Volume 3 Issue 1, June 2013

International Journal of Innovative Technology and Exploring Engineering

IJITEE

ISSN : 2278 - 3075
Website: www.ijitee.org

Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.
Exploring Innovation: A Key for Dedicated Services

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S. No	Volume-3 Issue-1, June 2013, ISSN: 2278-3075 (Online) Published By: Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.	Page No.

1.

Authors: Santanu Halder, Abul Hasnat, Amina Khatun, Debotosh Bhattacharjee, Mita Nasipuri

Paper Title: A Fast FPGA Based Architecture for Skin Region Detection

Abstract: This paper presents an efficient FPGA based architecture for skin region detection algorithm from a facial image. A lot of research work has been carried out on skin region detection for image processing applications. But there is a very limited work to design a hardware module for the same purpose which is very useful for a real time system where speed is a key factor. In this paper, an attempt has been made towards the designing of an efficient FPGA based skin region detection algorithm which is better than the existing architectures in respect of both space and time complexity. The methodology proposed by Zhang et al. in 2000, has been chosen as the skin region detection algorithm for the present work due to its property of simplicity resulting in faster computation. The experimental result shows a significant improvement in space complexity over an existing architectures and the module is able to operate at 285.919MHz speed which is more than twice of the operating speed of the existing architectures.

Keywords: Skin detection, Pixel classification, FPGA, YIQ.

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2.

Authors: Santanu Halder, Abul Hasnat, Amina Khatun, Debotosh Bhattacharjee, Mita Nasipuri

Paper Title: Development of a Bangla Character Recognition (BCR) System for Generation of Bengali Text from Braille Notation

Abstract: This paper presents a novel Bangla Character Recognition (BCR) system which converts a Braille Document into Bengali text which is not attempted in research work so far. The system is capable of doing the extraction of Braille Characters from a Braille document followed by decoding them into Bengali characters and then the decoded Bengali characters are normalized to Bengali text which is in human-understandable form. This system can be very useful for the blind communities and the associated persons who want to know the Braille system through Bengali language. The proposed methodology has been tested on the Braille documents collected from the Jhunka Pratibondhi Aloke Niketan, West Bengal.

Keywords: Braille Cell, Braille Notation and Bengali Character, Decoding, Normalization, Bengali Text.

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3.

Authors: **Sangheethaa Sukumaran, Mariya Seby, Neethu Kurian**

Paper Title: **Advanced Scheme for Data Transmission with Early Congestion Detection**

Abstract: We develop a distributed opportunistic routing scheme with early congestion detection for multi-hop wireless networks. The introduced scheme utilizes the functionality of opportunistic routing and considering an expected average per packet reward criterion, shortest path and so on. Congestion in network causes packet loss and delayed packet delivery. By detecting congestion earlier, the routing scheme which utilizes the opportunities in the network can increase the rate of performance and reliability of the network. We implement it in the NS2 simulator and experiment with AODV routing protocol.

Keywords: AODV protocol, Congestion Detection, Opportunistic Routing, r-Decider Algorithm

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4.

Authors: **Santanu Halder, Abul Hasnat, Azizul Hoque, Debotosh Bhattacharjee, Mita Nasipuri**

Paper Title: **Pipelining Based Floating Point Division: Architecture and Modeling**

Abstract: In this paper, an efficient FPGA based architecture for a fractional division based on Newton-Raphson method for IEEE single-precision floating point number is presented. With advent of more graphic, scientific and medical applications, floating point dividers have become indispensable and increasingly important. However, most of these modern applications need higher frequency or low latency of operations with minimal area occupancy. In this work, highly optimized pipelined architecture of an IEEE-754 single precision floating point divider is designed to achieve high frequency on FPGA. The division is performed by multiplying the numerator by the reciprocal value of the denominator and the initial approximation of the denominator is obtained from a Look-up Table.

Keywords: FPGA, Newton-Raphson Method, IEEE 754 Single precision format, VHDL

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5.

Authors: **Anupam Bhakta, Sandip Maity, Ramkrishna Das, Saurabh Dutta**

Paper Title: **An Approach of Visual Cryptography Scheme by Cumulative Image Encryption Technique Using Image-key Encryption, Bit-Sieved Operation and K-N Secret Sharing Scheme**

Abstract: Visual Cryptography is a special type of encryption technique to obscure image-based secret information which can be decrypted by Human Visual System (HVS). It is imperceptible to reveal the secret information unless a certain number of shares (k) or more among n number of shares are superimposed. As the decryption process is done by human visual system, secret information can be retrieved by anyone if the person gets at least k number of shares. For this, simple visual cryptography is very in secure. In this current work we have proposed a method where we done the encryption in several level. First we use a variable length image key to encrypt the original image then bit sieve procedure is used on resultant image and lastly we perform K-N secret sharing scheme on the final encrypted image. Decryption is done in reverse level of encryption that means we do K-N secret sharing scheme, bit sieve method and image key decryption respectively. As multiple levels of encryptions are being used thus the security is being increased in great extant.

Keywords: Bit Sieve Operation, Image Key Encryption, K-N Secret Sharing Scheme, Visual Cryptography.

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Authors: **Shimna M S, Sangeetha P S**

Paper Title: **Dynamic Password Schemes for Protecting Users from Password Theft for E-Banking**

Abstract: In this paper, we discuss how to prevent users passwords from being stolen by adversaries in online banking and automated teller machines. We propose dynamic password mechanisms in which a user has a mobile, in that mobile the dynamic password scheme is implemented using Android Operating System, so dynamic password requires a small amount of human computing to secure users passwords. Among the schemes, we have a default method (i.e., traditional password scheme), system recommended functions, user-specified functions, user-specified programs. A function/program is used to implement the dynamic password concept. For user-specified functions, we adopt secret little functions and a constant value, in which security is enhanced by hiding both. The computation of human can be reduce by using mobile applications with builtin dynamic password. Here the user only needs to input the system random digits which the system provides and then the dynamic password is automatically calculated for the user. Thus we can overcome the main attacks like phishing, key-logger, shoulder-surfing, mobile malwar attacks simultaneously.

Keywords: dynamic password, Net banking, secret little function, codebook, Phishing, key-loggers, shoulder-surfing, mobile malwar attack.

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7.

Authors: **Praneethchandran, M.Lokesha, M.C.Majumder, K.P.Ramachandran**

Paper Title: **Laplace and Morlet Wavelet Analysis for Gear Fault Diagnosis: A Comparative Study**

Abstract: The machines need to be developed with high speed and light weight to acquire market in this present competitive world and maintenance of these machines become critical and important to ensure failure free operation. Gear drives form a major component of any industrial machine and detection of faults at incipient stage is very crucial in order to reduce maintenance downtime of machine before the major failure. Vibrations emitted from faulty gears are rather non stationary and non-periodic signals and hence it is difficult to detect the gear fault by conventional FFT analysis. Therefore an effective and sophisticated signal processing method using wavelet analysis has successfully being applied.

This paper investigates the application of Laplace wavelet kurtosis for gear fault diagnosis. Also, this paper presents the optimisation of wavelet parameters to maximize the kurtosis parameter in order to render the wavelet coefficients sensitive to the generated fault signals. Further, this paper compares the use of Morlet and Laplace wavelet kurtosis for automated fault detection in gears for various fault stages and also compares the Laplace and Morlet wavelet kurtosis for varying working condition.

Keywords: Wavelet, Morlet wavelet, Laplace Wavelet Kurtosis, Gear,

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8.

Authors: **S. Venkateswaran, S. Karuppannan, S. Vijay prabhu, R. Kannan, S. Malar, P. Prabu**

Paper Title: **Hydro Chemical Characteristics and Groundwater Quality Assessment in Parts of Pambar River Basin, Tamil Nadu, India**

Abstract: Understanding geochemical characteristics of groundwater is vital for the support of habitat and for maintaining the quality of base flow to rivers, while its quality assessment is essential to ensure sustainable safe use of the resources for drinking, agricultural, and industrial purposes. Twenty seven sample sites were selected systematically and samples were taken for a reference line study to understand the geochemistry of the groundwater and to assess the overall physicochemical faces for pre and post monsoon. Sampling was carried out using pre-cleaned polyethylene containers. The physical and chemical parameters of the analytical results of groundwater were compared with the standard guideline values recommended by the World Health Organization for drinking and public health standards. Thematic maps pertaining to TDS, EC, TH, Cl, NO3, SO4, F , SAR, Na, Na % and RSC were generated using ArcGIS platform. To find out the distribution pattern of the concentration of different elements and to demarcate the higher concentration zones, the spatial maps for various elements were also generated, discussed, and presented.

Keywords: Geochemistry; Spatial Analysis; Water quality; Pambar

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9.

Authors: **Kavitha G M, Vinay Kumar A N, Balasubrhamanya**

Paper Title: **Secure Cloud Storage with Multi Cloud Architecture**

Abstract: The use of cloud computing has increased rapidly in many organizations. Cloud computing provides many benefits in terms of low cost and accessibility of data. Ensuring the security of cloud computing is a major factor in the cloud computing environment, as users often store sensitive information with cloud storage providers but these providers may be untrusted. Dealing with "single cloud" providers is predicted to become less popular with customers due to risks of service availability failure and the possibility of malicious insiders in the single cloud. A movement towards "multi-clouds", or in other words interclouds or cloud-of-clouds has emerged recently.
In this paper, we provide solutions for secure cloud storage in multi cloud based system. This work aims to promote the use of multi-clouds due to its ability to reduce security risks that affect the cloud computing user.

Keywords: Cloud computing, single cloud, multi-clouds, cloud storage, data integrity, data intrusion, service availability.

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Authors: **Sonali Anil Deshpande**

Paper Title: **ARM Based Design of Density and Viscosity Measuring Instrument For Petroleum**

Abstract: Real-time viscosity measurement remains a necessity for highly automated industry. The off-line viscosity measuring destroys the real time performance and the precision, and the change of temperature causes a biggish impact to the output. Density is one of the most universal and easily measurable qualitative characteristics of petroleum products. Knowledge of this quantity enables one not only optimize the operation of internal combustion engines but also to grade the petroleum products and take their mass into account. This paper proposed an improved method based on single chip, which realized the on-line signals gathering and the data processing of many kinds of signals, to measure the fluid viscosity. The configuration of the sensor was given, which was designed independently after many times tests and error analysis. The temperature measurement was carried out by temperature sensor and it's signal conditioning circuits.

Keywords: Viscosity, Density, Temperature, Viscometer Component, Petroleum, Diesel, Petrol, Kerosene.

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19. A Novel High-accuracy Fluid Densimeter Design,LI Qiong KONG Lingwang

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Authors: **Puspanjali Mohapatra, Soumya Das, Ashutosh Bhoi, Tapas Kumar Patra**

Paper Title: **Mining Foreign Exchange rates using Bio- inspired Neuralnets**

Abstract: To calculate the profit and risk associated with international transactions, currency exchange forecasting is highly desirable. If the forecasting is done accurately then the transaction can give maximum profit.To perform the above task several statistical and machine learning methods have already been proposed by the researchers in the literature. However this paper presents a comparative study between two predominantly used bio-inspired optimization techniques namely particle swarm optimization (PSO) and differential evolution (DE) to forecast the currency exchange rates for one day and one week ahead. For both the algorithms the functional link artificial neural network (FLANN) model is taken into consideration. In the proposed model DE and PSO are used as the evolutionary algorithms for supplementing the optimized value of unknown parameters of the FLANN model. Root mean square error (RMSE) and mean absolute percentage error (MAPE) are considered for performance evaluation of the proposed model. Here JAPANESE YEN(JPY), INDIAN RUPEE(INR), FRENCH FRANC(FRF) to US DOLLAR(USD) datasets are considered as the training and testing datasets.The results of FLANN-DE and FLANN-PSO are analyzed.The simulation results show that FLANN-DE outperforms the FLANN-PSO model regarding the accuracy , convergence speed over different time spans.

Keywords: FLANN, PSO, DE, Currency exchange rate prediction.

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12.

Authors: **Himanshu Verma, Jaimala Gambhir, Sachin Goyal**

Paper Title: **Energy Storage: A Review**

Abstract: Efficient and economic energy storage, if implemented in the current power infrastructure on a large scale, could bring about some of the greatest changes in the power industry in decades. Additionally, energy storage would improve the reliability and dynamic stability of the power system by providing stable, abundant energy reserves that require little ramp time and are less susceptible to varying fuel prices or shortages. Energy storage can shift the higher peak load to off-peak hours in order to level the generation requirement, allowing generators to run more efficiently at a stable power level, potentially decreasing the average cost of electricity. Additionally, increased energy storage capacity can avoid generation capacity, decrease transmission congestion, and help enable distributed generation such as residential solar and wind systems.

In this paper energy storage methods are discussed in such a way to provide a detailed overview of how each of the energy storage devices work so that the reader is able to get a better feel for the potential benefits and drawbacks of each device.

Keywords: Energy Storage , Battery ,Renewable Energy Sources, CAES ,PHS, Fuel Cell, Flywheel.

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13.

Authors:	**Abhay A D, Ganesh Krishna, Channabasappa Baligar**
Paper Title:	**Smart Card Reader Meeting ISO 7816-3 and EMV Level 1 Specifications Using PIC24F Microcontroller**

Abstract: A smart card is a pocket-sized card containing an embedded intelligent integrated circuit (i.e., intelligence to respond to a request from an external device). Smart cards contain a microprocessor chip that serves the dual functions of communication and extensive data storage. These cards are user friendly and have the capacity to retain, and protect the critical information stored in an electronic form. Smart cards are being deployed in most public and private sectors. Typically, a smart card reader is used for data transactions with the smart card. The smart card can be divided into two types: 1) Contact type 2) Contactless type. In contact type smart cards, the card communicates with the reader through a direct physical contact. In contactless type smart cards, the card communicates with the reader through a remote radio frequency interface. This paper shows the design of smart card reader meeting ISO 7816-3 & EMV Level 1 specifications using PIC24F microcontroller.

Keywords: Block wait time, Character wait time, Character guard time, EMV Level 1 Reader, IFD ,ISO 7816-2, ISO 7816-3, T=1, T=0

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14.

Authors:	**S.A Ngabea, J.T Liberty, G.I Bassey**
Paper Title:	**Environmental Impacts of Kashimbilla Multipurpose Buffer Dam and Associated Structures, Taraba State, Nigeria**

Abstract: People keep struggling for decades in order to shape the ecosphere in a manner they wants since the first day. The period in which this struggles was observed most intensively was the period covering the transition from a migrant and primitive hunter society to a resident life and farming. The most deep-seated environmental modification against the nature that had been realized in the history of the human being has started at this time. Even the development and downfall of civilizations are correlated to this interaction between the people and nature. One of the most important roles in utilizing water resource by dams were started to construct long years before gaining present information about hydrology and hydro-mechanics. Dams have a great deal of impact on the environment besides their benefits like controlling stream regimes consequently preventing floods, obtaining domestic and irrigation water from the stored water and generating energy. The environmental impacts of Kashimbilla dams are classified

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	according to different criterions as long term and short term impacts, the impacts on the close area and the impacts on the regions where the dam services, social and unsocial impacts, beneficial and harmful impacts. These effects may be ordered in an intensive and complicated manner like climatic, hydraulic, biologic, social, cultural archaeological etc. **Keywords:** Dam, Environmental, Impacts, Kashimbilla **References:** 1. Adams, W.M. (1992). Wasting the rain: Rivers, People and planning in Africa. London: Earthscan publications. 2. Barrow C.J. (1995). Impacts of Large Dam in Developing the environment. Pp. 226 -0 233, longman Singapore. 3. Baxter R.M. (2005). Environmental Effects of Dams and Impoundment. Journal of Annual Review Ecological Systems. 4. Boycen K.M. (2012). An Assessment of Socio-Economic Impacts of the construction of Siya Dam. Journal of Sustainable Development in Africa. Volume 14. No. 4. 5. Baba K. and Toshio H. (2000). Water Storage Transport and Distribution E/A of Dams and Reservoirs. UNESCO Eohss sample chapters. 6. Carteledge B. (1993). Energy and the Environment. Oxford Press UK. 7. International Hydropower Association (2003). The role of Hydropower in sustainable Development. UNESCO International hydrological Programme. 8. John T.H. and Salas J.D. (1995). Environmental Effects of Extreme Floods. US-Italy Research workshop on the Hydrometeorology, Impacts and management of extreme Floods. Perugia. 9. Sait et al (1995). Positive and Negative Impacts of Dams on the Environment. International Congress on River Basin Management. 10. Usman A. and Ifabiyi I.P. (2012). Socio-Economic Analysis of the operational impact of Shinroro Hydroelectric power Generation in the low land Area of middle River Niger. Research in Business and social science vol. 2 no. 4.	
15.	**Authors:**	**Divya Sharma, Oves Khan, Kanika Aggarwal, Preeti Vaidya**
	Paper Title:	**A New Approach to Prevent ARP Spoofing**
	Abstract: Many intra-domain protocols (like IP, ARP) do not have protection against malicious activities by network users. As a result IP and ARP spoofing are used by attackers to launch Man in the Middle (MITM), Denial of Service (DoS) and other attacks. These attacks are severe threats to the network users. Detecting and preventing IP-ARP spoofing will enhance the security to great extent. This paper presents a simple mechanism for detection and prevention of IP-ARP spoofing. **Keywords:** ARP Spoofing, IP Spoofing, Spoofing Detection and prevention. **References:** 1. David C. Plummer, "An Ethernet Address Resolution Protocol", Request For Comments: 826 2. S.J. Bhirud, V. Katker, "Light weight Approach for IP-ARP Spoofing Detection and Prevention",In Proc. Second Asian Himalyas International Conference on Internet,pp. 1–5, Nov 2011. 3. T. Bradley, C. Brown, and A. Malis. Inverse address resolution protocol.RFC 2390, September 1998. 4. S. Whalen. An introduction to arp spoofing.2600: The Hacker Quarterly,18(3), Fall 2001. 5. http://www.node99.org/projects/arpspoof/arpspoof.pdf. 6. C. Schluting. Configure your catalyst for a more secure layer 2, January 2005. http://www.enterprisenetworkingplanet.com/netsecur/article.php/3462211. 7. M. V. Tripunitara and P. Dutta," A middleware approach to asynchronousand backward compatible detection and prevention of arp Cache poisoning",In Proc. 15th Annual Computer Security Application Conference(ACSAC), pages 303–309, 1999. 8. Neminath H, S Biswas, S Roopa, R Ratti, R Nandi,FA Barbhuiya, A Sur, V Ramachandran, "A DES Approach to Intrusion Detection System foe ARP Spoofing Attacks", 18th Mediterranean Conference onControl & Automation (MED), ISBN: 978-1-4244-8091-3, IEEE 2010. 9. Wenjian Xing, Yunlan Zhao, Tonglei Li, "Research on the defense against ARP Spoofing Attacks based on Winpcap", 2010 Second International Workshop on Education Technology and Computer Science, Digital Object Identifier: 1O.l109IETCS.201O.75, 2010 IEEE. 10. Somnuk Puangpronpitag, Narongrit Masusai, "An Efficient and Feasible Solution to ARP Spoof Problem", 6th International Conference on Electrical Engineering lElectronics, Computer,Telecommunications and Information Technology,2009. ECTI-CON 2009. ISBN: 978-1-4244-3387-2. 11. D. Bruschi, A. Omaghi, E. Rosti, "S-ARP: a secure address resolution protocol, "Annual Computer Security Applications Conference (ACSAC), 2003.	**80-82**
16.	**Authors:**	**Divya Sharma, Preeti Vaidya, Oves Khan**
	Paper Title:	**Survey on Security Issues in Cloud Computing**
	Abstract: Cloud Computing is a new technology that allows organizations and individuals to share resources, information and software on-demand over the Internet. It is a new consumption, supplement and delivery model wherein resources are provided in a cost effective manner. It typically involves the use of software and hardware that are delivered as a service. The technology of cloud computing deals with leaving the provision of resources to a remote server and this server has performs services as per the user's need and data. This Research Paper discusses the concepts of the 'Cloud', the issues arisen by the cloud as well as discusses a method to select the best "Cloud" for an organization. **Keywords:** Cloud Computing, Infrastructure, Information Technology and Scalability. **References:** 1. http://cloudtimes.org/2012/11/28/standardization-cloud-norm-cloudnow-2013-predictions/. 2. http://ecomcanada.wordpress.com/2011/06/24/cloud-computing-architecture-good-practices-in-application-design-for-the-cloud/. 3. http://cloudtimes.org/2012/11/28/standardization-cloud-norm-cloudnow-2013-predictions/. 4. ENISA. (2009, Feb) "Cloud computing: benefits, risks and recommendations for information security." Available: http://www.enisa.europa.eu/act/rm/files/deliverables/cloud-computingrisk-assessment [Jul. 10, 2010]. 5. R. K. Balachandra, P. V. Ramakrishna and A. Rakshit. "Cloud Security Issues." In PROC '09 IEEE International Conference on Services Computing, 2009, pp 517-520. 6. P. Kresimir and H. Zeljko "Cloud computing security issues and challenges." In PROC Third International Conference on Advances in	**83-87**

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17.	**Authors:**	**Pradnya A. Shirsath, Vijay Kumar Verma**	
	Paper Title:	**A Recent Survey on Incremental Temporal Association Rule Mining**	
	Abstract: One of the most challenging areas in data mining is Association rule mining. Several algorithms have been developed to solve this problem. These algorithms work efficiently with static datasets. But if new records are added time to time to the datasets means if the datasets are incremental in nature, scenario of association rules may changed. Some of the new itemsets may become frequent, while some previously derived frequent set may become infrequent. Due to updated dataset some rules that are already derived may dropped and some new rules may arrive up. For the up to-date rules over the updated dataset, if the association mining technique redo the rule generation process for the whole dataset, based on the frequent itemsets, simply by discarding the earlier computed results, it will inefficient. It is mostly due to the multiple scanning over the older dataset. Recently, temporal data mining has become a core technical data processing technique to deal with changing data. Actually, temporal databases are continually appended or updated so that the discovered rules need to be updated. In this paper we represent the survey of various methods for incremental as well as temporal association rule mining.	
	Keywords: Mining, Incremental, Temporal, Inefficient, Frequent pattern.		
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18.	**Authors:**	**P.Kodanda Rama Rao, U.Ranga Raju, K.RamaMohan Rao, S.R.K. Reddy**	
	Paper Title:	**Response of Coastal Structures against Earthquake Forces Considering Soil-Structure Interaction and Tsunami Run-Up Forces**	
	Abstract: The catastrophic tsunamis generated by the great Indonesia earthquake triggered on December 26th, 2004, warned the coastal community on preparedness and constructing safe structures to resist against such events.		**91-98**

Earthquake occurs suddenly without warning and bulk of destruction takes place within a short period of time. Similarly, when tsunami strikes, there will be a tremendous loss and damage in coastal regions. Apart from having a sound warning system in case of tsunamis, it is necessary to build Earthquake–Tsunami Resistant (ETR) shelters, where residents living in coastal plain regions cannot move to farther distances before tsunami arrives the coast. Hence it is necessary to establish analytical methods for obtaining the response of coastal structures subjected to earthquake forces considering soil-structure interaction and also against tsunami run-up forces.
A three storied shelter building with four different cases of structural configurations and another typical structure, an elevated water tank of 6 lakh liters capacity are chosen for the analysis. A comparative study is made on the response of these structures against earthquake forces, when they rest on different soil/rock media. In the analysis, IS 1893-2002 seismic code for determining the base shear values against earthquake loads and FEMA 55 to calculate hydrodynamic and impact forces against tsunami impact are used. From the results, it is observed that the refuge shelters that are chosen are more vulnerable to high tide tsunami loads compared to earthquake loads. In general, it is noticed that Base shears and Displacements increase with the decreases in stiffness of the soil and this increase attributes more due to rocking effect of the soil. Buildings with open storey at bottom and upper stories with heavy mass give significant rise to time period of these structures causing early failures during an earthquake before tsunami arrives. In this study, a useful guideline is evaluated demarcating the heights below which earthquake forces and above which tsunami forces are predominant in the structure.

Keywords: Earthquake; tsunami; shelter; soil-structure interaction; time period; base shear; displacement; inundation depth; hydrodynamic force; and Impact force.

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Authors:	**CH.Siva Rama Krishna, P.Venkateswara Rao**	
Paper Title:	**Spectrum Efficiency for Rate-Adaptive MIMO OSFBC-OFDM Systems over Various Adaptation Policies**	

19.

Abstract: In this paper, closed-form expressions for capacities per unit bandwidth for multiuser MIMO-OFDM systems employing Orthogonal Space-Frequency Block Coding (OSFBC) over multipath frequency-selective fading channels are derived for optimal power adaptation, optimal rate adaptation with constant transmit power, channel inversion with fixed rate, and truncated channel inversion adaptation polices. A Signal to Noise Ratio (SNR) based user selection scheme is considered. Closed-form expressions are derived for OSFBC-OFDM system. Optimal power adaptation policy provides the highest capacity over the other adaptation policies. Capacity gains are more prominent for optimal rate adaptation with constant transmit power policy as compared to other adaptation policies.

Keywords: Orthogonal space-frequency block coding; optimal power adaptation; optimal rate adaptation with constant transmit power; channel inversion with fixed rate; truncated channel inversion; outage probability.

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Authors: **Himanshu Ratawal, Bharti Nagpal**

Paper Title: **A New Efficient Routing Protocol for MANET**

Abstract: MANET can be defined as a accumulation of mobile hosts which move in different directions and speeds with no need to create connectivity with existing network infrastructure. Various routing protocols have been made from the time of the existence of ad hoc networks. We proposes a new routing protocol for ad hoc networks which will reduce network overhead, power consumption, Multi-user Interference (MUI), and provide link reliability.

Keywords: MANET, ROUTING, OAODV, ROUTING PROTOCOL.

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21.

Authors: **Nagaraj P, Siva Yellampalli**

Paper Title: **8 Bit Second-Order Continuous-Time Band-Pass Sigma-Delta ADC**

Abstract: In this paper, a technique to design the 8 bit continuous-time band-pass Sigma-Delta converters for 70 MHz is presented. The conversion from discrete-time (z-domain) loop-filter transfer function into continuous-time (s-domain) is done by using Impulse-invariant-transformation. The transconductor-capacitor filter is used to implement continuous-time loop-filter. A latched-type comparator and a TSPC D Flip-flop are being used as the quantizer of the Sigma-Delta converter. The decimation filter is designed by a CIC Filter and an FIR filter of high-speed digital. A full adder cell and a TSPC D Flip-flop are used as basic building blocks of CIC Filter and FIR Filter. The 8 bit second-order continuous Sigma-Delta converter circuit has been implemented in Cadence using 180nm CMOS technology and the total power consumption is 57.9 mW. At a supply voltage of 3 V, the maximum SNDR is measured to be 35.13 dB, which corresponds to a resolution of 8 bits.

Keywords: Analog-to-digital converter, Continuous Sigma-Delta ADC, Decimation Filter, Sigma-Delta modulator.

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22.

Authors: **Bharath.S.V, Ashwini.S.Shivannavar, M.Z.Kurian**

Paper Title: **Design of Efficient SOC Bus Based on WISHBONE**

Abstract: In this paper wishbone bus is used to interconnect variety of devices. SOC designs are usually based on FPGA and ASIC which are widely used in embedded systems. In SOC design flexible interconnection between variety of devices is crucial to get maximum performance. Usually, in SOC design variety of devices such as high performance units like CPU, DMA, RAM ext., low performance devices like UART, GPIO's are connected to a single bus. The interconnecting bus runs at the speed of low speed device. An extra logic needs to be used in SOC to increase the performance of low speed devices, but this increases overall system power consumption. This paper proposes double bus architecture to interconnect the different devices according to the speed of the devices. High speed devices are connected to first level wishbone bus and low speed devices are connected to second level bus. This architecture shows that double bus design is feasible in low power SOC design.

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Keywords: Double bus, IP Core, SOC, Wishbone.

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23.

Authors: **Naresh Kumar Malik, Jasvir Singh, Rajiv Kumar, Neelam Rathi**

Paper Title: **A Review on Solar PV Cell**

Abstract: Photovoltaic cells provide an additional method of acquiring energy, converting sunlight directly into electricity through the use of semiconductors. Effective photovoltaic implementation is reviewed, focusing on semiconductor properties and overall photovoltaic system configuration.[1]

Keywords: energy conversion efficiency, photovoltaic, PV,solar cell.

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24.

Authors: **Mirza Raheber Raza, Praveen Kumar Y G, M. Z. Kurian, K.V. Narayanswamy**

Paper Title: **FPGA Implementation of MPLS**

Abstract: This paper presents a hardware architecture of Multi-Protocol Label Switching (MPLS). MPLS is a protocol used primarily to prioritize internet traffic and improve bandwidth utilization. MPLS solutions are meant to be used with Layer 2 or Layer 3 protocols. This paper presents hardware architecture to implement MPLS on FPGA.

Keywords: Bandwidth, FPGA, Internet traffic, MPLS.

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25.

Authors: **Ch. Sudha Rani, Phani Kumar Vaddi,N.V.Vamsi Krishna Togati**

Paper Title: **Artificial Neural Networks (ANNS) For Prediction of Engineering Properties of Soils**

Abstract: The behaviour of soil at the location of the project and interactions of the earth materials during and after construction has a major influence on the success, economy and safety of the work. Another complexity associated with some geotechnical engineering materials, such as sand and gravel, is the difficulty in obtaining undisturbed

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samples and time consuming involving skilled technician. Shear strength of a soil is perhaps the most important of its Engineering properties, as all stability analyses in the field of Geotechnical Engineering are dependent on Shear strength of soil. Permeability is very important engineering property of soils. Knowledge of permeability is essential in settlement of buildings, yield of wells, seepage trough and below the earth structures. The compression of a saturated soil under a steady static pressure is known as consolidation. It is entirely due to expulsion of water from the voids. To cope up with the difficulties involved, an attempt has been made to model Engineering properties of soil i.e. Shear Strength parameters, permeability and compression index in terms of Fine Fraction (FF), Liquid Limit (WL), Plasticity Index (IP), Maximum Dry density(MDD), and Optimum Moisture content(OMC). A multi-layer perceptron network with feed forward back propagation is used to model varying the number of hidden layers. For this purposes 68 soils test data was collected from the laboratory test results. Among the test data 47 soils data is used for training and remaining 27 soils for testing using 60-40 distribution. The architectures developed are 5-5-4(inputs-hidden layers-outputs), 5-6-4, 5-7-4, and 5-8-4. Model with 5-8-4 architecture is found to be quite satisfactory in predicting Engineering properties of soil i.e. Shear Strength parameters, permeability and compression index. Pictorial presentation of results gives a better idea than quantative assessment. A graph is plotted between the predicted values and observed values of outputs for training and testing process, from the graph it is found that all the points are close to equality line, indicating predicted values are close to observed values.

Keywords: Artificial Neural Networks, Shear Strength, permeability, Compression Index, Fine fraction, Liquid limit, Optimum Moisture content, Maximum Dry density and plasticity index.

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	Authors:	**Hema Sharma, Ilyas, Suryakant**
	Paper Title:	**Optimal Power Flow Using Dynamic Bacterial Forging Algorithm**

26.

Abstract: Optimal power flow (OPF) problem has already been attempted as a static optimization problem, by adopting conventional gradient-based methods and more recently, no conventional ones, such as evolutionary algorithms. However, as the loads, generation capacities and network connections in a power system are always in a changing status, these static-oriented methods are of limited use for this issue. This paper presents a new algorithm, dynamic bacterial foraging algorithm (DBFA), for solving an OPF problem in a dynamic environment in which system loads are changing. DBFA is based on the recently proposed BFA which mimics the basic foraging behaviour of E. coli bacteria. A selection scheme for bacteria's reproduction is employed in DBFA, which explores the self-adaptability of each bacterium in the group searching activities. DBFA has been evaluated, for optimizing the power system fuel cost with the OPF embedded, on the standard IEEE 30-bus with a range of load changes which occurred in different probabilities. The simulation results show that DBFA can more rapidly adapt to load changes, and more closely trace the global optimum of the system fuel cost, in comparison with BFA and some other techniques.

Keywords: Bacterial foraging algorithm (BFA), Optimal Power Flow, Dynamic Bacterial foraging algorithm

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27.

Authors:	**Ira Gaba, Paramjit Kaur**
Paper Title:	**A Novel Technique Used for Gait Recognition MDA, LDA and BPNN- A Review**

Abstract: Gait is the manner of the limb movement or the manner a foot of an individual and recognition of an individual is the task of identify a people. Gait Recognition is the biometric process by which an individual can be identify by the manner of walk. The advantage of gait over other biometric traits such as face, iris and fingerprint etc is that it is non-invasive and less unobtrusive biometric, which offers to identify people at the distance, without any interaction from the subject or at low resolution. In this paper we present the review of gait recognition system and different approaches MDA, LDA, PCA and BPNN.

Keywords: BPNN, Feature Extraction, Gait Recognition, LDA, MDA, PCA, Silhouette Extraction.

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28.

Authors:	**Ira Gaba, Paramjit Kaur**
Paper Title:	**A Novel Technique Used for Gait Recognition MDA, LDA and BPNN- A Review**

Abstract: Gait is the manner of the limb movement or the manner a foot of an individual and recognition of an individual is the task of identify a people. Gait Recognition is the biometric process by which an individual can be identify by the manner of walk. The advantage of gait over other biometric traits such as face, iris and fingerprint etc is that it is non-invasive and less unobtrusive biometric, which offers to identify people at the distance, without any interaction from the subject or at low resolution. In this paper we present the review of gait recognition system and different approaches MDA, LDA, PCA and BPNN.

Keywords: BPNN, Feature Extraction, Gait Recognition, LDA, MDA, PCA, Silhouette Extraction.

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2. Qinghan, "Technology review- Biometrics Technology, Application, Challenge and Computational Intelligence Solution" ,IEEE Computational Intelligence Magazine, Vol 2,pp5-25,2007.
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29.

Authors: **Mannini Goyal**

Paper Title: **An Efficient Technique Used To Generate Test Case on Embedded System Using Fuzzy Logic**

Abstract: Logical generation of the test case process ensures that the test cases have been derived in a consistent and objective manner and which covers all the requirements of the system. Temperature monitoring and controlling of nuclear reactor system is used which is an embedded system in which simulation is done and fuzzy logic is used to generate the test cases. The goal of my paper is to make a more efficient technique that could find the least number of test cases of the output domain for the hardware so that we can analyse the accuracy. Fuzzy logic is best technique because it reduces the test cases of an output domain in few second and gives the correct result. As the test cases are reduced, it will increase the performance of the system and save the time, effort of the user.

Keywords: Test case, Embedded system, Fuzzy logic, Output domain.

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30.

Authors: **A.D.Chaudhari, S.D.Shirbahadurkar**

Paper Title: **VHDL Implementation of IDEA Architectures**

Abstract: Cryptography is the art of keeping data secure from unauthorized access so as to guarantee that only the intended users can access it. Data security is an important issue in computer networks and cryptographic algorithms are essential parts in network security.This paper covers the implementation of the International Data Encryption Algorithm (IDEA) using Very Large Scale Integrated Circuits Hardware Description Language (VHDL) with the help of Xilinx – ISE 9.1. In terms of security, this algorithm is very much superior. In IDEA, the plaintext and the cipher text are 64 bit blocks, while the secret key is 128 bit long. The cipher is based on the design concept of mixing operations from different algebraic groups.

Keywords: Cryptographic Algorithm, IDEA, Modulo Multiplier, VHDL, Xilinx.

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31.

Authors: **Narendra M R**

Paper Title: **Study of Transmission Characteristics of MIMO System for Different Modulation Techniques**

Abstract: The performance of 2X2 Multiple Input multiple Output (MIMO) antenna systems has been analyzed by determining the transmit diversity using Alamouti Space Time Coding (STBC) techniques. For the BPSK and QPSK modulation technique transmission characteristics are determined. Adaptive White Gaussian Noise (AWGN) has been used presuming flat fading Rayleigh channel. On receiver side, linear equalization techniques such as Zero Forcing (ZF) and Maximum Likelihood Detector (MLD) were employed for computing BER. It is found that for 5

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dB Eb/No, the BER values of BPSK using ZF Equalizer 0.0687, BPSK using MLD Equalizer 0.0151, QPSK using ZF Equalizer 0.0070, QPSK using MLD Equalizer 1 is obtained. But BER value for BPSK Modulation with 2X2 Alamouti STBC and the BER value for QPSK Modulation with same 2X2 Alamouti STBC are obtained respectively as 0.0038 and 0.0034. The results indicate that the STBC multiplexing schemes show an overall improvement of ~67.95 dB between BPSK and QPSK modulation for the same 5 dB Eb/No value. The STBC multiplexing for digital transmission shows significant improvement in BER performance with higher levels of digital modulation. MATLAB tool is used for simulation and results are discussed in the paper.

Keywords: Multiple Input Multiple Output (MIMO), Space Time Block Code (STBC) Phase Shift Keying (PSK)

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32.

Authors: **S.Janaki, Siva Yellampalli**

Paper Title: **Design and Implementation of Impulse Distributed Waveform Generator Time Interleaved Impulse Generator**

Abstract: This paper presents the design and implementation of impulse distributed waveform generator which generates UWB pulses with a bandwidth of 7GHz (1GHz to 8GHz).It utilizes time interleaved impulse generators to generate waveforms. Wide bandwidth is achieved by reducing the width of the impulses generated by time-interleaved impulse generators. Each of the impulse generators are triggered by the tunable delay unit which introduces the delay between the impulses generated. The Pulse shaping circuit shapes the impulses, by pulse amplitude tuning. The amplitude tuned impulses are combined together to obtain the waveform by using on-chip transmission line. Pulse width tuning and delay tuning makes this circuit reconfigurable. The pulse width can be tuned from 80ps to 1ns, and trigger delay can be varied from 30ps to 100ps.

Keywords: delay tuning, impulse generator, pulse width tuning, time-interleaved.

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33.

Authors: **Manjunath Putted, Ganesh V Bhat**

Paper Title: **Control System Based Tiny Webserver**

Abstract: With the growing popularity of Internet, Embedded Technology and Web Technology developing a control system based on embedded web server, by using a Ethernet as communication media, this is finding wide spread application in embedded field. The proposed work plans to control the appliances placed in industrial area through the web server, in this plans to use of LPC1768 CORTEX-M3 based embedded board in the implementation of a Tiny web server (embedded web server) for control of industrial appliances in the server side. To communicate server with client a Ethernet is using here, Ethernet network communication Interface by using TCP/IP protocol and an Ethernet interface with HTML web page. This TCP/IP protocol is act as bridge between client and server and initialize to communicate. The webpage and firmware is done in HTML and dynamic C programming language respectively. Here the embedded system board acts as central heart of the server between webpage and appliances.

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Keywords: Controlling appliances, Embedded web server, Remote I/O data, TCP/IP.

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Authors:	**Karthika M.T., Neethu Kurian, Mariya Seby**
Paper Title:	**Comparison of Load Balancing and Scheduling Algorithms in Cloud Environment**

Abstract: The importance of cloud computing is increasing nowadays. Cloud computing is used for the delivery of hosted services like reliable, fault tolerant and scalable infrastructure over Internet. A variety of algorithms is used in the cloud environment for scheduling and load balancing, thereby reducing the total cost. The main algorithms usually used include, optimal cloud resource provisioning (OCRP) algorithm and hybrid cloud optimized cost(HCOC)scheduling algorithm These algorithms will formulate the optimized cost of resources in the cloud environment.

Keywords: Cloud computing, load balancing, scheduling

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35.

Authors:	**Reena Sharma, Aziz Ahmad, Shailendra Kr. Saroj**
Paper Title:	**Protection of Transmission Lines using Discrete Wavelet Transform**

Abstract: The main objectives of transmission line protection scheme are precisely differentiate the faults zone and indicate exact fault type using one end data only so that only faulted line will be removed .Fault generates transient current wave contained distinct frequency bands. In this paper discrete wavelet transform is used to capture two bands of frequencies from the transient current signal using db1 as a mother wavelet. The spectral energies of these two bands are obtained to determine the fault zone.

The faulted phase selection is done by the discrete wavelet transform using Haar as the mother wavelet. The coefficient of a frequency band in the range of 1 KHz-3 KHz are obtained for the three phase and ground currents. The average value of the coefficients of each current wave is then computed and used to classify the faulted phase. Fault simulations are performed using MATLAB/Simulink and then the results are interfaced to MATLAB where the algorithm is implemented.

Keywords: boundary protection, high frequency transient signals, mother wavelet, non-unit protection, power system faults, unit type protection, Wavelet transforms.

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36.

Authors: **Nithya.E, TousifAhamed Nadaf**

Paper Title: **Secure Sharing of Health Records in Cloud Using ABE**

Abstract: In recent years, Personal health record (PHR) has emerged as a patient-centric model of health information exchange. This stands in contrast with the more widely used electronic medical record, which is operated by institutions (such as a hospital) and contains data entered by doctors or billing data to support insurance claims. Individual Patient is the owner of the PHR. The main purpose of a PHR is to provide accurate and complete summary of an individual's medical history which is accessible online. Especially, each patient is promised the full control of his/her medical records and can share his/her health record with a wide range of users, including healthcare providers, family members or friends. PHR is often outsourced to be stored at a third party, such as cloud providers. To assure the patients' control over the access to their own PHRs, it is a promising method to encrypt the PHRs before outsourcing. Heretofore, issues such as risks of privacy exposure, scalability in key management, flexible access and efficient user revocation have remained, which are some of the most important challenges toward achieving fine-grained, cryptographically enforced data access control.

Keywords: Personal Health Record, Data Privacy, Attribute Based encryption, Cloud Computing.

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37.

Authors: **Manoj Kumar, S. K. Suman, Vinita Vasundhara**

Paper Title: **Integrating Non-Conventional Energy Sources to Supply a Local Load with Fuel Cell as Backup System**

Abstract: The electrical energy is distributed worldwide by overhead transmission lines or cables from generating stations. However, power systems are still needed at locations which are isolated or far from electrical energy suppliers. Renewable energy resources in micro-grid power systems are interesting topics of recent research as environmental pollution and scarcity of energy resources come to the fore. Moreover the integration of renewable energy systems (RESs) in smart grids (SGs) is a tough task, mainly due to the intermittent, varying and unpredictable nature of the sources, typically wind or sun due to changing weather conditions throughout the year. Sometimes there are low wind speeds and lesser sunny conditions and therefore power generation by solar and wind energy is reduced. This paper proposes a system in which solar and wind energy is integrated with fuel cell to provide a continuous power supply to a small local load to enhance reliability of power supply. Here PV and wind energy is used as the primary source of power with the fuel cell section acting as a current source, feeding only the deficit power. The proposed system is analyzed with a case study using MATLAB.

Keywords: Fuel Cell Backup System, Micro-Grid, Renewable Energy Sources, Solar Energy, Wind Energy.

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38.

Authors: **Prabhat Kumar Pallav, S.R. Ganorkar**

Paper Title: **Investigation and Analysis of Hough-DCT-Hamming Distance Based Method of Iris Recognition**

Abstract: As we know that iris recognition is widely used biometric identification system. This system is having growing future in the area of security. In the real time security systems we need to have reliable, efficient, faster iris recognition system. Iris recognition process is consisting of iris segmentation, normalization, localization as well as matching techniques. And hence the performance of this system is majorly depends on use of such techniques. In this paper we will first present the literature review over the different methods for iris segmentation, iris encoding as well matching. Thereafter, we will present the experimental evaluation of Hough-DCT-Hamming distance based Iris Recognition system. We simulated this approach using MATLAB and different datasets.

Keywords: Iris Segmentation, Hough Transform, Canny Edge, DCT, False Acceptance Rate, False Rejection Rate.

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39.

Authors: **Sunila Godara, Amita Verma**

Paper Title: **Analysis of Various Clustering Algorithms**

Abstract: Data clustering is a process of putting similar data into groups. A clustering algorithm partitions a data set into several groups such that the similarity within a group is larger than among groups. This paper reviews four types of clustering techniques- k-Means Clustering, Farther first clustering, Density Based Clustering, Filtered clusterer. These clustering techniques are implemented and analyzed using a clustering tool WEKA. Performance of the 4 techniques are presented and compared.

Keywords: Data clustering, Density Based Clustering, Farther first clustering, Filtered clusterer, K-Means Clustering.

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40.

Authors: **Tanvi Agrawal, Arun P. Agrawal**

	Paper Title:	**Regression Test Selection Using Metaheuristics**

Abstract: Regression Testing is a very expensive activity which is to be completed in a very limited time span. Regression test case selection is an effective technique which helps in reducing the cost and time of the testing. To select the efficient test cases for regression test case selection technique, metaheuristic algorithms Tabu Search and Genetic Algorithm are used.

Keywords: Genetic Algorithm, Metaheuristics, NP-hard, Regression Testing, Tabu Search.

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41.	**Authors:**	**Chandrakant N, Bijil A P, Puneeth P, Deepa Shenoy P, Venugopal K R, L M Patnaik**
	Paper Title:	**WSN Integrated Cloud Computing for N-Care System (NCS) Using Middleware Services**

Abstract: The number of wireless devices with powerful sensing capabilities is constantly growing. A mobile phone is an example of a device that is packed with several powerful sensors. Cloud computing is another area that been in focus over the last decade. Cloud computing can be defined as an architectural abstraction that provides scalability and reliability based on requirement. The challenge lies in the fact that sensors for different purposes are heterogeneous in nature. We propose a framework called the N-Care System that utilizes heterogeneous wireless networks to collect data, cloud services to provide additional computational capabilities and provides information for different types of end users. A wireless sensor network consisting of sensors that possess both sensing and transmitting capabilities forms a communication back-bone that can capture a wide variety of data. Multiple sensors are grouped in to a cluster that consists of an internet capable computing device called cluster head that collects data from the constituent sensor nodes and pushes it in to a cloud based database. End users can log in and access data from sensors that fall under the user's domain.

Keywords: Middleware, WSN, MANET, NCS, Cluster, Cloud

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42.	**Authors:**	**Vandana Sharma, Arun Prakash Agrawal**

	Paper Title:	**Regression Testing for Data-Driven Applications**	
	Abstract: Regression testing is a part of software maintenance and it consumes about two-third of the overall software life cycle cost. It is an expensive activity that is done whenever there are some changes takes places in software. Regression testing tests both the modified code and other parts of the program that may be adversely affected by the changes introduced in the program or a part of it. The regression testing of database applications concerns with the state of the database as it contributes too many components that increase the complexity of the applications because in case of database the test cases are not independent of each other and the database requires to be reset all the time. In this paper we have done a survey of regression testing techniques for testing database applications. **Keywords:** Data-driven Applications, Database Testing, Regression Testing, Software testing. **References:** 1. H. Leung, and L. White, " Insights into regression testing," In Proceedings of the Conference on Software Maintenance IEEE CH2744-1/89/0000/0060. 2. B. Daou, R. A. Haraty, N. Mansour, "Regression Testing of Database Applications," Las Vegas, NV ACM 2001 1-58113-287. 3. S. W. Ambler, IBM, 2007 "Test Driven Development of Database Applications," IEEE Software 0740-7459. 4. D. Kossmann, C. Binnig, E. Lo, "Testing Database Applications," SIGMOD 2006, June 27–29, 2006, Chicago, Illinois, USA. ACM 1595932569/06/0006. 5. G. M. Kapfhammer, "Regression Testing," Department of Computer Science Allegheny College. 6. Regression Testing Tools and Methods [online], Available at: http://www.softwaretestinghelp.com/regression-testing-tools-and-methods/ (Accessed: 4th May 2013). 7. D. Kossmann, C. Binnig, E. Lo, "Testing Database Applications," SIGMOD 2006, June 27–29, 2006, Chicago, Illinois, USA. ACM 1595932569/06/0006. 8. F. Haftmann, D. Kossmann, A. Kreutz, "Efficient Regression Tests for Database Applications." In Proceedings of the 2005 CIDR Conference 9. X. Lin, "Regression Testing in Research And Practice," Computer Science and Engineering Department University of Nebraska, Lincoln 1-402-472-4058 10. A. P. Mathur, "Foundations of Software Testing: Fundamental Algorithms and Techniques," 2008 11. SmartBear Software White Paper on Getting started with TestComplete9 (TestComplete by SmartBear http://downloads.smartbear.com/docs/getting_started_with_testcomplete.pdf). [The easiest access to this source is by Internet] 12. SalesForce White Paper on ApexCode Developer's Guide (SalesForce.com http://www.salesforce.com/us/developer/docs/apexcode/salesforce_apex_language_reference.pdf). [The easiest access to this source is by Internet] 13. IBM Rational White Paper on create a functional test (IBM Corp.2007 http://publib.boulder.ibm.com/infocenter/rfthelp/v7r0m0/topic/com.ibm.rational.test.ft.tutorial.doc/pdf/com.ibm.rational.test.ft.tutorial.doc.pdf). [The easiest access to this source is by Internet] 14. TestNG.org [homepage on the internet], TestNG: Complete Documentation. Available at: http://testng.org/doc/documentation-main.html (Accessed: 8th May 2013).	**209-211**
43.	**Authors:**	**Vandana Sharma, Arun Prakash Agrawal**	
	Paper Title:	**Regression Test Case Selection for Testing Database Applications**	
	Abstract: Regression testing is a part of software maintenance and it consumes about two-third of the overall software life cycle cost. It is the process of executing the full or partial test cases from the original test suite after any modifications to the original program. It tests both the modified code and other parts of the program that may be adversely affected by changes introduced in the program or a part of it. It is an expensive activity that is done whenever there are some changes in software. Regression testing tests both the modified code and other parts of the program that may be adversely affected by changes introduced in the program or a part of it. Test case selection selects the test cases to test the modified as well as unmodified part of the program from the original test suite. The regression testing of database applications concerns with the state of the database as it contributes too many components that increase the complexity of the applications because in case of database the test cases are not independent of each other and the database requires to be reset every time. The database applications are frequently modified due to the need of different requirements like, increase in number of users, components and data. Therefore regression testing of database applications is an essential activity as it requires maintaining the state of the database. It may be conducted either manually by re-executing a subset of all test cases of the original test suite or using automated tools. These tools enable the software testers to capture test cases and results for subsequent playback and comparison. In this paper, we have shown a study of the time taken in resets made to a database that is done manually or automatically with the help of various tools. We have also proposed the way in which the reset time of database state is reduced to a large extent. The database always requires to be reset after executing every query that too is done manually by the tester or with the help of some automated tool. In our work after reducing the reset time of database state we have presented the test cases with the details of the time taken in execution and code coverage of database application. Then the resulted test cases are selected from the original test cases that achieves the selection of maximum number of fault revealing test cases. **Keywords:** Database Applications, Database Testing, Regression Testing, Regression Test case Selection, Software Testing. **References:** 1. G. M. Kapfhammer, "Software Testing", Department of Computer Science Allegheny College. 2. H. Leung, and L. White, "Insights into regression testing," In Proceedings of the Conference on Software Maintenance IEEE CH2744-1/89/0000/0060. 3. S. Yoo, M. Harman, "Regression Testing Minimisation, Selection and Prioritization: A Survey," King's College London, Centre for	**212-216**

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44.

Authors: **Oshin Sharma, Sushil Kumar Bansal**

Paper Title: **Gait Recogniton System for Human Identification Using BPNN Classifier**

Abstract: Recognition of any individual is a task to identify people. Human recognition methods such as face, fingerprints, and iris generally require user's cooperation, physical contact or close proximity. These methods are not able to recognize an individual at a distance therefore recognition using gait is relatively new biometric technique without these disadvantages. Human identification using Gait is method to identify an individual by the way he walk or manner of moving on foot. Gait offers ability of distance recognition or at low resolution. In this paper, firstly binary silhouette of a walking person is detected from each frame. Secondly, feature from each frame is extracted using image processing operation. Here center of mass, step size length, and cycle length are talking as key feature. At last BPNN technique is used for training and testing purpose. Here all experiments are done on gait database and input video.

Keywords: Backpropagation neural network (BPNN), gait recognition, silhouette images, background subtraction, features extraction.

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45.

Authors: **Manish Chaudhary, Mandeep Singh Narula**

Paper Title: **FPGA Implementation of Booth's and Baugh- Wooley Multiplier Using Verilog**

Abstract: Here, in this paper we have designed and implemented a Signed-Unsigned Booth's Multiplier and a Signed-Unsigned Baugh-Wooley Multiplier for 32-bits multiplication. The designing and verification is done through verilog on Xilinx 12.4. In this paper we tried to explain the step by step process that was adopted for Signed-Unsigned Booth's Multiplier. Also, two different approaches for implementing the Signed Baugh-Wooley multiplier in Singed-Unsigned Baugh-Wooley multiplier and after, the implementation we could see the differences in certain parameters. The array structure of Signed-Unsigned Booth's Multiplier and Signed-Unsigned Baugh-Wooley Multiplier is obtained from RTL synthesis are shown. Different parameters like power, CPU usage, CPU time, memory usage etc. have been compared.

Keywords: array, booth, baugh-wooley, signed, unsigned, verilog,

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Authors: **V.R.Elangovan, E.Ramaraj**

Paper Title: **Comparative Study of Domain Driven Data Mining for It Infrastructure Suport**

Abstract: Information Technology (IT) is one of the most emerging fields in today's Internet world. IT can be defined in various ways, but is broadly considered to encompass the use of computers and telecommunications equipment to store, retrieve, transmit and manipulate data. Infrastructure is the base for everything. IT also has an infrastructure, which can be managed and maintained properly. For an organization's Information Technology, Infrastructure Management (IM) is the management of essential operation components, such as policies, processes, equipment, data, human resources and external contacts.

This paper, propose a methodology to manage the IT Infrastructure in a better way. In the proposed methodology uses the tree-structure based architecture to manage the infrastructure with less manual power. To maintain such services, we have to set up an infrastructure and also provide essential steps to maintain and manage those kinds of services. This kind of management is termed as IT Infrastructure Management Services. While the user wants to use this kind of IT Services, the infrastructure paves way for this by providing proper responses for the requests made by the user. These responses are provided by the IT resource persons who are managing and maintaining the services. The proposed methodology deals with this by undertaking the requests from the user and providing proper responses for the requests. The response is provided by analyzing the requests and then redirecting the requests to the resource person who are considering that kind of request. Thus the proposed methodology provides proper services for the user by managing the work flow in the IT Infrastructure. This paper also compared with the other methods in the domain driven data mining area, to ensure that the proposed method is more efficient in terms of SLA service level agreement and methodology when compared to other methods.

Keywords: (IM) (IT).

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Authors: **Sandra Mohan, Anish Joseph**

Paper Title: **A Dynamic Priority Based Arbitration Algorithm**

Abstract: Today's electronic industry consists of chips with multimillion gates. This new level of integration on a single chip is called the System on Chip (SoC) design. In an SoC, on-chip interconnection networks are mostly implemented using buses. The performance of the SoC design heavily depends upon the efficiency of its bus structure. The bus used in the SoC platform requires an arbitration process since multiple components connected to it can act as masters and hence initiate a transaction. As the number of system components in SoC design increases, it becomes that an efficient arbiter is one of the most critical factors for high system performance. This paper deals with an Advanced High-performance Bus (AHB) arbiter with a dynamic arbitration mechanism.

Keywords: AHB, AMBA, Arbiter, SoC.

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48.

Authors: **Ipta Thakur, Guide-Shaily Jain**

Paper Title: **Countermeasures for Security Vulnerability in Android**

Abstract: The high speed penetration of Smartphone's in the market with Android as the leading operating system makes the need for malware analysis on this platform an urgent and concerning issue. In our project we capitalize earlier approaches for dynamic analysis of location based and other suspicious permissions and classes which can cause vulnerability. Our framework has been demonstrated by analyzing the permissions those are vulnerable. Array list will be created on the basis of the permissions and names of classes, and then checked for vulnerabilities using automated approach and then assured through the manual cross checking for vulnerability.

Keywords: Android Security, Malware Analysis, Dynamic Analysis, Vulnerabilities.

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Authors: **Srikanth Mandarapu, Sreedhar Lolla, M.V.Suresh Kumar**

Paper Title: **Digital PI Controller Using Anti-Wind-Up Mechanism for A Speed Controlled Electric Drive System**

Abstract: This paper discusses the implementation of Digital PI Controller Using Anti Wind-Up Mechanism For A Speed Controlled Electric Drive System. To eliminate the system zeros relocated proportional integral controller is implemented. Which in turn reduces the over shoots. The torque is not limited, inspite of the use of relocated proportional integral controller. The motor windings get damaged, if the torque reaches higher values. In order to limit this torque, we introduce a torque limiter, which limits the torque value to the permissible limits. Due to limited torque, over shoots are produced for large inputs. To eliminate these overshoots, with limited torque, we implement the anti-windup mechanism.
The scheme is implemented in MATLAB and from the obtained results its possible use and limitations are studied

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for torque limits varying from +3000 to +7000 N-m.

Keywords: anti wind –up, digital pi controller, quantizer, torque limiter.

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Authors: **Priyanka Singh, Mukesh Kumar, A.K.Jaiswal, RohiniSaxena**

Paper Title: **Analysis of ZigBee (IEEE 802.15.4 standard) for Star Topology with AODV Protocol**

Abstract: ZigBee is a new wireless technology based on the 802.15.4 standard which is extensively used in wireless communication. This isdesigned for applications like wirelessmonitoring andcontrol of lights, security alarms, motion sensors, thermostats and smoke detectors.ZigBee technology provides a low data rate, low power, and low costwireless networking on the device-level communication.IEEE 802.15.4 specifies physical and media access control layers. The MAC layer defines different network topologies, namely a star, tree and mesh topology. In this paper, we give a brief overview of ZigBee (IEEE 802.14.5 standard) which is the fundamental of low rate-wireless personal area network (LR-WPAN).Then we analysis the performance of ZigBee (IEEE 802.15.4) for star topology with different traffic scenarios namely CBR, FTP, and Poissonusing thesimulation tool NS-2.

Keywords: LR-WPANs, NS-2, ZigBee.

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51.

Authors: **Praful Kumar Singh, Mrityunjay Kumar Choudhary**

Paper Title: **Scalar Multiplication Algorithms of Elliptic Curve Cryptography over GF (2^m)**

Abstract: Since the inception of elliptic curve cryptography by Koblitz [1] and Miller [2] for implementing public-key protocols as the Diffie-Hellman key agreement, elliptic curve cryptography has become one of the most researched area for providing one stop reliable and secure solution in the field of cryptography. The ECC covers all relevant asymmetric cryptographic primitives like digital signature (ECDSA), key exchange and agreement protocols. Point multiplication serves as the basic building block in all ECC primitives and is the computationally most expensive operation and our analysis revolves around this concept. This paper gives an introduction to Elliptic Curve Cryptography and deals with evaluation of fast scalar multiplication with parallelization of field operation and point addition/multiplication. Elliptic curve cryptography offers best optimized solution with minimum resources like Low memory, High Throughput, low power consumption and minimum key length for the same level of security as compared to its counterpart like RSA, DSA etc. in public key cryptography domain. The work is based on the extensive research work done by Julio Lopez, Ricardo Dahab, Montgomery and other pioneer scientists and academicians in the field of elliptic curve cryptography. Given the importance of Scalar multiplication , we focused ourselves on the Fast Multiplication on Elliptic Curves over finite Binary field GF(2^m) without Pre-computation whose background is set by Julio Lopez et al. in [1], because the finite field operations can be implemented very efficiently in hardware and software.

Keywords: Elliptic Curve Cryptography, Scalar Multiplication, Encryption

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Authors: **Nemi Chand Neel, Ajay Kumar Banyal, Manu Kumar Sharma**

Paper Title: **On-Chip High Speed Optical Interconnect with RLCG Electrical Interconnect: Challenges and Dimensions**

Abstract: Intrachip optical interconnects(OIs) have the pote-ntial to outperform electrical wires and to ultimately solve the communication bottleneck in high-performance integrated circuits. Performance targets and critical directions for Ics progress are yet to be fully explored. In this paper, the International Technology Roadmap for Semiconductors (ITRS) is used as a reference to explore the requirements that silicon-based Ics must satisfy to successfully outperform copper electrical interconnects (IEs). Consiering the state-of-art devices, these requirements are extended to specific IC components.

Keywords: Integrated optoelectronic circuits, optoelectron-ics, optical interconnects(ICs), silicon photonics.

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Paper Title: **Modified Version of Playfair Cipher Using Linear Feedback Shift Register and Transpose Matrix Concept**

Abstract: In this paper we are presenting a new technique for secure transmission of message by modified version of playfair cipher combining with random number generator and transpose of matrix concept. To develop such method of encryption technique we have used one of the simplest methods of random number generator called Linear Feedback Shift Register and Transpose Matrix concept has been used. The previous playfair cipher method is based on polyalphabetic cipher which is relatively easy to break because it leaves much of loop hole and a small hundreds of letters of cipher text are sufficient. Here we are generating random number sequences and placing it into 6X6 matrix. Then finding the transpose of it and mapping it to secret key of playfair cipher method. Corresponding number s will be transmitted to the receiver instead of alphabetic numeric key. This method increases security of the transmitted key over unsecured transmission media.

Keywords: Random number, Playfair Cipher, Poly-alphabetic-Numeric cipher, Linear Feedback Shift Register.

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