INTELLIGENT COMPUTING

Content-Based Image Retrieval Techniques: A Review

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ABSTRACT

Present-day, medicinal and healthcare industry needs a direct attention in the care of human organs and disease objects. They are extensively used for the analysis, treatment, and spotting of the disease. The retrieval of the appropriate images from the database is very difficult if the volume of the image database has increased. By means of this, Content-Based Image Retrieval (CBIR) acquired animmense deliberation to excerpt the pertinent information from the large image archive. It contains two activities, extracting the features and measuring the similarity. Based on these, many CBIR systems are proposed. This paper provides the exhaustive study of the recent CBIR which is used to design a mechanism for image retrieval to get better retrieval results with lesser computational complexity.

Keywords: CBIR, Feature Extraction, GLCM, Shape, Texture, Wavelet Transform.

Prediction of Passenger Traffic for Global Airport using Holt's Winter Method in Time Series Analysis

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ABSTRACT

This paper presents an insight into the future usage of airport by the passenger using the method Holt's winter in time series analysis. The airport industry has a gradual development over past few years. With the time series analysis, we can predict the airport traffic through passing over the data of past ten to twelve years of previous observed values of passenger traffic. Using this method, the results predict the future airport traffic and gives us a clear analysis of airport usage and to reduce traffic simultaneously solutions should be made previously. The results are based on agreement with the theoretical predictions and

significant improvement over previous efforts. This work is presented has a profound implication on future prediction d this may help to solve the problem of airport.

Keywords: Forecasting, Time series, Holt's winter method, Airplane passenger traffic.

A Survey on and Performance Analysis of Load Balancing Algorithms using Meta Heuristics approach in Public Cloud-Service Provider's Perspective

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ABSTRACT

Cloud Computing provides higher level services and shared pools of configurable resources with minimal management effort over the internet. Cloud Computing achieves coherence and economic of scale by means of shared resources. The growth of cloud computing depends on the high availability of low cost computers, storage devices and networks as well as hardware virtualization and utility computing. Service Level Agreement (SLA) is a service commitment tool between a cloud service provider and a cloud customer. Using SLA in cloud computing, reduce the chances of disappointing the cloud customer and manage the expectation between the service provider and the customer. The challenge is, it is very difficult to handle all request by the cloud providers at a time during peak hours and to keep up SLA. So when there is an uneven request arrival pattern, the cloud resources may either be underutilized or over-utilized. In order to balance the load, the load balancer plays the major role in cloud computing. The load balancing algorithm equalizes the workload and computing resources in a cloud computing environment. It allows an organization to manage their workload demands by allocating resources among multiple servers and thus it minimizes the response time, minimize the waiting time, maximize the throughput time, maximize the resource utilization and minimize the communication delays of the server by meeting the SLA. The major goal of this study is to review both the existing static and dynamic load balancing algorithms proposed till now and to design and implement a Load balancer that uses a Meta Heuristics approach – Ant Colony Optimization technique to perform balancing the load so that the SLA is met evenly without any issues. Each of the load balancing algorithms is compared with other algorithms theoretically and experimentally one of it is tested with the proposed system using AWS Cloud PaaS (Platform as a Service).

Improve Efficient Keywords Searching Data Retrieval Process in Cloud Server

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ABSTRACT

Over the past several decades there is an exceptionally large improvement in the computer technology which leads to an uncountable number of data and information emerging in and all over the world. Due to this tremendous and huge dump of data as well as web data most popular search engines are experiencing a lot of irrelevant retrieval of data. To distinguish a precise information pursuit furthermore to produce information that originates from anywhere. Too substantial to store on a search engine to such an extent that the PCs are associated with each other by the cloud search engine. Plan of search engines and its foundation grave is fundamentally focused. Search Engine Optimization is gathering of strategy and takes after by which any site can support positioning in internet searcher.

Task Based Resource Scheduling in Cloud

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ABSTRACT

Natural calamity is considered as one of the most significant research subject worldwide. Subsequently after disasters, the need for resilient communication rises and constantly fluctuates due to altering environmental situations and demand from public. At the present time, Cloud has been appeared as the most extensively used environment for

providing services to the users. Cloud offers services which are available on pay per use model and on-demand. One of the important processes of such systems is Scheduling. The present work focuses on task based resource scheduling and used Precedence Scheduling Algorithm (PSA) to get non-stop cloud services.

Keywords: disaster, virtual machine, scheduling, cloud.

Reversible Data Hiding using Spiral Order Technique in Medical Images

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ABSTRACT

Reversible data hiding is a technique of hiding secret and sensitive data in some multimedia cover medium. Both the hidden data and cover medium (image, video and audio) can be retrieved from stego image without any loss. A highly efficient reversible data hiding technique and histogram modification technique for medical images are proposed in this paper. Spiral order technique is used to locate the embedding area and a Histogram modification technique is used for embedding the hidden data. Based on the experimental results it is proved that the proposed method produces good visual quality stego and reconstructed image in terms of MSE, PSNR and SSIM with good embedding capacity. The proposed method is used for various medical images and recent reversible data hiding techniques to recover in comparison.

Keywords: Reversible data embedding, Medical image, Reversible data hiding

Contemplate Study of Contemporary Techniues for HUIM

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ABSTRACT

In this internet world, most of the transactions are done in online especially in ecommerce field which creates enormous size of transactional database that grows dynamically at each second. Really it is tough job to analyses the growing transactional database for the betterment of ecommerce business growth. Determining the Interesting pattern form incremental transactional database is evolving research area in the field of Data mining. Frequent Itemset Mining (FIM) approach is followed in earlier days to find the frequent pattern from transactional database. FIM has significant drawback of omitting the interesting factor about each items, such as quantity, price, profit and etc. This drawback is addressed in High Utility Itemset Mining (HUIM) which considers interesting factors of each item. This paper focuses on reviewing the existing state of art algorithms to create a path for the future research in the area of high utility itemset mining.

Keywords: HUIM, Utility, HUI, FIM

Honey Bee Behaviour Inspired Scheduling and Load Balancing of Virtual Machine in Fog Environment

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ABSTRACT

Load balancing is the method which shares the jobs across numerous computing resources in Cloud / Fog environment. The objective of cloud computing is to maximize utilization of all resources such as computing, data storage at low cost in a flexible and secure

mode .Cloud computing has many advantages but there are still issues in resource utilization, bandwidth utilization, less throughput etc. To overcome this issues new paradigm of computing is introduced as Fog computing. As fog computing is situated near the end user it is possible to transfer data without delay to remote devices which is distributed. Also fog computing is very useful real time streaming applications and wireless sensor networks. The proposed work uses honeybee galvanizing algorithm aims to schedule tasks to virtual machine when the virtual machine becomes idle. This algorithm provides better resource and bandwidth utilization.

Keywords: Honey bee Galvanizing Algorithm , Cloud Computing ,Fog Computing, Virtual Machine

A Review on the Impact of Climate Change on Agriculture in India using Big Data Analytics

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ABSTRACT

The analysis of Agriculture data would be good support for making effective decisions to improve the future food security concern. Nowadays the adaptation of big data analytics in various fields is very effective to predict the future value and estimate them with high accuracy. Agriculture is also one of the areas where the massive amount of data generated with huge volume, high dimensional space, and different variety of crops. To adopt the real-time analysis and get perfect essential results in this type of data sources big data analytic is one of the key platforms. This paper mainly focused on reviewing various analysis done in agriculture in India to develop a Big Data predictive model to find various useful information to enhance the sustainability of fulfilment in food security. This analysis will give the detailed impact of development in various levels of agriculture in different period with supported climatic changes. Results discussed in variety of situations can be matched with the analysis of climate changes in various locations is the key problem to solve it in future. This paper highlighted the foundation for analyzing impact of climate change and making the predictive model to support the formers as a decision-making support system to adopt smart climate agriculture in India.

Keywords: Food Security, Big Data Analytic, Decision-Making, Smart Climate Agriculture.

Comparative Analysis on Image Retrieval Technique using Machine Learning

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ABSTRACT

The Recommended system focus on Bag of features (Bof) model in image instance retrieval system. Most of the years, image retrieval is mainly used for browsing and searching for many applications. In recent years large amount of image retrieval shows the importance of semantic image retrieval in both research and industry application. Filter descriptors show an incredible discriminative power in taking care of vision issues like extricating the data about the recordings naturally. The recommended algorithm performs image quantizing of neighborhood descriptors and converts into visual words and further applies an adaptable ordering and recovery process. Every single image is splitted into short casings by outlines. Histograms are calculated based on the visual words dictionary of each picture and an input query are given and the particular images are selected from the database. Histogram is also used for counting the number of occurrences of an image. Key point locations are used to ensure an invariance of image location, scale and rotation. Closer image to the key point scale undergoes the process. Support Vector Machine is to compare the positive and negative occurrence of an image. Support Vector Machines (SVM) is utilized to recover the specific picture from the database and process the yield. Using this process, the images can be retrieved as soon as possible.

Keywords: Bag of features (Bof), histograms, Support Vector Machines, key point locations

Diabetes Risk Analysis using IoT and Deep Learning

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ABSTRACT

Internet of Things is an upcoming technology which is applied in solving problems involved in areas like banking, healthcare, security and transport etc. In the proposed system, IoT and machine learning techniques such as classification and regression techniques are applied on diabetes database to decide the risk of diabetic patients and suggest patients with lifestyle modifications and proper medication in order to improve their health condition and reduce adverse reactions in other parts of body or preventing to cause psychological effects. IoT devices and cloud technologies are connected to transfer data and to execute the decisions on well-defined rules.

Keywords: Diabetes, Deep Learning, Internet of Things (IoT), lifestyle modifications.

Review on Brain Tumor Segmentation Methods using Convolution Neural Network for MRI Images

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ABSTRACT

An efficient and timely detection of brain tumors will aid the better treatment selections and improves the survival rate of the patients. The segmentation processes of Magnetic resonance images (MRI) play a crucial role in detecting brain tumors. Since the large amounts of MRI images are generated during the cancer diagnosis, manual image segmentation will be a tedious job due to time constraints. An automatic image segmentation processes can alleviate the former limitation. There are various algorithms used to segment the images automatically, in which the deep learning technique is more efficiently used for large amount of images to find the size and location of a cancer. Enormous review papers have been published to give insight on MRI-based image segmentation. Our review is focused on Convolutional Neural Network (CNN) based deep learning algorithm, as it gives better accuracy in image recognition problems.

Keywords: Brain tumor, brain tumor segmentation, convolutional neural networks, deep learning, glioma, magnetic resonance imaging

A Self Induced Warning System for Wild Animal Trespassing using Machine Vision System

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ABSTRACT

In India an increase in human population that is caused by both industrial and agricultural growth has led to the conversion of the forest lands into developed human settlements. Animals that habit near forest-village border wait for nightfall, particularly to eat crops which have been known to kill or harm people. Therefore, there is a necessity to safeguard human livelihood without endangering the animal population by developing a suitable monitoring system. The development of a monitoring system for elephant intrusion can help to track the presence of animals over forest prone areas and avoid the chance of interference or harm of animal to human life. Animal is identified by matching the present captured image through vision based camera with the template image available. The pattern matching is done for identifying specific parts of the elephants such as ivory, trunk, ear etc. The platform used for processing is Machine Vision using LabVIEW based image processing algorithm. Cameras are fixed at places where animals usually used to enter the villages, and images are sent for processing through a wireless system. If the pattern matches with the template warning signals are produced. This system reduces the time required to detect animal presence. Thus this system becomes effective and preferable to implement. An early warning or message is sent to the forest officials as well as the villagers about the arrival of elephants towards forest-village prone areas. Thus, this system provides a solution for an unsupervised process for individual species identification specifically for elephants.

Keywords: Image processing, Animal trespassing warning, human-animal conflict, pattern matching, human-animal isolation

Offline Navigation: GPS based Assisting System in Sathuragiri Forests using Machine Learning

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ABSTRACT

Location aware services are the need of the hour in places where communication facilities are limited. The lack of location based services in dense forested areas with poor network connectivity has resulted in severe losses both human life and monetary in many a places around the world. The case of floods in Sathuragiri forest in Virudhunagar district of Tamil Nadu in May 2015 is a classic case of such deficiencies. This paper presents an efficient and robust offline based navigation system suitable for the Sathuragiri forest which can be customized for varying geographical regions. The dataset for Sathuragiri forest was downloaded from Google Maps and applied K-means Clustering to identify the possible centroids. The calculations were carried out for two cases namely plane surfaces and sloppy terrains wherein the altitude was also taken into consideration. A standalone GPS module with other accessories was designed to indicate the current position. Using Haversine Formula, the distance to all the nearby centroids is calculated and the system displays the path with minimum weight for the traversal. Various methods of clustering have been performed and desired result was achieved from K-means clustering

Keywords: Offline Navigation, K-Means, Haversine, Centroid Positioning

Comparative Analysis of Feature Selection Methods and Machine Learning Algorithms in Permission based Android Malware Detection

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ABSTRACT

The most anticipated cell phone working frameworks available in the market is Google android cell phone board. The open source android board raises trivial problems related to malevolent applications (Apps) and enables designers to take full preferred standpoint of the portable activity framework. On one hand, the distinction of android assimilates consideration of most engineers for building up their applications on this board. Then again, the expanded quantities of utilizations, readies an appropriate inclined for a few clients to create distinctive classes of malware and embed them in Google android advertise or other outsider markets as kindhearted applications. The issue of identifying such malware presents an elite test because of the confined assets accessible and insufficient benefits conceded to the client, yet additionally introduces extraordinary open door in the required metadata connected to every application. Consequently, in this work, android malwares are identified based on the permissions it demands from the client. A few machine learning calculations are being utilized in the discovery of android malware based on the group of permissions empowered for each application. This paper makes an endeavor to examine the execution of different attribute selection methods, like Relief Attribute Evaluator, Gain Ratio Attribute Evaluator, Correlation based Feature Subset Evaluator (CFS), Chi-Square (CH) examination and various machine learning calculations, as Naïve Bayes (NB), J48, Random Forest (RF), Support Vector Machine (SVM), Multi-Layer Perceptron based Neural Network (MLPNN), k-Nearest Neighbor (kNN) and hence an arrangement of results acquired for permission based malware recognition and categorization demonstrates that Chi-Square attribute selection technique and SVM machine learning calculation are overtaking the other feature selection and machine learning methods correspondingly.

Keywords: Android, Malware Detection, Permission, Feature Selection, Machine Learning

Search for Effective Data Mining Algorithm for Network Based Intrusion Detection (NIDS)- DDOS   Attacks

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ABSTRACT

Cloud Security can be effectively implemented using data mining techniques. Distributed Denial of Service (DDoS) has been classified as one of the most common as well as damaging forms of attack on the cloud environment. Hence it is important to detect

DDOS attack in cloud platforms. Previously variousdetection strategies have been proposed by researchers and used as defence mechanisms against DDOS attack . Analysis and comparison of these detection strategies are important to derive an efficient strategy to detect DDOS attack in a cloud scenario. Data mining technique is one of the efficient strategy that can be used to detect DDOS. This review paper discusses the efficiency of various data mining algorithms in detecting DDOS attacks .

Keywords: Data Mining techniques, DOS, Distributed Denial of Service (DDoS) attack, cloud security

Application of Rough Set Based Reduction for Network Data Set

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ABSTRACT

The modern technologies in all the fields constantly generate a large amount of data. The data if it is represented in an understandable form will influence the real world in all respects. The tremendous increase in the data size makes the analysis of the data more tedious. Hence the retrieval of useful information using systems with human approach is essential in today's scenario. Hence feature reduction using Quick reduct, an application of Rough set theory is used to reduce feature set size and identify the useful features based on semi-supervised learning. Particle swarm optimization is used for Quick reduct the feature reduction process. The algorithm is applied for network data set.

Keywords: Network instrusion detection, semi-supervised learning, rough set theory, particle swarm optimization

Review on Big Data Analytics in Mortality Prediction

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ABSTRACT

Big data analytics is the process of examining large and varied data sets i.e., big data to uncover hidden patterns, unknown correlations. ICU is for the patients with severe diseases and most of the patients need support from medical equipments for their survival and need to be closely monitored. Recently, big data analysis have been proved to be useful in the ICU mortality prediction to discover patterns hidden in the large clinical data. The significant aim is to predict the fatality rate among the ICU patients of large data by analyzing their medical parameters periodically. Prediction in the large ICU dataset becomes challenging due to various factors such as Time Asynchronization, Imbalanced data and high dimensionality. To overcome these challenges a technique called Principal component analysis is used through Singular value decomposition (SVD-PCA). SVD is a general matrix decomposition method which reduces the high dimensional data sets into fewer dimensions and has greater classification accuracy in both noisy and noiseless environments. In the proposed method the performance of the prediction is improved by the machine learning technique called Extreme learning machine to reach the best performance. Analysis tools are used to give statistical reports which gives easy prediction of mortality. This prediction model can help the healthcare institutions to easily analyse the mortality of patients and proceeds further for the welfare of patients.

Keywords: Big data, Mortality Prediction, ELM classifier

Stress Prediction to reduce Suicidal Rate in the Society based on Social Media using Machine Learning Approach

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ABSTRACT

Psychological Stress is a mental illness which becomes a normal part of life nowadays. The most common human experiences are to exposure the stressful situations like daily annoyances, time-pressured lifestyles, the consequences of overstretched and unexpected events. Stress can motivate and demotivate the person according to their feelings and emotions. It gets difficult when unable to handle on stress and it becomes long-term which can seriously interfere with the health, family life, and job. Due to the overwhelming stress, a person feels that they no longer able to handle it, which leads to suicidal ideation. Nowadays Social media has become a trend and plays a vital role in communication and information sharing worldwide, based on the rapidly growing use of social media and its influence on society, social media service provider offers users a convenient way to create, express, and share their ideas, thoughts, opinions through online comments and tweets. Online communication platforms are increasingly used to express thoughts and analysis of the user's thoughts and opinions which also the important perspective in the business and social environment. By using social media for the analysis of users post to predict the overwhelming stress state of the user in the earlier stage, will reduce suicidal rate. In this paper, we present how to find the stress level of a user by extracting tweet contents like text and images and proposed Optical character recognition, natural language processing techniques and machine learning approach like deep neural network on different social media platforms. This method provides excellent performance and accuracy for real-time data on social media.

Keywords: Machine Learning, Natural Language Processing, Deep Neural Network, Social Media

Wind Power Forecasting in Short-Term using Fuzzy K-Means Clustering and Neural Network

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ABSTRACT

Wind power forecasting is the large emerging field in research as it plays a vital role in wind power plant operation. Wind power is one of the fast-increasing sustainable power resources and it can be viewed as the additional substitute for traditional power produced from non-renewable energy. Wind power forecasting can reduce over-dependence on traditional source of electricity. Due to the random behaviour of the airstream, there will discontinuity in collecting of the wind data which is the major impact for forecasting accuracy. Last decade many researchers have applied data mining technique in different prediction system that produced good accuracy. So, this paper proposed, a hybrid method consist of Fuzzy K-Means clustering and Neural Network(NN) are used to improve the forecasting accuracy and also to reduce computational complexity for forecasting the wind power in short-term. Fuzzy K-Means clustering is used for selecting similar days and it consisting of information about the weather condition and historical power data. To avoid the volatility problems, a backpropagation algorithm is incorporated into the NN. In order to prove this efficiency, a hybrid approach can be evaluated in actual wind farm which can give better forecasting accuracy and also expected to reduce computational complexity when compared with other existing wind power forecasting approaches.

Keywords: Neural Network (NN), Fuzzy K-means clustering, Wind Power Forecasting (WPF).

Strength prediction using ANN for Concrete with Marble and Quarry Dust

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ABSTRACT

Modern construction material research is picking impetus in the recent two decades; a greater number of admixtures and combinations were tried by bountiful researchers across the globe. In this work an attempt is made to obtain the strength characteristics by using Soft computing techniques in the marble and quarry dust impregnated concrete. Strength characteristics of concrete are studied with reference to the addition of the above-mentioned admixtures and the results were given as input parameters. 28 days compressive strength of concrete with varying marble and quarry dust content is utilized as input data for the neural network and a model is created which is used to predict the strength. To prepare the ANN model the results are taken and the values obtained are mean square propagation and the testing, training, validation and for overall propagation the values are 0.99793, 0.99577, 0.9927 and 0.99073 and the best validation performance is 0.023295 at epoch 7 respectively for MD and for QD the values are 0.9974, 0.94374, 0.94445 and 0.947 and the best validation performance is 0.035578 at epoch 4 respectively. It is found that neural network can be utilized effectively to predict the strength characteristics of concrete.

Keywords: ANN, Concrete strength, strength prediction

ANN based Prediction of Bond and Impact Strength of Light Weight Self Consolidating Concrete with Coconut Shell

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ABSTRACT

In this experimental investigation, lightweight self-consolidating concrete (LWSCC) was developed with coconut shell as coarse aggregate. The effect of coconut shell aggregate (CSA) on bond strength and impact strength of Rice Husk Ash (RHA) based binary blended and RHA + Silica fume (SF) based ternary blended Self consolidating concrete (SCC) were determined. The bond strength was determined through pull-out test and the impact strength was calculated using falling weight test. The concrete mix was developed with the total powder content of 450 kg/m^3. The coarse aggregate content was replaced by CSA in the gradation of 0%, 25%, 50%, 75% and 100% in the designated SCC. The investigation revealed that the bond and impact strength of CSA based LWSCC were comparable to current code practice and other lightweight concretes. The experimental data obtained was used to develop an ANN model for predicting the strength characteristics of fresh or hardened concrete. The high regression values obtained during training the neural network models reveals high accuracy and were predicting the strength characteristics very similar to the experimental results.

Keywords: Light weight self-consolidating concrete, coconut shell, rice husk ash, silica fume, bond strength, impact strength, ANN.

Are Pregnancy Welfare Schemes effective? A case study on India

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ABSTRACT

It is a well-established fact that to be born into poverty is an everlasting detriment to the mental as well as physical growth. Governments and researchers are trying to work in tandem to identify the ways to overcome the outcomes of the pregnancy in poverty – Governments all over the world are announcing new schemes to support the pregnant women who are below the poverty line and there has been many NGOs and Foundations supporting this work. At the same time research to find out the effectiveness of these schemes in terms of decline in maternal as well as child mortality rate, post-delivery health for the mother and the baby is not comprehensive. This paper provides a structured approach to identify the factors impacting the effectiveness of these schemes by comparing some of the schemes in India and corroborating the facts with data.

Keywords: complications in pregnancy and childbirth, poverty and pregnancy, still births, antenatal care, intrapartum care.