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**Detention Pond Phosphorus Loadings Uncertainty Using Fuzzy Logic**

**Abstract:** This study vitalized the uncertainty and fuzzy rules consideration in the estimation of phosphorus loadings and eutrophication status of the hydrologic system namely detention pond using Fuzzy Logic (MATLAB). These methods were chosen to cater for the uncertainty of loading factors such as sediment and phosphorus inflow, inflowing discharge and pond storage volume. The average of phosphorus concentrations obtained from site investigation was 0.178 mg/L, hydraulic residence time was 1.77 year and the average annual hydraulic loadings was 694.70 m³/yr, obtained based on the 12 years period (2000-2012). The results showed that the maximum and minimum of phosphorus loadings was 2.00 x 10³ ton/year and 5.00 x 10³ ton/year. Phosphorus loadings obtained from MATLAB fuzzy logic was 3.9 x 10⁻³ ton/year. The eutrophication status of the detention pond was investigated using Fuzzy Logic Approach, incorporating various fuzzy rules (MATLAB). This evaluation required the twinning usage of Vollenweider P-Loadings diagram. Generally, eutrophication status in the detention pond at KolamTadahan UTM was still considered Oligotrophic stage. However precautions need to be established as the pond are alarming approach the Eutrophic Status.

**Keywords:** Detention Pond, Phosphorus loadings, Eutrophication, MATLAB Fuzzy Logic, Uncertainty.

**References**


A. Banerjee, M. Mitra

**Analysis of Ka Band DDR Impatt Diode Based On Different Solidstate Materials**

**Abstract:** IMPATT diode is a junction diode reversed bias to breakdown and can generate microwave power when embedded in a resonant cavity. From the date of its inception it is increasingly proving its worth as a prime solid state source for microwave and mm-wave frequency. The available structures of IMPATT are SDR, DDR, DAR, lo-high-lo, etc which shows gradually better efficiency and power output for different materials like Wz-GAN, InP, GaAs, Si, Ge. A detailed study in terms of the following parameters like (i) Electric field profile [E(x)] (ii) Modified normal current density profile [P(x)] (iii) Doping Profile (iv)Susceptance Vs Conductance characteristics (v) RF power output (vi) Negative resistivity profile [R(x)] (vii) Quality factor profile [Q(x)] of the diodes through simulation scheme. It is being observed that the wide band gap semiconductors are with higher efficiency (12.09 %) compare to normal Si, Ge at Ka band and because of the relatively high breakdown voltage also power output is highest as 14.3142 W for InP compare to other material.

**Keywords:** Ka-band IMPATT, IMPATT with wide band gap materials, DDR IMPATT, Small signal Analysis of Ka band IMPATT.
References:


Authors: Anuja JadHAV, Nikhil Borawake, Pradnya Shinde, Vishal Bharate

Paper Title: Novel T-Shaped Planar Dual Band Antenna with Slotted Ground for ISM/WLAN Operations

Abstract: In this paper, we propose a novel T-shaped planar dual band antenna in that two inverted L-shapes are used as additional resonators to produce the lower and upper resonant modes with high return loss. As a result, a dual band antenna for covering 2.4GHz and 5.2GHz ISM/WLAN bands is implemented. The dimension of the antenna is 30x42x1.6 mm3 and provides an impedance bandwidth of 563.6MHz and 1743.6MHz at lower and upper frequency band respectively. The antenna system shows good radiation patterns as well as total gain of 9.76dB and 4.28 dB. Detail design criteria with respect to geometrical parameter variation are given. The proposed antenna with relatively low profile is very suitable for multiband mobile communication systems.

Keywords: dual band antenna, impedance bandwidth, radiation pattern, resonant mode, total gain.

References:

Authors: Prashant Pant, Sanjeev Thakur

Paper Title: Data Migration Across The Clouds

Abstract: Having an effective and efficient strategy for optimizing long distance data migration is essential for every data center. With the ever increasing demands for the IT needs of businesses it is also important for data centers to deliver data migration cost effectively especially when faced with the demands from remote office back up, outsourcing, data center mergers and cloud computing. Data management and migration are important research challenges of novel Cloud environments. While moving data among different geographical domains, it is important to lower the transmission cost for performance purposes. Efficient scheduling methods allow us to manage data transmissions with lower number of steps and shorter transmission time. In previous research efforts, several methods have been proposed in literature in order to manage data and minimize transmission cost for the case of Single Cluster environments. This paper explores the issues and method of data Migration across the Clouds.

Keywords: Cloud Computing, Data Migration, Security Issue, Cloud Architecture.

References:
1. F. A. Alvi1, B.S Choudary,N. Jaferry, E.Pathan. - A review on cloud computing security issues & challenges.
Investigations were carried out to study the exhaust emissions from high grade low heat rejection (LHR) diesel engine consisting of air gap insulated piston with 3-mm air gap with super-ni (an alloy of nickel) crown, air gap insulated liner with superni insert and ceramic coated cylinder head with normal temperature condition of crude jatropha oil and carbureted alcohol (ethanol / methanol) with varied injection timing and injection pressure and compared with methanol operation over ethanol operation and also with pure diesel operation on conventional engine (CE). Exhaust emissions of smoke and oxides of nitrogen (NOx) were recorded by AVL Smoke meter and Netel Chromatograph NOX analyzer respectively at different values of brake mean effective pressure (BMEP). Aldehydes were measured by dinitrophenyl hydrazine (DNPH) method at peak load operation of the engine. Smoke levels and NOx levels decreased by 47% 12% respectively with LHR engine at 27obTDC and at 15obTDC with carbureted alcohol.

**Keywords:** Crude Vegetable Oil, Methanol, Ethanol, CE, LHR engine, emissions, and Combustion characteristics.

**References:**

13. Migrating to the Cloud By Tom Laszewski P Nauduri.
One aspect of interest in robotics is planning the optimal path for a mobile robot. The objective of path planning is to determine the shortest feasible path with the minimum time required for mobile robots to move from a starting position to a target position. In this study, Modified Genetic Algorithm (MGA) is developed for a global path planning, and the application of MGA to the problem of mobile robot navigation is investigated under an assumption that an environment model has been established already. The proposed algorithm read the map of the working environment which expressed by grid model and then creates an optimal or near optimal collision free path. The MGA algorithm was simulated using MATLAB R2012a. Adaptive population size without selection and mutation operators are used in the proposed algorithm. The simulation results demonstrate that this algorithm has a great potential to solve the path planning with satisfactory results in terms of minimizing distance and execution time.

**Keywords:** global path planning, intelligent mobile robot, modified genetic algorithm, optimal path.

**References:**


Authors: Nadia Adnan Shiltagh, Lana Dalawr Jalal

**Paper Title:** Path Planning of Intelligent Mobile Robot Using Modified Genetic Algorithm

**Abstract:**

One aspect of interest in robotics is planning the optimal path for a mobile robot. The objective of path planning is to determine the shortest feasible path with the minimum time required for mobile robots to move from a starting position to a target position. In this study, Modified Genetic Algorithm (MGA) is developed for a global path planning, and the application of MGA to the problem of mobile robot navigation is investigated under an assumption that an environment model has been established already. The proposed algorithm read the map of the working environment which expressed by grid model and then creates an optimal or near optimal collision free path. The MGA algorithm was simulated using MATLAB R2012a. Adaptive population size without selection and mutation operators are used in the proposed algorithm. The simulation results demonstrate that this algorithm has a great potential to solve the path planning with satisfactory results in terms of minimizing distance and execution time.

**Keywords:** global path planning, intelligent mobile robot, modified genetic algorithm, optimal path.
Abstract: Feature selection (FS) is considered to be an important preprocessing step in machine learning and pattern recognition, and feature evaluation is the key issue for constructing a feature selection algorithm. Feature selection process can also reduce noise and this way enhance the classification accuracy. In this article, feature selection method based on fuzzy similarity measures by multi objective genetic algorithm (FSFSM – MOGA) is introduced and performed the efficiency of the method was compared with the conventional version. When this method multi-objective genetic algorithms and fuzzy similarity measures used in CFS method can improve it.

Keywords: Feature Selection, Fuzzy Similarity Measures, Multi Objective Genetic.

References:


Authors: Sandya H. B., Hemanth Kumar P., Himanshi Bhudiraja, Susham K. Rao

Paper Title: Fuzzy Rule Based Feature Extraction and Classification of Time Series Signal

Abstract: Time series signal is a continuous signal which varies continuously with respect to time. These signals involve a great deal of useful information, the information content in these signals can be used for Feature Extraction and Classification. The purpose of Feature Extraction is to reduce the dimension of feature space and achieving better performances. The Features are extracted based on the mathematical calculations like Average, Maximum, Minimum, Standard Deviation and Variance. The Classification of extracted features is carried out by Fuzzy Rule based Selection System. Fuzzy Systems (FS) are evaluated for accuracy, multiplexity, flexibility and transparency for simple and complex systems. In this paper mandani based Fuzzy System is used to achieve accurate results. Based on feature extracted data the Fuzzy System generates a fuzzy score and the Classifier Algorithm classify the feature extracted signals as Good, Bad and Best signals.

Keywords: Fuzzy, Feature Extraction, Classification, Time series signal.

References:

2. Ramasubramanian V., Time series analysis. I.A.S.R.I., Library Avenue, New Delhi-110 012

Authors: Vimlesh Ramesh Bhat, Ashu Vashishtha, Naina Goel, Laxmi R. Sisode

Paper Title: Real Time GPS Tracking System for Transport Operations

Abstract: It is a Dynamic GPS based auto-fare calculator made for India. This application helps in bringing fairness to Indian Auto rickshaw industry. This application enables the user to be in more control of his travel, check where exactly he is being driven to and checking the fare and the distance. It acts as a guard against faulty meters and is an application so simple which anyone can use easily. The Global Positioning System (GPS) is a satellite-based navigation system made up of a network of 24 satellites placed into orbit. GPS works in any weather condition, anywhere in the world, 24 hours a day. Due to rapid advancement in the mobile computing field, the use of Mobile application is dramatically increasing. Thus, this project deal with finding the optimal paths and calculating the fare of Rent Vehicle by using Android SDK (Software Development Kit) and GPS (Global Positioning System) system.

Keywords: Dynamic GPS, Global Positioning system, Computing, Android SDK (Software Development Kit)

References:
6. Non –Intrusive GPS Tracking method (Gdanak University of Technology, Multimedia systems Department , Poland 2005.

Authors: Mustapha Ben Saidi, Abderrahim Marzouk

Paper Title: Multi-Trust_OrBAC: Access Control Model for Multi-Organizational Critical Systems Migrated To the Cloud

Abstract: Security of information systems is a problem chronic, the arrival of cloud computing as a new computing model, feeds the difficulty of implementing effective solutions. Thus more research is currently focused on data security in the cloud, and especially the issue of confidentiality. In this paper we propose a new protocol access control for complex, heterogeneous, interoperable, and distributed systems in the context of Cloud Computing : " Multi-TrustOrBAC " (Multi-Organization - Trust Based Access Control). This protocol allows a TTP «Trust Tiered Party [10] » to force users belonging to several organizations to cooperate to meet the security policies defined independently by them. The aim is to offer to organizations working together and having decided to migrate to the cloud, a means of real-time monitoring of their safety. Our solution is based on both the concept of trust assigned to users and to the definition of an order on the set of security policies. The logical formalism is used to specify and describe the rules of the security policies of different organizations.

Keywords: Policy security, interoperable system, heterogeneous and distributed systems, actions weighted, access control.

References:
3. Anas Abou Elkalam Yves Deswarte Multi-OrBAC un modele de controle d’acces pour les systemes multi-organisationnels Anas Abou El Kalam LIFO-ENS de Bourges, LAAS - CNRS ;
9. Effective Ways of Secure, Private and Trusted Cloud Computing Article Authors: Kumar Pardeep --- Sehgal VivekKumar --- Chauhan
Hybridization of Otsu Method and Median Filter for Color Image Segmentation

In this article a novel algorithm for color image segmentation has been developed. The proposed algorithm based on combining two existing methods in such a novel way to obtain a significant method to partition the color image into significant regions. On the first phase, the traditional Otsu method for gray channel image segmentation were applied for each of the R,G, and B channels separately to determine the suitable automatic threshold for each channel. After that, the new modified channels are integrated again to formulate a new color image. The resulted image suffers from some kind of distortion. To get rid of this distortion, the second phase is arise which is the median filter to smooth the image and increase the segmented regions. This process looks very significant by the ocular eye. Experimental results were presented on a variety of test images to support the proposed algorithm.

Keywords: Color image segmentation, Median filter, Otsu method, Thresholding.
References:
2. Computer Vision CITS4240 School of Computer Science & Software Engineering, The University of Western Australia.

Authors: B. Chakrabarti, D. Ghosh, M. Mitra
Paper Title: Effects of Photo Illumination on Diamond Based DDR IMPATT Diode Operating at MM-wave Frequency Band

Abstract: The effect of photo illumination on the d.c and small signal performance of diamond based IMPATT diode operating at W-band is investigated using a modified double iterative simulation method. Under optical illumination additional photo generated carriers are produced in the device which modulates the admittance and negative resistance properties of the diode. It is found that the operating frequency shift upward accompanied by degradation of conductance, negative resistance, quality factor and output power density level under photo illumination. Decrement in the values of negative conductivity by 19.2 % and in total negative resistance by 21 % has been observed when the diode is exposed to photo illumination. It is also established that the d.c properties of the diode become inferior as the intensity of optical illumination increases.

Keywords: Diamond IMPATT, Photo illumination, W-band, Negative Conductivity, Resistivity.

References:
Selective Harmonic Elimination of Multilevel Inverter Using SHEPWM Technique

Abstract: The emergence of multilevel inverters has been in increase since the last decade. These new types of converters are suitable for high voltage and high power application due to their ability to synthesize waveforms with better harmonic spectrum. Numerous topologies have been introduced and widely studied for utility and drive applications. Amongst these topologies, the multilevel cascaded inverter was introduced in Static VAR compensation and drive systems. This project presents a new technique for getting an effective multilevel SHEPWM control techniques is used to reduce odd harmonics. Selective harmonic elimination Technique in Seven Level Multilevel inverter with SRM is used in MATLAB Simulink environment is used to simulate the results.

Keywords: MATLAB Simulink, PWM control techniques, Multilevel Inverter.

References:
5. Selective Harmonics Elimination of PWM cascaded multilevel inverter ANIKET ANAND1, K.P.SINGH2Department of Electrical EngineeringMadan Mohan Malaviya Engineering College Gorakhpur-273010, India

Sensorless Rotor Position Estimation of Switched Reluctance Motor Drive Using Computational Intelligence Techniques

Abstract: This paper deals with an accurate method to detect the rotor position, which is used for high performance operation of Switched Reluctance Motor (SRM). Earlier, a several type of position sensors were used to detect the rotor position but this has many disadvantages like additional cost, electrical connections, mechanical alignment problems, and unreliability. To overcome these disadvantages several sensor less schemes were proposed for the SR Motor in the recent years, there by facilitating the elimination of the rotor position sensor. Here, the sensor fewer schemes is proposed based on fuzzy technique and also using adaptive Neuro fuzzy inference system (ANFIS) which it overcomes the disadvantages of sensor scheme and also it does not require any mathematical models and large lookup tables to predict the position angle. Then position estimation based on fuzzy and ANFIS are compared. In this paper, the rotor position or angle is estimated by using the relationship between flux linkage and phase current based on fuzzy rule base. ANFIS-based model reference system is continuously tuned by using Back Propagation method with actual value of SRM. The simulation results for novel sensorless schemes is described and developed in MATLAB and shown the effectiveness of this sensor less Scheme.

Keywords: ANFIS, SRM, Sensorless Rotor Position Scheme, Fuzzy Logic Estimator.

References:
3. Speed control of SR motor by self-tuning fuzzy PI controller with artificial neural network ERCUMENT KARAKASI,* and SONER VARDARBAZI


Authors: K. L. Neela, P. Mercy Nesa Rani, T. Rajesh

Paper Title: A Simulation Model for Corner Detection in Fruits Foveated Images

Abstract: Corner detection is a challenging and important research area in computer vision and object recognition systems. However, they have some problems such as sensitive to noise, poor localization. The corner detector - Feature Accelerated Segment Test (FAST) which will be a good locator of corners in foveated images similar to Human Visual Fixations. The feature detector considers pixels in a circular region. This technique creates uniformity over the image area considering the brightness and darkness for estimation that constitutes as corner. The resulting detector will detect very stable features in foveated images. This paper deals with foveation filtering and corner detection to establish feasible location in natural images. The proposed approach is implemented with the help of VC++ language and will provide fine location for all real world applications.

Keywords: Foveation Filtering, Corner Detection, Foveated images, FAST algorithm, Fruit Images

References:

Authors: U. Dinesh, Aravind Ram.S, M. Hariharan, K. Hariharan

Paper Title: A Novel Rom-less Direct Digital Frequency Synthesizer based on Euler Infinite Series

Abstract: The traditional DDFS based on a look up table needs a large sized ROM and it is more complex. This paper deals with a novel ROM-less architecture based on the approximation of Euler’s Infinite series. It has advantages of low complexity, low computational delay, and high spectral purity. The proposed DDFS has a high SFDR (spurious free dynamic range) when compared with [1] and the value is as good as 72.3dBc.

Keywords: Direct Digital Frequency Synthesis, Euler Infinite series, low complexity, spectral.

References:
<table>
<thead>
<tr>
<th>Authors:</th>
<th>Abhijit Maidamwar, D. Marotakar, Manisha Khorgade, Swati Sorte</th>
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<tr>
<td>Paper Title:</td>
<td>Reduction of Complexity for Estimating the Open Loop Pitch of the CS-ACELP Codec</td>
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<tr>
<td>Abstract:</td>
<td>G.729 or Conjugate structure algebraic CELP is a audio voice codec that compresses speech signal based on model characteristics of human voice. This paper deals with the reduction of the computational complexity for estimating the open loop pitch of the CS-ACELP codec, described in ITU recommendation G.729. For reduction in computation of open loop pitch analysis using Matlab 7.4, the weighted delta-LSP function is used. This depth first tree search is also used in G.729 for reducing the search complexity with minimum effort. In experimental study of our paper we are showing the comparing graphical result of Open Loop Pitch in Matlab 7.4, we are trying to prove that our proposed method save the computational time for calculation of open loop pitch</td>
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<tr>
<td>Keywords:</td>
<td>Open loop pitch analysis of G.729, Graphical result of open loop pitch, A-CELP, bit allocation of 8 kbps in G.729</td>
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<th>Authors:</th>
<th>Purnima Pandit</th>
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<td>Paper Title:</td>
<td>Multi-objective Linear Programming Problems involving Fuzzy Parameters</td>
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<tr>
<td>Abstract:</td>
<td>In many Linear programming problems it becomes desirable to have multiple criterions being optimized under the similar stated constraints. Also in the real life model the data can rarely be determined exactly with certainty and precision. The experimental data or the experts’ estimation may lead us to the interval of real numbers as the estimates of the parameters involved in the optimization problems. Such parameters can be efficiently modeled as fuzzy number. The situation can be then represented as Multi-objective LPP with fuzzy parameters. We here propose the method to compute the solution for multi-objective fully fuzzy LPP involving parameters represented by triangular fuzzy numbers.</td>
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<td>Keywords:</td>
<td>fully fuzzy LPP, fuzzy numbers, multi - objective, triangular fuzzy numbers.</td>
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<th>Authors:</th>
<th>Soumik Basak, Koustav Sarkar, Deepak Kumar, Sudarshan Chakravorty</th>
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<tr>
<td>Paper Title:</td>
<td>A Novel DFT Spreading Technique for Reduction of Peak- to-Average Power Ratio (PAPR) in OFDM Systems</td>
</tr>
<tr>
<td>Abstract:</td>
<td>The transmitted signal in an OFDM system can have high peak values due to the presence of many subcarriers. The high Peak-to-average Power Ratio (PAPR), as compared to a single carrier system in an OFDM system is detrimental for its proper operation. It decreases the signal-to-quantization noise ratio (SQNR) of the Analog-to-Digital and Digital-To-Analog converters. This degrades the efficiency of the power amplifiers in the transmitter. This paper aims to improve the PAPR in the uplink by DFT spreading so as to preserve the limited battery power in a mobile terminal.</td>
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<td>Keywords:</td>
<td>DFT spreading, OFDM, Peak-to-Average Power Ratio, SQNR.</td>
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## References:


## Authors:

**Tong Fu, Di Yin, Li Xiaoli, Chen Hui**

**Paper Title:** Simplified Model for Representing Dynamic Textures using Markov Model

**Abstract:** Dynamic textures are sequences of images of moving scenes that exhibit certain stationary properties in time; these include sea-waves, smoke, foliage, whirlwind etc. In previous works [1,2], dynamic textures are usually modeled as linear models, and parameters of the model are identified in the sense of maximum likelihood or minimum prediction error variance. Once its parameters are learned, a model has predictive power and can be used for extrapolating synthetic sequences. In this work we study a particular type of dynamic textures that can be represented in the form of Markov Models. An aggregation algorithm can then be adopted to reduce its complexity. The resulting low-dimensional models can capture complex visual phenomena with low computation cost.

**Keywords:** Dynamic Texture, Markov Model, Aggregation, Reduced order model.

**References:**


## Authors:

**Abdelmajid Hassan Mansour Emam**

**Paper Title:** Additional Authentication and Authorization using Registered Email-ID for Cloud Computing

**Abstract:** Cloud computing is a new computing paradigm that changes the way of information technology is provided and used. But achieving acceptable level of information security issues are an important aspect and a key factor in the cloud. This cloud firstly lists some of the different security issues of the cloud computing, and then proposes additional security mechanism of authenticating and authorizing users by using registered Email-ID in the cloud computing. To ensure that only authorized persons may use the resources in the role of identity and authorizations management.

**Keywords:** Cloud Computing, Authentication, Authorization, Identity management.

**References:**

The advance of technology makes video acquisition devices better and less costly, thereby increasing the number of applications that can effectively utilize digital video. Compared to still images, video sequences provide more information about how objects and scenarios change over time. For object recognition, navigation systems and surveillance systems, object tracking is an indispensable first-step. The conventional approach to object tracking is based on the difference between the current image and the background image. The algorithms based on the difference image are useful in extracting the moving objects from the image and tracking them in consecutive frames. The proposed algorithm, consisting of three stages i.e. color extraction, foreground detection using Blob Analysis and tracking the required color from a particular picture frame, after color extraction the moving objects present in the foreground frames. The proposed algorithm, consisting of three stages i.e. color extraction, foreground detection using Blob Analysis is applied on consecutive frames of video sequence, so as to observe the motion of the object, hence the moving object in the video sequences will be tracked.

References:
1. Takashi morimoto, Osama kiryama, youmei harada,object tracking in video images based on image segmentation and pattern matching IEEE conference proceedings, vol no 05, page no 3215-3218, 2005

Authors: D. Hari Hara Santosh, P. Venkatesh, P. Poornesh, L. Narayana Rao, N. Arun Kumar
Paper Title: Tracking Multiple Moving Objects Using Gaussian Mixture Model
Abstract: The advance of technology makes video acquisition devices better and less costly, thereby increasing the number of applications that can effectively utilize digital video. Compared to still images, video sequences provide more information about how objects and scenarios change over time. For object recognition, navigation systems and surveillance systems, object tracking is an indispensable first-step. The conventional approach to object tracking is based on the difference between the current image and the background image. The algorithms based on the difference image are useful in extracting the moving objects from the image and track them in consecutive frames. The proposed algorithm, consisting of three stages i.e. color extraction, foreground detection using Gaussian Mixture Model and object tracking using Blob Analysis. Initial color discrimination is done to extract the required color from a particular picture frame, after color extraction the moving objects present in the foreground are detected using Gaussian Mixture Model and Blob Analysis is applied on consecutive frames of video sequence, so as to observe the motion of the object, hence the moving object in the video sequences will be tracked.

Keywords: gaussian mixture model, multiple object tracking blob analysis, background subtraction, foreground detection

References: 1. Takashi morimoto, Osama kiryama, youmei harada,object tracking in video images based on image segmentation and pattern matching IEEE conference proceedings, vol no 05, page no 3215-3218, 2005

Authors: Pranjali Raturi, Aarti Pandey
Paper Title: Field Strength Predicting Outdoor Models
Abstract: The main objective of this paper is a comprehensive review of outdoor propagation model in different geographical areas. A wide variety of radio propagation models for different wireless services that specifically address varying propagation environments and operating frequency bands are generally known. A large number of propagation prediction models have been developed for various terrains Irregularities, tunnels, urban streets and buildings, earth curvature, etc
Keywords: outdoor, propagation model, path loss

References:

Authors: E. Elangoavan, K. Thanushkodi

Paper Title: A Novel Direct Power Control of 3phase Induction Multi Motor Drive with AFF

Abstract: Direct Power Control (DPC) of three phase PWM rectifiers without line voltage sensors and based on Virtual flux estimation is presented. In this paper, the compensation of neighboring nonlinear power load is proposed. The active filtering function enlarges the functionality of PWM rectifiers, which decreases the rapid additional installation of compensating equipment. It gives a chance to fulfill both shunt active power filter and PWM rectifier tasks in a multimotor drive system by one advanced PWM rectifier. The Direct Power Control Space Vector modulated (DPC-SVM) and new Synchronous Double Reference Frame Phase locked Loop (SDRF-PLL) approach, made the control system resistant to a majority of line voltage disturbances and also it allow a constant switching frequency of the converters, leading to least switching losses. This assures proper operation of the system for abnormal and failure grid conditions. Simulation results have proven excellent performance and verify the validity of the proposed system.

Keywords: Active filtering function, Direct Power Control, SDRF, Space vector modulation.

References:

Authors: Dasari Sowmya, Venu Samson Deva Kumar, Ch.V. Phani Krishna

Paper Title: Crew Scheduling Management System

Abstract: Indian Railways is the world’s ninth largest commercial or utility employer, by number of employees, with over 1.4 million employees. Indian Railways (reporting mark IR) is an Indian state-owned enterprise, owned

Authors: Dasari Sowmya, Venu Samson Deva Kumar, Ch.V. Phani Krishna
and operated by the government of India through the Ministry of Railways. Our Railways were first introduced to India in 1853 from Bombay to Thane. Indian Railways is the golden era to our nation. RUNNING ROOM is a railway project which aims “To allocate the beds for the loco Pilots (LP’s), Assistant Loco Pilots (ALP’s) and Guards in the running room of all divisions. It is also used to display the allocated beds of different sections through online”, is using J2EE technology. The project maintains the registers of the LP’s, ALP’s, Guards those who are traveling between different sections and to know the timings of Loco Pilots. In this the Loco-Pilot and Assistant-Pilots will take rest after traveling to a particular distance for a specified time. The LP/ALP must register into the book by giving the details like his name, incoming train no, outgoing date, outgoing train no, room which is allocated, room departure time and also along with his designation and head quarters. It is also called bed occupation register. In this project if the bed is filled it will be indicated with a particular color. By this we can get the remaining number of beds so that we can allocate for the other pilots all this information must be provided through online. When a pilot register in the login form and enter his details like username, password he will redirect to the bed occupation register. While entering to the designation and some other details the particular room number and the bed number will be allocated to the LP/ALP. The process will be easy, comparing to the present situation, which is done as paper work.

Keywords: Running Room, Loco-pilot, Assistant Loco-pilot, Bed allocation.

References:
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3. Core Java™ 2 Volume II Advanced -Cay S. Hortsman
4. Pearson Education Sun Microsystems Gary Cornell
5. Head First Servlets & JSP- Eric Freeman
6. O'Reilly SPD Elisabeth Freeman
8. Effective Java Programming Language Guide-Joshua Bloch
9. Pearson Education Sun Microsystems
10. Java Database Best Practices - George Reese
11. O'Reilly SPD

Authors: Santosh Kumar R, Narasimham Ch, Pallam Setty S

Paper Title: Small Secret Exponent Attack on Multiprime RSA

Abstract: Lattice reduction is a powerful algorithm for cryptanalyzing public key cryptosystems, especially RSA. There exist several attacks on RSA by using the lattice reduction techniques. In this paper, we attack on the version of RSA, called Multiprime RSA, by using the lattice reduction techniques.

Keywords: Lattice reduction, Multiprime RSA, Unravelled linearization.

References:

Authors: Ramesh Chandra Chourasia, Mukesh Kumar

Paper Title: Speed Control of S.E.D.C. Motor by Using Pi and Fuzzy Logic Controller

Abstract: In this paper we proposed PI controller & fuzzy controller design for reducing the sensitivity of the...
effect of load variations dynamic load changes for the response of the output speed of the system S.E.DC motor which can cause malfunctions in the electronic circuits or the complete failure of the control system. The paper describes the implementations of a PI controller and fuzzy controller which can operate successfully in hostile environments such as an orbiting space vehicle.

Keywords: SCDC Motor, PI controller & fuzzy controller

References:

Authors: Rakesh Kumar, Sanjay Tyagi, Manju Sharma

Paper Title: Memetic Algorithm: Hybridization of Hill Climbing with Selection Operator

Abstract: Genetic Algorithms are the population based search and optimization technique that mimic the process of natural evolution. Premature Convergence and genetic drift are the inherent characteristics of genetic algorithms that make them incapable of finding global optimal solution. A memetic algorithm is an extension of genetic algorithm that incorporates the local search techniques within genetic operations so as to prevent the premature convergence and improve performance in case of NP-hard problems. This paper proposes a new memetic algorithm where hill climbing local search is applied to each individual selected after selection operation. The experiments have been conducted using four different benchmark functions and implementation is carried out using MATLAB.

The function’s result shows that the proposed memetic algorithm performs better than the genetic algorithm in terms of producing more optimal results and maintains balance between exploitation and exploration within the search space.

Keywords: benchmark functions, hybrid genetic algorithms, hill climbing, memetic algorithms.

References:

Authors: G.Ramadevi,R.Sujath
Paper Title: Robust code based Fault Tolerant Architecture using OFB mode for Onboard EO satellites

Abstract: The demand to protect the sensitive and valuable data transmitted from satellites to ground has increased and hence the need to use security algorithm on board in Earth Observation satellites also increased. The security algorithms like Advanced Encryption Standard by NIST (National Institute of Standards and Technology), is popular in the aerospace industry including satellites. The analysis of the effects of single even upsets (SEUs) on imaging data during on-board encryption is detailed. To avoid data corruption due to SEUs, fault-tolerant model of OFB mode encryption based on robust error detection and corrections codes is proposed. The satellite imaging data is encrypted using OFB mode encryption is done using Matlab. Then its encrypted output image is converted into gray codes is also done using Matlab. The gray codes with injected faults is given as an input to the proposed robust error detection and correction code module which is designed using VHDL, from which single bit upset and multiple bit upsets are detected and corrected. The implementation of proposed model is done using Field programmable gate array (FPGA). Hence power and throughpout of fault tolerant model are increased.

Keywords: OFB mode encryption, Error detection and correction codes, Robust codes, SEUs.

References:
3. Z.Wang and M.G.Karpovsky(June 2012)”Reliable and Secure Memories Based on Algebraic Manipulation Correction Codes”, Proc Int Symp. on On-line Testing.
20. Input image from Google Search engine

Authors: Ankit Rastogi, Pratibha Tiwari
Paper Title: Optimal Tuning of Fractional Order PID Controller for DC Motor Speed Control Using Particle Swarm Optimization

Abstract: PID controller is the most widely used controller in industry for control applications due to its simple structure and easy parameter adjusting. But increase in complexity of control systems has introduced many modified PID controllers. The recent advancement in fractional order calculus has introduced fractional order PID controller and it has received a great attention for researchers. Fractional order PID (FOPID) controller is an advancement of conventional PID controller in which the derivative and integral order are fractional rather than integer. Apart from the usual tuning parameters of PID, it has two more parameters λ (integer order) and μ (derivative order) which are...
in fractions. This increases the flexibility and robustness of the system and gives a better performance than classical PID controller. In this research paper, FOPID has been applied to DC motor for speed control and optimal values of λ and μ has been obtained using particle swarm optimization technique.

**Keywords:**
- DC motor
- Fractional order PID controller
- PID controller
- Particle swarm optimization

**References:**

**Authors:** Shruti S. Jamsandekar, R.R Mudholkar

**Paper Title:** Performance Evaluation by Fuzzy Inference Technique

**Abstract:** The education domain offers a fertile ground for many interesting and challenging data mining applications. These applications can help both educators and students, and improve the quality of education. The ability to monitor the progress of student’s academic performance is a critical issue to the academic community of higher learning. The present work intends to approach this problem by taking the advantage of fuzzy inference technique in order to classify student scores data according to the level of their performance. In this proposed approach we have performed fuzzification of the input data (students marks) by creating fuzzy inference system (FIS) subject wise, next each FIS output is passed to next level FIS with two inputs, outputs of the final FIS are performance value calculated based on all subject marks with/without lab marks. In the proposed approach a combination of two membership function is carried out (trapezoidal and triangular). The experimental results are obtained by applying different evaluation method, it helps in identifying students lying at overlapping section of two class distribution, the results also could help educators to monitor the progress and provide timely guidance to students to achieve better performance score.

**Keywords:** Performance Evaluation, Academic Institute, Fuzzy Classification, Fuzzy Inference
13. Grade point Average available :http://www.achieverspoint.com
14. Fuzzy Inference System Chapter 4 available:http://xa.yimg.com

Authors: Hanamane M. D., Attar K. D., Mudholkar R. R.

Paper Title: Embedded Fuzzy Module for Sugar Industrial Boiler Parameter Control

Abstract: In sugar industry, past the sugar was main product and bagasse was considered as west and its disposal was the problem. The present paper highlights the design and development of Embedded Fuzzy Module for energy efficiency improvement of bagasse boiler for a sugar factory intended for cogeneration system. The multipurpose boiler considered parameters are Water flow, Steam flow, Amount of fuel and Air flow. The Fuzzy Logic Inference is to find out the desirable amount of fuel (bagasse) and Air flow for targeted steam flow. In this paper Embedded Fuzzy Logic Module for improving the steam generation performance as well as saving fuel of boiler in the sugar industry.

Keywords: Boiler parameters, Control system, Fuzzy Logic, Sugar industry etc.

References:
13. Stef Smith and Alessandra Orsone “Alternative Power Technologies: A Decision Model For A Sugar Refinery” application note on Kingston University, Faculty of Business and Law UK.

Authors: R. Ramesh, S. Balamurugan, P. Venkatesh

Paper Title: Real Time Servo Motor Control of Single Rotary Inverted Pendulum Using Dspace

Abstract: The objective of the paper is to carry out real time experiment using state of art hardware dSPACE DS1104 R&D controller board in a laboratory education point of view. The Quanser servo plant module and dSPACE software with the DS1104 R&D controller board are used in the experiment to derive state space equation for the inverted pendulum (ROTPEN-E). The linear and nonlinear analysis of the plant gives both angles (θ and q) control variations. The LQR controller is stabilizing pendulum upright.

Keywords: Quanser servo plant with Rotary inverted pendulum (SRV02), dSPACE R&D controller board (DS1104), State space equations; LQR control.

References:

Authors: Anil Kumar, Sanjay Kumar Bagri

Paper Title: Improving the Productivity of Lever Combination Switch using Continuous Improvement Process

Abstract: Most of the companies always report poor quality of particular product during its operation which results in increasing cost, and customer complaints. The purpose of this study is to help Company Mindarika to improve the product quality and to increase productivity by using Continuous Process Improvement and the Quality Control Techniques. Methods and procedures of this study include a review of literature relevant to Continuous Improvement, Quality Control Techniques, Root cause Analysis. After the causes of defects are identified, solutions and procedures are recommended to the Company to eliminate defects in the assembly process of Lever Combination Switch so that the productivity can be improved.

Keywords: Lever Combination Switch; Continuous Process Improvement; Quality Control Tools; Noise in Switch. Greasing of ratchet.

36. References:
3. www.mindigroup.com/mindarika.htm

Authors: Navneet Kaur, Ashima Singh

Paper Title: A Complexity Metric for Black Box Components

Abstract: The Component Based Software Development (CBSD) approach is becoming the trend for software development which is based on developing the software from existing components instead of developing software from scratch everytime. Measuring software complexity is an important aspect during software development. Because software complexity is an important determinant of software development effort, testing effort , cost, maintainability etc. Researchers have proposed a wide range of complexity metrics for software systems . But the traditional software product and process metrics are neither suitable nor sufficient in measuring the Component and Component Based Software (CBS) complexity. So CBSD provides one of the central problems in measuring component and CBS complexity. Measuring component complexity plays an important role in determining the complexity of CBS system. Because component complexity affects the complexity of whole CBS , Component complexity affects integration and testing effort, cost, maintainability of CBS system . But now a days black box components are being used during CBSD and most of the time source code is not available which creates difficulty in measuring component complexity. In this paper a metric has been proposed for determining the black box component complexity. The proposed metric measures component complexity on the basis of component interface specification and the use of the concept of assigned weights

Keywords: Black Box Component, CBSD, CBS system , component complexity, complexity metrics, traditional software product and process metrics.

References:
also provides many computers’ service, such as web browser, a new suite of metrics for the integration of software components.” University of Newcastle, Australia.


Abstract:

Extensive growth of data gives the motivation to find meaningful patterns among the huge data. Sequential pattern provides us interesting relationships between different items in sequential database. In the real world, there are several applications in which specific sequences are more important than other sequences. Traditional Sequential pattern approaches are suffering from two disadvantages: Firstly, all the items and sequences are treated uniformly. Second, conventional algorithms are generating large number of patterns for lower support. In addition, the unimportant patterns with low weights can be detected. This paper addresses problem of traditional framework and various framework of weighted sequential pattern. Paper also discusses how algorithm mines sequential pattern which reduces the search space and new pruning technique prune the unimportant pattern and pick only those patterns which leads to important and emerging pattern. Later section of paper discusses results of simulation study and how researcher can lead current research.

Keywords: Weighted Sequential Pattern Mining, Weighted Association Mining Framework, Weighted sequential pattern Mining Framework

References:


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10. J. Pei, J. Han, B. Mortazavi-Asl, H. Pino, ‘PrefixSpan: Mining Sequential Patterns Efficiently by Prefix- Projected Pattern Growth’, ICDE’01, 2001


12. Ke Sun and Fengsheng Bai : Mining Weighted Association Rule without Preassigned Weights IEEE Transactions on Knowledge and Data engineering Vol. 20, No. 4, April 2008, pp. 489-495

13. M. Sulaiman Khan, Maybin Muye, Frans Coenen: Fuzzy Weighted Association Rule Mining with Weighted Support and Confidence Framework


18. Yihua Zhong,Yuxin Liao Mining Effective and Weighted Association Rules Based on Dual Confidence Fourth International Conference on Computational and Information Sciences Research 2012


Abstract: Smartphone has become the most typical and popular mobile device in recent years. It combines the functionality of mobile phone and PDA. Besides, it provides many computers’ functionality, Middleware as processing, communication, data storage and etc. It also provides many computers’ service, such as web browser, portable media player, video call, GPS, Wi-Fi and etc. This paper provides an effective mechanism for securing the communication between the RJSON data from the middleware and back using various secure cryptographic algorithms implemented in JavaScript. Security plays a vital role in today’s mobile world. There are security issues like sniffing of data while accessing information through open channel. Cryptographic techniques play an important role in protecting communication links and data, since access to data can be limited to those who hold the proper key. This paper discusses different cryptographic techniques available in lightweight RJSON format to securely...
transfer information in a network by an android smartphone. A native android application Sadelok Newspaper is used to securely send data using AES, 3Des and Blowfish and compare them. The paper describes and compares the JavaScript based cryptographic techniques on the JavaScript Object Notation, for faster and efficient encryption of data that is suitable for use in smartphones.

**Keywords:** 3DES, Blowfish, JSCrypt, Smartphone Security, RJSON, Android, Smartphones.

**References:**


**Authors:** Naveen Choudhary

**Paper Title:** Turn Prohibition Routing Investigation for Irregular, 2D-Mesh and 3D-Mesh Based Network on Chip

**Abstract:** Network on Chip (NoC) has established itself as an alternative to the on chip bus to meet the increasing requirements of complex communication needs system of chip on Chip (SoC). A popular choice of topology for generic Network on Chip has been 2D Meshes. Similarly for application specific Network on Chip irregular topologies customized to application needs is preferred. However as the feature size continue to shrink and integration densities continue to increase, the interconnect delay is emerging as the critical bottleneck for the performance of 2D NoC. The advances in technology such as over the cell routing and Through-Silicon-Vias (TSV) has made possible performance conscious and scalable Network on Chip with more than 2 dimension. As was the case with 2D Mesh NoC, the 3D Mesh NoC is proving to be a preferred choice for the NoC designers due to its simple and scalable design.

The communication over the Network on Chip is required to be deadlock and livelock free. Turn prohibition based routing function are a popular choice for NoC communication as it provides deadlock free communication over the NoC without the requirement of additional physical or virtual channels. Moreover turn prohibit based routing is capable of providing deadlock free, livelock free, minimal or nonminimal and maximally adaptive communication over NoCs. Turn prohibition routing is based on analyzing the directions in which packets can turn in the network and the cycles that the turns can form. Prohibiting just enough turns to break all the resource dependence cycles in the network can help researchers design an effective and efficient deadlock and livelock free routing functions for the NoCs. This paper presents an investigation of the various popular turn prohibition based routing algorithms presented in the NoC research literature for 2D mesh, 3D mesh and irregular topology based on chip networks.

**Keywords:** Turn Model, Routing, Network-on-Chip, Livelock, Deadlock.

**References:**


Authors: S. Gayathri, R. Meenakumari

Paper Title: Hybrid State Estimation Approach for the Optimal Placement of Phasor Measurement Units

Abstract: Power systems are rapidly becoming populated by Phasor Measurement Units (PMU). Compared to conventional one(SCADA), PMU has synchrophasor technology and it measures the dynamic behaviour of the system. Real time monitoring operations are done through PMU in the smart grid environment. Finding a suitable location for the placement of PMU is an optimization problem which could be solved by various Optimization technique. PMUs actually measure the system state instead of indirectly estimating it, the idea to improve the quality of state estimate is that inclusion of this type of data in a state estimator. For analysis, operation and planning of power system state estimation and load flow analysis is most important. A hybrid state estimation technique (fixing a PMU in the conventional load flow analysis) is applied for the test case system and the results are validated. The true value is obtained by load flow analysis and the estimated value is obtained by weighted least squares (WLS) state estimation technique. From the simulated results it is observed that the residue will be less if PMU data’s are included.

Keywords: Newton Raphson Method, PMU, State Estimation, Load Flow, Weighted Least Squares.

References:

Authors: Vandana Kamboj, Amitr Kaur

Paper Title: Comparison of Constant SUGENO-Type and MAMDANI-Type Fuzzy Inference System for Load Sensor

Abstract: Load sensor is developed using mamdani fuzzy inference system and sugeno fuzzy inference system. It is two input and one output sensor. Both mamdani-type fuzzy inference system and sugeno-type fuzzy inference system are simulated using MATLAB fuzzy logic toolbox. This paper outlines the basic difference between these two fuzzy inference system and their simulated results are compared.

Keywords: Fiber Bragg Grating sensor, fuzzy inference system (FIS), fuzzy logic, mamdani, sugeno, windmill blades.

References:

Authors: Srishtee Chaudhary, Rajesh Mehra

Paper Title: FPGA Based Adaptive Filter Design Using Least PTH-Norm Technique

Abstract: Adaptive filters are considered nonlinear systems; therefore their behavior analysis is more complicated than for fixed filters. As adaptive filters are self-designing filters, their design can be considered less involved than in the case of digital filters with fixed coefficients. This paper presents simulation of Low Pass FIR Adaptive filter using least mean square (LMS) algorithm and least Pth norm algorithm. LMS algorithm is a type of adaptive filter known as stochastic gradient-based algorithms as it utilizes the gradient vector of the filter tap weights to converge to the optimal wiener solution whereas Least Pth does not need to adapt the weighting function involved and no constraints are imposed during the course of optimization. In this paper FPGA implementation of a low pass FIR filter is done using least Pth-norm technique. The performance of both approaches is compared.

Keywords: Adaptive filters, FIR , Least Pth norm, LMS, Matlab, FPGA.

References:

Authors: Abhishek Kumar, J.E. Nalavade, Vinay Yeola, Vishal Vivek, Yatharth Srivastava

Paper Title: An Adaptive Learning System Based on Ant Colony Algorithm

Abstract: One of the most important emerging requirements of the learning is adaptation to learner’s needs. Adaptive learning will permit improvements in the current scenario. It suggests courses adapted to results, behaviors, preferences, tastes of learners. In the present paper, we have proposed an approach based on the Ants colonies' optimization algorithm. This helps to recommend a learning course. It adapts to fit in the best manner into learner's profiles. The approach is helpful in improving both the learning achievement and learning efficiency of individual Learners. Learners with different attributes may locate learning objects (LO) which have a higher probability of being suitable. A web-based learning approach was created for learners to find the learning objects more effectively. We propose an attribute based ant colony system to help learners find an adaptive LO more effectively.

Keywords: adaptive learning, ant colony, learning object, learning style, learner

References:
2. Yao Jung Yang ab,* , Chuni Wua,* “An attribute-based ant colony system for adaptive learning object recommendation”(20081)
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<tr>
<th>Authors:</th>
<th>A. Swetha, Y. Madhavi Latha</th>
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<tr>
<td>Paper Title:</td>
<td>Network Security-Proposals</td>
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<tr>
<td>Abstract:</td>
<td>The explosion of the public Internet and e-commerce, private computers, and computer networks, if not adequately secured, are increasingly vulnerable to damaging attacks. Hackers, viruses, vindictive employees and even human error all represent clear and present dangers to networks. Loss of irreplaceable data is a very real threat for any business owner whose network connects to the outside world. Remote access for employees and connection to the Internet may improve communication in ways you’ve hardly imagined. Access to the Internet can open the world to communicating with customers and vendors, and is an immense source of information. But these same opportunities open a local area network (LAN) to the possibility of attack by thieves and vandals.</td>
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<td>Keywords:</td>
<td>LAN</td>
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<td>3. Cryptography and Network Security by Kahate</td>
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<th>Authors:</th>
<th>Monika, Amrit Kaur</th>
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<td>Paper Title:</td>
<td>Comparison of Fuzzy Logic and NEURO Fuzzy Algorithms for Load Sensor</td>
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<td>Abstract:</td>
<td>Load sensor is developed using fuzzy logic as well as neuro-fuzzy method. It is two inputs and one output sensor. Both fuzzy logic and neuro-fuzzy algorithms are simulated using MATLAB fuzzy logic toolbox. This paper outlines the basic difference between the results of fuzzy logic and neuro-fuzzy algorithms and provides the better algorithm for load sensor.</td>
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<td>Keywords:</td>
<td>fuzzy logic, load sensor, neuro-fuzzy, optical fiber, rule base</td>
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<th>Authors:</th>
<th>Nikita Gupta, Swapna Devi</th>
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<td>Paper Title:</td>
<td>Improved EEG Source Localization for an Isotropic Multi - Spherical Head Model</td>
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<td>Abstract:</td>
<td>Human head comprises multiple layers and tissues. The aim of this work is to investigate the effect of conductivity variation, due to presence of Gray matter and White matter in Brain, on Source Localization in Electroencephalography (EEG). Particle Swarm Optimization (PSO) Algorithm, a global optimization algorithm, has been used for finding Inverse Solution of EEG. It has been found that a five-spherical head model comprising, Scalp, Skull, CSF, Gray Matter and White Matter give better performance in source localization than a four spherical head model comprising, Scalp, Skull, CSF and Brain.</td>
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<td>Keywords:</td>
<td>EEG, Head Models, PSO, Source Localization</td>
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</table>
Abstract: PHRs grant patients access to a wide range of health information sources, best medical practices and health knowledge. In patient-centric secure sharing, patients will create, manage and control their personal health data from one place using the web. Prior to storing the records in cloud server, they are encrypted using encryption algorithm which ensures the patient’s full control over their PHR. In addition to PHR (Medical history, current exams), personal files, insurance details and sensitive information can also be stored and shared. Patients only decide which set of users can access which set of files. All the files stored in clouds which are semi-trusted servers, are in the encrypted form and are confidential to other users. We make use of Attribute Based encryption (ABE) to encrypt the files. In this scheme, users are categorized into personal and professional domains which greatly reduce the key management complexity. There is a structured way to access the files for personal and professional purposes. Patients are able to dynamically modify the access policy and attributes.

Keywords: Attribute Based Encryption, Cipher, DES, Feistel.

References:
15. S. Yu, C. Wang, K. Ren, and W. Lou, “Attribute based data sharing with attribute revocation,” in

Authors: Naveen Choudhary, Chand Mal Samota

Paper Title: A Survey of Logic Based Distributed Routing for On-Chip Interconnection Networks

Abstract: The availability of increased number of resources on a single silicon chip is enforcing the designers to come up with efficient and effective management of these resources on a chip. Moreover defective components, chip virtualization and power-aware techniques may lead to irregular on chip interconnection topology making efficient routing a non trivial challenge. Nearly, all routing algorithms and topologies support switches that make use of routing tables for efficient routing. However memories do not scale well in terms of area and power consumption for the routing tables, thus not practical for scalable on chip networks. Logic based distributed routing
(LBDR) is recently proposed as an alternative solution to the table based distributed routing which can drastically reduce the memory requirement even while being as efficient as table based distributed routing. LBDR is a simple methodology of routing that enables the removal of the routing tables at every switch and uses only a small set of bits per switch to enable efficient routing. This paper surveys different variations of efficient Logic-based distributed routing (LBDR) proposed in the NoC research literature for regular and irregular on chip interconnection topologies.

**Keywords:** Networks-on-chip, Routing, LBDR, LBDR-e, uLBDR, Fault-tolerance.

**References:**

**Authors:** Bidyut Das, Subhajit Pal, Suman Kr. Mondal, Dipankar Dalui, Saikat Kumar Shome

**Paper Title:** Automatic Keyword Extraction From Any Text Document Using N-gram Rigid Collocation

**Abstract:** An unsupervised method for extracting keywords from a single document is proposed in this paper. A fuzzy set theoretic approach, fuzzy n-gram indexing, is used to extract n-gram keywords. It is noticed that n-gram keyword renders a better result as compared to mono-gram keyword, but for some documents the most relevant keyword is mono-gram. This paper focuses on a keyword extraction approach which neither requires a dictionary or thesaurus nor does it depend on the size of text document. The algorithm is efficient enough to dynamically determine the mono-gram, bi-gram as well as n-grams keywords for different documents.

**Keywords:** Keyword extraction; n-gram collocation, fuzzy set; information retrieval, natural language processing.

**References:**
Abstract: The escalating applies of wireless networks and the constant thinness of electrical devices have empowered the development of Wireless Body Area Network (WBAN). In this network various sensors are attached on clothing or on the body or even implanted under the skin. This network enables medical doctor to distantly monitor essential signs and organs of patients and provide real time opinions for medical diagnosis. The numerous new, realistic and ground-breaking applications of WBAN facilitate to advance health care and the quality of life. By means of a WBAN, the patient experiences a superior and greater physical mobility and is no longer constrained to reside in the hospital. The amalgamation of low-power, miniaturized, lightweight sensors nodes lead to the development of a proactive and unobtrusive Wireless Body Area Network (WBAN). A WBAN presents a long term health monitoring of a patient devoid of any restriction on his/her normal daily life activities. It is the easiest and fastest way to monitor patient’s health status effectively. Although WBAN is the efficient way to diagnose patients existing condition but the challenges related to developing an effective WBAN is not studied and analyzed significantly. The effectiveness of the WBAN strongly depends on controlling the energy consumption of sensor nodes. To achieve energy efficiency, low duty cycle MAC protocols are used. In this paper, we discuss about the basic idea and key components of WBAN, basic difference between wireless sensor networks (WSN) and WBAN, technical challenges, and its importance, quality of service (QoS) and security, analysis of MAC features, various applications, different sensors; physiological signals, their frequency; different data rate, latency of WBANs, issues related to energy or power efficiency, and existing WBAN technologies. Finally, the open research issues and challenges are also pointed out.

Keywords: WBAN, WSN, MAC, QoS, Energy efficiency

References:


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32. J. Polastre, J. Hill, and D. Culler, "Versatile low power media access for wireless sensor networks", In ACM Conference onEmbroidered Networked Sensor Systems (Sensys), Baltimore,Maryland, USA, pp. 95-107, Nov. 2004
46. C. Li, H.-B. Li, and R. Kohno, “Performance Evaluation of IEEE 802.15.4 for Wireless Body Area Network (WBAN),” in 2009 IEEE International Conference

Authors: Rakesh Kumar, Girdhar Gopal, Rajesh Kumar

Paper Title: Novel Crossover Operator for Genetic Algorithm for Permutation Problems

Abstract: Simple Symmetric Traveling Salesman Problem (TSP) has a combinational nature. When there are 25 or more cities to visit, brute force search is not feasible. Instead, heuristic & probabilistic search methods are more reasonable for obtaining optimal solutions. In this paper, Genetic algorithm and crossover are researched and a novel crossover operator has been introduced by combining two existing crossover methods named PMX and OX crossover. The proposed operator is tested on 4 different inputs from TSPLIB provided by Heidelberg University and the result are compared with Partial Matched Crossover(PMX), Order Crossover(OX) and cyclic crossover(CX) and is found that proposed crossover has outperformed the rest in all the problems.

Keywords: Crossover, Genetic Algorithm, Traveling Salesman Problem (TSP).

References:

Author(s): Swati Dhull, Deepender Dhull, Swati Juneja

Paper Title: Implementing Security Consideration in Dynamic Source Routing

Abstract: Security has become one of the major issues for data communication over wired and wireless networks. To enhance the security of data transmission, existing system works on the cryptography based algorithms such as SSL, IPSec. Although IPSec and SSL accounts for great level of security, they introduce overheads. A mass of control messages exchanging also needed in order to adopt multiple path deliveries from source to destination. Different from the past work on the designs of cryptography algorithms and system infrastructures, we will propose a dynamic routing algorithm that could randomize delivery paths for data transmission. The algorithm is easy to implement and compatible with popular routing protocols, such as the Routing Information Protocol in wired networks and Destination-sequenced Distance Vector protocol in wireless networks, without introducing extra control messages. An analytic study on the proposed algorithm is presented, and a series of simulation experiments are conducted to verify the analytic results and to show the capability of the proposed algorithm.

Keywords: DSR, IP, MANET, SSL, WLAN.

References:
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Author(s): Shalini Singh, Ejaz Aslam Lodhi

Paper Title: Study of Variation in TSP using Genetic Algorithm and Its Operator Comparison

Abstract: The Purpose of this Paper is to give near optimal solution in terms of quality and computation time. By implementing Genetic Optimization Technique, the effectiveness of the path has been evaluated in terms of fitness function with the parameter such as tour length. In this research work, we see different variation in traveling salesmen problem using Genetic Algorithm Technique. Considering the Limitation of Nearest Neighbor we find that the number of iteration and resulting time complexity can be minimized by using Genetic approach. We also compare the operator of pursued approach which give the best result for finding the shortest path in a shortest time for moving toward the goal. Thus the optimal distance with the tour length is obtained in a more effective way.

Keywords: TSP, Fitness Function, Genetic Algorithm, Nearest Neighbour, GA operators.

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4. A Genetic Algorithm Tutorial: Darrel Whitley, Computer Science Department, Colorado State University, USA.
### Authors: Harish Kumar Pal, Anand Kumar Singh

**Paper Title:** PAPR Reduction Technique Using Advanced Peak Windowing Method of OFDM System

**Abstract:** PAPR reduction techniques, peak windowing found its way into practical implementation without side information while maintaining a good spectral characteristic compared with the clipping method. In a real system, however, when successive peaks emerge less than a half of the window size, windows will unfortunately overlap. As a result, the signal peaks are suppressed much more than the required threshold and degrade the BER performance. We propose an advanced peak windowing method. The proposed method overcomes the drawback of the conventional one while maintaining almost the same spectral mask and providing more efficient BER performance.

**Keywords:** PAPR, BER, OFDM, Windowing Technique

**References:**

### Authors: K. Asokan, R. Ashok Kumar

**Paper Title:** Modeling of bidding Strategies for Power Suppliers and Large Consumers in Electricity Market with Risk Analysis

**Abstract:** In the competitive electricity market, Generation companies and large consumers are participating in bidding methodologies for their own benefits. In oligopoly market structure, GENCOs tries to maximize their profit and minimize the risk factor. So it is very essential and important for the GENCOs to formulate optimal bidding strategies with risk terminology before entering into the electricity market to achieve a maximum profit, since the market clearing price (MRP) are variable in nature. In this paper an optimal bidding strategy associated with risk management is devised as a multi objective stochastic optimization problem and solved by Quantum inspired PSO. The impact of risk on the GENCOs is analyzed by introducing the factor λ. The proposed Quantum inspired PSO effectively maximize the GENCOs profit and benefit of large consumers. A numerical example with six suppliers and two large consumers is considered to illustrate the essential features of the proposed method and test results are tabulated. The simulation result shows that these approaches effectively maximize the Profit and Benefit of Power suppliers and Large Consumers, converge much faster and more reliable when compared with existing methods.

**Keywords:** Electricity market, Optimal bidding, Profit maximization, Risk analysis, Quantum inspired PSO.

**References:**
In this paper a new design of comparator is described with the help of Full adder which are the basic building block of ALU and ALU is a basic functioning unit of the microprocessors and DSP. In the world of technology it has become essential to develop various new design methodologies to reduce the power and area consumption. In this paper comparator are developed using various design of full adder. This will reduce the power of the comparator design. The proposed comparator has been designed using DSCH 3.1 and Microwind 3.1 at 120 nm technologies. The developed comparator with show an improvement of 25.14% in power.

Keywords: Full adder, nnmos, pmos, cmos, speed, low power, less transistor count, efficiency.

References:
65. Niels van Bakel, Jo van den Brand, “Design of a comparator in a 0.25μm CMOS technology”.

Authors: P. R. Devale, Shrikala M. Deshmukh, Anil B. Pawar

Paper Title: Persuasive Cued Click Points with Click Draw Based Graphical Password Scheme

Abstract: Now a days, graphical password is used as an alternative to text-based passwords, biometric and tokens. We use Graphical passwords because peoples can remember images better than the text. The Graphical passwords are divided into three categories: click-based graphical password, choice-based graphical password and draw-based graphical password. In this paper, we combine the features of these three methods. Our proposed system is mainly the combination of Persuasive Cued Click Points and click-draw based graphical password scheme (CD-GPS). In this, users first choose an ordered sequence of 5 images and then select single image to click-draw their secrets. On remaining 4 images we select click points using features of PCCP (viewport and shuffle button). At the time of login images appear as per the decided sequence. For login user should click on the images for which we used features of PCCP for password creation and user should draw a secret on the previously selected image. By adding feature of secret drawing to PCCP , attackers fail to know that there is use of secret drawing technique on a image in between these images, unfortunately if they knows about secret drawing, they don’t get exact idea that on which image secret has to done .Our proposed system provides higher security than other techniques.

Keywords: Authentication, Graphical Password, images, security.

References:
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5. Karen Renauda Department of Computing Science, University Of Glasgowkaren@dcs.gla.ac.uk “Quantifying the Quality of Web Authentication Mechanisms A Usability Perspective” Journal of Web Engineering, Vol. 0, No. 0 (2003) 000-000_c Rinton Press.
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Authors: Manpreet Singh, Loveleen Kaur

Paper Title: New Energy Efficient Approach for Underwater Acoustic Networks

Abstract: The Underwater acoustic network is the type wireless sensor network. The sensor network is deployed for sensing the environment conditions. Wireless sensor network is deployed on the far places like forests, deserts, underwater etc. The battery of the sensor node is limited, it is difficult to recharge or replace the battery of the sensor node. The underwater acoustic network is deployed inside the sea. In such type of environment, network interference is very high. In this paper, new technique is been proposed for reducing the power consumption of the sensor nodes and too enhance the network throughput.

Keywords: Underwater Acoustic Networks, under water Acoustic communications, Energy Efficiency, Robust, scalable, Cross layer Design

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Authors: Ashish Kumar Kendhe, Himani Agrawal

Paper Title: A Survey Report on Various Cryptanalysis Techniques

Abstract: This paper mainly focuses on various types of attacks on symmetric cipher & asymmetric cipher. In this paper we tried to describe the existing cryptanalytic attacks on various ciphers and countermeasures to these attacks have been suggested on the basis of information available to attacker, computational time requirements and memory requirements etc. In order to develop a new secure cipher, it is very necessary that these attacks should be taken into consideration during development and countermeasures of these attacks should be applied in the design, so that the new design is not vulnerable to these attacks. It will also facilitate the security analysis of the existing ciphers and provide an opportunity to understand the requirements for developing a secure and efficient cipher design. This paper surveys about various cryptanalysis techniques for image encryption schemes, public key cryptosystems, various encryption standards such as AES, DES, RSA etc. and tries to suggest some points to improve the level of security.

References:

10. Liam Keliher, “Refined Analysis of Bounds Related to Linear and Differential Cryptanalysis for the AES” published in International
Paper Title: A Novel High ICMR and High Frequency Response of an Inverting Summing OpAmp

Abstract: In this paper, we propose a novel high ICMR (input common mode range) and high frequency response of an inverting summing pump (operational amplifier). While selecting an operational amplifier for circuit design the most critical parameters must be consider. Some of the parameters are supply voltage, gain-bandwidth product, input noise voltage, slew rate, PSRR (power supply rejection ratio) and CMRR (common mode rejection ratio). The most important parameter is input common mode range, if we violate this parameter leads an undistorted waveform at the output stage. This leads an impact on the frequency response. Perhaps too much capacitance on the output stage causing clipping or oscillations on the output waveform. This paper work estimates the increasing the ICMR range value by cascading the output stage combined with unusual implementation of differential amplifier to get better frequency response than conventional inverting summing operational amplifier.

Keywords: amplifier, CMRR, Gain, ICMR, OpAmp

References:
2. Johan H. Huijsing, Senior Member, Ron Hogervorst and Klass-Jan de Langen “Low Power Low Voltage VLSI OPAMP cells” IEEE
Abstract:

The principle of three phase three level PWM AC/AC matrix converter using 9 bidirectional switching devices is explained. IGBT-power diode combination is used is main power switching device. Constant voltage and frequency sinusoidal supply voltage can be converted to variable voltage and frequency voltage using this converter. The working is described based on the working three phase to single phase matrix converter. MATLAB/Simulink software is used for the simulation. The operation is analyzed for various modulation indexes and input voltages. The results are compared and the optimum condition for favorable operation is obtained.

Keywords:
sinusoidal pulse width modulation, ac to ac converter, matrix converter.

References:

Keywords: Microwaves, IR, Brassica Juncea.
References:

Authors: Ravijeeet Singh Chauhan

Paper Title: Predicting the Value of a Target Attribute Using Data Mining

Abstract: In this paper, the short coming of ID3’s inclining to choose attributes with many values is discussed, and then a new decision tree algorithm which is improved version of ID3. Our proposed methodology uses greedy approach to select the best attribute. To do so the information gain is used. The attribute with highest information gain is selected. If information gain is not good then again divide attributes values into groups. These steps are done until we get good classification/misclassification ratio. The proposed algorithms classify the data sets more accurately and efficiently.

Keywords: Classification, Decision tree, ID3, Prediction, Clustering.

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1. Singh Vijendra. Efficient Clustering For High Dimensional Data: Subspace Based Clustering and Density Based Clustering, Information Technology Journal; 2011, 10(6), pp. 1092-1105.
5. Gama, J. and Bzdził, P. “Linear Tree. Intelligent Data Analysis”, 1999,.3(1): pp. 1

Authors: Gaurav Vashisth, A. D. Prasad

Paper Title: Leveling of DEM Generated from Satellite Data for Mosaicking

Abstract: Digital Elevation Model finds use in wide range of applications. Often the study area in such applications is very large, which needs the mosaicking of the adjacent smaller DEM tiles. When adjacent DEMs are mosaicked together then systematic errors such as vertical offset and tilt between the DEM tiles can produce visible discontinuities along the borders of the overlapping areas. The standard mosaicking procedures reduces just the inconsistencies at the boundaries of the areas of overlap; the remaining portion of DEM tiles is left uncorrected. The method proposed in the paper uses the cell values present in the overlap region to reduce the vertical offsets and the tilt present in the DEM tiles so that they can be subsequently used for preparing mosaic of DEM tiles.

Keywords: GIS, DEM, Leveling, Mosaic, Errors, Cartosat.

References:
1. ASSESSMENT OF DEM MOSAIC ACCURACY, volume 37 of The International archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Beijing, 2008. ISPRS.
Abstract: One of the biggest environmental challenges that face Malaysia today is the scarcity of water. The increased need of water resources caused by population growth and rapid industrialization has created the need to manage water resources more efficiently and effectively. Many methods are developed to increase the source of water supply; one alternative source is rainwater harvesting. Rainfall harvesting from catchments has not received large attention in Malaysia. This method is one of the proactive action can be taken to avoid shortage of water resources in the future. The analysis results showed the minimum and maximum flow rate according to return year obtained using Fuzzy membership functions establishment. Retention times obtained from MATLAB are 7.27 days. Using a Rational method, the relationship between flow rate and intensity is created. The relationship yields an equation that is $y = 0.0000317x$ and $R^2 = 0.9855$. Then, the relationship between coefficient and intensity yields an equation that is $y = -0.0031x + 1.317$ and $R^2 = 0.9238$. All assumptions and calculations in this study are based on studies undertaken. In general, the findings can be summarized as good based on the results obtained.

Keywords: fuzzy membership function, MATLAB, overflow, rainwater harvesting and tank size.

References:
Authors: Poornoroughn

Paper Title: Performance Analysis of Different Feed Forward Networks in Non-Linear Classification

Abstract: Artificial Neural Networks (ANN) are recognized extensively as a powerful tool for most of the research applications including classification of heterogeneous data using function approximators. Identifying better neural classifier architecture for a given input data depends on many factors, including the complexity of the problem, the training set, the number of weightands biases in the network and the error goal. Feedforward networks frequently exercise classification techniques for complex non-linear data. This paper presents a comparative study of different type of Feedforward neural networks such as Simple Feedforward networks, Pattern recognition networks and Cascade forward networks in classifying the global carbon emissions data. In this study the per capita carbon emissions of several countries are classified into low, medium and high category. Levenberg-Marquardt learning algorithm is used to train these networks as it is the fastest and first choice supervised learning algorithm with less training errors. Hyperbolic tangent activation function is used in this study because of their massive interconnectivity and enhanced processing performance. Experimental results show that simple Feedforward network outperformed in less number of epochs with higher classification accuracy.

Keywords: Green House Gases (GHG), Feed Forward network, Pattern Recognition Network, Cascade forward network

References:

Authors: Thota Reshma Kishore, D.Akhila Devi, S.Prathyusha, D.Bhagyasri, Bhuma Naresh

Paper Title: Client and Data Confidentiality in Cloud Computing Using Fragmentation Method

Abstract: In Today’s world cloud computing has occupied a prior place in the emerging technologies cause of its ease of access at lower costs. According Moore’s Law computer technology, through transistors and integrated circuits, along with digital electronic devices, will double every 18 months to two years. It’s a steep curve that began in the 1960s and is expected to continue until about 2020. It is anticipated in the coming years there will be more than one trillion cloud-ready devices, allowing users to work more quickly, conveniently, and at lower cost...this phenomenon presents us with a great risk of data theft and privacy issues. especially for those dealing with sensitive information, Questions that arise include what methods are available and how can that information remain secure to ensure client protection and confidentiality?. Among these Confidentiality privacy is the main reason that many companies and also individuals to some extent are avoiding the cloud ready devices, which also need be addressed. For this purpose we are proposing a new model that enables convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This report analyses the challenges posed by cloud computing and the standardization work being done by various standards development organizations (SDOs) to minimize privacy risks in the cloud, including the role of privacy-enhancing technologies (PETs) here the new model to provide confidentiality using fragmentation method. The method supports minimal encryption to minimize the computations overhead due to encryption.

Keywords: Cloud computing, Data confidentiality, Fragmentation, Data outsourcing, Privacy preserving.

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Authors: Bandaru Vishnu Roopini, Akkireddy Lakshmi Harika, Kurra Manasa Devi, Jaladi Raja Sree

Paper Title: Transaction Management Policy in Distributed Real Time System

Abstract: Managing the transactions in real time distributed computing system is not easy, as it has heterogeneous networked computers to solve a single problem. If a transaction runs across some different sites, it may commit at some sites and may fail at another site, leading to an inconsistent transaction. The complexity is increase in real time applications by placing deadlines on the response time of the database system and transactions processing. Such a system needs to process transactions before these deadlines expired. A series of simulation study have been performed to analyze the performance under different transaction management under conditions such as different workloads, distribution methods, execution mode-distribution and parallel etc. The scheduling of data accesses are done in order to meet their deadlines and to minimize the number of transactions that missed deadlines. A new concept is introduced to manage the transactions in database size for originating site and remote site rather than database size computing parameters. With this approach, the system gives a significant improvement in performance.

Keywords: Digital Circuits, Real time system, transaction management, missed deadlines, database size.

References:

Authors: Mandeep Kaur, Kewal krishan

Paper Title: Cluster Analysis of Behavior of E-learners

Abstract: E-learning is a modern way of learning in which teachers and students don’t have actual contact. It’s a web based or online learning in which e-learners enroll in educational courses and can learn online. Unlike traditional classrooms in which some students don’t put their queries to teachers due to hesitation e-learners can put any kind of queries to teachers because they don’t have face to face contact. In E-learning system students have different kind of behavior. Though e-learning courses are designed on the basis of “same content fits all” yet students feel difficulty because every students’ learning ability depends upon their individual learning ability. This study proposes the analysis of students’ behavior using data mining tools and techniques. Classification and clustering techniques are used to analyze the relationship between usage of courses and performance of students. Students’ performance depends upon their grades, how much time they spend in learning, usage of courses as well as richness of course quality. The study uses data from previous approach, E-learning data from Greek University. This paper uses same approach with different data mining tools and techniques.

Keywords: E-learning, data mining, classification, clustering.

References:
Abstract: Since analog circuits have proved primarily essential in many of today's high complex performance systems. This paper demonstrates designing and simulation of low power CMOS technology based differential amplifier at nano scale of different channel length(45nm,32nm,22nm) via applying various supply voltages i.e. 1.1V, 0.95V , 0.9V respectively. Here the high input impedance, low power dissipation circuit is mainly characterized in terms of common mode rejection ratio (CMRR), voltage gain and gain band width product .The input impedance calculated are in the range of 190 GΩ (giga ohm), cut off frequency (-3db) approximately greater than 50 MHz (mega hertz) and average power dissipation in the order of less than 130 µw (micro watt). The simulation result shows that all transistors are operated in saturation region, with this unique behavior of MOSFET transistor operating in this region not only allows a designer to work at a low voltage but also at a high frequency. Finally, the analog design consists of low operating voltages via very deep sub micron (nano scale) technology.. The simulation is carried out using PTM Low Power 45nm, 32nm, & 22nm Metal Gate / High-K / Strained-Si technology with H-spice. A Matlab tool is also used to plot the graph of various parameters at different channel length in two dimensions (2-D).

Keywords: Very deep sub-micron (VDSM), Nanoelectronics, Scaling.

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14. “Juan Pablo Martinez Brito , Sergio Bampi” A DC offset and CMRR analysis in a CMOS 0.35 mm transconductance amplifier using Pilgrims area/accuracy tradeoff
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Authors: C. H. Guzmán-Valdívía, A. Blanco-Ortega, M.A. Oliver-Salazar, J.L. Carrera-Escobedo

Paper Title: Therapeutic Motion Analysis of Lower Limbs Using Kinovea

Abstract: Goniometry has been widely used to analyze human motion. The goniometer is a tool to measure the angular change on systems of a single degree of freedom. However, it is inappropriate to detect movements with multiple degrees of freedom. Kinovea is a free software application for the analysis, comparison and evaluation of movement. Generally, used to evaluate the progress of an athlete in training. Many studies in the literature have proposed solutions for measuring combined movements, especially in lower limbs. In this paper, we discuss the possibility to use Kinovea in rehabilitation movements for lower limbs. We used a webcam to record the movement of patient’s leg. The detection and analysis was carry out using Kinovea with position markers to measure angular positions of lower limbs. To find the angle of the hip and knee, a mathematical model based on a robot of two degrees of freedom was the proposed method. The results of position, velocity and acceleration for ankle and knee was presented in a XY plane. In addition, the angular measure of hip and knee was obtained using the inverse kinematics of a 2RR robot.

Keywords: Goniometry, Image Motion Analysis, Kinovea, Lower Limbs, Patient Rehabilitation.

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Authors: Chitanya, K.Sowjanya, P.Raghavendra

Paper Title: Isolated Bidirectional Full-Bridge DC–DC Converter with a Flyback Snubber

Abstract: An isolated bidirectional full-bridge dc–dc converter with high conversion ratio, high output power, and soft start-up capability is proposed in this paper. The use of a capacitor, a diode, and a flyback converter can clamp the voltage spike caused by the current difference between the current-fed inductor and leakage inductance of the isolation transformer, and can reduce the current flowing through the active switches at the current-fed side. Operational principle of the proposed converter is first described, and then, the design equation is derived. A 1.5-kW prototype with low-side voltage of 48 V and high-side voltage of 360 V has been implemented, from which experimental results have verified its feasibility.

Keywords: Flyback converter, isolated full- bridge bidirectional converter, soft start-up.

References:

Authors: S.Sarathambekai, K. Umamaheswari

Paper Title: Comparison among four Modified Discrete Particle Swarm Optimization for Task Scheduling in Heterogeneous Computing Systems

Abstract: Task scheduling in heterogeneous multiprocessor systems is an extremely hard NP complete problem. Hence, the heuristic approaches must be used to discover good solutions within a reasonable time. Particle Swarm Optimization (PSO) is a population based new heuristic optimization technique developed from swarm intelligence. This paper presents a Modified Discrete PSO (MDPSO). PSO was originally designed for continuous optimization problems. Some conversion techniques are needed to operate PSO in discrete domain. In Discrete PSO, conversion techniques are not required. Here, the particles are directly represented as integer vectors. The MDPSO extends the basic form of DPSO which incorporates mutation, which is an operator of Genetic Algorithm, for the better diversity of the particles. In this paper, the scheduler aims at minimizing make span, reliability cost and flow time in heterogeneous multiprocessor systems for scheduling of independent tasks using four different MDPSO algorithms. The performance of PSO greatly depends on its control parameters such as inertia weight and acceleration coefficients. Slightly different parameter settings may direct to very different performance. This paper compares the formulation and results of four different MDPSO techniques: constant control parameters, random inertia weight with time varying acceleration coefficients, linearly decreasing inertia weight with time varying acceleration coefficients and constant control parameters with dependent random parameters. Benchmark instances of Expected Time to Complete (ETC) model is used to test the MDPSO. Based on this comparative analysis, MDPSO with linearly decreasing inertia weight provides better results than others.

Keywords: Expected Time to Complete, Heterogeneous Multiprocessor systems, Task Scheduling, Particle Swarm Optimization.

References:
Investigation of Overlap Ratio for Savonius Type Vertical Axis Hydro Turbine

Abstract: Hydropower from the river is one of the best renewable sources. Hydropower source is predictable compared to wind or solar energy. For generation of electricity using the kinetic energy of natural water resources, Savonius rotor is one of the best types of turbine. The Savonius turbine is more popular as wind turbine. However, in present work, attempt is made for use of Savonius rotor as hydro turbine application. A 3D computational model built and analyzed using a Computational Fluid Dynamic (CFD) analysis using ANSYS. The effect of overlap ratio is investigated for performance enhancement Savonius turbine. In present investigation three different overlap ratios, 0.0, 0.1 and 0.2 are studied, at different angular speeds of rotor. It is found that the maximum torque can be obtained at overlap ratio of 0.2.

Keywords: Overlap ratio, Savonius Turbine, CFD Simulation, Micro hydro turbine, Coefficient of torque, Coefficient of power.

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Authors: Kathira Murugesan, Anjana.T.K

Paper Title: Authentication Scheme Based On Shape and Text for Secure Sharing Of PHR Using ABE in Cloud

Abstract: Information Technology is widely used in health care for efficiently managing the Personal Health Records (PHR) in a cost effective manner. Under this scenario a computing paradigm (cloud computing) where the resources are provided as services will offer a ubiquitous access to medical data. However, there have been wide privacy concerns as personal health information could be exposed to those third party servers and to unauthorized parties. In our paper a hybrid password authentication scheme based on shape and text is used. It uses shapes of
strokes on the grid as the origin passwords and allows users to login with text passwords with the help of traditional input devices. Hidden-camera and shoulder-surfing is highly resistible with this approach. The scheme also has high scalability and flexibility to enhance the authentication process security. Such a privacy preserving PHR system should be enforced cryptographically too. We also leverage attribute based encryption (ABE) techniques to encrypt each patient’s PHR. Apart from previous works in secure outsourcing of data, multiple data owner scenario is focused, and users in the PHR system is divided into multiple security domains that greatly reduces the key management complexity for owners and users.

Keywords: Attribute Based Encryption, Cloud Computing, Hybrid Password Authentication, Personal Health Records

References:
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Authors: D.M. Thakore, Tanveer S Beg

Paper Title: An Automatic Debugging Tool Extension for Object Oriented Softwares

Abstract: In the process of Software Development and evolution, Developer has to answer multiple questions about how the code or software behaves at runtime. The traditional or classical debugger while debugging gives developer bunch of breakpoints in the source code. Object based debugging offer, interruption when a given or a particular object is accessed or modified. Programmers, who try to find violations in such source code, need new tool that allows them to explore objects in the system effectively. The implementation of the proposed debugging actually offers programmers an effective tool which will allows searching of objects even for programs that have huge number of objects. As stated from traditional tools that, the complexity of object oriented system increases, debugging becomes relatively difficult. Developer needs a dedicated user interface for these operations on objects; this need is fulfilled by facilitating a user interface for the programmer. Object based debugging tool looks forward to analyse the relationship in between the objects during the runtime. So the key behind this is to focus on a particular object instead of the execution stack. This allows functioning operations directly on objects rather than on the execution stack. The presented tool can allow user or a developer, different operations, which going to perform on a particular object. There exists therefore conceptual gap between the interface offered by the debugger and the need of the developer, hence to overcome or fill the gap; there is a need for object based debugger and useful interface for it.

Keywords: Software programming, debugging, objects, error, bugs
Fuzzy Inventory Model for Deteriorating Items with Shortages under Fully Backlogged Condition

Abstract: In this paper, a fuzzy inventory model for deteriorating items with shortages under fully backlogged condition is formulated and solved. Deterioration rate and demand are assumed to be constant. Shortages are allowed and assumed to be fully backlogged. Fuzziness is introduced by allowing the cost components (holding cost, shortage cost, etc.), demand rate and the deterioration. In fuzzy environment, all related inventory parameters are assumed to be trapezoidal fuzzy numbers. The purpose of this paper is to minimize the total cost function in fuzzy environment. A numerical example is given in order to show the applicability of the proposed model. The convexity of the cost function is shown graphically. Sensitivity analysis is also carried out to detect the most sensitive parameters of the system. From the sensitivity analysis, we show that the total cost function is extremely influenced by the holding cost, demand rate and the shortage cost.

Keywords: Inventory model, Trapezoidal fuzzy number, Fuzzy demand, Fuzzy deterioration.

References:

Authors: D. Dutta, Pavan Kumar
 compatibility

Abstract: The Present time system software’s are complex and cost estimation is required in such type of complex software’s. The overall cost of such software’s can be reduced by reusing the existing components. The component based software engineering is the technique through which we can easily reuse the existing components and able to reduce the overall software cost. We can estimate the overall cost of the system software before development, if the overall cost will be reduced by reusing the existing components then only we can reuse these components otherwise not. The Compatibility is the main problem in the component based software’s. Before reusing the component based software module, we have to check its compatibility with the software in which we are using that module. In our work; we have designed an automation tool to check the compatibility. The overall system cost can also be increased when we perform integration testing. Our proposed new technique will reduce overall software cost and provide better integration testing.

Keywords: Component based, Cost estimation, compatibility

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Authors: Nishant Gupta, Dhawaleswar Rao

Paper Title: Compatibility Estimation for Component Based Software Engineering

Abstract: The Present time system software’s are complex and cost estimation is required in such type of complex software’s. The overall cost of such software’s can be reduced by reusing the existing components. The component based software engineering is the technique through which we can easily reuse the existing components and able to reduce the overall software cost. We can estimate the overall cost of the system software before development, if the overall cost will be reduced by reusing the existing components then only we can reuse these components otherwise not. The Compatibility is the main problem in the component based software’s. Before reusing the component based software module, we have to check its compatibility with the software in which we are using that module. In our work; we have designed an automation tool to check the compatibility. The overall system cost can also be increased when we perform integration testing. Our proposed new technique will reduce overall software cost and provide better integration testing.

Keywords: Component based, Cost estimation, compatibility

References:

Electronic noses utilize an array of chemical sensors of different specificities which responds to the volatile organic compounds present in the gases. The use of electronic chemical sensors in an array design with coupled signal conditioning and appropriate pattern recognition system is capable of identifying complex odours. Such an artificial gas sensing system is called 'electronic nose'. The requirement for the sensors in an electronic nose is that they have a partial sensitivity, i.e. that they can respond broadly to a range or class of gases rather than to a specific one. However, the electronic nose will categorize many odours that contain many chemical components. Different types of gas sensors in the sensor array includes metal oxide semiconductors, optical and amperometric gas sensor, surface acoustic sensors, piezoelectric gas sensors. In this review paper, we discuss the operating principle of each chemical sensor type and its use in electronic nose system.

Keywords: Chemical sensors, Electronic noses, -E-nose, Volatile Organic Compounds (VOC).

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Authors: Kalyan Chatterjee, Mandavi, Prasannjit, Nitolpat Mrinal, Vikash Kumar Saw, Kumari Rupmala, Priyadarshani

Paper Title: Adaptive Filtering and Voice Compression Using Neural Networks

Abstract: Voice data compression is about a process which reduces the data rate or file size of digital audio signals. This process reduces the dynamic range without changing the amount of digital data of audio signals. Voice compression is one of the leading victory of digital signal processing that spotlight on dipping the bit rate of speech signals for transmission and storage devoid of considerable loss of quality. This paper attempts to present an adaptive filtering technique for the removal of useless noise from the audio signals. After the noise removal has been done, the filtered audio signal is taken as the input to the neural network. Finally, the back propagation algorithm is applied for the compression of the audio signals.

Keywords: Adaptive Filtering, Audio signals, Back propagation algorithm, Neural Network, Recursive Least Square Algorithm (RLC).

References:

Authors: Ali Moghadasazadeh, Majid Mohamadi, Ali Akbar Niknafs, Peyman Keshavarzian

Paper Title: Quantum Circuit Automatic Synthesizer (QCAS)

Abstract: Quantum and reversible circuit synthesis has been important concern of designers in recently passed decades. Considering the application of garbage bit in optimization of quantum circuit, GA-Based techniques have been introduced. This project provides an extensible infrastructure for quantum circuit automatic synthesis and optimization with the enhancement of interoperability features. The problem domain begins from complex computing model up to a synthesis of reversible quantum circuit. Optimization criterias are whole considered separately from software processing logic which cause capability of applying variable optimization critria in different problem domains.The new introduced methodology utilize PSO technique for circuit synthesis evolutionary computation in optimization step. A software library has been developed which implements this technique. It provides a simple flexible software for researchers in order to automatic synthesis of quantum circuit that implements an open source library of prerequisite of quantum circuit synthesis.

Keywords: Terms-Quantum circuits, gate, PSO, Automatic synthesis.

References:
In this paper, a fuzzy equivalence relation is defined, generally, superseding most of the established results. The technique of employing sets of values for tuple components to express imprecision and redundancy in relational databases was proposed by Buckles and Petry in their classic works on fuzzy relational databases [1], [2]. By employing finite scalar domains with similarity relations and special fuzzy number domains, Buckles and Petry have demonstrated that the classical properties of uniqueness of tuple interpretations and well-definedness of the relational algebra can be retained in the fuzzy relational database model. The key to the preservation of these properties is the fact that scalar domains with similarity relations and the fuzzy number domains can be partitioned into equivalence classes. However, since equivalence classes can be constructed by assuming the existence of similarity relations, it is desirable to generalize the fuzzy relational database model to one based only on equivalence classes. In this work, we show that the important properties of classical relational databases (and of relational databases) are preserved in a generalized model based on equivalence relations on finite domains.

Keywords: Domain partitions, Equivalence classes, Equivalence relations, Fuzzy relational databases, Relational algebra.

86.

References:

Authors: Vishakha Patange, D.D.Gatade

Paper Title: Survey of Load Balancing Approaches in Peer-To-Peer Network

Abstract: In recent years, structured peer-to-peer (P2P) has gained an important role in the design of large-scale distributed systems. However, due to their strict data placement rules, they are often prone to three main load imbalances, i.e., range, data, and execution skew. Further imbalance may result due to non-uniform distribution of objects in the identifier space and a high degree of heterogeneity in object loads and node capacities. A node’s load may vary greatly over time since the system can be expected to experience continuous insertions and deletions of objects, skewed object arrival patterns, and continuous arrival and departure of nodes. A virtual server looks like a single peer to the underlying DHT, but each physical node can be responsible for more than one virtual server. Load balancing among application layer peer-to-peer (P2P) networks is critical for its effectiveness but, is considered to be the most important development for next-generation internet infrastructure. Most structured P2P systems rely on 1D-space partitioning schemes to solve the load imbalance problem. P2P system harnesses the resources of large populations - networked computers in a cost-effective manner such as the storage, bandwidth, and computing

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power. In structured P2P systems, data items are spread across distributed computers (nodes), and the location of each item is determined in a decentralized manner.

**Keywords:** About four key words or phrases in alphabetical order, separated by commas.

**References:**


**Authors:** Sanjay S. Gharde, Pallavi V. Baviskar, K. P. Adhiya

**Paper Title:** Identification of Handwritten Simple Mathematical Equation Based on SVM and Projection Histogram

**Abstract:** Recognition of simple mathematical equation can applied on off-line handwritten samples. For smooth implementation database is prepaid with total 237 symbols which are collected from 28 different simple mathematical equations. The dataset 1and dataset 2 are training using most popular classifier named Support Vector Machine. In particular, this work tries to spotlight on evaluation of various methods used for feature extraction and recognition system. Moreover, some essential issues in simple mathematical handwritten equation recognition will be addressed in deepness. This paper discusses various steps of recognition process for simple mathematical handwritten equations. In that, pre-processing, segmentation, feature extraction, classification and recognition for handwritten mathematical symbol as well as for simple expression is described. Among the different phases applied in recognition system, features extraction and classification method may influence the overall accuracy and recognition rate of the system. Therefore, various techniques applied in this context are studied and comparative analysis is prepared. This evaluation study suggests projection histogram most suitable feature extraction technique and support vector machine is appropriate classification technique for implementation. Using projection profile and support vector machine two different dataset are recognized then 97.58% and 98.40% (as an average it resulted into 98.26%) recognition rate is achieved for simple handwritten mathematical equation.

**Keywords:** Classification, mathematical expression, projection histogram, support vector machine.

**References:**

6. S.V. Rajashekararadhy, Dr P. Vanaja Ranjan, , 2008 “efficient zone based feature extraction algorithm for handwritten numeral recognition of four popular south indian” journal of theoretical and applied information technology

**Authors:** E. Mattar

**Paper Title:** Principal Components Analysis Based Iris Recognition and Identification System

**Abstract:** This article focuses on the employment of iris recognition technique and their application in security systems. The implementation of such a system is based on the processing of an iris (scene) using Principal Component Analysis known in the literature as (PCA). This is done by an iris segmentation algorithm of (Libor Masek). Libor Masek algorithm is utilized here to segment an iris from some undesired noises and ingredients in

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an eye image. This rather helps to acquire the most accurate iris scene. Eigen irises are hence obtained using the PCA method. Eigen of irises are then utilized to train an Artificial Neural Network (ANN) recognition system. This is followed by transforming a set of irises into a new space. Transformed irises are accumulated in a database, where they are compared with a set of test irises transformed in the same state of the recognition cycle. The proposed system has resulted in accurate results up to for identifying a pre-stored individuals.

Keywords: Iris recognition, Principal Component Analysis, Pattern recognition, Eigen vectors.

References:

Authors: Teerawong Laosuwan, Satith Sangpradid, Poramate Chunpang

Paper Title: Suitable Areas for Economic Crops Based on GIS and Physical Land Evaluation Model

Abstract: The aim of this research was to locate suitable areas for economic crops of sesame based on Geographic Information System (GIS) and Physical Land Evaluation Model in Chi watershed, North-east of Thailand. The authors used decision tools or rules to locate suitable areas for economic crops plantation by analyzing six variables from physical evaluation model (S), (W), (R), (L), (SA), and (SL). These six factors were determined their score via Physical Land Evaluation Model. The results of this work found that areas for sesame plantation included high, moderate, low and non suitable areas, which accounted for 30.47%, 19.61%, 8.92% and 1.66%, respectively.

Keywords: Suitable Areas, Economic Crops Plantation, GIS, Physical Land Evaluation.

References:

Authors: Mandeep Devgan, Kanwalvir Singh Dhindsa

Paper Title: QoS and Cost Aware Service Brokering Using Pattern Based Service Selection in Cloud Computing

Abstract: In this paper an effective Services selection mechanism has been introduced for creating a practically
useful Service Broker. Selection of Services is based on characteristics such as performance, reliability and cost, ranking and integrity are also considered. In Cloud computing a service broker is responsible for routing the user requests to the most appropriate Services. Traditionally, user of a service issues service request with some specific characteristics to a service broker and the broker searches all available Services with specified service and with a certain level of the user satisfaction. But, how can we select a set of available services from a query of service user with the same restriction? To solve this issue, we propose a service selector for service broker that can denote the restriction of similar services into a service test data, which is a set of similar cloud services, and select a set of services that provide a certain level of service consumer’s satisfaction. We first identify the performance, reliability and cost of services which could be important for a cloud service consumer while requesting and then represent them in a knowledge base. And then we implement a Usage Pattern based selection mechanism to handle a service request with Limitation and the selection method is experimented on a simulated service test data. First Part also involves the testing and comparison of the Usage Pattern mechanism with traditional selection mechanism. In Part II, some of functionally similar Cloud services with different non-functional characteristics are modeled and each web service is differentiated with their non-functional properties. The usage pattern based mechanism is then incorporated with a user interface for consumer, so that user can request the service-broker for a set of best cloud services in terms of required levels of non-functional characteristics. The Usage Pattern based service selection mechanism in the service-broker will give a set of best services according to the required level of consumer satisfaction. The consumer can then select any service from the set and invoke it through its Uniform Resource Locator (URL) address. This last Part leads to the concept of an automated service broker satisfying the needs of the consumer with usage pattern. This usage pattern-based Broker would be able to satisfy the consumer requests better than a traditional broker by finding more cloud services and at the same time giving consumer the flexibility to describe its requirements in a more flexible and more realistic manner.

**Keywords:** Cloud Computing, Service Broker, Service Selection, Usage Pattern.

**References:**