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### Volume 9 Issue 2S, December 2019, ISSN: 2278-3075 (Online)

**Authors:** Sanjay Kumar N V, Keshava Munegowda

**Paper Title:** Distributed Streaming Storage Performance Benchmarking: Kafka and Pravega

**Abstract:** The performance benchmarking tool for a distributed streaming storage system should be targeted to achieve maximum possible throughput from the streaming storage system by thrusting data massively. This paper details the design and implementation of high-performance benchmark tool for Kafka and Pravega streaming storage systems. The benchmark tool presented in this paper supports multiple writers and readers. The Pravega streaming storage is evaluated against Kafka with respect to performance.

**Keyword:** Benchmarking, Big Data, Concurrency, Distributed Systems, Events, Kafka, Latency, Open Messaging, Performance, Pravega, Streams, Storage, Throughput.

**References:**
8. Pravega Benchmark tool: https://github.com/kmgowda/pravega-benchmark/releases/tag/v1.0

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**Authors:** Vandana B, S Sathish Kumar

**Paper Title:** Hybrid K Mean Clustering Algorithm for Crop Production Analysis in Agriculture

**Abstract:** The proposed research work aims to perform the cluster analysis in the field of Precision Agriculture. The k-means technique is implemented to cluster the agriculture data. Selecting K value plays a major role in k-means algorithm. Different techniques are used to identify the number of cluster value (k-value). Identification of suitable initial centroid has an important role in k-means algorithm. In general it will be selected randomly. In the proposed work to get the stability in the result Hybrid K-Mean clustering is used to identify the initial centroids. Since initial cluster centers are well defined Hybrid K-Means acts as a stable clustering technique.

**Keyword:** Cluster analysis, K-Means, Precision Agriculture.

**References:**
Abstract: For development of software, the most important aspects are the software requirements. They are the foundation stone for initiating any software development process. Software requirements documents contain the needs of the customers in natural language. By using various methods like reviews, inspections, walkthroughs, the content of the software requirement can be checked manually to reduce ambiguity. In recent years there is an attempt to automate these activities as a result of advancement in automation of natural language analysis. Automation of text mining techniques and text analysis is leading to feasibility of automation of requirements documents processing. The process can be completed in minutes now which were taking weeks earlier. Automation of analysis of text has triggered numerous possibilities for quality assurance of requirements. The possibilities of automation are model checking automation, automated rule checking, automated test case execution and measurement automation. In future more tools will enter the scene for automation of requirements quality assurance. At present most of them are in experimental stage. There is a definite need for more research in this field.

Keyword: Ambiguity, Requirements document, Software Requirements, Quality assurance

References:
Paper Title: Development of Agriculture Chatbot using Machine Learning Techniques

Abstract: Agriculture data is a main source of country’s economic growth. It is important to provide agriculture related information to all the people who are involved in agriculture activities as and when required. This meaningful information is used by people who supply services to agriculture domain and to take some correct decision related to agriculture to apply for their field. The solutions to this problem are given by the efficient interaction of computer with human. Chatbot system provides ability to extract the exact answer to the queries posed by farmers. The proposed system is called as Agriculture Chatbot system or even it is called as Question-Answering system for agriculture domain, where farmer is asking the agriculture related question which fetches the precise answers for the asked questions by farmers in natural language and processes the query using RNN (Recurrent Neural Network) deep learning algorithm to extract correct answer.

Keyword: Chatbot, Recurrent neural network, Deep learning, Natural language, precise answer.

References:

Authors: Ashwini S Savanth, P.A.Vijaya, Bindu M. Kutty

Paper Title: Functional Connectivity within Brain Networks of Long Term and Short term Meditators

Abstract: Meditation refers to a state of mind of relaxation and concentration, where generally the mind and body is at rest. The process of meditation reflects the state of the brain which is distinct from sleep or typical wakeful states of consciousness. Meditative practices usually involve regulation of emotions and monitoring of attention. Over the past decade there has been a tremendous increase in an interest to study the neural mechanisms involved in meditative practices. It could also be beneficial to explore if the effect of meditation is altered by the number of years of meditation practice. Functional Magnetic Resonance Imaging (fMRI) is a very useful imaging technique which can be used to perform this analysis due to its inherent benefits, mainly it being a non-invasive technique. Functional activation and connectivity analysis can be performed on the fMRI data to find the active regions and the connectivity in the brain regions. Functional connectivity is defined as a simple temporal correlation between anatomically separate, active neural regions. Functional connectivity gives the statistical dependencies between regional time series. It is a statistical concept and is quantified using metrics like Correlation. In this study, a comparison is made between functional connectivity in the brain regions of long term meditation practitioners (LTP) and short-term meditation practitioners (STP) to see the differences and similarities in the connectivity patterns. From the analysis, it is evident that in fact there is a difference in connectivity between long term and short term practitioners and hence continuous practice of meditation can have long term effects.

Keyword: fMRI, functional connectivity, meditation, meditation experience.

References:
3. E. Baron Short, Samet Kose, Qiwen Mu, Jeffery Boreckardt, Andrew Newberg, Mark S. George, and F. Andrew Kozel, “Regional Brain Activation during Meditation Shows Time and Practice Effects: An Exploratory FMRI Study”, Advance Access Publication 27 December 2007

Authors: Pulkit Singh, Piyush Modi, Bibhudendra Acharya, Rahul Kumar Chaurasia

Paper Title: Energy-Efficient and High-throughput Implementations of Lightweight Block Cipher

Abstract: Security in resource-constrained devices has drawn the great attentions to researchers in recent years. To make secure transmission of critical information in such devices, lightweight cryptography algorithms come in light to large extend. KLEIN has been popular lightweight block cipher used to overcome such issues. In this paper, different architectures of KLEIN block cipher are presented. One of designs enhances the efficiency with regard to the throughput at the expense of a larger area. In order to make such designs, the pipelined registers are placed on different positions in datapath algorithm. The proposed design transforms the data input to protected output with the speed of 2414.13 Mbps for xc5vlx50t-3ff1136 device. In addition, the second design implementation completes either one or more than one round in only one clock and gives energy-efficient and high throughput implementations. Due to this, a trade-off between area and speed can be analyzed for high-speed applications. Moreover, this proposed design shows that with increasing the area of cipher implementation results in more transformation of plaintext into ciphertext. All results are verified and simulated for various families of Xilinx ISE design suite.

Abstract: Internet of Things enables seamless interaction between connected devices. The growing popularity of IoT will increase the number of sensors and devices to be connected with Internet enormously, resulting in generation of Trillions of GBs of data. Most of the IoT devices have very less storage capacity and hence data generated are to be transmitted to IoT node head which takes care of processing. Data generated from ECG devices, Video surveillance systems are very large requiring a physical medium with high bandwidth for the connection between device and IoT node head. Further the objects plugged into Internet are most of the times powered by batteries requiring low power communication. Visible Light Communication (VLC) is one such technology that provides wide bandwidth up to 10Gbps with energy efficiency and thus it can be a potential solution for the above problem. In this paper we propose NS3 based IoT implementation using existing IoT protocol stack with Visible Light Communication as the physical medium considering error model. We achieve a throughput of 416 Mb/s which is a significant improvement over Wireless Fidelity based IoT implementation which has a throughput of 1.2 Mb/s under the same condition.

Keyword: Internet of Things, NS3 Network Simulator, Visible Light Communication, WiFi

References:
Integration of Healthcare domain Ontologies using Bayesian Networks

Abstract: Semantic Web (SW) was created with the vision of knowledge sharing. Knowledge from the past and present help predict the future with the use of Machine Learning (ML) algorithms. SW powered with ontologies help in realizing machine interactions supporting automated knowledge extraction. Healthcare as a field of medical domain gives lot of importance for timely accurate decisions with the available features. Representing existing information in terms of ontologies, retrieving the decisions upon establishing interaction between the relevant ontologies within the same domain, knowledge sharing & reusing the existing facts are of great benefit to the medical practitioners and researchers which has lot of open challenges to be resolved in order to realize the same. To address the stated issues, an algorithmic approach – Ontologies Integration algorithm using Bayesian Networks (OIBN) based on Bayesian Belief Networks (BBN) working on Naïve beliefs has been proposed which works on symptoms through the attributes of related ontologies within the same domain exploring the symptom dependencies and their probability of occurrences in combination. Selection of features for integration will follow the steps proposed in Sequential Forward Feature Selection algorithm (SFFS). The observation on the correctness of the presented method over diabetic datasets represented in ontological form with integration of relevant features reveals that the knowledge graphs have been efficiently explored discovering the facts based on the probability theory. The experimental results conclude that the proposed technique is showing enhanced prediction accuracy of 80.95% which is better compared to accuracies of the individual ontologies prior to integration and existing state-art technique.

Keyword: Semantic web, Ontologies, Ontology agents, Ontologies Integration, Health care, Diabetology, Domains.

References:

Abstract: Smart cities which are becoming overcrowded today are making human beings life miserable and prone to more challenges on daily basis. Overcrowded is leading to vast generation of wastes contributing to air pollution and in turn is affecting health causing various diseases. Even though various measures are taken to recycle wastes, the rate at which it is being produced is becoming higher and higher. This paper deals with prediction of waste generation using Naïve Bayes machine learning algorithm (Classifier) based on the statistics of previous waste datasets. The datasets used for the future prediction are obtained from reliable sources. The implementation of the algorithm is done in Pyspark using Anaconda Jupyter. The performance of the classifier on the datasets is analyzed with confusion matrix and accuracy metric is used to rate the efficiency of the classifier. The accuracy obtained indicates that algorithm can be effectively used for real time prediction and it gives more accurate results for huge input datasets based on independence assumption.

Keywords: Machine Learning, Big Data, Naïve Bayes Classifier, PySpark, Solid Garbage Waste
Abstract: An expert system is one which uses collection of data comprising the knowledge to offer guidance or make inferences. Its work in most cases can be seen as classification which is basically the task of assigning objects to different categories or classes, determined by the properties of those objects. Numerous research works have been and being done to develop efficient knowledge acquisition techniques for expert systems. Some state-of-the-art algorithms are great performers but need extensive learning whereas older rule / decision-tree based algorithms perform pretty well with small data sets. Moreover, co-existence of learners of different levels of expertise and accuracy is believed to be encouraged to achieve a cumulative intelligence just like the human beings have. RISE is one such algorithm that infuses both instance-based learning and rule induction. It proved to be quite efficient handling binary and multi-classification problems for small data sets in terms of accuracy and cost as well. In this work, features like exclusion of inefficient rules, inclusion of exceptions in the rule set and ordering of the rules using weights beforehand are integrated with the classical RISE algorithm to develop a more efficient classifier system named as ExIORISE. Empirical study shows that ExIORISE outperforms RISE, C4.5 and CN2 significantly.

Keyword: Classification, expert system, rule / decision-tree based algorithms, exceptions; inefficient rules, ordering according to weight.

References:

Authors: Hema N, M V Sudhamani

Paper Title: Segmentation of Liver from CT Abdominal Images

Abstract: Automatic segmentation of liver from the abdominal Computed Tomography images is a difficult task. It is very important to segment the liver accurately, so the tumors can be located, detected and classified accurately within a liver. The proposed segmentation methods include preprocessing stage as first step where image resizing and grayscale conversion is performed. Thresholding technique is applied to obtain a binary image. Next, liver is segmented from 2-D abdominal CT scanned images using various segmentation methods like adaptive thresholding with morphological operations, global thresholding with morphological operations and Watershed gradient transform. Next, Active contour balloon snake model is applied on 3-D dataset 3D-IRCADb (3D Image Reconstruction for Comparison of Algorithm Database). The empirical comparative study is carried out using JSC, DSC, sensitivity, speciﬁcity and accuracy and results are tabulated. The empirical comparative study of these methods using Dice and Jaccard Similarity Coefficient is carried out and results are tabulated.

Keyword: Abdominal Computed Tomography, Liver segmentation, Thresholding, Morphological operations, Watershed.
References:

Authors: R Rajkumar, M V Sudhamani

Paper Title: Content based Image Retrieval System using Combination of Color and Shape Features, and Siamese Neural Network

Abstract: With an advent of technology a huge collection of digital images is formed as repositories on world wide web (WWW). The task of searching for similar images in the repository is difficult. In this paper, retrieval of similar images from www is demonstrated with the help of combination of image features as color and shape and then using Siamese neural network which is constructed to the requirement as a novel approach. Here, one-shot learning technique is used to test the Siamese Neural Network model for retrieval performance. Various experiments are conducted with both the methods and results obtained are tabulated. The performance of the system is evaluated with precision parameter and which is found to be high. Also, relative study is made with existing works.

Keyword: CBIR, Siamese Neural Network, One-shot learning, Color.

References:
5. R Rajkumar, Dr. M V Sudhamani, Development of Retrieval System using Color from Multi-Segments and Shape features from Images as Combination, Accepted to International Journal of Engineering and Technology (IJEAT) – Open Access Journal, DOI: 10.35940/ijet.A1291.109119, ISSN: 2249 – 8958, Volume-9 Issue-1, October 2019.

Authors: C. M. Naveen Kumar, G. Shivakumar

Paper Title: Sensor and Feature Level Fusion of Thermal Image and ECG Signals in Recognizing Human Emotions
Abstract: Recent studies on recognition of various emotion labels concentrated on speech signals, text, visual images and anatomical variables. The proposed system combines the features of ECG which are extracted using empirical mode decomposition and features of thermal images which are extracted from Gray Level Co-occurrence Matrix (GLCM) viz energy, contrast, homogeneity and correlation. ECG is acquired from AD8232 module and thermal images from FLUKE TiS20. Data of ECG and thermal images are acquired simultaneously from a subject and database consists of data from 40 subjects in age group of 20 years to 40 years from Hassan, Karnataka, India. Here different labels of emotions have been classified based on K-nearest neighbor decision rule. This system yielded highest accuracy for disgust and lowest for anger using ECG and highest accuracy for disgust and surprise and least for sad.

Keyword: human emotions, electrocardiogram, thermal image, empirical mode decomposition

References:

Authors: Shivananda V. Seeri, P. S. Hiremath, J. D. Pujari, Prakashgoud Patil

Paper Title: Text Extraction and Recognition in Natural Scene Images using Contourlet Transform and PNN

Abstract: Of late, the rapid development in the technology and multimedia capability in digital cameras and mobile devices has led to ever increasing number of images or multi-media data to the digital world. Particularly, in natural scene images, the text content provides explicit information to understand the semantics of images. Therefore, a system developed for extracting and recognizing texts accurately from natural scene images, in real-time, has significant relevance to numerous applications such as, assistive technology for people with vision impairment, tourist with language barrier, vehicle number plate detection, street signs, advertisement bill boards, robotics, etc. The extraction of the texts from natural scene images is a formidable task due to large variations in character fonts, styles, sizes, text orientations, presence of complex backgrounds and varying light conditions. The main focus of this research paper is to propose a novel hybrid approach for automatic detection, localization, extraction and recognition of text in natural scene images with cluttered background. Firstly, image regions with text are detected using edge features (GLCM) extracted from Contourlet transformed image and SVM (Support Vector Machine) classifier. Secondly, horizontal projection is applied on text regions for segmenting lines and vertical projection is applied on each text line for segmenting characters. The proposed method for text extraction has produced the precision, recall, F-Score and accuracy of 98.50%, 90.85.62%, 95.00%, and 89.90%, respectively. And, these results prove that the proposed method is efficient. Further, the so extracted characters are processed for recognition using contourlet transform and Probabilistic Neural Network (PNN) classifier. The computed features are moment invariants. Only the English script is considered for the experimentation. The proposed character recognition method has accuracy of 79.07%, which is higher in comparison to accuracy of 75.15% obtained by KNN (K-Nearest Neighbors) classifier.

Keyword: Scene Image, Text Extraction, Character recognition, Contourlet transform, PNN.

References:
Abstract: This paper proposes Object Based Image Retrieval (OBIR) System with segmenting the objects from the images and then extracting various features from the objects. The objects are the most prominent part of an image which relates more to the human perception. First, the object present in the images is segmented by four different segmentation techniques such as K-means, Active Contours, Edge-Convex hull and Global Thresholding. Later, the color features such as Color Histogram (CH) and Color Coherence Vector (CCV), Texture feature using Local Binary Patterns (LBP) and shape feature using Histogram of Gradients (HOG) are extracted. Finally, with the usage of different segmentation and techniques mentioned above feature are extracted from objects. Results obtained are tabulated and performance study is made.

Keywords: OBIR, Color histogram, Color Coherence Vector and Local Binary Patterns and Histogram of Gradients.

References:
Abstract: In recent years the medical diagnosis is majorly done based on the medical images captured using various imaging modalities. The medical doctors and radiologists use these medical images to identify the pathological problems or diseases and suggest the patient about further treatment. In this process, medical doctors and radiologists often prefer to make use of software which can assist in taking the decision. Such an approach is called as Computer Aided Diagnosis (CAD). The CAD systems usually comprise of many phases like segmentation of portion corresponding to a particular organ or region under consideration, detecting the pathology bearing area in that and further classifying into various disease classes. Here, Accuracy of classifiers majorly decides the effectiveness of the diagnosis. In this paper, classification of liver tumors into benign and malignant is considered as a case study. Implementation of two different classifiers namely Support Vector Machine and Rough Set based classifier is carried out using set of features extracted such as Texture features using Average Correction Higher order Local Autocorrelation Coefficients and shape features using Legendre moments. Comparison of performance of both the classifiers is made and tabulated. Here, Rough Set based classifier has performed better when compared with Support Vector Machine.

Keyword: Liver tumor, Average Correction Higher order Local Autocorrelation Coefficients, Legendre Moments, Support Vector Machine Classifier, Rough Set based classifier

References:
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References:

Authors: Uma R., Sarojadevi H., Sanju V.

Paper Title: Design Environment for Verilog Module Analysis using Open Source Tools

Abstract: Network-on-Chip provides possible solutions for the limitations and challenges by the present day architectures for the interconnections. The characteristics of NoCs include energy efficiency, reliability, scalability, reusability and distributed routing decisions. The existence of today’s semiconductor industry depends on shorter time-to-market, challenge of meeting increasing transistor density, reduced product life cycle, and operating frequencies getting higher. This paper discusses about a design environment for the analysis of Verilog NoC module. Tools such as Icarus Verilog, GTK Wave, Yosys etc. which are used for compilation, simulation and synthesis of the NoC are also discussed in this paper.

Keyword: Network-on-Chip, Semiconductor, Verilog, Simulation, Synthesis.

References:
Abstract: The down scaling of Metal Oxide Semiconductor Field Effect transistor (MOSFET) devices nevertheless the most important and effective way for accomplishing high performance with low power adopted the miniaturization trend of channel length from the past, which is very aggressive. The double gate NanoFET with the incorporation of the strain Silicon technology is developed here on 45nm gate length comprises of tri-layered (s-Si/s-SiGe/s-Si) channel region with varied thicknesses. The indusion of strain increases mobility of charge carriers. Two gates are deployed in bottom and up side of strained channel provides better control over the depletion region developed by applying same gate bias voltage. This newly developed double gate NanoFET on 45nm channel length provides 65% reduced subthreshold leakage current, and maximum electron drift velocity in strained channel.

Keyword: HOI MOSFET, lattice mismatch, strained Silicon, work function.

References:

Authors: Akhilesh Yadav, Poonam Jindal, Devaraju Basappa, Mahendra Prakashaih

Paper Title: Forward Error Correction For Gigabit Automotive Ethernet using RS(450,406) Encoder

Abstract: Error correction and detection during data transmission is a major issue. For resolving this, many error correction techniques are available. The Reed-Solomon coding is the most powerful forward error correction technique used in Gigabit Automotive Ethernet to compact channel noise during data transmission. The car becomes more smarter day by day and more new advanced electronics is being used in vehicle. Gigabit Automotive Ethernet (1000BASE-T1) provide fast bandwidth for many kinds of applications and connect different functional parts in the car. The Reed Solomon (RS) coding is the powerful forward error correction (FEC) technique used in 1000BASE-T1 Automotive Ethernet. RS(450,406) coding is also known as shortened Reed Solomon codes. The Reed Solomon (RS) codes are generally used in communication system due to its ability of correcting both random and burst errors. Reed Solomon codes are no-binary systematic linear block codes. RS coding is widely used in high speed communication system. This RS code is implemented using Galois field (GF). The Automotive Ethernet is encoded using RS(450,406) codes through GF(512) for FEC. This RS code can correct the error up to t=22 symbol, while other encoding techniques corrects the error in t bits. In this paper we implemented the RS(Reed Solomon) code in Cadence ncsim Verilog software and used Cadence Simvision for showing timing diagrams. This RS code uses 9-bit based shortened (450,406) code.

Keyword: Automotive Ethernet, Cadence, Galois Field, Generator polynomial, ncsim, Reed Solomon, RS
References:

Authors: Anitha C L, R Sumathi

Paper Title: Design and Development of an Energy Efficient Algorithm for Data Aggregation in Wireless Sensor Network using Unsupervised Learning

Abstract: A wireless sensor network generally defined as the collection of sensors that are utilized to track and record the data in real-time on an ongoing basis from different applications. In comparison with other sensor nodes, data transmission obtained through sinks in WSN eliminates the energy in nearby nodes. This issue is identified as one of the major problems in a wireless sensor network. Two new algorithms were proposed in this research paper that mainly focused on the usage of machine learning algorithms to solve the data collection issue in the wireless sensor network. The algorithms proposed will able to create cluster heads to decrease energy usage, this will save about 50% of energy power consumption and mobile sinks are used to record the data from cluster heads in a network. Ultimately, current algorithms such as RLLO, DBRkM, CLIQUE, RL-CRC, and EPMS were compared.

Keyword: Agents, Cluster head, Markov decision process, Sink traversal, Reinforcement learning.

References:
Abstract: Location-based service (LBS) is a popular information service which uses the geographical position of the user to provide service. Major challenges for wide deployment of such services is security and privacy, in our paper we propose a generic model of authenticated key exchange (AKE) protocol termed as forward-secure authenticated key exchange protocol (FSAKE) which uses elliptic curve cryptosystem. The FSAKE protocol supports concurrent sessions and is used for the exchange of secure seed values which are used in forward-secure pseudo-random number generators to generate secret keys for message authentication and symmetric encryption. The FSAKE protocol is a key evolving scheme which updates the long-term keys (LTks) at regular intervals and guarantees the security of the past keys and mitigates the damage caused by exposure of the current key. We make use of Scyther model checking tool to prove the correctness of FSAKE protocol security.

Keyword: Authenticated Key Exchange, Elliptic Curve Cryptography, Forward-Secure, Formal Verification, Location-Based Services, Symmetric Key Evolving Systems.

References:
and limited information rate. The concept of multipath propagation refers to travelling of wireless signal to the receiving antenna via different paths in space resulting in inter-symbol interference and fading. This phenomenon leads to failure of maximum use of the bandwidth resulting in low information rate. The problematic event of multipath propagation can be exploited by using more than one antenna (MIMO) in the sending and the receiving side. Multiple sending antennas use the concept of space diversity by sending same data signal through different path based on the fact that different version of the same signal will be received by the receiver increasing quality and reliability of the received data signal. Though in the current usage scenario, MIMO actually exploits multipath propagation concept for carrying more than one data stream over the same radio signal. One of the most important factors that influence the efficiency of MIMO antenna systems is the design layout of multiple antennas. Microstrip antennas, having small height and width, low cost, low weight and small volume can be a suitable candidate for being used as MIMO. The wireless performance of locally limited wireless communication systems such as Bluetooth and Wi-Fi using 2.4 GHz unlicensed band can be increased significantly by incorporating the advantages of MIMO and microstrip antenna technology. In this paper, the performance of MIMO Microstrip antenna using OFDM technique for 2.4 GHz communication has been evaluated.

Keyword: Dielectric constant, MIMO, Microstrip antenna, OFDM Technique, Wireless communication, 2.4GHz,

References:
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Authors: Anjan Kumar K N, Chandrashekar B S

Paper Title: Location based Web Object Search using Probabilistic Classification Model

Abstract: The classical Web search engines focus on satisfying the information need of the users by retrieving...
relevant Web documents corresponding to the user query. The Web document contains the information on different Web objects such as authors, automobiles, political parties e.t.c. The user might be accessing the Web document to procure information about a specific Web object, the remaining information in the Web object [2-6] becomes redundant specific to the user. If the size of Web documents is significantly large and the user information requirement is small fraction of the document, the user has to invest effort in locating the required information inside the document. It would be much more convenient if the user is provided with only the required Web object information located inside the Web documents. Web object search engines provide Web search facility through vertical search on Web objects. In this paper the main goal we considered is the objective information present in different documents is extracted and integrated into an object repository over which the Web object search facility is built.


References:

Authors: Praveen Kumar P S, H S Jayanna

Paper Title: Creation and Instigation of Triphone based Big-Lexicon Speaker-Independent Continuous Speech Recognition Framework for Kannada Language

Abstract: This paper proposes a framework that is intended to do the comparably accurate recognition of speech and in precise, continuous speech recognition (CSR) based on triphone modelling for Kannada dialect. For designing the proposed framework, the features from the speech data are obtained from the well-known feature extraction technique Mel-frequency cepstral coefficients (MFCC) and from its transformations, like, linear discriminant analysis (LDA) and maximum likelihood linear transforms (MLLT) are obtained from Kannada speech data files. At that point, the system is trained to evaluate the hidden Markov model (HMM) parameters for continuous speech (CS) data. The persistent Kannada speech information is gathered from 2600 speakers (1560 men and 1040women) of the age bunch in the scope of 14 years-80 years. The speech information is acquired from different geographical regions of the Karnataka (one of the 29 states situated in the southern part of India) state under degraded condition. It comprises of 21,551 words that spread 30 locales. The performance evaluation of both monophone and triphone models concerning word error rate (WER) is done and the obtained results are compared with the standard databases such as TIMIT and aurora4. A significant reduction in WER is obtained for triphone models. The speech recognition (SR) rate is verified for both offline and online recognition mode for all the speakers. The results reveal that the recognition rate (RR) for Kannada speech corpus has got a better improvement over the state-of-the-art existing databases.

Keyword: Automatic speech recognition, Continuous speech, Kannada dialect, Kaldi toolkit, monophone, triphone, HMM, WER.
Customer churn prediction has always been a major problem in telecom industries. Customer retention is always one of the major objectives of any service providing company as maintaining loyal customers has always been cheaper than acquiring new customers. In this paper, we have tried to predict the churn rate of a dataset from a telecom company using some classifiers and then training the same classifiers with ensemble learning models. The ensemble techniques are assumed to yield better results. We have used 42 classifiers from over different like Nearest Neighbors, Decision Tables, Random Forests, etc., which roughly covers almost all the well-known classifiers used in the industry in today’s date. Further, the ensemble techniques are used in our work such as bagging and boosting which are trained on the same classifiers so that we can compare the performance of individual classifiers as well as the same when used as a base classifier. We have extracted the accuracy of the classifiers, True Positive and False Positive rates, f-measure, MCC score, Area Under Curve (AUC) area and Precision-Recall (PRC) area. These measures, not only helped us know which algorithm is more fruitful but also gave us insights about the varying performance. It is observed that, in most of the cases, the classifiers, when combined with either of the ensemble techniques, yield better results. The experimental results reveal that the accuracy of the classifier improves when combined with bagging or boosting.

References:

Authors: Debjyoti Das Adhikary, Deepak Gupta

Paper Title: Ensemble Learning Models for Churn Prediction

Abstract: Customer churn prediction has always been a major problem in telecom industries. Customer retention is always one of the major objectives of any service providing company as maintaining loyal customers has always been cheaper than acquiring new customers. In this paper, we have tried to predict the churn rate of a dataset from a telecom company using some classifiers and then training the same classifiers with ensemble learning models. The ensemble techniques are assumed to yield better results. We have used 42 classifiers from over different like Nearest Neighbors, Decision Tables, Random Forests, etc., which roughly covers almost all the well-known classifiers used in the industry in today’s date. Further, the ensemble techniques are used in our work such as bagging and boosting which are trained on the same classifiers so that we can compare the performance of individual classifiers as well as the same when used as a base classifier. We have extracted the accuracy of the classifiers, True Positive and False Positive rates, f-measure, MCC score, Area Under Curve (AUC) area and Precision-Recall (PRC) area. These measures, not only helped us know which algorithm is more fruitful but also gave us insights about the varying performance. It is observed that, in most of the cases, the classifiers, when combined with either of the ensemble techniques, yield better results. The experimental results reveal that the accuracy of the classifier improves when combined with bagging or boosting.

Keyword: Churn Prediction, Bagging, Boosting, Machine Learning.

Authors: Vijayalaxmi Mekali, Girijamma H. A

Paper Title: Novel CADe/CADx System for Lung Nodules Segmentation and Classification on Computed Tomography Images

Abstract: Detection and classification of different types lung nodules poses major challenges in medical diagnosis routine. Classification of segmented nodules based on extracted hybrid features of segmented nodules have shown remarkable performance. Recently deep features alone and also with combination of hybrid features have improved nodules classification. In this research work new CADe/CADx system is proposed for detection and classification of Well Circumscribed Nodules, Juxta Vascular Nodules and Juxta Pleural Nodules. In nodules detection part, algorithms proposed in our previous work were used. Classifiers decision fusion based new nodules classification system is proposed. Four set of hybrid features and deep features using Convolution Neural Network are considered from segmented nodules. Hybrid features set consist of twenty four shape features, six GLCM features in four direction with a distance of two, six First Order Statistic features and twelve energy features. Five individually trained Probabilistic Neural Networks by all five set features separately used in nodule classification. In classification process all five classifiers decisions are fused at 2-level, 3-level, 4-level and 5-level. The proposed system achieved highest performance with 5-level fusion compared with other level fusions. System was evaluated on CT images of LIDC database with consideration of 2669 lung nodules of malignancy rate 1 to 5. Based on malignancy rate 2669 nodules are grouped as dataset 1 and dataset 2 with nodules of malignancy rate 1, 2, 3 and 3, 4, 5 respectively. The 5-level decision fusion achieved highest accuracy of 95.72, sensitivity of 95.52, specificity of 95.79 and Area Under Curve of 96.21 for dataset 1 and accuracy of 92.54, sensitivity of 90.48, specificity of 94.63 and Area Under Curve of 92.69 for dataset 2.

Keyword: Computed Tomography, Computer Aided Detection/Diagnosis, Convolution Neural Network, Lung cancer and Lung Nodule Classification.

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Paper Title: Empirical Assessment of Transfer Learning Techniques for Surgical Tools Classification

Abstract: Automated surgical tool classification in the medical images is a real-time computerized assistance for the surgeons in performing different operations. Deep learning has evolved in every facet of life due to availability of large datasets and emergence of Convolutional Neural Networks (CNN) that have paved the way for development of different image related processes. In the medical field there are number of challenges such as non-availability of datasets, image annotation requires extensive time, imbalanced data. Transfer learning is the process of applying existing pretrained models to the new problem. It is useful in those scenarios where the large datasets are not available, or the new dataset shares visual features with the existing dataset on which the model is pretrained. Most of the pretrained models are trained on ImageNet which is a largescale dataset (1.2 million labelled training images). In this paper we evaluated and explored two different CNN architectures namely VGG16 and MobileNet-v1-1.0-224 on subset of surgical toolset. This paper presents comparative analysis of the techniques using learning curves and different performance metrics.

Keywords: Convolutional neural networks, Data Augmentation, Deep learning, Transfer learning

References:

Worm hole, data security, MANETS, VANETS, malicious, attacks.

References:

### Authors: Shwetha M. S., Girijamma H A

**Paper Title:** IPOG Modified Design Technique for Effective Testing

**Abstract:** Software testing is a very crucial, effective and efficient stage in Software Development Life Cycle. As Customers satisfaction and reliability is very essential, this can be achieved by testing phase. The cost can be reduced when testing time is decreased. Hence, combinatorial method is a very effective and well-proved method where high quality of software can be delivered with less time. It is very exhaustive and hard phase to check all the combination of the input parameters given to authenticate the proper functioning of software system before delivering. Many issues are triggered in an application by the interaction of one or more parameters. Hence it is significant to check all the combination of N or fewer parameters in all N-way combinatorial input. This way of combinatorial testing will yield high guarantee software system such that all the faults have been discovered effectively. Manual Testing of this type of combinatorial inputs is impossible so there are few standard algorithms such as IPOG-C later defined as IPOGD, etc. In this paper, we are presenting the performance of Combinatorial Testing Technique called IPOG-Modified Design method with the IPOGD Technique and Manual way of test case generation. The results are evaluated for N-way combinatorial inputs of seven parameters. Evaluation of results shows that the IPOG-Modified Design Technique yields better performance than the IPOG Technique and manual technique for the same input data set. Over all the IPOG and IPOGMD Combinatorial testing methods can reduce cost, improves efficiency in software testing for numerous applications.

**Keyword:** Combinatorial Software Testing Methods – Manual & IPOG & IPOGMD

**References:**


### Authors: Vani Ashok

**Paper Title:** Combining Discriminant Analysis and Neural Networks for Detection of Internal Defects in Mangoes using X-Ray Imaging Technique

**Abstract:** In today’s competitive world, quality is considered as the key factor in the modern food industry and the quality of agricultural produce is of main concern for export. Specifically, quality of fruits is of major concern in the export and import industry as it has to conform to the quality norms of the corresponding country. In recent years, non-invasive imaging techniques such as Magnetic resonance imaging (MRI), X-ray, Computed...
tomography (CT), Nuclear magnetic resonance (NMR), Near infrared (NIR), Ultrasound and Hyper-spectral imaging are being employed to determine the quality of fruits. The “king of fruits”, Mango (Mangifera indica Linn) is the most economically important agricultural crop. India being the major producer of mangoes (50% of global production) and contributing majority of mango cultivars to the world market needs economical, non-destructive methods for quality evaluation of mangoes. There is a need to develop a non-destructive system that objectively classifies the internal quality of mangoes in real time. In this paper, an X-ray based computer vision methodology is proposed to automatically detect internal defects of mangoes and classify the quality into two groups, “Defective” and “Non-defective”. In the proposed methodology we built a dataset of 572 X-ray images of mangoes and validated it using Discriminant Function Analysis (DFA) predictive model which determines the group membership of each sample in the dataset based on the huge feature space extracted from the sample images. The features that best predicts the group membership were given as inputs to Multilayer Perceptron Neural Networks (MLP NN) with scaled conjugate gradient optimization algorithm and the optimized MLP architecture with maximum classification accuracy was determined. The proposed model was able to classify the X-ray image samples into Defective and Non-defective groups with an accuracy of 91.3%.

**Keyword:** X-ray imaging, Non-destructive, Internal Defects, Discriminant Function, Scaled Conjugate Gradient, Neural Networks

**References:**

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**Authors:** Venkatesh P, Saikat Majumder

**Paper Title:** Deep Belief Network for Prediction of Rician Fading Channel

**Abstract:** In this paper a novel channel prediction scheme is presented for rician fading channel. The channel prediction is done by using a Deep Belief Network (DBN) which is composed of two Restricted Boltzmann Machines (RBMs), this deep learning algorithm can produce fewer predictive errors than echo state networks and other predictive approaches.. Simulation results shows that the DBN channel prediction system has a lower MSE than the prediction of the echo state network and other conventional prediction methods and the obtained SER gap between the actual CSI and predicted CSI is small.

**Keyword:** Channel prediction, Deep Belief network, Restricted Boltzmann Machine, Rician fading.

**References:**

2. T. Ding and A. Hirose, “Fading channel prediction based on combination of complex-valued neural networks and chirp Z-
Digital Videos and multimedia copy-move forgery detection is a trending topic in multimedia forensics. Protecting videos and other digital media from tampering has become a cause of concern. Video copy-move forgery has increasingly become a type of cybercrime that is employed to using videos for various malicious purposes such as providing fake evidences in court rooms, spreading fake rumors, using it to defame a person. A lot of approaches have been proposed for detecting the traces left by any forgery caused due to the copy-move operation. In this paper, we conduct a survey on these existing approaches which are applied for the detection of copy –move videos and also for the identification forgery in the images. In some of the existing methods, the problem of copy-move video forgery has been addressed using different techniques. Techniques such as noise residue, motion and brightness gradients, optical flow techniques solve only part of the whole problem. This survey analyses the current solutions and what they offer to address this problem.

**Authors:** Seemanthini.K, Manjunath S S, Raghuram A S, Sneha N P

**Paper Title:** Detection of Video and Multimedia Copy-Move Forgery using Optical Algorithm and GLSM Clustering

**Abstract:** Digital Videos and multimedia copy-move forgery detection is a trending topic in multimedia forensics. Protecting videos and other digital media from tampering has become a cause of concern. Video copy-move forgery has increasingly become a type of cybercrime that is employed to using videos for various malicious purposes such as providing fake evidences in court rooms, spreading fake rumors, using it to defame a person. A lot of approaches have been proposed for detecting the traces left by any forgery caused due to the copy-move operation. In this paper, we conduct a survey on these existing approaches which are applied for the detection of copy –move videos and also for the identification forgery in the images. In some of the existing methods, the problem of copy-move video forgery has been addressed using different techniques. Techniques such as noise residue, motion and brightness gradients, optical flow techniques solve only part of the whole problem. This survey analyses the current solutions and what they offer to address this problem.

**Keyword:** Noise residue , Copy-move forgery, optical flow, copy- move forgery, Motion brightness

**References:**

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field consistency. ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings. 2674-2678. 10.1109/ICASSP.2014.6854085.


Authors: Narendrakumar, K B Ramesh

Paper Title: Design of Radial Artery Pulse Sensor System for Ayurveda Disease Diagnosis

Abstract: In today’s modern world everyone will be suffering from one or another disease and to know it all doctors suggest to undergo some scanning like x-ray, MRI, city scan and some blood checkups to confirm one’s health issue with his prediction. In ancient days there was no scanning and checkup instead people believed in physicians, who use treat the unhealthy persons with knowledge of medicine known as ayurveda in India and Traditional Chinese Medicine (TCM) in china.

Ayurveda there are eight methods to diagnose the health status and one of it is nadi pareeksha, where nadi vaidiya feels the three nadi signals vata, pitta and kapha at the wrist of a person and by feeling the palpation of these signals he predicts the health status of a person. As now a day’s everyone has adopted costly and complex foreign medicine, which only tries to cure the present health issue of a subject has got hundreds of side effects, so in order to overcome this we need to follow the ayurveda practitioner. Ayurveda require a very experienced person who rarely seen in modern world, so we are trying to bring their ideas in some technical views.

In this project, a non-invasive methodology is implemented to know health issue of a person and an attempt is made to bring back the ayurvedic knowledge. Where nadi signals of a subject are acquired and calculated each signal mean and peak values, which are different for different health issues and stored in a database. The incoming new subject signals mean and peak values are computed and compared with values stored in data base and then the system reports the health status of a subject.

Keyword: Pulse diagnosis, Wrist pulse signal, nadi, DAQ card

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Authors: Shashidhara H R, Sanjay P K, G T Raju, Vinayaka Murthy

Paper Title: Effective Cost Models for Predicting Web Query Execution Cost

Abstract: Classical query optimizers rely on sophisticated cost models to estimate the cost of executing a query and its operators. By using this cost model, an efficient global plan is created by the optimizer which will be used to execute a given query. This cost modeling facility is difficult to be implemented in Web query engines because many local data sources might not be comfortable in sharing meta data information due to
confidentiality issues. In this work, an efficient and effective cost modeling techniques for Web query engines are proposed. These techniques do not force the local data sources to reveal their meta data but employs a learning mechanism to estimate the cost of executing a given local query. Two cost modeling algorithms namely: Poisson cost model and Exponential cost model algorithms are presented. Empirical results over real world datasets reveal the efficiency and effectiveness of the new cost models.

**Keyword:** Cost models, web query optimization, mediator, operators

**References:**

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**Authors:** Sowmya S.R, Manjunath S.S

**Paper Title:** Clustering based Categorical Data Protection

**Abstract:** At present, the number of publicly available datasets is increasing day by day. It is therefore imperative to improve the confidentiality of the data, which has become one of the main reasons for an investigation. Extended to provide effective protection techniques that hinder the disclosure of entities in datasets while preserving the usefulness of the data. A systematic approach to categorical data protection is achieved by applying groups to the dataset and then protecting each group. In this paper, we present a survey and analysis on clustering techniques. The analysis of grouping techniques can result in confidential data or outliers in groups, and effective protection methods for such groups.

**Keyword:** Clustering, Categorical Data, privacy, Data mining.

**References:**


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Authors: Praveena Mydolalu Veerappa, Ajeet Annarao Chikkamunnur

Paper Title: Natural Language SQL Query Processing using Fuzzy Matching and Elimination Technique

Abstract: In Structured Query Language (SQL), complex queries are difficult to write or understand by a user, because every user is not familiar with SQL. A common user can able to retrieve the information from the query databases using natural language is considered as an important research area. To improve the communication between databases application and naive user, an enhanced application with intelligent interface are needed. A fuzzy system with matching and elimination technique is designed in this research study, where SQL queries are formed from the input given by the user through several steps like noise removal, lexicon normalization and query formation. Then, the system uses the Latent Dirichlet Allocation (LDA) to extract the keywords from the input query. Finally, matching and elimination techniques are used to find the data, which is related to the input query given by end-user. When compared with the existing SQL techniques, the proposed fuzzy method achieved 91% and 90.5% accuracy, 95% and 93% precision, and 0.10 and 0.12 error rate for both 28 and 50 queries.

Keywords: Elimination Technique, Fuzzy Matching Technique, Natural Language, Query Database, Structured Query Language.

References:


Depression Analysis using Machine Learning Based on Musical Habits

Abstract: Depression has been a main cause of mental illness. Depression results in vital impairment in lifestyle. A significant reason for suicidal cerebration is observed to be depression. Music varies the intensity of emotional experience by captivating the neurotransmitters and brain anatomy, including the brain’s dopaminergic projections. The popularity of using Regression Models in data analysis in both research and industry has driven the development of an array of prediction models. It relies on independent variables and can provide the prediction for the dependent variable. The paper outlines the development of a Regression model to get the depression score of a person based on the music the user listens to. A regression model is used to predict the depression score depending upon the data obtained from a varied span of individuals and the genre of music they have listened to. We generate a suitable report based on the depression score. The doctor can then use the report to give the necessary treatment to the depressed patient. With our research, we have obtained variance and r2 score of over 0.95.

Keyword: Multivariate Linear Regression, Music, Principal Component Analysis, Support Vector Regression.

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Diabetic Foot Risk Classification using Decision Tree and Bio-Inspired Evolutionary Algorithms

Abstract: Diabetic foot complications are a burden to the Indian population which affects both financially and physically. The complications could be prevented if the risk of diabetic foot are detected well in advance before the peripheral nerves are damaged leading to amputation and limb loss. The quantification of severity plays an important role in timely intervention, delivery of appropriate treatment and prevention of amputation. This can be modeled as a classification problem where the risk category is stratified into different levels of severity. This paper is an approach to build such a system, capable of classifying the risk category of diabetic patients for suitable follow-up and care. Decision trees are used for the same with features selected using bio-inspired evolutionary algorithms like Particle Swarm Optimization (PSO), Genetic Algorithm (GA), Cuckoo Search (CS), FireFly (FF), Dragon Fly (DF) and Gravitational Search Algorithm (GSA). The overall accuracy is 77% but it identifies the low risk and high risk cases effectively with 97% and 89% respectively.

Keyword: Diabetic foot risk classification, Decision Tree, Feature Selection, Bio-Inspired algorithms

References:


Authors: Sapna V. M, Roshan Makam, Keshava M, Sudhanva Narayana

Paper Title: Conceptual Framework for Invariant Protein Fragment Library

Abstract: Proteins are essential and are present in all life forms and determining its structure is cumbersome, laborious and time consuming. Hence, over 3-4 decades, researchers have been using computational techniques such as template and template free based protein structure prediction from its sequence. This research focuses on developing a conceptual basis for establishing an invariant fragment library which can be used for protein structure prediction. Based on 20 amino acids, fragments can be classified into lengths of 3 to 41 size. Further, they can be classified based on the identical number of amino acids present in the fragment. This encompasses the number of fragments that can exist and in no way represent the actual possible fragments that can exist in nature. Invariant fragments are ones which are rigid in structure 3-dimensionally and do not change. A formula was arrived at to determine all possible permutations that can exist for length 3 to 41 based on the 20 amino acids. 100 proteins from the Protein Data Bank were downloaded, broken into fragments of 3 to 41 resulting in a total of 6102,102 fragments using Asynchronous Distributed Processing. Then identical fragments in sequence were superimposed and Root Mean Square Deviation (RMSD) values were obtained resulting in roughly 3.2% of the original fragments. t-score and z-scores were obtained from which Skewness, Kurtosis and Excess Kurtosis were determined. For invariance, skewness cutoff was set at + 0.1 and using the excess kurtosis, fragments whose distribution were either leptokurtic or platykurtic and were within + 1 standard deviation of the mean were considered as invariant i.e., if there were no outliers in the distribution and if most of the t-score or z-score values were centered around its average value. Using these cutoff values, fragments were classified and deposited into an invariant fragment library. Roughly 3,81,799 invariant fragments were obtained which is roughly 6.3% of the total number of initial fragments. This would be way less than the number of fragments that one has to either use in homology or de-novo modelling thereby reducing the design space. Further work is underway to set up the entire invariant fragment library which can then be used to predict protein structure by template-based approach.

41. Keyword: Proteins, Fragments, Invariant, Library

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Authors: Madhukar M, Nagesh Kumar D N, M C Hanumantharju M C, B M Chandrashekar, Kajol R

Paper Title: Reconfigurable FPGA Architecture for Cryptographic Hashing Algorithms

Abstract: Nowadays, security is the most significant thing in the communication field. Most of the data transmitted over the communication channel are highly confidential so it needs more security. But this confidential data are easily stolen by hackers and it affects the users’ privacy. Nowadays, so many encryption algorithms have been established to protect the original information of the users. But, Hash Function (HF) security is the most important primitive which used for data authentication and data integrity. The reconfigurable cryptography integrated with chip which used for cryptography. Hashing algorithm is used to generate the random number which also used as a key value for cryptography. In this paper, different kind of Secure Hash Algorithms (SHA) such as SHA-0, SHA-1, SHA-2, and SHA-3 in that the SHA-2 has different family (SHA-2F) such as SHA-224, SHA-256, SHA-384, and SHA-512 is studied.

Keyword: Encryption algorithms, Decryption, Hash function, Reconfigurable cryptographic, Secure Hash Algorithms.

References:


Authors: Nagaraj.Aiholli, Uday.Wali, Rashmi.Rachh

Paper Title: Implementation of Arithmetic unit for RNS using 2n-3 as Base

Abstract: Residue Number System (RNS) is often used in Cryptographic applications. Choice of a unique base for RNS is an important factor in implementing RNS. Bit folding after multiplication is a commonly used method for implementing RNS. In this paper an architecture based on modulo 2n-3 arithmetic is implemented. Each word of partial product is mapped once normal and then with one bit left shift with reference to the base number. The results are tabulated in terms of delay and area with Xilinx tool. Efficiency of implementation is compared with results available in literature.

Keyword: Modulo Arithmetic, Residue Number System, Squarer.

References:

Authors: Kripa Sekaran, Priyanka K, Pooja R

Paper Title: Route Recommendation System based on Safety Metrics and Route Profiling

Abstract: This project is based on the crime rates happening in our city and the measures taken to curb them to help in strengthening the perception of security in the minds of women and also people who are travelling alone at night. Safe route recommendation is an important part of the field of intelligent transportation, which can provide the guidance of travel mode and travel route for women as well as to travellers. The current route recommendation method has the complexity of urban transports, such as single traffic plan recommendation that often fails to meet the expected requirements. In order to solve the limitation of the one-way vehicle travel method, we propose a safe route recommendation method which includes three modes of transportation, including cars/cabs/auto rickshaws, public transport vehicles, and walking. The routes are represented in...
different color each denoting a different degree of safety gives user a choice to choose from. The routes/paths are categorized into high, medium and low risk areas. In GI Science, problems related to routing systems have been deeply explored an approach to provide risk score defined by crime rates for generating safe routes This obtained data is then displayed in a map with red, yellow and green patches denoting high, medium and low risk areas respectively. Thus, data are classified by the decision tree (ID3) algorithm. A geospatial repository is used to store tweets related to crime events of the city and the city’s street network is converted into graph format which will make the routing and classification mechanism easier. A forecast related to crime events that can occur in a certain place with the collected data was performed. The ID3 classifier classifies each routes into the following labels High, Medium, Low which describes the extent to which the specific route is risky. Our application presents all possible shortest and safe paths between the starting and destination point to the user.

**Key word:** Classifier, Data Mining, Decision tree algorithm, Safe route recommendation.

**References:**


**Authors:** Kripa Sekaran, Priyanka K, Pooja R

**Paper Title:** Route Recommendation System based on Safety Metrics and Route Profiling

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**Key word:** Classifier, Data Mining, Decision tree algorithm, Safe route recommendation.

**References:**

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Authors: Gowramma G S, Shantharam Nayak, Nagaraj Cholli
Paper Title: Intrinsic and Extrinsic Factors Predicting the Cumulative Outcome of IVF / ICSI Treatment

Abstract: Infertility rates in India becoming increased in last decade principally due to the urbanization conditions and the lifestyle habits. It is giving alarm by continuously reporting the progress in incident cases of infertility amongst the young Indian adults of both male and female population. Among the various Assisted Reproductive Technologies (ART) available today in the treatment of infertility, In Vitro Fertilization (IVF) is found to be the most applicable treatment method of choice. This involves the administration of different hormones and drugs to treat infertility. In the present scenario technically IVF treatment process is tedious, laborious, high cost and most importantly success rates reported to be very low (20-30%). The prediction of IVF success rates is becoming an important scientific knowledge and practice, which helps both the doctor and the candidate couple to know about the conditions hence to take the right decision. The accurate prediction of the IVF success rate is really a challenging task in obstetrics and gynecology medicine. The success rates of the IVF depends on the various factors such as Intrinsic factors i.e, Genetic predisposition, Age, Body mass Index, Hormonal balance, Embryo viability, Sperm quality, Endometriosis and overall patient’s response level of the candidate couple and the Extrinsic factors such as Medical equipment technology, Treatment methods, Personal experiences of clinicians and embryologists, Process time, Stress due to the lifestyle etc.

Keyword: Success rates prediction, Data analytics, Intrinsic factors, Extrinsic factors.

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Authors: Prajwala T R, D.Ramesh, H Venugopal
Paper Title: Meteorological Data Analysis using Artificial Neural Networks

Abstract: This paper focuses on weather data analysis for Bangalore urban region(Karnataka,India) over a span of 30 years. The 30 years data is preprocessed to have average monthly temperature, vapor pressure, PET (Potential-Evapo Transpiration), cloud cover, rainfall. These features are considered as factors affecting the rainfall. The correlation between the above mentioned parameters with the monthly rainfall are found using...
spearman correlation. Artificial Neural Networks (ANN) is used to classify instances as less rain, medium and heavy rain. The results of accuracy, confusion matrix is tabulated. Also the optimal number epochs, number of neurons and number of hidden layers is also identified for the data. The graph of actual output and predicted output is plotted.

**Keyword:** Spearman coefficient, Vapour pressure, PET (Potential-Evapo Transpiration), MultiLayerPerceptron, confusion matrix, precision, Recall

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**Authors:** Vasisreddy Prabha Kiranmai, Sharmitha S Bysani, Vijaya Kumar B P, Kusuma S M

**Paper Title:** Design and Development of Techniques for Equipment Health Monitoring System

**Abstract:** Machines in Industries are often subjected to enormous wear and tear, which if unnoticed, may lead to production delays and increased maintenance cost. Machines must be able to analyse and provide statistics about its health, so that preventive measures can be taken to avoid catastrophes in the industries. Thus, there is a need of automated fault detection and prediction of system’s condition. The concept of equipment health monitoring is a crucial step in the field of research and development in the manufacturing industries. This equipment makes it handy in situations where machines require continuous monitoring and is difficult for humans to provide such attention, especially in the case of unmanned vehicles.

Prediction of the status of equipment by acquisition of data from industrial machinery is the critical step in building such a system. Health of machines can be estimated by the data collected by the sensors-temperature, accelerometer, etc integrated with an embedded computing system, like as a Raspberry Pi. This IoT model consisting of embedded system with wireless connectivity collects real time data from the equipment/machinery used in industries. This data is used to analyse and predict the health of the equipment, examine the steady-state characteristics using Machine Learning technique, Hidden Markovian Model.

The concept of the proposed IoT model is evaluated over a conveyor belt test rig under various conditions, like different loads placed on various locations of conveyor belt and the belt is made to run at different speeds and data is collected over all these conditions. Then, a data model is created using Hidden Markovian Model which is further used in predicting the state of the belt based on the sequential data, here it is the sensor data. Given a state of the belt, this model can predict whether the belt is in proper condition or not, and if human intervention is required. Thus, at any point of time, having this setup on the machinery which needs to be monitored can be used in predicting the faults and notifying the user in case of any faulty behaviour or malfunctioning of machines. This setup can be used for any machines which are subjected to any motion, vibration and thermal changes. This helps in creating a completely automated fault detection systems in the present Industries.

**Keyword:** accelerometer, automated fault detection, condition of machine, equipment health monitoring, IoT, Hidden Markovian Model, sensor

**References:**

Abstract: The rapid rise of virtual machines are affecting the daily lives of people profusely. It is clear that to cater to such huge amounts of requests, services which can withstand the upper bound of those requests must be maintained. In this paper, we propose a model based on Evolutionary Algorithms which attempts to schedule given tasks to virtual machines in such a manner, so as to minimise the load imbalance among the different machines available. We show that using a greedy approach with certain optimisation functions, a workable solution can be reached which would help reduce this “upper bound” mentioned above. Through it, one can expect the load on any particular machine to not exceed a certain amount and be distributed amongst all virtual machines.

Keyword: Genetic Algorithms, Load Balancing, Makespan, NSGA-II, Virtual Machines

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Authors: Siddhartha Dwivedi, Divya Kumar
Paper Title: Tri-Objective NSGA-II Based Methods for Load Balancing

Abstract: The 4G Wireless Networks (WN) have not only provided seamless connection; they also strive to provide Quality of Service (QoS) to the users. However, providing efficient QoS to the users is quite often challenging due to large number of users and significant traffic load. One of the popular techniques to provide consistent QoS to the user is Vertical Handoff (VH). The main concept of VH is to migrate the user to another WN which can provide the requested QoS. Even though substantial contribution has been made in the literature for VH techniques, security oriented VH techniques are limited in number. Security aspect has become critical in Next Generation WN, due to new form of threats which are being introduced, and VH techniques also need to cater to such huge amounts of requests, servers which can withstand the upper bound of those requests must be maintained. In this paper, we propose a model based on Evolutionary Algorithms which attempts to schedule given tasks to virtual machines in such a manner, so as to minimise the load imbalance among the different machines available. We show that using a greedy approach with certain optimisation functions, a workable solution can be reached which would help reduce this “upper bound” mentioned above. Through it, one can expect the load on any particular machine to not exceed a certain amount and be distributed amongst all virtual machines.


References:
Abstract: An ad-hoc network is an interconnection of source node and destination node pairs with wireless communication, and it is non-centralized manner, nodes are having self-organizing capabilities. The nodes can move dynamically in such a way that interconnection between nodes vary. The routing mechanism in these networks is in multi-hop manner by taking help of intermediate nodes, these nodes helps in packet flow between source and destination node. Advantage of this type of routing is conservation of energy and efficiently delivers packets. This multi-hop manner of packet transmission introduces blending of various traffic flows, resulting in inter-dependencies between activities of nodes and strong correlations among the nodes. The analysis of ad-hoc networks is complicated task; techniques of the information theory will not yield an accurate analysis. In this work, we use a sub field of statistic mechanics called Totally Asymmetric Simple Exclusion Process and MAC technique for evaluating ad-hoc networks. This helps in evaluating performance parameters such as average delay and throughput of linear ad-hoc network. Finally it has been demonstrated that TASEP can improve the performance parameter such as end to end delay and throughput. 

Keyword: Ad-hoc networks, Random Time Division Multiplexing, Totally Asymmetric Simple Exclusion
Process.

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Israel & 9978. Homepage: www.eng.tau.ac.il/michaelm. Email: michaelm@eng.tau.ac.i
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Authors: Ipsita Sanyal, K. R. Dhavana, Kailash T. V., Kruthika R., Bhavanishankar K.

Paper Title: Vibration Guided Automatic Vision for Enhanced Security

Abstract: The existing security systems are secure but are not smart enough to handle arbitrary scenarios leading to many false triggers of the alert system. Furthermore, these systems require constant human intervention which is difficult to achieve. They are also vulnerable as they contain many loopholes and the sensors used are easily manipulatable. The proposed system tries to solve this problem in an efficient and a smart way by the use of sensors, AI and IoT which makes the system robust and resistant against attacks. The system implements advanced face detection via Single Shot Detection and face recognition via Inception Neural Networks. The system was recorded to be 97.95%.


References:
Abstract: Learning can be broadly classified into academics and non-academics. Academics is predominantly pre-defined syllabus driven and classroom centric with faculties on board. Non-academics are generally provided less than 10% of the total learning time. Areas like industry, research and inspiration are rarely addressed in the course time. The sector of E-learning has achieved proliferating reputation and popularity, and for the right grounds. Majority of the youth in this country belongs to the age group of 15-19. And a minimum of youth belongs to the age group of 25-29. With this growing population of the youth increases and the learners and increases the need of more teachers and advanced teaching mechanisms. Begetting a powerful learning affair with a classroom like experience, presenting a near to conventional classroom essence are the aspirations of a lucrative E-learning platform. E-wyre is a versatile knowledge sharing supplement to help students. Especially at UG & PG level and above the education institutions address the access and shortfall of high caliber educators. The impact of this is pretty high at rural areas. The objective of E-wyre is to connect various domain knowledge experts (DKE) from various fields. This will be live, virtual, interactive and on-demand.

Keyword: E-learning, E-wyre, robust learning, Domain Knowledge Expert.

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Abstract: Wireless sensor network incorporates an innovative aspect called as data handling technologies for big data organization. In today’s research the data aggregation occupies an important position and its emerging rapidly. Data aggregation incudes, process of accumulating the data at node, then either store or transfer further to reach out the destination. This survey depicts about the previous work on data aggregation in WSN and also its impact on the different services. There are number of data aggregation techniques available for reducing the data, processing the data and storing the data. Some of them are discussed here in the review. The data aggregation performed using certain techniques can also be aimed in having energy efficiency, time efficient, security could be in the form of confidentiality, unimpaired, authenticate, freshness, quality, data availability, access control, nonrepudiation, secrecy, secrecy. These are the relevant performance metrics to maintain the better Qos in WSNs applications. The goal of this paper is to display an overview of existing techniques for performance improvement in homogenous/heterogenous networks.


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Authors: Monika P., G. T. Raju

Paper Title: Integration of Healthcare Ontologies at Schema Level using Customized Metadata

Abstract: In today’s fast growing competitive world, Data mining has become a research area of great interest as the problem of handling data in many circumstances toss lot of opportunities for research discoveries. Data being generated every second particularly in healthcare sector need to be managed efficiently so that further perusal when needed will be easier for medical professionals and researchers as an aid of decision support. Heterogeneity in the structure of data rather than the semantic discovery is the key of open challenge remained yet unaddressed. Structural construct deals at schema level of data depiction. Ontologies as means of data representation in the form of knowledge graphs are serving the field of Machine Learning (ML) from decades supporting automated knowledge extraction. Lot of research contributions are found to handle general formats to certain extent, but handling images and Portable Document Format (PDF) remain open as a major...
problem statement to be addressed in-order to enjoy successful information retrieval benefits. However not all relevant data is being retrieved during semantic queries due to non-homogeneity in data representation at the schema level resulting in ruling out of the document matches. In order to address the stated issue, an approach has been presented in the paper which aims at extracting metadata about the documents facing problem of heterogeneity, constructing ontologies based on the customized metadata tags followed with integration of ontologies for enhancing the prediction accuracy by increasing the relativity of documents in the semantic context. The proposed methodology can be evaluated using any of the classification techniques and solutions proved worth can be retained for daily access of semantic information thereby achieving good prediction accuracy in the process of efficient knowledge recovery.

**Keyword:** Semantic web, Ontologies, Ontology agents, Ontologies Integration, Health care, Schema.

**References:**

**Authors:** Madhu H. S., Nithin Gowda N. S., Srivatsa, Yashas Gowda H. M., Ramesh B.

**Paper Title:** Virtual Assistant App for Disabled People

**Abstract:** Human life is heading towards busy and hectic schedule it becomes necessary to automate the home appliances. The main objective of virtual assistant is controlling, managing and co-ordinating surrounding devices in a comfortable, secure and effective way. Some methods can control and handle different types of appliances using unique methodology. Virtual Assistant presents the automated approach of controlling the household devices that could ease the tasks of using the traditional methods. Augmented Reality is a recently developed method for the automation of various electrical appliances which is used to allow virtual pop ups on the screen when the camera of the smartphone is pointed towards the object. This pop up enables the user to turn on or off the device by simple touch selection thus improvising the ways of automation in a significant way. This application is built in such a platform where a visually challenged one also has a chance to interact with the system through braille method. The entire system concentrates on simple way of interaction. The best way of interaction is through Android Application. Developed app will not only be helpful for disabled persons but also provides a reliable and well-structured platform for each and every individual that helps in saving energy. Face recognition plays a vital role in providing security for the home owner by providing information about the people present at their door-step.

**Keyword:** Virtual assistant, Android application, Augmented Reality (AR), Face recognition

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57. 326-329
Abstract: The data analytics has become prominent for today’s world because it is defined as the methodology of investigating data sets in order to draw conclusion about the information it contain. The Data Mining is a key part of Data Analytics because it has techniques and tools which help to explore knowledge which is hidden in data. The outcome of data analytics is very crucial to Business organizations because it helps in decision making process. In Data Analytics there are two roles which are very prominent and they are Data publisher and Data Analyzer. Data Publisher is the one who provides data for analytics which is collected from heterogeneous sources. Data Analyzer receives data from Data publisher and uses for data analytics. The main issue involves here is data privacy, which is concerned with the proper treatment of data i.e. approval, discern and regulations. A separate field called PPDP- Privacy Preserving Data Publishing mainly concentrates on how data is shared, used by data analysts and it may be implicit or explicit to organizations (third party) such that it should be safer from untrusted people and attacks. The PPDP offers several approaches to publish data in safe manner and supports data utility, but there is a need of domain specific privacy concern because privacy needs are different based on the domain and in mean time how data is utilized. In the paper a hybrid approach is proposed to preserve data privacy in concern with data publisher which supports domain specific data privacy and utility.

Keywords: PPDP, PPDM, DW, CH.
and also the activities are discussed in detail. Additionally, challenges, benefits and drawbacks with Model Based Testing are briefly bestowed. It also describes the suitable applications of Model Based Testing.

**Keyword:** System Under Test (SUT), Model Based Testing (MBT)

**References:**


**Authors:** Laxman L. Kumarwad

**Paper Title:** Assessment of E-Readiness and Effectiveness of E-Governance Projects

**Abstract:** In this decade, a number of e-governance initiatives are implemented in the Satara district. It is essential to assess the e-readiness and effectiveness of the initiatives for smooth running of the projects and future enhancement plan. The researcher has made an attempt to assess the e-readiness and effectiveness of e-governance initiatives in Satara district. For this purpose, the researcher identified the seven key indicators for assessment of effectiveness of e-governance projects running in the Satara district, Maharashtra, India. The researcher collected primary data from the citizens of Satara district and secondary data is gathered from government gazettes, government publications, census of India. Finally, the researcher specified the conclusion.

**Keyword:** E-Readiness, Assessment Indicators, CSC, Assessment Framework.

**References:**


**Authors:** Bikram Kumar, Deepak Gupta, Rajat Subhra Goswami

**Paper Title:** Classification of Student’s Confusion Level in E-Learning using Machine Learning

**Abstract:** With the advancement of technology, the traditional mode of teaching-learning pedagogy has evolved into online education system as it is easily accessible. But, it is very difficult to detect whether the students are ‘confused’ or ‘not confused’ while watching online videos. Getting confused while watching online videos is one of the root causes of less performance of the students. Keeping in mind the above statements, we would like to investigate whether the students are ‘confused’ or ‘not confused’ while watching Massive Open Online Course (MOOC) videos. There are a lot of studies that prove electroencephalogram (EEG) signals behave differently as we are in different conditions such as happy, sad, angry, etc. So, in this paper, we have
applied several supervised learning algorithms to detect if the students are ‘confused’ or ‘not confused’ while watching MOOC videos using EEG data. The results of this paper show that machine learning is a potential technique, for the analysis of EEG data that can detect the confusion level of the students which is comparable to human observation for predicting the confusion level of the students that can improve the quality of online education system.

Keyword: Confusion, EEG, Machine Learning, MOOC, Supervised Learning

References:

Authors: Vidya Y., G. T. Raju

Paper Title: Early Detection of Depression in Women using Machine Learning Methods

Abstract: According to World Health Organisation(WHO), most prevailing mental sickness and leading evidence of disability is Depression. In India Depression is much more prevalent in women of all age groups. Even though effectual treatment is noted for Depression, it is not reaching the maximum number of sufferers in both wealthy and pathetic countries. In this respect, many scientific discipline and researchers have been employed to develop Machine Learning models to determine level of Depression. This paper presents background knowledge on depression and usage of machine learning and also review past studies that apply machine learning for determine depression with their merits and demerits.

Keyword: Depression detection, Machine Learning, Major depressive disorder (MDD), Anxiety.

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Authors: Zeeshas Mishra, Shubham Mishra, Bibhudendra Acharya

Paper Title: LEA 192: High Speed Architecture of Lightweight Block Cipher

Abstract: High-throughput lightweight cryptography calculation is the need of the present world to convey between two asset obliged devices Pipelineing is the technique have been used to achieve high throughput. In this paper we have target to lightweight block cipher LEA. Block size of LEA is 128 and key size 128, 192, and 256 bit. In this paper we have focus on LEA architecture for 192-bit key size and achieve very good throughput. This method has a higher capability of throughput as compared to previous LEA ciphers. Proposed work is 56% improved version of compared paper for respective Speed and area also less than previous architecture. Graph representation have been shown of different matrices and comparison.

Keyword: ARX, Block Cipher, Cryptography, LEA, Lightweight, Pipeline, Throughput.

References:


In this paper, we analyze, model, predict and cluster Global Active Power, i.e., a time series data obtained at one minute intervals from electricity sensors of a household. We analyze changes in seasonality and trends to model the data. We then compare various forecasting methods such as SARIMA and LSTM to forecast sensor data for the household and combine them to achieve a hybrid model that captures nonlinear variations better than either SARIMA or LSTM used in isolation. Finally, we cluster slices of time series data effectively
using a novel clustering algorithm that is a combination of density-based and centroid-based approaches, to discover relevant sub-clusters from sensor data. Our experiments have yielded meaningful insights from the data at both a micro, day-to-day granularity, as well as a macro, weekly to monthly granularity.

**Keyword:** Time series, Forecasting, SARIMA, LSTM, RNN, Clustering

**References:**
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Authors: Sunita T. N, Bharathi Malakreddy A

**Paper Title:** Recent Advancement of Auto-Scaling in LTE M2M Communication.

**Abstract:** Lately Machine to Machine (M2M) Communication has gathered huge research interest because of its peculiar nature of communication without any or less human intervention. With the increase in wide variety of devices and application, there is huge change in traffic patterns of Machine Type Communication (MTC) system. Existing traditional Long-Term Evolution (LTE) network will not be able to handle these growing demands of the bandwidth and network availability. There are some challenges in the existing network like latency, scalability, reliability, interference and delay, which degrade the Quality of Service (QoS). Hence to address these issues would require some advanced network resource management capabilities such as Network Functions Virtualization (NFV), Software Defined Networking (SDN). These technologies would help the operators to provide efficient services to consumer. In this literature we present survey of auto-scaling the resources required for LTE communication using SDN, NFV and Machine Learning (ML) for facilitating MTC along with its requirements, existing work and challenges. This paper first describes in brief about SDN/NFV and its requirements, existing work and challenges. This paper first describes in brief about SDN/NFV and its requirements, existing work and challenges. Finally we discuss the application of the MTC along with open problems and finally some future research in this area.

**Keyword:** Auto-Scaling, Machine to Machine, SDN, NFV, Machine Learning.

**References:**


Paper Title: Machine Learning based Twitter Sentimental Analysis in Business Field

Abstract: Social networking sites like twitter have imillions of users sharing their thoughts on any issue at any time. This paper addresses the problem of sentiment analysis in tweets. It aims to classify sentiments of tweets by using Wavelet Feature Extraction. Journal of Electrical Engineering Science, 1, 1, 2010, ISSN: 2008-9864.

Keywords: sentiment analysis, microblogging, isocioeconomic networking platform which allows users to write short status updates of their life, microblogging and social media.

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Authors: Ramesh K V, G T Raju

Paper Title: Cloud Security: Inter-Host Docker Container Communication using Vault Dynamic Secrets

Abstract: In this paper we attempt to address Inter-Host Docker container communications security issues by incorporating a latest approach provided by Vault Hashicorp dynamic secret mechanism for managing SSH keys and server credentials. A simulation environment is prepared for Inter-Host container communication consisting of one host running locally and the peer host running as an AWS EC2 instance in cloud. Industry standard monitoring tool Grafana is used in the simulation environment to highlight the security impacts for any organization. We also draw special attention to some of the security vulnerabilities in docker container like ARP spoofing, Integrity of the docker host and containers and MAC flooding attacks. We try to list some best practices to be followed when using docker containers in any production deployments.

Keyword: Docker containers, Dynamic secrets, Grafana, Cloud Security, Vault Hashicorp

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Authors: Anagha Naga Krishna, Tejashwini V, Sudhamani M J

Paper Title: Diagnosis of Brain Diseases using Neural Networks

Abstract: Intensification in the occurrence of brain diseases and the need for the initial diagnosis for ailments like Tumor, Alzheimer’s, Epilepsy and Parkinson’s has riveted the attention of researchers. Machine learning practices, specifically deep learning, is considered as a beneficial diagnostic tool. Deep learning approaches to neuroimaging will assist computer-aided analysis of neurological diseases. Feature extraction of neuroimages carried out using Artificial Neural Networks leads to better diagnoses. In this study, all the brain diseases are revisited to consolidate the methodologies carried out by various authors in the literature.

Keyword: Brain, Classification, Feature Extraction, Neural network

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International conference on Communication and Signal Processing, April 3-5, 2013, India.


Authors: Sudha V, Girjamma H A

Paper Title: Modeling a Gene Structure Behavior Analysis based on the Correlation Ontology

Abstract: The ever increasing digitization and advancement in the medical filed provides data especially related to gene structure and computing models gives an opportunity to analyses those data for the more critical classifications and analysis to provide practitioner a better decision-making platform to advice proper treatment. The subtype classification is a challenging task if it is handled only by the computer vision methods, whereas if the low-level relationship is established and structure of the gene profile is understood then the statistical methods are quite useful and effective for the sub-type doses classifications. This paper presents a process of analyzing the gene structure and its correlations among the node behavior analysis by modeling it at the numerical computing platform. Various performance metrics like p-score and t-test is conducted to get the optimal performance factor. The proposed methods can be extended to the further critical computations in advanced models and get the analysis of typical gene profile structure behaviors and used as an effective classifier for the sub-type classifier of the various type of doses sub-cluster. The computational analysis shows significant improvement (50%) in type-1 and type-2 gene expression analysis.

Keyword: Biomedical, Gene Structure, Gene Ontology, Clustering Support Vector Machine.

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Authors: Srishti C Rai, Sheetal Vernekar, Ajay L Gowda, Nishith A, Prathima Anand
Paper Title: Mood Mechanic
Abstract: Depression is a major problem being faced by a lot of people. It is the extremely low mood faced by an individual. Some cope up with this mood change very quickly but some drastically fall into it. Those who fall into it suffer from depression. Prediction of a person’s mood plays a major role in treatment of depression. But predicting a person’s mood from previously collected data is challenging. Mood of a person can depend on various factors such body language, facial expressions and current mind state. But mood prediction is not enough, instead the proposed system involves ways in which we can use the predicted data to provide assistance in case of any deviation from a healthy mental condition. Past approaches being used, predict mood considering only a few parameters. This can lead to results being less accurate making it less reliable. A lot of these issues can be handled by the ‘Mood Mechanic’ approach. This paper mainly emphasizes on the existing approaches related to mood prediction and their limitations so as to propose a system that would not only help in efficient prediction but also help in assisting the user of the system on the further actions to be taken based on the predicted results. This approach considers many parameters such as facial expressions, social media usage and self-evaluation results. On collecting all these data and performing analysis on them, the system will suggest the actions or solutions, which will help the person in deciding on tasks which are generally suggested and are necessary for getting better.

Keyword: Depression, Mood prediction, Mental wellbeing, Sentimental analysis

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3. “Automated Mood-aware Engagement Prediction” by Svati Dhamija, Terrance E. Boul University of Colorado Springs, CO 80918
5. “Detection and treatment of depression in physically ill” by David Goldberg, World Psychiatry Association

Authors: Patil N S, Kiran P, Preethi B
Paper Title: A Computational Modeling for Knowledge Binding of the Unstructured Web Data
Abstract: The focus of this manuscript is laid towards extracting insightful data embedded into web-based information which is crucial for various academic and commercialized application requirements. The study thereby introduces a robust computational modeling by means of computing knowledge from collaborative web-based unstructured information. For this purpose, this design is simplified with Fuzzy based matching algorithm and also with a set of procedures which reduces the computational effort to a significant extent. The numerical theoretical analysis shows that the effectiveness of the formulated model. It also shows that the formulated concept outperforms the baseline modeling by almost 50% when computational performance is concerned.

Keyword: Unstructured web-data, Fuzzy Logic, Information Mining

References:


Authors: N P Samarth, Gowtham V Bhat, Hema N

Paper Title: Stock Price Prediction

Abstract: Stock trading is a very crucial activity in the world of Finance and is a supporting structure for many companies. Predicting the future value of a stock is the main goal of stock price prediction project. In this paper, we have used machine learning algorithms to predict future stock prices of a company. Stock prediction by the stock brokers is mainly done using the time series or the technical and fundamental analysis but as these techniques are very unreliable and limited, we propose making use of intelligent techniques such as machine learning. Python is a programming language which can be used to implement machine learning algorithms with its numerous inbuilt libraries. We propose an approach that uses machine learning algorithms and will be trained on the historical stock data that is available and gain intelligence, later it uses the knowledge acquired for predicting the stock prices accurately. Random Forest Regression is one of the machine learning technique that is used for stock price prediction for small and large capitalizations also in different markets employing both up-to-minute and daily frequencies.

Keyword: Machine Learning, Random Forest Regression, Stock Market, Predictions.

References:

Authors: Ch Sai Abhishek, Ketaki V Patil, P Yukttha, Meghana K S, MV Sudhamani

Paper Title: Predictive Analysis of IPL Match Winner using Machine Learning Techniques

Abstract: Artificial intelligence (AI) can be implemented using Machine Learning which allows the computing to potentially robotically study and improve from its previous experiences without being manually typed. Data can be accessed and used by the computer programs developed using Machine learning. This paper mainly focused on implementation of machine learning in the arena of sports to predict the captivating team of an IPL match. Cricket is a popular uncertain sport, particularly the T-20 format, there’s a possibility of the complete game play to change with the effect of any single over. Millions of spectators watch the Indian Premier League (IPL) every year, hence it becomes a real-time problem to compose a technique that will forecast the conclusion of matches. Many aspects and features determine the result of a cricket match each of which has a weighted impact on the result of a T20 cricket match. This paper describes all those features in detail. A multivariate regression-based approach is proposed to measure the team’s points in the league. The past performance of every team determines its probability of winning a match against a particular opponent. Finally, a set of seven factors or attributes is identified that can be used for predicting the IPL match winner. Various machine learning models were trained and used to perform within the time lapse between the toss and initiation of the match, to predict the winner. The performance of the model developed are evaluated with various classification techniques where Random Forest and Decision Tree have given good results.

Keyword: Cricket prediction, Decision Trees, KNN, Logistic Regression, Multivariate Regression, Random forest, SVM, Sports Analysis.

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Authors: Pranita Mahajan, Dipti P. Rana

Paper Title: Text Mining In Healthcare

Abstract: In healthcare, data mining intensively and extensively becoming essential. Data mining applications can benefit all patients and the healthcare professionals. This paper starts with introducing data mining and the healthcare paradigm. This study confers various techniques of data mining in healthcare application domain. As the scope of the study is limited to text mining classification, state of art in particular to healthcare text mining classification is studied in detail with suggested improvements. Various issues and challenges owing to the type of data in healthcare are also discussed in detail with possible solutions. Finally, the paper highlights the need for personalized prescriptive systems for patients and healthcare professionals.


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Abstract: Diabetic Retinopathy (DR) is a progressive syndrome that leads to loss of vision if not detected and treated. Retina is inner layer of the eyeball which is capillary and delicate transparent membrane. It is high developed tissue of eye which plays a major role for vision. Retina is the source for detection of many disorders. Part of retina with optic disc can be viewed through opthalmoscope and termed as fundus image which is a basis of diagnosis for DR. DR can be categorized as Proliferative Diabetic Retinopathy (PDR), Diabetic Maculopathy, Non-proliferative Diabetic Retinopathy (NPDR) and Advanced Diabetic Eye Disease. Machine Learning (ML) techniques play a vital role in early detection of DR. In this paper a review on the existing techniques with open issues to be addressed is presented for diagnosing DR and model is proposed to consider the features namely Microaneurysms, Retinal Hemorrhages, Hard exudates, Cotton wool Spots, Neovascularization for classification of DR. These features can be combined with hypertension to predict other disorders like stroke, chronic heart disease, renal dysfunction, cardiovascular mortality and so on which overcome the need of other preliminary checkup. The complete profile of disorders for a diabetic patient can be deduced by the retinal fundus image.

Keywords: Diabetic Retinopathy, Machine Learning, Retinal Fundus Images.

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25. Ivan Petrov i c. Department of Control and Computer Engineering Faculty of Electrical Engineering and Computing University of Zagreb Unsa 3, 10000 Zagreb, Croatia.
27. Xiangyuan Lan, Shengjing Zhang, Member, IEEE, Pong C. Yuen, Senior Member, IEEE, and Rama Chellappa, Fellow, IEEE TRANSACTIONS ON IMAGE PROCESSING, VOL. 27, NO. 4, APRIL 2018
29. Robust visual tracking via patch based kernel correlation filters with adaptive multiple feature ensemble Wei Chen, Kaihua Zhang, Qingshan Liu, NEUCOM17300, S0925
30. Robust visual tracking via patch based kernel correlation filters with adaptive multiple feature ensemble Wei Chen, Kaihua Zhang, Qingshan Liu, NEUCOM17300, S0925
31. Joint Sparse Representation and Robust Feature-Level Fusion for Multi-Cue Visual Tracking Xiangyuan Lan, Student Member, IEEE, Andy J. Ma, Pong C. Yuen, Senior Member, IEEE, and Rama Chellappa, Fellow, IEEE
32. Tracking Objects From Satellite Videos: A Velocity Feature Based Correlation Filter Jia Shao, Bo Du, Chen Wu, Lefei Zhang, Qingshan Liu, NEUCOM17300, S0925
33. Tracking Objects From Satellite Videos: A Velocity Feature Based Correlation Filter Jia Shao, Bo Du, Chen Wu, Lefei Zhang, Qingshan Liu, NEUCOM17300, S0925
35. Robust visual tracking via patch based kernel correlation filters with adaptive multiple feature ensemble Wei Chen, Kaihua Zhang, Qingshan Liu, SENICOM17300, S0925
36. Joint Sparse Representation and Robust Feature-Level Fusion for Multi-Cue Visual Tracking Xiangyuan Lan, Student Member, IEEE, Andy J. Ma, Pong C. Yuen, Senior Member, IEEE, and Rama Chellappa, Fellow, IEEE
37. Tracking Objects From Satellite Videos: A Velocity Feature Based Correlation Filter Jia Shao, Bo Du, Chen Wu, Lefei Zhang, Qingshan Liu, NEUCOM17300, S0925
38. Joint Sparse Representation and Robust Feature-Level Fusion for Multi-Cue Visual Tracking Xiangyuan Lan, Student Member, IEEE, Andy J. Ma, Pong C. Yuen, Senior Member, IEEE, and Rama Chellappa, Fellow, IEEE
39. Tracking Objects From Satellite Videos: A Velocity Feature Based Correlation Filter Jia Shao, Bo Du, Chen Wu, Lefei Zhang, Qingshan Liu, NEUCOM17300, S0925
Endoscopy is one of the most efficient colon screening techniques through which the polyps are identified and treated. This manual process of identifying the polyps has a chance of missing some polyps while diagnosis. To overcome this an efficient computer aided detection technique need to be designed, there are several computing techniques and algorithms available, this research article tries to compare different techniques used in polyp detection and also proposes several performance evaluation metrics which can be used to find the efficiency of methods in identifying polyps in endoscopy videos. The article presents various identification methods, evaluation methods include various parameters like performance metrics. The proposed ensemble approaches are discussed in polyp detection mechanism.

**Keyword:** Ensemble, Endoscopy, polyp detection. Video mining

**References:**

**Authors:**
Nagesh B S, N P Kavya

**Paper Title:**
Validation Techniques for Relating Ensemble Methods in Polyp Detection

**Abstract:**

Mobile ad hoc networks (MANETs) are collection of nodes connected through wireless medium and do not require infrastructure for operation. Network Topology keeps on changing because mobility of nodes are high. Therefore, it is important for MANETs to provide efficient routing and security features. Since MANETs do not require any pre-existing infrastructure, they are extensively used in emergency and rescue and military applications. MANETs thus will form essentially an important part in wireless networks. In this paper, Ad hoc On-Demand Distance Vector (AODV) and Greedy Perimeter Stateless Routing (GPSR) routing protocol performance is compared with respect to Throughput and E2ED and observed that there is an improvement in throughput by 11% in case of GPSR. Simulation is performed using NS3.

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**Authors:**
Vanitha K. S., S. V. Uma

**Paper Title:**
Performance Examination of GPSR and AODV Routing Protocols in MANETS

**Abstract:**
Keywords: AODV, GPSR, E2ED, MANET, Throughput.

References:

Authors: Priyanka Ahalwatt

Paper Title: Key Distribution and Management in WSN Security: A State of the Art

Abstract: Offering efficient key management scheme (KMS) in WSN faces many challenges that will significantly impact the design and implementation of security protocols for WSN. The goal of KMS is to provide an effective environment in which the sensor node can communicate in a secure manner. It should be able to resolve the issue of generate, allocate the cryptographic keys in WSN in an efficient and effective manner. Hence, the methods for trustworthy allocation and management of these keys are very important for security of WSN. Many KMSs have been developed in recent years. However, inherent characteristics of a WSN make incorporating security a great challenge. This paper presents a comprehensive review of current state-of-the-art of KMS designed for WSN security and compare with respect to several evaluation measures. This paper also investigates the security requirements, goals and challenges of KMS based on existing literature reviews. We also attempt to provide insight into potential research trends in the area of WSN security and outline the approaches that are likely to play a very important role.

Keywords: key management, Wireless sensor networks, key distribution, key revocation, rekeying.

References:
30. sSECURITY IN SENSOR NETWORKS BOOK

Authors: Shrinivas Biradar, G. T. Raju

Paper Title: Web Objects Opinion through Sentiment Engineering

Abstract: Sentiment Analysis is the analysis of thoughts, feelings and qualities of people towards an object. Automatically recognizing user-generated content views is of great help for commercial and political use. Sentiment Analysis / Opinion Mining lets us gather information about the positive and negative characteristics
of any given object/product, and we recommend the favorable and highly scoring views on the object/product to the user. Although researchers have contributed a lot towards objects review through sentiment analysis, still there are open issues needs to be addressed such as Negation Handling, Domain Generalization and Detection and Removal of Fake Reviews. This paper presents a review on the various algorithms used for Negation Handling, Domain Generalization and Detection and Removal of Fake Reviews along with a comparative study against performance metrics along with their limitations.

**Keyword:** Domain Generalization, Fake Reviews, Negation Handling and Sentiment Analysis.

**References:**


**Authors:** Nalini Sampath, N. K. Srinath

**Paper Title:** Classification methods, Deep Learning Architecture, Data source and Challenges in Detection of Breast Cancer

**Abstract:** Different types of cancer can be prevented, screened for and/or detected and treated at an early stage. According to recent statistics breast cancer has a mortality rate of 12.7 per one lakh women. Mutation of genes at an abnormal rate leads to cancer. Changes in the size, color, texture and constant pain are the initial symptoms of breast cancer. A person presented with these symptoms requires breast cancer screening which would help in the diagnosis. Early detection can help health care professionals to start with the treatment, thereby reducing the mortality rate. Recent advances in breast cancer detection have proven to aid both medical professional and patients in making health care decisions. In this paper image acquisition technique, classification techniques, deep learning models and data sets available are highlighted.

**Keyword:** Classification, dataset, deep learning, imaging modality, transfer learning.

**References:**

Authors: Shanthala Nagaraja, Kiran Yarehalli Chandrappa

Paper Title: Topical Modelling

Abstract: In the history of information and technology the knowledge which was generated is stored in the form of digital technology. In present day the search engines will search based on terms and extract the list of similar documents from many topics. In this paper, the proposed Topic Modelling techniques will search based on the group of words from each document. The aim behind proposed topic modelling techniques is to comprise the topics from each of the document. The hidden topics from the list of collected text documents can be extracted using proposed probabilistic topic modelling.

Keyword: Modelling techniques, extracted, document.

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Authors: A Gomathy

Paper Title: Performance of Movable Head Disk Storage Devices with Various Disk Scheduling Algorithms

References:
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31. www.bcdcr.edu
Abstract: Hard drives are the ones which needs to be accessed in an efficient manner so that it is feasible to get better recital of the central processing unit. Now a day’s magnetic disks are capable of providing more input output bandwidth yet a huge amount of this bandwidth is lost due to the access time of the hard disk. This paper discusses an analysis of performance of various disk scheduling algorithms with their merits and demerits

Keyword: Fcfs, Sstfs, Scans, C-Scans, F-Scans, Looks, C-Looks, S-Looks

References:

Authors: Saneeep Bidwai, Nikhil Joshi, Saylee Bidwai, Uday Wali

Paper Title: Deep Learning Predictive Models for Cognitive Radio System

Abstract: Cognitive Radio (CR) was introduced to improve the utilization of Radio Frequencies (RF) that remain under-utilized by the primary users (licensee). The main idea behind CR is to allow un-licensed (secondary) users to occupy vacancies in licensed bands. However, CR mandates the secondary user to vacate the frequency band within a specified time after the primary user attempts to use the frequency band. CR does not expect the primary users to share their frequency usage schedules and hence the secondary users have to scan and predict the vacancy. The advantage for the secondary users is that they do not pay for utilization of band, if they are conformal to the CR specifications. CR is the next generation of smart communication systems. CR requires continuous monitoring of the intended RF band in the intended geographical area. This information may be used to predict spectral vacancies (white spaces). Certain bands, e.g. Analog TV bands, will have pre declared utilization schedules but in general, spectrum utilization is a random process and hence prediction can be difficult. However, Deep Learning (DL) techniques can improve the accuracy of prediction. Deep Learning techniques require large and clean data sets to work correctly. Such data sets are also necessary to compare achievable accuracy of prediction algorithms. Towards this end, we have created data sets that can be used for simulation, training and testing of CR over GSM band (890-960MHz). A typical file with two hour of observations will have about 1.2 million samples. More than 1000 sets of data samples have been captured from urban and rural areas in India. All the data sets have been cleaned to avoid instrument errors and statistical outliers.

In this paper we have used these standardized data sets to perform a comparative analysis of three DL methods for CR, viz. Auto-encoder (AE), Long Short-Term Memory (LSTM) and Multi Layer Perceptron (MLP). Results of the comparison are discussed.

Keyword: GSM, LSTM, Auto-encoder, MLP, Cognitive Radio.

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1. Sandeep Bidwai1, Uday V. Wali2, Mr. Bahubali Shirgapur3, Mrs. Saylee S. Bidwai4,”Detecting White Spaces for Cognitive Radio”, International Journal of Technology and Science, ISSN (Online) 2350-1111, (Print) 2350-1103 Volume 9, Issue 2, 2016 pp. 8-11
Abstract: In recent trend, big data analytics is a hot research topic for analyzing data for the business purposes, in which extraction of the important features from high volume of data is a hindrance job. In the current system, there are various methods available to extract the important feature, but it is not accurate in extraction of important features. To overcome this problem, in this paper, we have proposed a model called Map-Reduce based Chi-Square (MRCS) for feature selection. Next, the data preprocessing techniques and machine learning algorithms are used to generate business intelligence rules. The experimental results show that our proposed algorithm takes less execution time.

Keyword: Big Data, Business Intelligence Rules, Chi-Square, Feature Selection, Map-Reduce.

References:

Abstract: Cross-layer planes design is relatively new security approach for future technological era in which different parameters are analyzed across protocols stack, so that the internet connected exchange their information with utmost security. The traditional existing approaches operates at single layer security and across few cross layers on TCP/IP model. Hence intruder can monitor hole loops on victim nodes in Wireless Sensor Network (WSN), which is serious issue for sensitive data. For example, Intrusion Detection System (IDS) operates on network layer and identifies routing attacks, but it does not react to physical layer, MAC layer and transport layers anomalies. Cross-layer design among few layers can monitor and detect some intrusions but this consumes more energy at node and node will become inactive early in the network. Hence, in this article, we are proposing Cross-layer Planes Framework for Detecting Malicious Activities (CPFDMA) at different layers is proposed to secure the WSN as viable security framework is based on the Cross-layer planes which interact attributes in different layers of the protocol stack and monitor & analyze anomaly patterns, notifying them to avoid their malicious activities from the network.

Keyword: WSN, Cross-layer Framework, Malicious Activities.

References:
Clustering Techniques for Medical Imaging

Abstract: Nowadays medical imaging is becoming one of the popular techniques used to monitor human body to diagnose diseases, detect and treat injuries so that it can be treated. It helps in fetching desired information from the medical images. Clustering techniques in medical imaging is used to assist image based analysis of heterogeneous ailments by creating clusters of given population into homogeneous sub populations which helps in better understanding of the disease within each sub population. In this paper, we have discussed and compared various clustering techniques such as Fuzzy C Means clustering (FCM), Spatial Fuzzy C Means clustering(SFCM), K-Means and Particle Swarm Optimization Incorporative Fuzzy C Means clustering (PSOFCM), Gustafson Kessel (GK) clustering and Density Based Clustering of Applications with Noise (DBSCAN) to detect a tumor in human brain based on various image segmentation parameters. Accuracy of these algorithms is tested using MRI brain image.

Keywords: Clustering techniques, Medical imaging, FCM, SFCM, K-means, PSOFCM, DBSCAN, Gustafson Kessel, multiple clustering, Brain tumor.

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### 91.

**Authors:** Lakshmi KN, Divya G, Devika SP, Yogesh HS, Megha V  
**Paper Title:** A Design on Bank Customer Complaints Analysis using Natural Language Processing  
**Abstract:** The banking sector has undergone a major revolution with the advent of digital transformation. The entry of Fintech and tech giants such as Google, Amazon, and Facebook have introduced convenient banking that is easy to understand and use. In this focused condition, banks are understanding the significance of client care and fulfillment and need to give close consideration to the Voice of Customer to improve client experience. By dissecting and getting bits of knowledge from client input, banks will have better data to settle on key choices. In their quest to better understand their customers, banks are seeking artificial intelligence (AI) solutions in the form the of sentiment analysis. What is sentiment analysis? In simple words, sentiment analysis is the process of detecting a customer's reaction to a product, brand, situation or event through texts, posts, reviews, and other digital content. Using sentiment analysis, business leaders can gain deep insight into how their customers think and feel. The analysis can help in tracking customer opinions over a period of time, determine customer segmentation, plan product improvements, prioritize customer service issues, and many more business use cases.  
**Keyword:** Artificial Intelligence(AI), Finetech and tech giants, Sentimental analysis;  
**References:**  

### 92.

**Authors:** Kavyashree B S, Navarathna M, Samyak V Jain, Vignesh N, Prof. Vidyashree K P  
**Paper Title:** Virtual Fences  
**Abstract:** In modern world, human-animal conflict has caused hindrance for wildlife conservation and protection of human settlements. A search for effective protection systems have been proposed and re-proposed every passing day. Until now, wild animal identification and repelling systems have been created using Camera Surveillance, infrared and thermal sensors, LVDT, Geophones and Acoustic sensors. As these methods are very expensive and less accurate, an automated system for identification of human intruders and wild animals (Elephants and wild-boars) and a repelling alarm system is introduced in this project wherein the human-wildlife conflict can be reduced to a large extent. In this method, an amalgamation of three layers are deployed to identify the presence of animals. The first outer layer detects the movement with the help of a PIR (passive infrared detector) sensors and gives the warning signal to alert the people around that area using GSM as well as triggers the image detection part of the system. Middle layer activates the initial repelling system to make the animals realize that it is in a human habitat and to make them run back to the forest by triggering an alarm system of high frequency noise. In case if it is a human being trespassing into the farmland, a GSM model is used to send an alert text to the owner of the plot, informing him of the presence of an intruder. If the animals are still moving forward towards the conserved area, the third layer activates the second repelling system wherein, the alarm is produced through high-amplitude speakers along with high intensity search lights and fog dispensers. As the speakers and search lights are installed in patterns the entire attack susceptible area is covered, which reduces manual monitoring of the system. This system also holds good for identification and alerting when a human being trespasses the covered area, with intentions of causing theft or damage to the property.  
**Keyword:** Alarm system, intruder detection, animal detection, repelling system, virtual fences.  
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1. N. Rajath, Faridulh Inzamam M, N. Suganthi, Elephant Intrusion Detection and Repulsive System, ISSN: 2277-3878, Volume-7
Authors: Maithri .C, Chandramouli .H


Abstract: The electronic information from online newspapers, journals, conference proceedings website pages and emails are growing rapidly which are generating huge amount of data. Data grouping has been gotten impressive consideration in numerous applications. The size of data is raised exponentially due to the advancement of innovation and development, makes clustering of vast size of information, a challenging issue. With the end goal to manage the issue, numerous scientists endeavor to outline productive parallel clustering representations to be needed in algorithms of hadoop. In this paper, we show the implementation of parallelized K-Means and parallelized K-Medoids algorithms for clustering an large data objects file based on MapReduce for grouping huge information. The proposed algorithms combines initialization algorithm with Map Reduce framework to reduce the number of iterations and it can scale well with the commodity hardware as the efficient process for large dataset processing. The outcome of this paper shows the implementation of each algorithms.

Keywords: Big Data, Clustering algorithms, Hadoop, K-means, K-Medoids, K-Medoids++, MapReduce.

References:
negatively affects many families, relationships, jobs. But to provide effective treatment, there is no awareness about this. Most people do not give much thought to this as they do to physical problems due to reasons which include that they are shy, afraid or negligent about this. A feasible solution to this is to create awareness about this so that people can actively seek out help and just not choose to suffer in silence. This paper proposes an approach to detect psychological state or depression in people using mainly non-verbal and involuntary cues with the help of a standard questionnaire. The subject wears the MindWave device by NeuroSky and pairs it with a smartphone. Then a standard questionnaire is answered during which the data on brain waves and emotions are collected simultaneously by MindWave and the smartphone camera respectively. The data collected is then used to train a model that will give a score pertaining to the severity of depression in a person, thus aiming to give a better accuracy compared to all the devices present.

**Keyword:** Brainwaves, Depression Detection, Diagnosis, Emotion, Neurosky, PHQ-9

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**Authors:** Mallikarjun H M, Akshay Chhetri, Apoorva G S, Gowri Jadhav, Sheetal B V

**Paper Title:** Depression Predictor Model for Farmers using Machine Learning Techniques

**Abstract:** There are a few disorders that are the outcome of unbalanced mental state. A very basic one is depression. Depression is a very serious yet common mental ailment that damagingly distresses how a person thinks or feels or acts. Side effects of physical injuries are obvious and regularly agonizing, because of which they are recognized and paid attention to. Symptoms of mental illnesses are not very comprehensible. A lot of individuals don't know about them, including the people who are suffering. This research paper proposes a methodology with an approach to machine learning in order to categorize the subject into 4 distinguished levels of depression, namely normal, mildly depressed, moderately depressed and severely depressed. This procedure is proposed to be carried out using PHQ-9 and DASS-21 questionnaire and the electric EEG bands Alpha, Beta, Delta, Gamma and Theta variations will be obtained via the usage of head kit Neurosky’s Mindwave aid.

**Keyword:** PHQ-9, DASS-21, EEG, SVM

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9. H M Mallikarjun, H N Suresh." Depression level prediction using EEG signal processing", 2014 International Conference on Contemporary Computing and Informatics (IC3I), 2014. DOI: 10.1109/IC3I.2014.7019674
### Assessment of Object Segmentation Techniques for Object Based Image Retrieval

**Abstract:** Objects relates more to human perception than any other attributes of an image. Image segmentation is a significant image processing technique to get the objects from complex image background. This work assesses the techniques of segmentation from basic global thresholding, edge based methods up to the advanced techniques such as K-means, Active Contour Model (Snakes) segmentation approaches. Later, results are post processed with the help of morphological operations and make them suitable for object based image retrieval. It also provides the comparative analysis and empirical assessment of performance of the proposed modified segmentation approaches.

**Keyword:** OBIR, image segmentation, active contours, K-means image segmentation.

**References:**


Authors: Hema N, Laxmidevi Noolvi, M V Sudhamani

Paper Title: Liver and Tumor Segmentation Techniques for CT Abdominal Images

Abstract: Image segmentation is one of the important step in digital image processing where the images are partitioned into different segments based on several properties like brightness, contrast, intensity and texture. Image processing includes several steps among which segmentation is the difficult task. Accurate segmentation is the fundamental step in digital image processing. Segmentation can be performed manually, but as it is a tedious task, automatic segmentation techniques which gives more accuracy has to be found. Many recent segmentation techniques for liver image segmentation are discussed here. Some of the techniques to segment liver from CT scanned abdominal image and to segment tumor from the liver are discussed. The main objective is to highlight various techniques which can aid in developing a novel segmentation technique.

Keywords: Abdominal image, Liver, Enhancement, Segmentation, CT scan images.

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2. Qung Huang , Hai Ding , Xiaodong Wang , Guangzhi Wang, “Fully automatic liver segmentation in CT images using modified graph cuts and feature detection”, Department of Biomedical Engineering, School of Medicine, Tsinghua University, Beijing 100084, 2018.
Abstract: Autism is an abnormal condition of human brain neurons, which makes individuals attention deficient, unable to speak and several other neurodevelopmental disorders as detected in the children with the age group of 2 to 5 years. However, autism is a neurological irregularity with more than one behavioral problem. Autism would be generally detected by behavioral symptoms, but early detection was not possible with behavioral approach. So, studying the structure of brain by using MRI image of the brain would be an efficient technique in early detection of autism. Various image classification and segmentation methods have been developed by many researchers. This work proposes a new performance metrics to find out efficiency of segmentation algorithms.

Keyword: ASD, Genetic Threshold, K-means, Segmentation.

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8. Hongyoon Choi, “Functional connectivity patterns of autism spectrum disorder identified by deep feature learning.”.

Abstract: Lung cancer remains one of the fatal diseases with very high mortality rate in both men and women. Computer aided diagnostic systems have been contributing towards the enhancement of survival rate to a maximum extent. Most of such systems yield binary results, i.e. they classify whether a nodule is benign or malignant and they are computationally expensive. This paper proposes a methodology to build a Content
Based Image Retrieval (CBIR) system that provides additional provisioning to the domain experts. Since the CBIR systems retrieve most similar images, this visual dimension will assist the budding and experience radiologist to assess the nodule information to greater detail. Nine visual and shape features are extracted for each nodule image collected from LIDC database and Minkowski distance measure is used for computing similarity. Experiments are conducted on 750 nodules out of which 375 are benign and 375 are malignant as identified by domain experts. Precision, recall and F measure metrics are considered to evaluate the methodology with achieved average values of 0.92, 0.82 and 0.86 respectively.

Keyword: CBIR, nodule, Similarity measure.

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Authors: Rejo Mathew

Paper Title: Contemporary GPS Security Mechanisms

Abstract: GPS (Global Positioning System) plays a big role in day to day activities. From navigation to tracking devices, all are dependent on GPS. As the attacks on GPS have increased so the review of GPS security plays a vital role in research. This paper looks at different spoofing generation methods. The idea is to discuss the single antenna, multiple antenna and other factors that are susceptible to interference. Based on the type of vulnerability the solutions are described in detail. This paper focusses on the current anti-jamming and anti-spoofing GPS mechanisms. This paper presents a comprehensive analysis of all the techniques along with the pros and cons of each method.

Keyword: GPS, Global Positioning System, GPS Security, GPS Anti-Spoofing

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Authors: Satyanarayana R, Shankaraiah

Paper Title: Performance Enhancement of Rectangular Microstrip Antenna with Different Substrate Materials.

Abstract: Above 1GHz , Microstrip antenna is extensively used in Wireless communication. The demand of increased wireless communication applications, needs increase in bandwidth, gain and efficiency of microstrip antenna. Microstrip antenna is a low profile antenna but has narrow bandwidth, low gain and efficiency. In this paper amicrostrip antenna is designed with dimensional change technique to improve bandwidth, gain and efficiency. The enhanced performance of proposed design with different dielectric materials designed and are compared with reference Microstrip antenna. A bandwidth enhancement of 230MHz and gain enhancement of 8.4dB are achieved with proposed antenna.

Keywords: Bandwidth, Gain, HFSS, VSWR, Wireless communication

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Authors:
Anuja Kumar Acharya, Rajalakshmi Satapathy, Biswajit Sahoo

Paper Title:
Sparse Representation Based Multi Object Tracking using GPU

Abstract: This work proposes a sparse based representation for tracking multi object for the longer sequence of video frame. Object of interest are first identified and then represented with set of low dimensional feature covariance matrix. These feature of different object are kept in a dictionary. In order to classify the object, sparse based Orthogonal matching pursuit(OMP) algorithm is used. Furthermore, towards reducing the computational overhead, proposed model is implemented on a graphical processing unit enhanced with the multi threaded resource for parallelization of the task. Experimental results shows that proposed method out perform as compared with the state of art in identifying the objects.

Keyword: Sparse representation, OMP, Feature Space, GPU, CUDA.

References:


Authors: K P Naveen Reddy, Alekhya T, Sushma Manjula T, Rashmi K

Paper Title: AI-Based Attendance Monitoring System

Abstract: Attendance Monitoring System is essential in all organizations for checking the performance of students and it is not easy task to check each and every student is present or not. In all organization attendance are taken manually by calling their register numbers or names and noted in attendance registers issued by the department heads as a proof and in some organizations the students wants to sign in these sheets which are stored for future references. This technique is repetitive, complex work and leads to errors as few students regularly sign for their absent students or telling proxy attendance of the absent students. This method additionally makes it more complex to track all the students attendance and difficult to monitoring the individual student attendance in a big classroom atmosphere. In this article, we are using the technique of utilization face detection and recognition framework to continuously recognize students going to class or not and marking their attendance by comparing their faces with database to match and marking attendance. This facial biometric framework takes a picture of a person using camera and contrast that image and compare the image with the image with is stored at the time of enrolment and if it matches marks the attendance and monitor the student performance continuously. We may use the concept of artificial intelligence concept to monitor student attendance like capturing the motion pictures of the student when present in class to analyze the student data how much time the student presents in class.

Keyword: Artificial Intelligence, Student Attendance System, Face reorganization, Students attendance monitoring system and applications

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Authors: Dhanush C, Adith Kumar B. A., Ajay Umakanth, Ajay Deshpande, Bhavanishankar K.

Paper Title: Smartphone enabled Counterfeit Note Detection using Siamese Network

Abstract: Counterfeit note has a disastrous impact on a country’s economy. The circulation of such fake notes not only diminishes the value of genuine note but also results in inflation. The feasible solution to this burning issue is to create awareness about the counterfeit notes among public and to equip them with a technology to detect fake notes on their own. Though there exist numerous research articles on detection of fake notes, they are not handy. The reason for this could be the unavailability or unaffordability in acquiring the equipment for the same. This paper proposes an approach whose implementation can easily be deployed on a smart phone and hence anyone with access to them can use the application to detect the fake notes. The proposed approach consists of the processing phases including image procurement, pre-processing, data augmentation, feature extraction and classification. ₹500 notes are considered for experimentation analysis. Out of 17 distinctive features, 3 such from the obverse side are considered to evaluate the genuineness of the note. Siamese neural network is employed to build a model for effective classification of the notes. The performance of the proposed approach is evaluated at 85% with respect to accuracy.
Abstract: This paper presents a comparison of the Median Filter and its variants that are used for the preprocessing of mammilla cancer images in Medical Imaging. Preprocessing of mammilla cancer images is a very important step in their accurate espial. Median filters and its other versions such as Adaptive Median Filter, Progressive Switching Median Filter, and Relaxed Median Filter are applied on a dataset of open source mammilla cancer images for their preprocessing. Their perpetration is compared based on various performance metrics and it’s inferred that the Relaxed Median Filter outperforms the performance of the other Median Filters used.

Keyword: Median, Adaptive, Filter, Switching.

References:


Abstract: The key to proper governance of the municipal bodies lies in knowing the geography of the region. The land cover of the region changes with respect to time. Also, there are seasonal variations in the layout of the water bodies. Manual verification and surveying of these things becomes very difficult for want of resources. Remote Sensing Images play a very important role in mapping the land cover. In this paper, we consider such remotely sensed Multispectral Images, taken from Landsat-8. Parametric Machine learning algorithm like Maximum Likelihood Classifier has been used on those images to classify the land cover. Normalized Difference Vegetation Index (NDVI) has been calculated and integrates with the classification process. Four basic land covers have been identified for the purpose namely Water, Vegetation, Built-up and Barren soil. The area of study is Bangalore urban region where we find that the water bodies are decreasing day by day. An overall efficiency of 82% with a kappa hat 0f 0.67 has been achieved with the method. The user and the producer accuracies have also been tabulated in the Results part. The results show the land cover changes in a temporal manner.

Keyword: Land Cover Classification, Bangalore Urban, Multispectral Landsat Images, Maximum Likelihood Classifier, Normalized Difference Vegetation Index (NDVI).

References:
object detection and briefs the basic steps in the process. It also provides a review of various techniques and approaches used for object detection in videos. Discussion of every approach and limitations will provide several promising directions and guidelines for future work.

**Keyword:** pedestrian detection, anomaly detection,

**References:**


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**Authors:** Swetha B., S. V. Uma

**Paper Title:** Efficient Lookup Solutions for Named Data Networks

**Abstract:** Named Data Networking (NDN) is a fast growing architecture, which is proposed as an alternative to existing IP. NDN allows users to request the data identified by a unique name without any information of the hosting entity. NDN supports in-network caching of contents, multi-path forwarding, and data security. In NDN, packet-forwarding decisions are driven by lookup operations on content name of the NDN packets. An NDN node maintains set of routing tables that aid in forwarding decisions. Forwarding the NDN packets depend on lookup of these NDN tables and performing Longest Prefix Matching (LPM) against these NDN tables. The NDN names are unbounded and of variable length. These features along with large and dynamic NDN tables pose several challenges that include increased memory requirement and delayed lookup operations. To this end, there is a need for an efficient data structure that support fast lookup operations with low memory overhead. Several lookup techniques are proposed in this direction. Traversing trie structures would be slow since every level of trie require a memory access. Hash tables incur additional hash computations on names and suffer from collisions. Bloom filters suffer from false positives and do not support deletions. Improving the performance of these structures can lead to a better lookup solution. This survey paper explores different lookup structures for NDN networks. Performance is measured with respect to lookup rate and memory efficiency.

**Keyword:** Cache store (CS), Forwarding Information Base (FIB), Longest Prefix Matching (LPM), Pending Interest Table (PIT).

**References:**


6. Yanbiao Li, Dafang Zhang, Xian Yu, Wei Liang, Jing Long, and Hong Qiao, “Accelerate NDN Name Lookup using FPGA: Challenges and a scalable Approach” Cristina Munoz, Liang Wang, Eduardo Solana and
Abstract: One of the latest emerging class of systems which implants cyber features into the physical world is the Cyber Physical System (CPS), which provides a platform for interaction between physical world and virtual world. CPS promises to transform the physical world to virtual world through interaction similar to human interaction with each other. With the increasing demand of cyber physical systems in various applications, it requires wide variety of communication protocols for reliable and real time data transmission. The low- power and low – cost features of some canonical protocols lead to some short falls, reliability and timeliness. In this paper, we discuss an extensive survey on MAC protocols and Research challenges for enhancing the QoS in CPS.

Keywords: CPS, MAC and QoS

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Abstract: Microarray is a significant tool and influential method which is used to analyze the cDNA expression in living beings. With the help of this technology one can compute gene expression profile in massive and parallel way. Microarray image segmentation offers an input for subsequent analysis of the extracted microarray data. This work addresses on the different approaches used for segmentation of microarray images. Based on the morphology, topology of spots various methods such as circular shaped, region based, active-contour model based segmentation, shape based, supervised learning and watershed segmentation has been taken for this study. This paper explores and compiles various non statistical approaches used in the field of microarray image segmentation. Finaly general tendencies in microarray image segmentation are presented.
Keywords: Microarray, Mean Absolute Error, Spots, Supervised Learning.

References:

Authors: Shreyas S., Simhadri Govindappa, C. G. Raghavendra, Vinayak Shastri, Yathin Patil

Paper Title: Categorization of Silkworm Based on Chitin Glands using Image Processing

Abstract: This paper demonstrates a prototype for highly accurate identification of the silkworm pupa (Bombyx mori) gender using optical property. The methodology is to optical beam in the near infrared spectrum that can effectively and safely penetrate the body of a silkworm pupa. After the illumination, some of the basic factors are used to determine the gender.
operations of image processing like image thresholding, contour detection, blob filtering and image inversion processes are applied to remove the unwanted image noises and at the same time highlighted the gland that distinguishes the gender in silkworm. The proof of concept is experimentally done using three 633 nm wavelength Light emitting diodes (LED’s), a pi camera, and a computer. Some of the key features of this method include ease of implementation with cost reduction and high accuracy.

**Keyword:** Chitin Gland, Gaussian Blurring, Thresholding, Pupa.

**References:**

**Authors:** Kamalamma, K. V., Ajeet A. Chikkamannur

**Paper Title:** Ameliorated Methodology for Base Design in Information System

**Abstract:** The pragmatic Information retrieval technique is providing the responses to the users’ query depending on their choice. The clients are struggling hard to comprehend the semantic within the reports. The data recovery within common language content isn’t organized and could be semantically equivocal. The unstructured data may contain non-key attributes. The joint operation takes place between the primary key and foreign key of different tables. The foreign key of one table must be the primary key of another table is the most common in a database and heavily optimized. Join is used to connect rows in another table (or even in the same table) based on the arbitrary condition for structured data but what it for unstructured data to retrieve an information? Information containing an unstructured data and Non-key attributes needs the establishment of relation between Non-key attributes as well as Non-key joins. This paper proposes a data base design to retrieve information with Non-key attributes and representing the knowledge with decision tree. From the decision tree the semiotic is extracted i.e. path from root node to leaf node.

**Keyword:** Semantics, Non-key attribute, Decision tree, semiotics.

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1. Performing Group-By before Join, Weipeng P. Yan Per-Ake Larson Department of Computer Science, University of Waterloo Waterloo, Ontario, Canada N2L 3G1, 1994 IEEE

**Authors:** Gulab Sah, Rajat Subhra Goswami, Sunit Kumar Nandi

**Paper Title:** Machine Learning Methods for Predicting the Popularity of Forthcoming Objects

**Abstract:** Now a day, product ratings are very much essential for the product available online so that customers can view a product’s actual rating before they are going to buy it. This is only the primary source of information for a product, and it is also essential for manufacturers, retailers to improve product quality in terms of production and sale. A rating can make it easy for consumers to figure out how much they enjoy the product.
Now in case of new arrival products which have not been used by any customers or any users, the ratings not available online. We have tried to find ratings for new arrival products in this research work by identifying the quality of that product, which will assist customers before buying it. We have also examined different methods that will predict the rating of the newest arrival product based on product features, description, information that are available on the e-commerce platform like Amazon, Flipchart. To achieve the defined goal, we have worked on existing data that are available for products already arrived in the market and already used by a customer. The main objective of this research is to help the customer who is going to purchase new arrival products. This is done by comparing different existing Machine Learning methods with the help of the existing data set. We have tried to find out the best method among the existing Machine learning methods and applied that method to predict the rating of the newest arrival product based on the available features.

**Keyword:** Product rating, Amazon, classifiers, Support Vector Classifier, K-Nearest Neighbors, Naive Bayes classifier, Random Forest Classifier, Neural network, Decision tree, Multinomial logistic regression, Confusion Matrix.

**References:**


**Authors:** Sugandha Saxena, S. N. Prasad, Bhavanishankar

**Paper Title:** Techniques for Lung Cancer Detection from CT Image

**Abstract:** The most lethal disease found in the medical field is lung cancer and early detection of this disease has become a challenge for many doctors and diagnostics. The lung cancer contributes over 15.3% of the total number of new cases diagnosed in the recent years. Smoking and pollution are considered as the major causes of lung cancer. At present, there are huge number of tests available to detect lung cancer such as PET Scan, Computerized Tomography (CT) Scan and X-ray etc. are used to diagnose the disease. By x-ray the picture of the lungs may uncover the unusual mass or nodule. A further developed adaption found in CT scan which can uncover the small lesions in the lung that probably won’t be distinguished with X-ray. Biopsy tests are done for detailed diagnosis of the disease. For accurate and better results, a data mining techniques, machine learning algorithms or deep learning algorithms could be used in the laboratories. In this survey, we have elaborated various existing techniques used so far.

**Keyword:** Lung cancer, data analytics, machine learning algorithm, deep learning algorithms.

**References:**


Authors: S. Mamatha Jaur, Soumya N. G., G. T. Raju

Paper Title: Crop Recommendation using Machine Learning Techniques

Abstract: Precision agriculture (PA) allows precise utilization of inputs like seed, water, pesticides, and fertilizers at the right time to the crop for maximizing productivity, quality and yields. By deploying sensors and mapping fields, farmers can understand their field in a better way conserve the being used and reduce adverse affects on the environment. Most of the Indian farmers practice traditional farming patterns to decide crop to be cultivated in a field. However, the farmers do not perceive crop yield is interdependent on soil characteristics and climatic condition. Thus this paper proposes a crop recommendation system which helps farmers to decide the right crop to sow in their field. Machine learning techniques provide efficient framework for data-driven decision making. This paper provides a review on set of machine learning techniques to support the farmers in making decision about right crop to grow depending on their field’s prominent attributes.

Keyword: Precision Agriculture, Smart framing, Crop prediction, Crop Recommendation.

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3. S.Pudumalar, “Crop Recommendation System for Precision Agriculture”, 2016 IEEE Eighth International Conference on Advanced Computing (ICoAC)


**Paper Title:** A Machine Learning-Based Method for Predicting unknown Pharmacointeractions

**Abstract:** A lot of research has been done on the efficacy of machine learning algorithms in predicting the pharmacological interference between two drugs. Ordinarily, this interference depends on many factors such as the taxonomical, chemical, pharmacological or genomic similarities between the two drugs. Nevertheless, a lot of adverse events (AEs) are reported every year, due to the simultaneous consumption of two or more drugs.

Much research has been conducted on the accuracy of the interference prediction based on these factors, each differing in the algorithms and factors used. In this publication, we propose a machine learning-based approach to predict undiscovered drug-drug interactions based on a few of the impacting factors, for better results and thus, help minimize the potential harm that can be caused to society.

**Keyword:** drug-drug interactions, pharmacointeraction, machine learning, DDI

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**Author:** Ambika P. R., Bharathi Malakreddy A.

**Paper Title:** Laplacian Matrix Based Spectral Graph Clustering

**Abstract:** Recent attention in the research field of clustering is focused on grouping of clusters based on structure of a graph. At present, there are plentiful literature work has been proposed towards the clustering techniques but it is still an open challenge to find the best technique for clustering. This paper presents a comprehensive review of our insights towards emerging clustering methods on graph based spectral clustering. Graph Laplacians have become a core technology for the spectral clustering which works based on the properties of the Laplacian matrix. In our study, we discuss correlation between similarity and Laplacian matrices within a graph and spectral graph theory concepts. Current studies on graph-based clustering methods requires a well defined good quality graph to achieve high clustering accuracy. This paper describes how spectral graph theory has been used in the literature of clustering concepts and how it helps to predict relationships that have not yet been identified in the existing literature. Some application areas on the graph clustering algorithms are discussed. This survey outlines the problems addressed by the existing research works on spectral clustering with its problems, methodologies, data sets and advantages. This paper identifies fundamental issues of graph clustering which provides a better direction for more applications in social network analysis, image segmentation, computer vision and other domains.

**Keyword:** Clustering, Laplacian, spectral graph.

**References:**
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Authors: Annapurna Kattimani, Vijayalakshmi M., Channappa B. Akki

Paper Title: Hybrid and Decentralized Privacy Preservation using D-Anonymity and T-Closeness in Social Network

Abstract: Although Social Network (SN) knowledge is significant assets for data examination, freeing the data to the general public could reason an invasion of privacy. Privacy insurance is taken a lot of seriously than various data mining duties. The privacy problems are dealt with by several algorithms and strategies in the literature. But, perpetually there exists a trade-off between privacy and data. Our objective in this work is to design and develop a privacy-preserving solution for the social network. We have used K-anonymity and T-closeness algorithm and data anonymization. Further, data anonymization is decentralized by giving control of anonymization to the data owner. The solution is implemented on a dummy social network for testing the effectiveness of the privacy preservation solution proposed by us.

Keyword: SN (social-networking), K-anonymity, T-closeness, Quasi-identifier.

References:
Data Mining Techniques for Identification and Classification of Various Diseases in Plants

Abstract: Data mining is currently being used in various applications; In research community it plays a vital role. This paper provides information about data mining techniques for the preprocessing and classification of various disease in plants. Since various plants has different diseases based on that each of them has different data sets and objectives for knowledge discovery. Data Mining Techniques applied on plants that it helps in segmentation and classification of diseased plants, it avoids Oral Inspection and helps to increase in crop productivity. This paper provides various classification techniques such as K-Nearest Neighbors, Support Vector Machine, Principle component analysis, Neural Network. Thus among various techniques neural network is effective for disease detection in plants.


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Authors: K S Sampada, N P Kayva

Paper Title: Machine Learning Methods for Keyword Extraction and Indexing

Abstract: The digital age results in the creation of massive information. It is a common tradition among the users to digitalize almost every moment of daily life, since it has become convenient to fetch the information as and when needed from the Internet. User can able to retrieve information by providing query keyword. The objective of the search is to quickly return the set of most relevant documents given a search string. Accomplishing this task for a fixed query involves determining the most relevant documents form the big-data. Queries given to the IR systems are enabled by the keywords. Keyword extraction is a process of identifying the document. Manual keyword extraction is cumbersome and it is infeasible to efficiently identify all the keywords in the document. Therefore the machine learning approaches for keyword extraction are proposed. In this paper various machine learning approaches have discussed along with its merits and de-merits. Here we are also proposing a trained index structure which is efficient to identify the specific locus of the record.

Keyword: Keyword extraction, Indexing, Information system, Machine learning approaches

References:

Authors: Priyanka C Hiremath, Raju G T

Paper Title: Recommender System for Geo-Social Access Control Framework

Abstract: A malicious attack or threat can happen within any organization, from their own employees,
administrators, contractors or former employees, who pose the important resources of a company such as database, physical laboratories and financial resources. In an organization insider attacks are most common as well as most costly affair. According to United States cyber security 2018 statistics, insider threat holds the risk of 74\% out of surveyed organizations. The insider threat has caused immense loss to data as well as monetary assets. Among the surveyed organization by US cyber securities, 53\% of organization claimed their remediation cost was around $ 100000 and in 2018 the number raised to 66\%. Higher number of organization claimed insider attackers were most costly attacks in comparison with external attacks. Some of the probable reasons, why it is difficult to stop an insider attack are firstly, insider threat may be unintentional and all of sudden. Second is distinguishing regular work by employee and malicious work is difficult. Third is most of the insider attackers are technologically sound to mask their intentional activities or easily erase the intentional activity signs from the system before anyone observes it. Lastly and the worst case is employees simply say their intentional act was by mistake and escape from scenario. To avoid such malicious insider attacks lots of research is done on access control. Access control is a method or technique to control the access of an insider to the organizations valuable resources. There are different types of access control models, having their own access control policies and criteria to grant the authority, to have an access to specific resources of an organization. In this paper we discuss the different types of technical access control models that have been developed with certain parameters and their advantages and limitations.

**Keyword:** Insider attack, Context, Attributes, Roles, Resources, Geo-Social Data, Access control.

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Examination of Diabetes Mellitus for Early Prediction and Automatic Detection of Exudates for Diabetic Retinopathy

**Abstract:** More than 42 Cr new diabetes Patients added worldwide as per the World Health Association Annual Report Statistics [3, 7]. The World Health Organization (WHO) reports that there is measurable hike in the number of individual Diabetes cases in the various regions and sectors of WHO Survey [9]. Because of the high level of stress, irrespective of the Gender and income, the Death Toll increasing every year. In this paper, hypothetical analysis-based Survey done of diabetes mellitus for early prediction and Automatic Detection of Exudates for Diabetic Retinopathy [8, 17]. The Hypothetical analysis results indicate the severances of the issue and significant importance of the need for early prediction and Automatic Detection [13]. With hypothetical analysis across various models we proposed to provide a vision into various machine learning models and its prognostic precision in relations of the recital, accuracy improvement from 2+% to 12+%.

**Keyword:** Exudates, Diabetic Retinopathy (DR)

**References:**

**Authors:** Lubna Taranum M P, Rajashekar J S

**Keywords:** Breast Cancer, Region of Interest (ROI), DBT images, Segmentation.

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4. Early Breast Cancer Detection via UWB Based on MRI-derived Model. Author: Xia Xiao, Qinwei Li, Liang Wang. IEEE.
5. A Novel Algorithm for Locating Region Of Interest in Breast Ultra Sound Images. Author: Stafford Michial and Bindu A Thomas, 2017ICECCOT.
6. Automated Breast Profile segmentation for ROI detection using digital mammograms. Author: Jawad Nahi, Sameem Adbul


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Authors: Priyanka G, Rachana J, Vijayalakshmi N, Abhisheka G S, Vinutha D C

Paper Title: IoT Door Lock Security System using Google Assistance

Abstract: Nowadays security is the most common problem in door locking system. Anyone can break the door using hard objects and make a robbery of the home, offices and any other properties. This can lead to huge loss for the human economy. In this paper we are proposing a model, in which we used to lock and open the entryway utilizing the google help over the voice and run IoT board and run IoT application. The existing system rely on microcontroller, Global System for Mobile (GSM), GPS(Global Positioning System), various sensors, programming like MATLAB, biometric face affirmation, Iris scanner, RFID(Radio frequency identification) technology [6], smart card and mystery express etc. In a colossal fragment of frameworks, Short Message Service (SMS) approach is utilized for correspondence so the structure, it requires some test to pass on message.

Keyword: Security, face confirmation, RFID, Smart Card and secret express.

References:


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Authors: Shilpa V, Vidya A, S N Chandrashekar

Paper Title: Learning on Tools Used in IoT Development Life Cycle

Abstract: Internet of thing is an entity of the physical or virtual object, which is able to identified as well as integrated into communication system. Managing the Internet of Things is called as Web of Things. The IoT gadgets are rooted with sensors, gateways, Internet connectivity and cloud. Also using these gadgets we can converse with other devices through Internet for secured communication. Growth of IoT can be seen extremely fast in our present life. It is acknowledged that by 2020 thousands of billions of objects will be deployed globally. We trust to facilitate IoT as software-driven, therefore utility requirements resolve the modernization as well as improvement towards IoT. Primary domains identified are energy transportation, distribution, smart town, smart communication, smart domestic, atmospheric, supply chain, as well as fitness care. This study presents open source tools used in IoT development life cycle. The expression open source was mainly associated to infrastructure software, where we can improve the code re-usability rather than the implementation using web of objects.

Keyword: AMQP, CoAP, IoT, JSON, Node-RED, VSCP

698-700

701-707
References:
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Authors:
D C Vinutha, G T Raju

Paper Title: Task Selection for Scheduling using Hadoop Scheduler

Abstract: MapReduce is a prevalent model for data intensive applications. This covers the difficulties of parallel programming and provides an abstract environment. Hadoop is a benchmark for Big Data storage by being able to provide load balancing, scalable and fault tolerance operation. Hadoop output is mainly dependent on scheduler. Various algorithms for scheduling [6–10]have been suggested for various types of environments, applications and workload. In this work new task selection method is developed to facilitate the scheduler, if a node has several local tasks. Experimental result shows an improvement of 20% in respect of locality and fairness.
**Keyword:** Map Reduce, Hadoop Fair Scheduler, LATE.

**References:**

**Authors:** Vijaykumar M, Vishnu Shivalingappa Toragall, Gagan P Rao, Kayya G V, Vinutha D C

**Paper Title:** IoT Based Flow Valve Control and Accounting System

**Abstract:** The most important and necessary factor for all living individuals in the present world is water. Drinking water utilization suffers from many problems or difficulties in real-time execution. Nowadays, due to increasing population providing drinking water facilities to everywhere is a big challenge resulted in insufficiency of water. Water contamination is the main cause for scarcity of water. The main reasons for water pollution are use of pesticides, chemical fertilizers and Industrialization. Due to this, Water gets contaminated and it causes severe problems like waterborne infections to individual lives and it also hazardous to aquatic life. Due to all this there is need for water quality checking in specific duration of time or regularly. Parameters that are to be checked to assess the water quality are Temperature, pH, turbidity and Salinity. Based on the measurement obtained about the parameter the water usage will be decided

**Keyword:** Temperature, PH, Turbidity, Salinity

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**Authors:** Naresh Patel K M, Kiran P

**Paper Title:** Preprocessing Methods for Unstructured Healthcare Text Data

**Abstract:** At present, the amount unstructured text data is increasing exponentially from the past periodically. Information retrieval (IR) from these unstructured text data is challenging. As the data users foresee for particular/specific outcomes. Retrieval of the significant outcomes depends on the fashion, how they are associated/indexed. Unstructured text data like clinical data containing more health information requires challenging preprocessing methods, which also help to reduce the size of the dataset so that it will optimize the performance of the IR system. In this paper, we have proposed the pre-processing methods such as Data collection, Data Cleaning, Tokenization, Stemming, Removal of Stop words which will efficiently help the data users to find the specific patterns from the unstructured text data.

**Keyword:** Information Retrieval (IR), Tokenization, Stemming, Stop words, Unstructured Text Data.
References:
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Authors: Pragati Mynampati, Medha Gourayya, Shashidhara HR

Paper Title: UIDAI Aadhar Enrollment with P2P Blockchain Technologies

Abstract: Blockchain technologies are becoming more popular in securing the sensitive data such as government holding citizens’ s wealth, health and personal information. A blockchain is a shared encrypted data of records, consisting of a ledger of transactions. As the data stored in blockchain is tamper proof, it is proposed to implement new Aadhar enrolments with P2P Blockchains and migrate the existing centralized Aadhaar personnel’s personal data from the conventional RDBMS / Big data system repositories to distributed ledger technologies by creating private blockchains. In this paper, we will discuss how to provide security for Aadhar card enrolment data using blockchain architectures. A blockchain-based Aadhaar would help UIDAI in truly complying with the data protection and privacy stipulations outlined in the Right to Privacy Act judgment

Keyword: Aadhar, Distributed Ledger Technologies, P2P Blockchains, UIDAI.

References:
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5. Architecting World's Largest Biometric Identity System - Aadhaar Experience by Dr. Pramod Verma.

Authors: Prajwai M J, Prajwai M

Paper Title: Patient Monitoring System for Easy Supervision using LabVIEW.

Abstract: This study is aimed to develop a self-managing application for patients. Here, a novel model of an automatic pill reminder that can allay the inconsistency or uncertainty is presented. This application is useful in taking prescribed medications of the right dosage at the exact specified time guided by the medical practitioner. Hence, believed to shift from some particular approaches that are most voluminously resting on the human memory to automate with negligible oversight. So as to relieve people from human miscalculations of giving wrong pills at the wrong clock in the wrong amount.

Keyword: Medication adherence, eHealth, Elderly Health- care.

References:
Abstract: India is mainly an agricultural country the farmer is an important part of agriculture. Agriculture mainly depends on him. Even then the farmers cannot predict prices for their commodities because prediction of prices plays a major challenge. Several characteristics are taken into account so that the crop price forecast is accurate. We consider the attributes of the Mysore region to make it a real-time application framework. Price prediction is a big issue for farmers who are not aware of the market prices. Forecasting price of agriculture commodities helps the agriculturist and also the agriculture department of mysore region to make decisions. The new model predicts the accuracy for the agricultural yields and it also avoids the role of middle man.

Keyword: Price Prediction, Data Mining, Naïve Baysian Classifier, k-means, Artificial Neural Networks, Support Vector Machine, Prediction, Extended Kalman filter, Wavelet, Error Analysis;

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The comparative study of HTS hysteresis motor with YBCO and BSCCO element in the rotor and copper conductors in the stator is proposed in this paper. Both the elements are used as rotor materials. Then the effect of each material is numerically calculated and simulated using AV formulation. Various performance parameters such as magnetic flux density, magnetic field and current density etc. of hysteresis motor and hysteresis rotor with both materials are computed. For this, two dimensional Partial Difference Equation based module of COMSOL Multiphysics has been used with two dimensional geometry with proper Neumann and Dirichlet boundary conditions. COMSOL Multiphysics is finite element based solver software. The computed constraints are evaluated with each other.

**Keyword:** High Temperature Superconducting (HTS), Hysteresis Motors, Bismuth Strontium Calcium Copper Oxide (BSCCO), Yttrium Barium Copper Oxide (YBCO) Finite Element Method.

**References:**

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