelt gratitude and obligations to Springer, to be a part of ICIDA 2022.

We are extremely grateful to the benign reviewers for sparing their valuable time and putting in effort to review the papers in a stipulated time and providing their valuable suggestion and appreciation in improvising the presentation, quality and content of this proceeding. The eminence of these papers is an accolade not only to the authors but also to the reviewers who have guided towards perfection. Last but not the least, the editorial members of Springer Publishing deserve a special mention and our sincere thanks to them not only for making our dream come true in the shape of this proceeding, but also for its hassle free and in-time publication in the reputed AISC series, Springer. The ICIDA 2022 conference and proceedings are a credit to a large group of people and everyone should be proud of the outcome.

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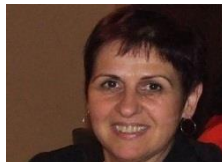


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From the Desk of Editors

In recent times, highly incremental nature of real time data opens up several opportunities for the industries and academia to meet numerous challenges. Thus, the data are processed to extract valuable information which method includes analysing and restructuring of data in order to maintain effective decision-making. To discover useful knowledge from the huge source of data intelligent data analysis techniques are required. While “Data Mining” evolves with innovative learning algorithms and knowledge discovery techniques, Computational Intelligence combines the results of data mining for becoming more intelligent than ever. ICIDA2022 is an international platform for the researchers from industries and academia to represent they’re of research and development in the fields of Data Mining & Data Analytics. After a through double blind peer review process by experienced subject expert reviewers chosen from the country and abroad, editors have finally selected 22.79% papers. The ICIDA2022 proceedings are a collection of papers that the International Advisory, Program, and Technical Committee greatly appreciated. This International Conference ICIDA2022 aims at surrounding new breed of engineers, technologist making it a crest of global victory. All the papers are focused on the thematic areas of the conference and respective authors have provided many opportunities for presentation. The proceeding of ICIDA 2022 is to be released to mark this great day of ICIDA more exceptional. We hope the author’s own research and opinions add value to it. First and foremost are the authors of papers, columns and editorials whose works have made the conference a great success. We had an immense pleasure to put together this proceeding. The conference and proceedings are a credit to a large group of people and everyone should be thanked for the outcome. We extend our deep sense of gratitude to all those for their warm encouragement, encouragement and continuous support for making it possible.

Hope all of us will appreciate the good assistance made and justify our efforts ICIDA 2022



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Abstracts of Contributed Papers

In Transience in COVID patients with comorbidity issues - A Systematic Review and Meta-Analysis Based on Indian and South-East Asian Context

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Abstract. Past years were very important for human civilization and lesson learning. During the pandemic, our human civilization has witnessed a massive change in lifestyle which has created a disruptive impact upon physical as well as mental well-being. As every situation in our lives may be treated as either a reward or a lesson; we can learn the importance of immunity to fight against any disease. According to the recent studies on COVID, it has been observed that the mortality rate of COVID patients is varying along with different comorbidities like hypertension, diabetes, COPD, cancer or any lung related disease. The after effect for patients with comorbidity issues is also much higher than patients with zero comorbidity issues. A systematic review has been performed to analyze the effect of comorbidity issues on COVID patients compared to general conditions. In this review, we have covered three major comorbid diseases- diabetes, COPD and any incurable disease like cancer or HIV. we have selected several peer-reviewed articles from some popular databases such as PubMed, BMJ, Google Scholar, Lancet and focused and performed a meta-analysis based on several comorbidity factors and risk associated with that.

NFT HUB - The Decentralized Non-Fungible Token Market Place

Ms. Divya. P, Bachala Bharath Sudha Chandra, Yapati Harsha Vardhan, Dr. T.

Ananth kumar, Mrs. Jayalakshmi Saravanan and Mr. Parthiban.R

Abstract. In today's digital environment, content ownership is a huge issue. Monetization for material such as artwork, photographs, novels, gifs, and memes is not possible on any social networking platform. This project enables digital creators and owners to produce and sell customized crypto assets that serve as proof of ownership and aid in the detection and prevention of digital content counterfeit and copying. A non-fungible token can be made out of any digital file. NFTs are files that are tracked using the same block chain technology that is used to support cryptocurrencies such as Bitcoin and Ethereum. This system allows buyers and sellers to keep track of who owns which files. A Non-Fungible Token (NFT) defines a non-transferable data unit that may be bought and traded on a digital ledger described as a Block Chain. Web content such as photography, videos, and audio files can be linked using a variety of NFT data units. NFTs vary from exchangeable cryptocurrencies like bitcoin in that each token is uniquely identifiable. We can identify the owners of digital content and provide remuneration to the creators of digital content using the NFT (Non-Fungible Tokens) market place. Digital assets, such as cryptocurrencies and tokens, are supported by block chain technology. Tokens are typically created utilizing smart contracts on top of the block chain network. Block chain is a new technique that can solve a variety of problems, such as ten birds with one bullet. As a result, there is no need to discover answers to each and every difficulty with Block Chain. In the next 5 to 10 years, Block Chain technology will be embraced by 20 different sorts of companies. Block Chain is a decentralized system that solves the issues that centralized systems have. Block Chain combines peer-to-peer networks with cryptographic.

Hashgraph: A Decentralized Security Approach Based on Blockchain with NFT Transactions

Ms. Divya. P, Rajeshwaran. S, Mr. Parthiban, Dr. T. Ananth kumar and Mrs.
Jayalakshmi Saravanan

Abstract. Blockchain technology is used by developers to establish computational confidence in their goods. As a result, organizations and individuals who may not know or trust one another may collaborate quickly and cheaply. You can create and exchange value, establish identity, and check with public distributed ledgers, and the blockchain server is unique in that it achieves the same result as the most widely used public blockchains (such as Bitcoin or Ethereum). These advantages are due to the underlying hash-graph consensus technique and the global enterprise governing body that now owns and manages our proposed project's efficient block-chain nodes. We will execute NFT transactions using our hedera optimized blockchain network. This recommended approach combines a variety of areas, including encryption, banking, and financial transactions. The introductory portion below describes the study that allows NFT transactions in the hedera optimized network phase of the three. This is the first eminent research on the NFT Transaction on the blockchain approach that we are aware of. By adopting an efficient method between datacentres and HCS technology, it is possible to assess our multichain approach to the banking and financial circumstances with ease. This technique to computational confidence in banking and financial situations is both economical and effective. The incident response and prevention team can quickly enhance any difficult and complicated procedure. It falls under the capability of NFT with blockchain to act rapidly and decide in a perplexed condition. It offers the easiest, most efficient route throughout the transaction phase for interacting with potential customers, integrating test-net, main-net, and mirror-net. With the simplicity of calculation and computation on this enhanced blockchain server, it draws new customers in the future.

Med-Card: An innovative way to keep your medical records handy and safe

Abhishek Goel¹, Mandeep Singh², Jaya Gupta³, Nancy Mangla⁴

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Abstract. The healthcare sector has advanced a lot from new machines to do effective surgeries and rolling out medicines to even cure diseases which were considered incurable once. But the technical advancements have not reached their records yet. The traditional method of recording everything on paper is still in use. The only difference that is there is that now the printed material is being provided in spite of handwritten one. But these papers are indeed very costly and hefty things to manage in sectors like healthcare. Today when everything is related to privacy then why not have a look at our medical records in a similar way. We propose a system where patients can keep their records handy in a medical card issued to them. All their medical history and prescription will be stored over there. All the clinical records are well maintained and kept safe without any breach to them. Our proposed system is cost effective and very much possible and also quite feasible as no resources are being used at users end. Here we tried presenting a prototype which is very similar to the actual layout of our project. The application of this will save a lot of resources that are time consuming and inefficient. We are also planning to have a duration of period for which a person wants to opt for service of this med

card. Each individual who will take the med card, contingent upon card esteem, first they pay Card Value to the Organization. This data is shared to every one of the parts of the Hospital branches with the goal that they can keep up with worldwide data of the gathering. In the event that the user of the Med Card is enduring illness they will be given starting treatment with next to no consultancy charges.

Delta operator based modeling and control of high power induction motor using novel chaotic gorilla troop optimizer

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Abstract. New chaotic gorilla troop optimizer is developed in this study. Different one-dimensional chaotic maps are used to alter two parameters of the parent algorithm. Thus the development of new chaotic algorithms is based on ten well-known and widely cited chaotic maps. The suggested method is tested using two varieties of benchmark functions, namely unimodal and multimodal. Using this proposed algorithm, a 500 hp ac motor model is diminished. Further, the controller is also developed taking advantage of the unified domain method. The controller implementation is done with the help of approximate model matching technique. The methods proposed outclass manifold cutting-edge approaches with respect to the optimal solutions as well as convergence graphs. In order to account for the stability of the proposed algorithms, the standard deviation of the optimal values is examined. Selected results of the proposed methods are displayed in this work. All of the experiments conducted have yielded promising results.

An Enhanced Optimize Outlier Detection using Different Machine Learning Classifier

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Abstract. Data mining (DM) is an efficient tool used to mine hidden information from databases enriched with historical data. The mined information provides useful knowledge for decision makers to make suitable decisions. Based on the applications, the knowledge required by the decision makers will differ and thus need different mining techniques. Hence, an ample set of mining techniques like classification, clustering, association mining, regression analysis, outlier analysis, etc., are used in practice for knowledge discovery. These mining techniques utilize various Machine Learning (ML) algorithms. ML algorithms assume the normal

objects as highly probable and the outliers as low probable. The global outliers which occur very rarely will deviate totally from the normal objects and can be easily distinguished by unsupervised ML algorithms. Whereas, the collective outliers which occur rarely as groups will deviate from the normal objects and can be distinguished by ML algorithms. This paper analyzes the outliers and class imbalance for diabetes prediction for different ML algorithms i.e. logistic regression (LR), decision tree (DT), random forest (RF), K-neighbors (K-NN) and XG-Boosting (XGB).

Prediction of Disease Diagnosis for Smart Healthcare Systems using Machine Learning Algorithm

Nidhi Sabre¹, Chetan Gupta²

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Abstract. In the field of clinical conclusion, Machine learning (ML) strategies are broadly taken on for expectation and grouping task. The point of ML strategies is to arrange the illness all the more precisely an in proficient way for determination of sickness. There is steady development in tolerant life care machine and frameworks. Thus, this development builds the typical existence of individuals. Be that as it may, these medical services frameworks face the few difficulties and issues like deluding patients' data, security of information, absence of exact information, absence of medico data, classifiers for expectation and some more. The point of this study will to propose a model in view of ML to determine patients to have diabetes and coronary illness in brilliant clinics. In this sense, it was underlined that by the portrayal for the job of ML models important advances in shrewd clinic climate. The exactness pace of conclusion (order) in view of research center discoveries can be improved through light ML models. Three ML models, in particular, support vector machine (SVM), Decision Tree (DT) and Gradient Boosting (GB), will prepare and test based on lab datasets. Three primary systemic situations of diabetes and coronary illness analyze, for example, analyse in light of unique and standardized datasets and those in view of component choice, were introduced. The proposed model in view of ML can be filled in as a clinical choice emotionally supportive network.

Optimization Accuracy on An Intelligent Approach to Detect Fake News on Twitter Using LSTM Neural Network.

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Abstract. Fake identity is a critical problem nowadays on social media. Fake news is rapidly spread by fake identities and bots that generate the trustworthiness issue on social media. Identifying profiles and accounts using soft computing algorithms is necessary to improve the trustworthiness of social media. The Recurrent Neural Network (RNN) categorizes each profile based on training and testing modules. This work focuses on classifying bots or human entries according to their extracted features using machine learning.

Once the training phase is completed, features are extracted from the dataset based on the term frequency on which the classification technique is applied. The proposed work is very effective in detecting malicious accounts from an imbalanced dataset in social media. The system provides maximum accuracy for the classification of fake and real identities on the social media dataset. It achieves good accuracy with RNN-long short-term memory (LSTM). The system improves the classification accuracy with the increase in the number of folds in cross-validation. In experiment analysis, we have done testing on real-time social media datasets; We achieve around 96% accuracy, 100% precision, 99% recall, and 96% F1 score on the real-time dataset.

Mining User Interest using Bayesian-PMF and Markov Chain Monte Carlo for Personalized Recommendation Systems

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Abstract. It is easy and beneficial to use low-rank matrix approximation techniques in collaborative filtering systems. Model of this kind are often fit by obtaining MAP estimates of parameters, a technique that is efficient even for exceptionally large datasets. This method, however, is tedious and prone to overfitting unless the regularization parameters are properly adjusted, since it discovers a single estimation of the parameters. To manage model capacity automatically, this research work integrates all model hyperparameters, and parameters in the Bayesian approach of the probabilistic matrix factorization (PMF). The MovieLens-100K dataset, which contains over 100-K movie ratings, shows that Bayesian PMF can be effectively trained using MCMC (Markov chain Monte Carlo) technique. The proposed model achieves better efficacy as compared to PMF-MAP models.

Big Data and Its Role in Cyber Security

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Abstract. Big Data Analytics (BDA) is defined as the process of processing, storing, and acquiring enormous volumes of data for future analysis. Data is being generated at an alarmingly rapid rate. The Internet's fast expansion, the Internet of Things (IoT), social networking sites and other technical breakthroughs are the primary sources of big data. It is a critical characteristic in cybersecurity, where the purpose is to safeguard assets. Furthermore, the increasing value of data has elevated big data to the status of a high-value

target. In this study, we look at recent cybersecurity research in connection to big data. We discussed how big data is safeguarded and how it could be utilized as a cybersecurity tool. We also discussed cybersecurity in the age of big data as well as trend and challenges in its research.

QR Code Based Digital Payment System using Visual Cryptography

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Abstract. Quick response code (QR code) is employed due to its benefits, especially in the area of mobile payments. In the transaction process, however, there is an unavoidable risk. It is challenging to identify the attacker's tampering with the QR code carrying the recipient account for the merchant. As a result, verifying QR codes is critical. In this study, we propose a methodology to more secure the payment method. This method encrypts the payment process using the visual cryptography scheme (VCS) and AES secret key techniques. The first step is to use the (2, 2) VCS to divide the original QR code into two shares, secondly, we are applying the AES algorithm in one share and adding a secret key to this share. Then both shares are distributed. First one sent to the user using cloud server and second one directly to the applicant desk. The two shares can then be properly stacked, and the same QR code is recreated using the specified VCS.

A Study of Different Approaches of offloading for Mobile Cloud Computing

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Abstract. In today's world, mobile computing is growing rapidly. Smartphones, notebooks computers, gaming consoles, smartwatches, and other gadgets have grown at an exponential rate. These devices are assembled with data resources such as sensors and cameras, as well as user interface features such as speakers and touchscreens. Online communication and gaming are possible because of the internet, allowing people to connect. These functionalities are required intensive computational operations and must be handled by the latest mobile devices. But mobile devices have a limitation in data storage and energy. Cloud computing gives services to users over the internet, anything can be delivered via the cloud. Mobile Cloud Computing (MCC) is a technique where the application process and data storage can be done outside the mobile device. It is a combination of mobile computing, cloud computing, and wireless network that collaborate to provide rich computational resources to mobile users. The procedure of migration of data and computation process from a mobile device toward the cloud is known as offloading. The focus of this paper is to investigate the different algorithms and frameworks and experiment surroundings that are used for offloading data and processes from mobile devices to cloud systems.

Use of Machine Learning Models for Analysing the Accuracy for predicting the cancerous diseases

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Abstract. One of the diseases, which cause more number of deaths frequently and in more numbers-, is Breast Cancer. Let us go through the index for global statistic for breast cancer (BC), which impact women globally and it causes lot of trouble to health of women in turn causing deaths. So it is the threat to society for causing lot of trouble and majority of the new cases are suffering from breast cancer. A tumor, which is causing deaths of women round the globe, is known by the name malignant. As we are aware that early diagnosis of any diseases example malignant or cancer will always increase the chances of survival because of early detection patient can get early or preventive clinical treatment. It will be helpful in avoiding unnecessary therapies if benign tumors are classified more precisely. So it is very important to classify the tumor status accurately for breast cancer detecting and classifying it into one of the group that is whether it is malignant or benign and it is very popular domain for research. On complex dataset if we want to predict or forecast BC pattern machine learning models will be very useful as they can classify different pattern more accurately than any other general algorithms. Artificial Intelligence models are useful for properly grouping datasets, particularly in the healthcare arena, where these models are frequently used to reach conclusions and helpful in predicting. While predicting using Logistic Regression the exactness was calculated then latter the same is compared with Decision Tree and Random Forest Classifier to give the best method for predicting breast cancer on a dataset available to us. The main goal is to evaluate each model's accuracy and precision in terms of productivity and exactness for accuracy, precision, fl-score, and support. According to the findings, the Random Forest Classifier has the highest precision (96.50 percent) when assessing the data, followed by Decision Tree (93.70 percent), and Logistic Regression (95.10 percent). All of the trials are carried out using AI tools in a re-enactment.

Predict Employee Promotion using Supervised Classification Approaches

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Abstract. In today's highly developed, massive corporate offices or industries, it is difficult to personally evaluate every employee's performance and recommend them for promotion. It has only been the subject of a few research projects, but those who have worked on it have created algorithms for predicting promotions as well as the fundamental traits and job qualities for each person. The incorporation of extra attributes allows our model to do more with fewer strategies. The goal of this research is to provide a machine learning based system for predicting whether or not an employee will be promoted. We do this by offering a linear model that offers a respectable level of accuracy at a cheap cost. This process takes into account the training record, annual performance review score, length of service, key performance indicators, and other elements of the employee. Due to the limited number of classifications, a linear classifier was utilized to train the model. This linear classifier completes 50 iterations with an accuracy rate of 92.6%. Using this method, you may be able to acquire an answer on the likelihood of promoting any employee. This software might prove to be the saving grace for an organization's HR department.

SMART GRID ANALYTICS –Analyzing and identifying power distribution losses with the help of efficient Data Regression algorithms

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Abstract. In recent years, today's energy consumption is growing rapidly and it is diligently dealing with huge energy losses, both technical and non-technical. All of this can cause companies to lose a huge amount of energy. This non-technical loss in energy use is called any energy consumed that is not charged with some type of irregularity. Furthermore, it was necessary to perform a computationally escalated algorithm of AI on measured data. This collected data from the measurement is not technical. These are why companies lose systems with characteristics which is similar to those considered big data. Perhaps the NTL problem is the most difficult problem for energy data management and at the level leading to verifying whether advanced technologies are emerging. This paper proposed a methodology for NTLs recognition with the regression analysis that guides how to overcome these drawbacks. The framework deals with energy consumption data, smart meter, and customer registration data to identify losses. The results obtained from regeneration demonstrate the effectiveness of the proposed technique is concerned with the detection of fraudulent electricity consumers and energy losses.

Load Balancing on Cloud using Genetic Algorithms

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Abstract. With the growth of technologies like cloud computing, the dissent of 'Single- Process- Single-Server' for handling server traffic is open to question. Parallel server requests every millisecond would frequently swamp a single server. To handle this scenario, many models and algorithms have been suggested in literature. However, our approach is novice and concentrates on the selection of best breed of processes to balance load. Genetic Algorithms have been used in almost all fields of engineering and sciences. The intent of this paper is to apply genetic algorithm on a set of processes on the server to manage load balancing on server. Genetic Algorithms have given results with near optimum solutions. Hence, there is a desideratum to develop better techniques of load balancing. This paper focuses on ameliorating the task of load balancing on cloud servers using genetic algorithms. In this paper, we have optimized the set of processes using Genetic Algorithm to get better breed of processes before deploying them on cloud platform. This improves the overall quality of the applications deployed on cloud.

Hybrid feature selection approach to classify IoT network traffic for Intrusion Detection System

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Abstract. Internet of Things (IoT) systems have become a major part of our daily lives. As IoT systems are rising, the amount of data generated by them is also growing. It is a need of hour to build a robust system that could protect human, information and infrastructure from damage. The IoT network traffic classification is very much essential to filter out the attacked traffic and save the system from larger damage. This paper proposes a hybrid feature selection technique to classify incoming IoT network traffic as normal or attacked. The proposed hybrid techniques combine a feature set from two embedded feature selectors : Random Forest and LightGBM under different mathematical set operations i.e. union and intersection. Data under this feature set is trained and analysed over Extra Tree and Gradient Boost Classifier. The hybrid selector approach gives promising results with an accuracy of around 99% and execution time of building a model is lower than individual selector and is reduced by almost 50% when no feature selection technique is used.

A Deep Learning Based Framework for Analyzing Stress Factors Among Working Women

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Abstract. Due to gender-specific job stresses, occupational stress is becoming more common in a variety of sectors and may be a problem of uneven size for working women. Even while these pressures haven't received much attention up until now, new research indicates that they can have a negative impact on health. Numerous diseases, such as cardiovascular disease, neurological disease, and others are greatly influenced by stress. Additionally, it has been asserted that high employee stress levels negatively affect an organization's productivity, which may have an effect on society's financial burden. Therefore, it is essential including both personal health and society well-being to handle stress. Women employees are a vital and integral part of society, and by managing their stress and anticipating problems before they arise, they may enhance their performance both personally and organizationally. In this paper, various stressors on working women are examined. This paper provides a framework for analysing stress in working women that considers a number of physiological aspects, including respiratory rate, heart rate, and other sociocultural assessments by using convolutional neural network as the base model which is trained on FER2013 dataset and achieves an accuracy of 97.7%. According to the severity of the results of the stress prediction, various corrective measures are then recommended.

Automatic Question Generation

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Abstract. It is critical to evaluate an individual's capabilities in order to assess their capabilities. Exams have a vital part in the testing process and, as a result, the questions that must be tested. Framing questions may be a tiresome endeavour at times, necessitating the use of automated question generating. Natural Language Processing may be used to produce questions that are accurate, answered, and efficient (NLP). We can structure questions by accepting and processing information using NLP and different question creation methods. MCQs, fill in the Blanks, WH questions, Crosswords, and a quick synopsis of the supplied material are among the questions created. Before being sent to the AQG, the data is pre-processed. Depending on the supplied content, the questions are verified for contextual relevance and answerability. Automated Question Generation can be beneficial in self-analysis, self-guidance, and other areas.

Automatic Construction of Named Entity Corpus for Adverse Drug Reaction Prediction

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Abstract. One of the hefty global causes of obliteration is cancer. The scientific communities of clinical and molecular oncology have recently contrived to significantly extend the life expectancy of patients with specific cancer forms. Multitudinous medical health records are being published on a prodigious scale embracing electronic health records, case reports, discharge summaries, patient reviews, etc. The attainability of structured data presents a significant stumbling block. Natural language processing (NLP) is the sole practical method to extract and encode textual data for clinical science, but the absence of standard, annotated datasets for training and testing of machine learning algorithms impedes the progress in clinical NLP. Therefore, the intention of this research is to bridge the gap identified from the literature by developing a reliable labelled dataset for the automated prediction of adverse drug reactions induced by the medications used in the treatment of cancer. This corpus is based on the complete text of case reports relating to cancer, unlike other datasets.

A Space Efficient Metadata Structure for ranking Subset Sums

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Abstract. The top-k variation of the Subset Sum problem can be successfully used in solving some popular problems in Recommendation Systems as well as other domains. Given a set of n real numbers, we generate the k best subsets so that the sums of their elements are minimized, where k is a positive integer chosen by the user. Our solution methodology is based on constructing a metadata structure G for a given n . The metadata structure G is constructed as a layered directed acyclic graph where in each node an n -bit vector is kept from which a suitable subset can be retrieved. The explicit construction of the whole graph is never needed; only an implicit traversal is carried out in an output-sensitive manner to reduce the total time and space requirement. We then improve efficiency of our algorithm by reporting each subset incrementally, doing away with the storage of the bit vector in each node. We have implemented our algorithms and compared one of the variations with an existing algorithm, which illustrates the superiority of our algorithm by a constant factor both with respect to time and space complexity.

Brain Tumor Detection Using Machine Learning

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Abstract. Cerebrum growths are brought about by the strange improvement of cells. This is one of the main sources of grown-ups passings all over the plane. A large number of passings can forestall the early recognition of cerebrum cancers. The recognition of cerebrum growths using attractive reverberation imaging (MRI) can build the recurrence of the patient's endurance rate. This work intends to recognize cancers at the beginning phase. Computerized discovery of growths utilizing attractive reverberation imaging (MRI) is vital as a need might have arisen for treatment arranging. The conventional method for recognizing deserts in attractive reverberation imaging of the cerebrum is to look at an individual. This strategy isn't good for a lot of information. In this way, programmed growth identification strategies to acquire radiation experts are being created. The Discovery of cell growth utilizing MRI is worrisome because of the complexities and variety of cancers. This article uses a formula to focus on equipment that can detect malignancies in the MRI cerebrum. The proposed activity is partitioned into three sections: Apply step changes to the MRI picture of the mind to extricate the surface capacity utilizing the GLCM (GREETING MATCHING MATRIX) and characterized utilizing the AI calculation.

Implementation of a Smart patient health tracking and monitoring system based on IoT and wireless Technology

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Abstract. The health department plays a crucial role in this pandemic situation these days. Today, healthcare is of paramount importance in every country. In this situation, the Internet of Things based on the current technology plays a big role in healthcare. The Internet of Things (IoT) is a new Internet revolution that is a rising field of research, particularly in healthcare. With the increase in wearable sensors and smartphones and the evolution of new and advanced generation of communication i.e., 5G technology, this may be done swiftly when diagnosing the patient and aids in the prevention of disease transmission and the accurate identification of

health concerns even when the doctor is a long distance away. Here, we may continuously monitor the patient's heartbeat, temperature, and other fundamental data, as well as assess the patient's status and preserve the patient's information on a server using remote correspondence (wireless communication) based on the Wi-Fi module.

Diabetes Disease Prediction using KNN

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Abstract. Diabetes is a very common chronic disease that is of rising concern. According to the World Health Organization, it is estimated that approximately 422 million people worldwide suffer from diabetes. By 2040, the number of people suffering from diabetes is estimated to increase to approximately 642 million. Due to diabetes, one person dies every six seconds (five million a year) which is more than HIV, tuberculosis, and malaria combined and 1.6 million deaths are due to diabetes every year. In the previous part, we have covered some of the traditional ways for diabetes prediction. The use of Machine learning applications in this disease can reform the approach of its diagnosis and management. Support vector machines, logistics regression, K-Nearest Neighbour (KNN), decision tree algorithms were used to identify the model. These techniques are more suitable to detect early signs of diabetes based on nine important parameters. Accuracy, F-Measure, Recall, Precision, and ROC (Receiver Operating Curve) measures are used to define the performance of the different machine learning techniques.

Review: Internet of Things for Vehicle Simulation System

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Abstract. For last few years Internet of Things is becoming a quite vernacular phrase. The increase in number of experiments and research works there is an exponential advancement in creating, designing and building various models which can construct a smart and advanced world around us. This can only be achieved by performing large number of prototype based experiments and assumptions. This review paper mainly emphasizes on automobile simulation and computer based tests especially vehicle simulation. It provides a simple possible ways to acquire car simulation information and also displays present available interfaces and gives a plan to utilize them.

Time Series Analysis and Forecast Accuracy Comparison of Models Using RMSE – Artificial Neural Networks.

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Abstract. Primary importance of our Research paper is to demonstrate the time series Analysis and Forecast Accuracy of Different Selected Models based on Neural Networks. Fundamentally important to many practical applications is time series modelling and forecasting. As a result, there have been numerous ongoing research projects on this topic for many months. For enhancing the precision and efficacy of time series modelling and forecasting, numerous significant models have been put out in the literature. The purpose of this research is to give a brief overview of some common time series forecasting methods that are implemented, along with their key characteristics. The most frugal model is chosen with great care when fitting one to a Data set of Pune Precipitation data from 1965 to 2002. We have utilized the RMSE (Root mean square error) as a performance index to assess forecast accuracy and to contrast several models that have been fitted to a time series. We applied Feed forward, Time Lagged, Seasonal Neural Networks, long short-Term memory models on Selected Dataset. Long Short-Term Memory Neural Model Worked better than other models.

A Non-Recursive Space -Efficient Blind Approach to Find All Possible Solutions of the N-Queens Problem

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Abstract. N-Queen's problem is the problem of placing N number of chess queens on an NxN chessboard such that none of them attack each other. A chess queen can move horizontally, vertically, and diagonally. So, the neighbours of a queen have to be placed in such a way so that there is no clash in these three directions. Scientists accept the fact that the branching factor increases in a nearly linear fashion. With the use of artificial intelligence search patterns like Breadth First Search (BFS), Depth First Search (DFS) and backtracking algorithms, many academics have identified the problem and found out a number of techniques to compute possible solutions to n-queen's problem. The solutions using a blind approach, that is, uninformed searches like BFS and DFS, use recursion. Also, backtracking uses recursion for the solution of this problem. All these recursive algorithms use a system stack which is limited. So, for a small value of N, it exhausts the memory quickly though it depends on machine. This paper deals with the above problem and proposes a non-recursive DFS search-based approach to solve the problem to save system memory. In this work, Depth First Search (DFS) is used as a blind approach or uninformed search. This experimental study yields a noteworthy result in terms of time and space.

Handling Missing Values Using Fuzzy Clustering: A Review

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Abstract. The problem of missing values has been a prominent area of research in recent years. They may prove to be a huge obstacle during the analysis of data related to various domains including healthcare, education, research, and image processing etc. While dealing with real-world datasets, incomplete data due to missing values may produce biased results, thereby, reducing its statistical power. Hence it is important to handle the problem of missing values. Many researchers have proposed various methods for handling such missing values, which are broadly categorized as deletion, single imputation and multiple imputations. Out of all these methods, fuzzy clustering is the most efficient one. This paper reviews and analyses the existing research work to handle missing values using fuzzy clustering. Our study provides the comparison of various researcher works based on different aspects broadly categorized as: dataset collected & domain involved; Missing value imputation (MVI) technique & applied distance equation; missingness mechanism/rate; and performance evaluation criteria/ tools.

Application of Ensemble Methods in Medical Diagnosis

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Abstract. Medical diagnoses with Machine Learning face challenges of high False Negative rate, which can pose a threat to patients' lives. Moreover, ML solutions tend to be less robust to minor changes in input data. Thus, the need for an efficient machine learning framework is to be given top priority to ensure the safety of patients and prevent any false negatives during detection of a disease. One model alone cannot be relied upon for the predictions of diseases in healthcare. The solution to this issue is to consider the predictions of multiple models and then collectively take a decision. Hence, we explore ensemble learning methods using several models as a part of the ensemble to improve model robustness and reduce false detections, hence making ML models more stable and reliable in medical diagnosis. We also experiment with a dataset pre-processing technique called SMOTE (Synthetic Over-sampling Technique) that deal with dataset imbalance.

Some Modified Activation Functions of Hyperbolic Tangent (TanH) Activation Function for Artificial Neural Networks

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Abstract. There is a number of Activation Function (AF) present in the neural network. In spite of that the hyperbolic tangent (TanH) and logsigmoid are commonly used AFs. The TanH AF is better as compared with logsigmoid. On all the numbers of hidden neurons or nodes, logsigmoid and TanH do not had shown better results or performance. For this purpose, we have presented six modified TanH with the help of a generalization of TanH AF. When logsigmoid and TanH do not provide satisfactory results then we may find better results with the help of our purposed other modified TanH. In some situation our modified TanH give equal results as TanH, so we may also use our modified TanH for the verification of TanH results. All these AFs are also as powerful as logsigmoid and TanH. Like logsig and TanH, all of our modified TanH have four properties. First these AFs are bounded range; second all these are zero centered and the other two properties are continuously differentiable and have smooth S-shape. Due to all these properties, we can use all of our modified TanH for solving nonlinear problems. We have taken seven datasets for checking of these AFs. First of all we check the performance on the iris dataset (on 150-samples) using SCG, LM, and BR training algorithms. After that we have tested on cancer (on 699-samples), glass (on 214-samples), bodyfat (on 252-samples), chemical (on 498-samples), wine (on 178-samples), and ovarian (on 216-samples) using SCG training algorithm for more satisfaction of the results.

Advancements and Challenges in Smart Shopping System

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Abstract. The Internet of Things (IoT) is a new era of computing technology through which various things can connect. It is a network of connected devices and objects equipped with smart sensors to collect information and communicate it to other entities of the network. IoT offers various special applications in almost every walk of life to make lives more comfortable. Smart Shopping System is one of the most relevant applications pertinent to the current scenario. Nowadays people frequently visit shopping malls for purchasing items. But, they end up in long queues with long waiting times at billing counters for payments. A smart shopping system facilitates and prepares automatic billing. This paper provides an extensive review of the new smart shopping system to reduce waiting time and make shopping more enjoyable and comfortable.

Ensemble Model for Music Genre Classification

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Abstract. Music Information Retrieval (MIR) has been a popular area of research since its inception. Music can be divided into some conventional categories, called music genres, based on a certain set of features such as orchestral instruments, rhythm, tempo, etc. The MIR community has made tremendous efforts to solve the problem of music genre classification. In this work, we have analysed how the number of genres affect the accuracy of various machine learning models. This paper also presents a novel approach towards the challenge of identifying genre of a given audio clip using an ensemble model with an accuracy of 90.3%.

Decoding Low Code/No-Code Development Hype -Study of Rapid Application Development Worthiness & Overview of Various Platforms

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Abstract. Low Code No-Code (LCNC) platforms allow for the development of software applications with very little or no coding. LCNC platforms are the most delinquent in the league & are surrounded by an enormous buzz. This paper studies the overview of various LCNC Platforms, their worthiness in Rapid Application Development (RAD), & LCNC trends. It also discusses various specifications of Low Code Development & how Low Code No-Code is becoming very popular & an effective option. The research here presents a comparative overview of various LCNC platforms which can replace the developers & traditional development methods.

IoT Framework for Quality-of-Service enhancement in Building Management System

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Abstract. The Internet of Things (IoT) is used for automating human life during the provision of its services. This incredible technology has the potential to improve and ease human life significantly. Building Management System (BMS) is one such system, which is being extensively used in today's world as a remedy against buildings using high electricity supply. Multi agent System (MAS) is being used in smart buildings to communicate and negotiate with multiple agents for energy supply. Machine Learning algorithms are included as a part of Economical Building Management System (EBMS) to enhance the computational calculation for the electricity distribution and real-time electricity price forecasting even when facility managers are absent. Quality of Service (QoS) plays very important role while considering the Internet of Things (IoT) due to large number of interconnected nodes, so Quality of Service Enhancement metrics must be clearly defined to enhance the popularity of any service. As the number of nodes expand, QoS is compromised which is the nature of IoT technology. QoS is inversely dependent on node count i.e, with the increment of node QoS will start hampering as increasing number of nodes will increase number of requests over the IoT server. In today's environment an optimized framework is strongly needed which can control the QoS for IoT. In order to limit the number of queries, an improved framework has been proposed and implemented in this study using mathematical tools, specifically MATLAB. The best power control strategy depends on the goal of the optimization problem: a fair strategy maximizes the product of each user's QoS, the best policies are derived using various Machine Learning algorithms, and applying standard of QoS optimization for goals and QoS limitations are shown.

Blockchain IoT: Challenges and Solutions for Building Management System

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Abstract. Building Information Modelling (BIM) is a creative invention in the area of Architecture, Engineering, and Construction (AEC) and it can better increase collaboration among partners via the use of information and correspondence. 3D models are created as part of the BIM interface, and these models are used to manage actual resources as they are delivered via Building Management Systems (BMS) to the Internet of Things (IoT) structures and administrations. This paper focuses on using new developments in the construction industry such as BIM using IoT and Block Chain (BC), as well as examining buildings interconnection and interoperability in a proposed framework design. In a building, effective security management, and monitoring are viewed as critical variables for the unhindered activity of the organization that has them [1]. This review study proposes a strategy and a framework that employs Block Chain (BC) innovation as a means of achieving and controlling a structure that incorporates coordinated IoT and BIM advancements. The proposed framework configuration used in smart Building may be used in a variety of structures [7].

Evolving Connections in Metaverse

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Abstract. In this period of fast modernization advancement, the field of Internet and Web have a huge change in which people learn, communicate, connect, share information etc. People still interact with the system using keyboard, mouse and other monitoring systems. However, the primary modes of computer-based communication and connection remain unchanged. Though we have various new and emerging applications like social networking, video conferencing, Augmented Reality (AR) applications (e.g., Pokemon Go), virtual 3D network models which provide a rise in digital transformation, but they have a limited result because of conventional reasons and need of insufficient network support or bandwidth. The term ‘metaverse’ has been formulated to facilitate truly amazing experiences that go beyond our conventional lives. The Metaverse can be thought of as a digital representation of the real world. Avatars are virtual representation of various human outlines, which is an approximation of the current real world. The concept of Metaverse has now a topic of debate in the field of digital transformation. As the metaverse grows, online spaces will emerge that provide more complex user interactions than current technology permits. Big tech giants are attempting to forge the path for the future. In addition to games and social media, metaverse will incorporate economic infrastructures, digital entities, and other applications. This paper gives a reasonable effort of inexpensive approach that examines the new developments of the metaverse and the resulting digital transformation.

A Systematic Approach On Blockchain Security Methodologies In IoT

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Abstract. With the advent of smart homes, “shrewd urban communities, and savvy everything, the Internet of Things (IoT) has arisen as an area of amazing effect, potential, and development, with Cisco Inc. foreseeing to have 50 billion associated gadgets by 2020. Be that as it may, the majority of these IoT gadgets are not difficult to hack and think twice about. We audit and order famous security issues as to the IoT layered design, notwithstanding conventions utilized for systems administration, correspondence, and the executives. We frame security prerequisites for IoT alongside the current assaults, dangers, and cutting edge arrangements. Besides, we classify and plan IoT security issues against existing arrangements tracked down in the writing. All the more significantly, we examine, how block chain, which is the fundamental innovation for bit coin, can be a key empowering influence to tackle numerous IoT security issues. The paper additionally recognizes open exploration issues and difficulties for IoT security by processing numerous secure keys through a single special key, a secure hash function is needed in association with a key derivation function to enhance the encrypted mechanism and maximize cryptography efficiency. What's more, we give access control groupings. At last, we feature difficulties and future examination headings in creating generic architecture for security components for IoT frameworks.

A Systematic Analysis On Airborne Infectious Virus Diseases: A Review

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Abstract. With the exponential growth and intensification of the process of global integration, an individual health is gaining attention day by day. As the number of human mobility is growing, the threat of the outbreak of epidemic Airborne Infectious virus diseases (AIVD) is the main problem all over the world. As the AIVD has affected countries not only economically but also affected socially. Although much less fatal than Ebola and SARS Virus epidemics, the current coronavirus (COVID-19) and its variant has spread more quickly in people within a few days. So, the current study proposed a deep learning which is subset of machine learning based framework for combating the AIVD such as COVID-19 in the field of global public health. This article represents systematically and comprehensively evaluates the study of AIVD from the perspective of healthcare research areas. It provides insights into the citation patterns, highly cited literature, core keywords, and network visualization of the analysis for the AIVD research.

Comparison of different similarity methods for text Categorization

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Abstract. Incorporating semantic information into any similarity metric increases its effectiveness and yields findings that may be further analysed using human interpretation. There will be fewer accurate findings if the similarity is calculated based only on the text's words. Three alternative approaches are shown in this study, each of which uses a feature vector that combines semantic information from readers and calculates similarities between them. These methods—LSA using word2vec, Explicit Semantic Analysis using bag-of-words, and Soft Cosine Similarity using TF-IDF—are based on textual data and knowledge-based methodologies. The technique produces simple-to-read documents that can be used in different information retrieval systems. When comparing commonalities between brief news texts, Latent Semantic Analysis employing Word2Vec Vectors outperformed the other two.

The Upsurge of Deep Learning for Disease Prediction in Healthcare

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Abstract. The healthcare sector generates around one trillion Gigabytes of clinical data annually. With limited resources, manually analyzing these massive amounts of data is tremendously time-consuming. Latest advancements in Deep Learning (DL) have been shown as an efficacious approach to building end-to-end learning models for disease prognosis and diagnosis. In the past, discovering information from data has been accomplished through conventional Machine Learning techniques. Problems with these techniques are that they do not scale appropriately with the increase in data due to a lack of domain knowledge. This work briefly explained popular algorithms based on the state-of-the-art related to DL and the healthcare sector. These algorithms can potentially prevent infectious diseases, reducing operating costs and efforts. Finally, Significance and importance of DL in healthcare are discussed to aid readers in formulating new healthcare research problems.

SDN Based Cryptographic Client Authentication: A New Approach to DHCP Starvation Mitigation

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Abstract. Network Security has called for more concern with the growing scale of internet usage and cyber-attacks thus making the DHCP (Dynamic Host Configuration Protocol) a vital tool for managing a network. However, few concerns have been channeled towards DHCP as the protocol was initially designed with the convenience of use instead of security, which left it open to attacks including DHCP starvation which is a threat to the operation of a network. DHCP starvation attack is one of the problems that has occurred over network communication and several techniques have been established to solve this problem. However, the issue of users' denial of service (DOS) for both wired and wireless networks persists. Thus, this paper proposes an SDN plus Cryptographic based solution to lessen the impact of the attack and create a more secure network. The proposed model authenticates the DHCP DISCOVER request sent by any client connected to the switch (be it the attacker or the victim) thus leading to a more secured starvation mitigation. The proposed approach further suggests a novel approach to DORA activity which is based on BROADCAST-

UNICAST-BROADCASTUNICAST to a UNICAST-UNICASTBROADCAST-UNICAST. The proposed approach is proven mathematically as represented via a python code to be effective and deployable in a real-time scenario.

Power of deep learning models in bioinformatics

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Abstract. Deep learning (DL) models have had an influence on machine learning-based in bioinformatics applications since they allow for the learning of complicated non-linear interactions between functionalities. It also enables information utilized from large unlabelled data that is unrelated to the problem under investigation. Protein-protein interactions (PPIs) are important in a variety of biological functions, including cell signalling, immune function, and cellular organization. PPIs analysis is thus vital, as it may spotlight the detection of targeted proteins and its role in the disease and thus help in designing treatments for it. PPIs play critical roles in life processes, and ab-normal interactions are linked to a variety of disorders. For the purpose of understanding disease grounds and developing new medications, PPI sites must be identified. Because of the overall cost of experimental methods, effective and efficient computational methods for PPI prediction are extremely valuable. Machine learning and deep learning techniques have produced remarkable results, but their efficacy is highly reliant on protein interpretation and feature extraction. This paper will explain various deep learning models that can be used in Bioinformatics as well as the challenges they face.

Deep Neural Network with Optimal Tuned Weights for Automated Crowd Anomaly Detection

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Abstract. Enhanced approaches to detect the anomalies in crowd videos could help in crowd surveillance. In vision-based surveillance, this is an attractive research topic. Previous researchers have used temporal and spatial information obtained from videos to detect different types of crowd abnormal behaviours. This article aims to propose new crowd anomaly detection with 3 major stages like segmentation, feature extraction & classification. Originally, the input frame is subjected to the segmentation stage as its input. Here, the segmentation process is performed using Fuzzy C-means (FCM) clustering. During the feature extraction stage, it extracts the features Histogram of Gradient (HoG) and Center Symmetric Local Binary Pattern (CSLBP) based features. Further, the optimized Deep Neural Network (DNN) is utilized for the detection of anomalies. To enhance the performance of proposed work, DNN weights are optimally tuned via the developed OBL added Shark Smell Optimization (OBLSSO) model. Finally, the suggested system's outcomes are compared to those past methods using a variety of metrics.

Tuning Geofencing in Child Kidnapping Prevention Methods

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Abstract. Geofencing is a type of virtual perimeter that delimits a physical space using location-based services. A geofence is tuned in location tracking methods to give improved accuracy and enhance traveller monitoring on the basis of atypical user locations. A proposed technique using multi layers in geo-fencing technology is presented in this study, so as to provide efficient energy. A smartphone's GPS is used by the location monitoring system, which is a type of LBS (Location Based Service) system. The server shows the location of the trackable person on the map which is accessed either by the website or authorized family person. Geofencing also restricts the areas where travellers may be watched, and family members are able to receive notifications via their smartphones in the form of messages or alarms if a traveller were to leave the Geofence area. The suggested plan offers a model that combines Geofencing technology, GPS, and platform to let family members immediately track the whereabouts of loved ones. The information being transferred is sent with authentication, integrity, confidentiality and freshness. The investigation confirmed the system's usefulness and demonstrated its excellent capabilities in a number of areas, including accessibility, secrecy, security, location accuracy, and seamless data transmission.

Segmentation of the Eye Fundus Images using Edge Detection, improved Image and Clustering of Density in Diabetic Retinopathy

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Abstract. We found that early determination is imperative to dodge assist complications in this consider. Retinopathy Diabetic (DR). The condition can be separated into either of two stages of analyzed Eye Fundus pictures, depending on this frequency and amount for this characteristic lesion series (EFI). A new algorithm is used for the segmentation for this eye fundus and this value for this eye fundus segmentation is first used for later edge detection. Improved face fundus imaging is also important in the image segmentation algorithm. In this analysis we explain how we segment and interpret each lesion, experiment, compromise and findings.

Securing Medical Images using Quantum Key Distribution Scheme BB84

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Abstract. Medical images are very sensitive data for maintaining the safety and confidentiality of a patient. In most cases, data can be hacked by an unauthorized third party when a medical image is transferred to another party over the public Internet. This unauthorized access should be strictly prohibited to keep those data secured. Various security measures for healthcare images have been proposed like watermarking, image stereography, and cryptography as well. One of the best ways to transfer medical images through the public internet is Quantum Cryptography. Cryptography, adopting the principle of quantum mechanics has shown outstanding achievement in securing digital communication. The evolution of quantum cryptography replaces various classical quantum cryptography. Quantum Key Distribution (QKD) is a cryptography protocol based on quantum mechanics and is used to exchange secure keys between two parties. In this paper, we have simulated medical image encryption using QKD protocol BB84 without using the classical channel. This paper will help medical professionals and the healthcare industry to transfer patients' data on the public Internet using high secure key distribution method BB84.

DESIGN AND DEVELOPMENT OF AUV FOR CORAL REEF INSPECTION AND GEOTAGGING USING CV/ML

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Abstract. Coral reefs are the biggest underwater ecosystem that provides habitat for millions of aquatic species. Recent studies show that corals face extinction due to various natural and man-made imbalances in the climate. The importance of coral reef inspection and related studies are relevant in overcoming these effects of nature. Coral reefs are considered the most biodiverse ecosystem in the world. They cover only 0.1% of the earth's surface but possess a variety of living species. They are home to 4000 species of reef fishes, 840 species of corals, and over 1 million species of other animals. The proposed work addresses the challenges faced in coral reef monitoring and inspection by the entire system design of an autonomous underwater vehicle (AUV). The designed AUV is capable of oceanic inspection, monitoring, and detecting the abnormalities in corals using Computer Vision and Machine Learning (CV/ML). AUV consists of a Single Board Computer (SBC) that runs ML models to detect coral bleaching. SBC guides the control system of AUV to navigate based on autonomous decisions. The surface beacons (SB) which are attached to AUV collect information from AUV and deploy to the surface upon SBC command. SB can detect the sea surface, upon reaching the surface of the sea, it activates the GPS and transmits the collected logs to the base station with its position information. Developed AUV has the capability of detecting the healthy and bleached corals and geotag the location for post-inspection.

Theoretical approach of proposed algorithm for channel estimation in OFDM MIMO system

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Abstract. 5G technology is replacing the existing 4G/LTE communication system because there is need of high speed communication system at lower bandwidth. 5G communication system has low latency and high data rate with secure communication which is main requirement of today generation system. In 5G system, mimo system is used. There is use of multiple antennas at the transmitter and receiver side both. OFDM modulation techniques are used for error free transmission and efficient use of bandwidth. Channel estimation play a crucial role in error free transmission. Various channel estimation technique LS, MSME, DFT, purposed algorithm is studied in this paper.

An approach for Digital-Social network analysis using Twitter API

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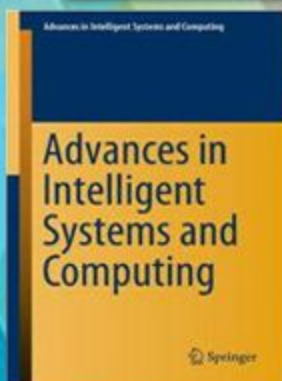
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Abstract. In today's world of the internet, we have seen that we are a series of interconnected points that communicate with one another. We are able to send out information about ourselves or about work, we can exchange videos and files, and connect with people of the same beliefs and ideas. Through this process, we are able to retrieve a broader awareness, clarify different concerns, interrogate people and overall map different ideas and people together. Networking has been used quite often as a term to describe such objectives. Whether we are talking about one or more devices communicating with one another or a group of people connecting with each other, networking has been used to describe such connectivity and communication between objects. Network analysis has been introduced as well, as a way to explore this connectivity, and it has also affected connectivity on a social level also known as social network analysis. To further clarify social network analysis (SNA) which is the main concern of the paper, we need to acknowledge what each term means, what are the different types of SNA, the benefits and purpose of the SNA usage, how we can use it and what are the best tools and applications that we can use.

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