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1.

Authors: Gaurav Jaswal, Rajan Parmar, Amit Kaul

Paper Title: QRS Detection Using Wavelet Transform

Abstract: The paper has been inspired by the need to find an efficient method for QRS detection which is simple and has good accuracy and less computation time. Our heart acts as the representative of the physiological changes of our body. Electrocardiography (ECG) is the electrical signature of the heart and thus one of the important indicators of our pathological condition. In this paper the Discrete Wavelet Transform is used to detect QRS complex. The DWT approach is found to be better and more accurate than the other common methods when evaluated on MIT/BIH ECG database and the database borrowed from NIT Jalandhar.

Keywords: Mean square error, QRS, DWT, ECG

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2.

Authors: Vinay.G.R, B.Yogesha, G N Reddy

Paper Title: Integration of Wireless Hart Into DCS For Asset Monitor Applications

Abstract: With new firmware upgrade of wireless adapter, wireless HART is ready to redefine process monitoring, preventive maintenance and asset management. It enables users to quickly and easily gain the benefits of wireless technology while maintaining compatibility with the existing HART devices and tools. Wireless HART is designed with strict timing requirements and to be highly reliable and interoperable while being easy to install and operate. This new firmware upgrade was done to strike a proper balance between, simplicity, battery-life and guaranteed real-time wireless communication. In this paper, we present the test suite developed to exercise the wireless HART devices. We discuss the architecture of the test suite, the reliability of the mesh network after firmware upgrade of the wireless adapter and integration of wireless HART into DCS.

Keywords: integration, asset management, interoperability

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3.

Authors: **Ashima Yadav**

Paper Title: **Performance Analysis in Cooperative Communication**

Abstract: In this paper, we have developed a framework for resource allocation in a multi user cooperative wireless network. We have considered centralized and decentralized node-relay assignment with the objective of maximizing the sum throughput. We present an efficient polynomial time centralized assignment algorithm to achieve this objective, and also investigate efficient decentralized schemes that do not require a central authority to perform the allocation. We present a novel message passing based assignment scheme which converges to the optimal value, and present an adapted scheme based on distributed auction theory. We also present a simple sub-optimal greedy assignment strategy and provide empirical data to support its practical significance.

Keywords: We present an efficient polynomial time centralized assignment algorithm to achieve this objective,

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4.

Authors: **Pushkar Venkatesh Kulkarni, N. K. Chapkhhane**

Paper Title: **Development and testing of PTFE based Composite Bearing Material for Turbine Pump**

Abstract: In Vertical submerged turbine pumps the long shafts are supported at intervals by transmission bearings. The radial load acting on shaft is taken care by the intermediate bearings. These transmission bearings are lubricated by the flowing liquid through pump. During starting as water level is below line shaft bearing it requires prepublication before start. Selection of the bearing material becomes critical in situations where we don't have pre lubrication water available. Also remote start and stop is difficult. In this scenario pump runs dry during initial start. Our aim is to develop bearing which will take care of dry running. When pumped water is sea water / raw water containing sand/abrasive particles then line shaft sleeve bearing should withstand against wear.
To cater the problems in conventional bearings and to find the appropriate bearing material focus is given on latest trends & Tribological developments in the world. Different PTFE based composite bearing. In this study, composite materials were comparatively investigated under actual load and sliding velocities by using in a Pump. The influence of inorganic fillers MoS2, on the wear of the glass & bronze fabric reinforced epoxy composites under dry & wet running conditions has been checked.
Bronze filled PTFE bearing are found excellent and will serve as an alternative to conventional bearings.

Keywords: PTFE, Composite bearings, fillers, Vertical turbine pump.

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5.

Authors: **Dilip Vishwakarma, Deepak Chopra**

Paper Title: **An Efficient Attack Detection System for Mobile Ad-hoc Network**

Abstract: A mobile ad hoc network (MANET) is a wireless network that does not rely on any fixed infrastructure (i.e., routing facilities, such as wired networks and access points), and whose nodes must coordinate among themselves to determine connectivity and routing. The traditional way of protecting networks is not directly applicable to MANETs. Many conventional security solutions are ineffective and inefficient for the highly dynamic and resource-constrained environments where MANET use might be expected. Since prevention techniques are never enough, intrusion detection systems (IDSs), which monitor system activities and detect intrusions, are generally used to complement other security mechanisms. How to detect intrusions effectively and efficiently on this highly dynamic, distributed and resource-constrained environment is a challenging research problem. In this paper, we investigate the use of evolutionary computation techniques for synthesizing intrusion detection programs on MANETs. We evolve programs to detect the following attacks against MANETs: dropping attacks and power consumption attack. The proposed system is a novel architecture that uses knowledge-based intrusion detection techniques to detect the attacks that an adversary can perform against the routing fabric of mobile ad hoc networks. Moreover, the system is designed to take countermeasures to minimize the effectiveness of an attack and keep the performance of the network within acceptable limits. The novelty of the system lies in the usage of timed finite state machines that enable the real-time detection of attacks. Our system does not introduce any changes to the underlying routing protocol and operates as an intermediate component between the network traffic and the routing protocol. The system was developed and tested to operate in AODV-enabled networks. Our experimental results compare with normal AODV, under attack AODV and the results is more efficient than existing works

Keywords: IDSs

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6.

Authors: **S. Ravi Chandra Kishore, K.V. Ramana Rao**

Paper Title: **Implementation of carry-save adders in FPGA**

Abstract: The addition operations can be optimized through a special purpose carry propagation logic in most of the FPGAs. The delay is same for small size operands and this redundant adders require more hardware resources than carry propagate adders. Therefore, carry-save adders are not usually implemented on FPGA devices, although they are very useful in ASIC implementations. In this paper we have showed that it is possible to implement redundant adders with a hardware cost close to that of a carry propagate adder. Redundant adders are clearly faster for 16 bits and bigger word lengths and have an area requirement similar to carry propagate adders. Among all the redundant adders studied, the 4:2 compressor is the fastest one, presents the best exploitation of the logic resources within FPGA slices and the easiest way to adapt classical algorithms to efficiently fit FPGA resources. This design aimed to be implemented in Spartan-3E FPGA. The CSA architecture uses 1215 LUT's out of available 3840 and 96 IO blocks and the average fan-out of non clock nets is 4.73 and the peak memory usage is 148 MB.

Keywords: ASIC, redundant adders, FPGA.

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Authors: **Prashant, Nidhi Sharma**

Paper Title: **An Introduction to Component – Oriented Software Technology**

Abstract: Modern software systems are increasingly required to be open and distributed. Such systems are open not only in terms of network connections and interoperability support for heterogeneous hardware and software platforms, but, above all, in terms of evolving and changing requirements. Although object-oriented technology offers some relief, to a large extent the languages, methods and tools fail to address the needs of open systems because they do not escape from traditional models of software development that assume system requirements to be closed and stable. In this paper we have discussed that open systems requirements can only be adequately addressed by adopting a component oriented as opposed to a purely object-oriented software development approach, by shifting emphasis away from programming and towards generalized software composition.

Keywords: Component, Object, Composition, Static.

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Authors: **Anjana Bhardwaj, Manish, A. K. Arora**

Paper Title: **A Comparison of the SOFM with LVQ, SOFM without LVQ and Statistical Technique**

Abstract: The shapes and firing rates of MUAP’s (motor unit action potentials) in an EMG (electromyographic) signal provide an important source of information for the diagnosis of neuromuscular disorders. In order to extract this information from EMG signals recorded at low to moderate force levels, it is required: i) to identify the MUAP’s composing the EMG signal, ii) to classify MUAP’s with similar shape. For the classification of MUAP’s two different pattern recognition techniques are presented: i) An artificial neural network (ANN) technique based on unsupervised learning, using a modified version of the self-organizing feature maps (SOFM) algorithm and learning vector quantization (LVQ), and ii) A statistical pattern recognition technique based on Euclidean distance. A total of 521 MUAP’s obtained from 2 normal subjects, 4 subjects suffering from myopathy, and 5 subjects suffering from motor neuron disease were analyzed. The success rate for the ANN technique was 97.6%, the success rate for SOFM technique was 94.8%, and for statistical technique it was 95.3%. So SOFM technique along with LVQ is batter technology than the SOFM without LVQ technique and Statistical technique.

Keywords: Artificial Neural Network, Electromyography, learning vector quantization, Motor unit Action Potentials, Self-organizing feature maps.

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9.

Authors: **Bashar Sarayreh, Ammar Mardawi, Rakan Dmour**

Paper Title: **Comparative Study: The Nonaka Model of Knowledge Management**

Abstract: Knowledge Management went through a major transition from straightforward models which focused on the dichotomy of tacit and explicit knowledge to sophisticated frameworks which included specific processes. In this paper we outline the emergence of knowledge management as a distinct academic discipline to locate Nonaka’s work. Our immediate objective is to provide a comprehensive comparison of the most noteworthy discussions and criticism of the Nonaka model for Knowledge Management before and after the year 2000. Finally, we close by considering a series of key examples of the Nonaka model as deployed in industry.
Up to the year 2000 or thereabouts, it was augured the model was rather simplistic and the desire to codify everything was not possible. Much of the critique of Nonaka following 2000 focused on the seeming subjectiveness of his vision of knowledge and the inadequacy of the SECI structure in a time of radically different communication technologies [5][6][11]. Finally, we show that most of published case studies on the idea of converting tacit knowledge to explicit in the ICT sector are out of date[1][3].
We conclude that knowledge management, conversion, and codifying requires further research and development to take in consideration the tacit origins of knowledge and the rapidly changing methods of communication.

Keywords: Knowledge Management, Nonaka’s Model, knowledge codifying, SECI model

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Authors: **Riju Bhattacharya, Kamal K. Mehta**

Paper Title: **Using Comfort Related Data of Indian Railways for Fault Finding On Track: A Case Study with Multiple Profile**

Abstract: Derailment has always been one of the major concerns for railway. It is a unique challenge for railways to ensure that wheels stay on the rail. Railway technologies have advanced significantly in recent years and safety levels are high compared with the early days and also compared with other transport modes. Derailments however, unfortunately, still frequently occur. The issue of comfort in respect to vibration has become a common question to the railways since vibration plays a major role for ride comfort and ability to perform desk activities. Several factors influence vibration discomfort in relation to passenger activities, e.g. seat design, seated posture, use of backrest, etc. To avoid derailments, railway collect comfort related data from multiple profile trains (i.e. Express, Superfast, passenger's trains etc) for finding the damage among thousands of tracks when trains travel from one station to another station. In this study we analyzed the received data on the basis of ENV12299 standard and using Visual Studio 6.0. MS Access database is used to store the report data. The frequency variations observed during the experiment relate only to the cause of losing lateral control at wheel and rail interface.

Keywords: Railway, Derailment mechanisms, Vibrations, Lateral control

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11.

Authors: **Misam Abidi, Mangulkar Madhuri. N.**

Paper Title: **Review on Shear Wall for Soft Story High-Rise Buildings**

Abstract: Severe structural damage suffered by several modern buildings during recent earthquakes illustrates the importance of avoiding sudden changes in lateral stiffness and strength. Recent earthquakes that occurred have shown that a large number of existing reinforced concrete buildings are vulnerable to damage or even collapse during a strong earthquake. While damage and collapse due to soft story are most often observed in buildings, they can also be developed in other types of structures. The lower level containing the concrete columns behaved as a soft story in that the columns were unable to provide adequate shear resistance during the earthquake. So, in this paper highlights the importance for immediate measures to prevent the indiscriminate use of soft first story in buildings, which are designed without regard to the increased displacement, ductility and force demands in the first story and this paper argues the importance of novel design approach which has an advantage of interaction between rigid frames and shear walls. A combination of the two structural components leads to a highly efficient system, in which the shear wall resists the majority of the lateral loads in the lower portion of the building, and the frame supports the majority of the lateral loads in the upper portion of the building

Keywords: High rise buildings, RC frame linear behavior of shear wall, Soft Story /Weak Story.

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12.

Authors: **Rintu S Abraham, Veena S**

Paper Title: **Active Noise Control Using IIR Adaptive Filter**

Abstract: Noise control is essential from the point of view of health, conversation and communication. Traditionally reduced noise levels are achieved by means of passive absorbers like foam, perforated boards etc. But due to their size and weight, the passive absorbers are not suitable for mobile vehicles like aircrafts, helicopters and cars at low frequencies (50-500 Hz). This calls for an alternative technology, ACTIVE NOISE CONTROL (ANC). Generally, algorithms based on adaptive FIR structure with number of coefficients ranging up to hundreds are used in active noise control and this increases the computational burden on the processor. Compared to FIR filters, in this project IIR filters are used that can model a physical system efficiently with less number of coefficients due to its inherent pole-zero structure. The poles of an IIR filter make it possible to obtain well-matched characteristics with a lower-order structure, thus requiring fewer arithmetic operations.

Keywords: ANC, FIR, IIR

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13.

Authors: **Suyog K.Dahule, M.A.Gaikwad**

Paper Title: **Design & Simulation of Round Robin Arbiter for NOC Architecture**

Abstract: NOC means network on chip is a new method for on chip communication to solve a problem that challenges system on chip. Arbiter is used in network on chip when number of input are requested for same output port , the arbiter has generate the grant signal on the basis of that number of input port getting a priority and the input port transmit a packet to output port. In this paper we have design round robin arbiter for NOC architecture. After design of round robin arbiter we analyze the area and power.

Keywords: Network on–Chip, Round Robin Arbiter.

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14.

Authors: **Zhenxing Luo**

	Paper Title:	**Anti-attack and Channel Aware Target Localization in Wireless Sensor Networks Deployed in Hostile Environments**	
	Abstract: This paper discusses the attack and communication channel problems of the energy-based target localization method in wireless sensor network. An anti-attack and channel aware (AACA) target localization method is presented to address the attack problem and the problem of communication channel errors at the same time. Particularly, the AACA method proposed in this paper focuses on the Rayleigh fading channel with coherent receiver. Moreover, the AACA method was compared with the weighted average (WA) method under attack and communication channnel errors. Results showed that the root mean square (RMS) errors presented by the AACA method were close to the CRLB. Moreover, the WA method, although not able to provide as good performance as the AACA method, could give results in much shorter time. **Keywords:** Cramer-Rao lower bound, Target localization, Wireless sensor networks **References:** 1. D. Li, K. D. Wong, Y.H.Hu, and A. N. Sayeed, "Detection, Classification, and Tracking of Targets", IEEE Signal Processing Magazine, vol.19, no. 3, pp. 17-29, Mar. 2002. 2. Z. X. Luo and T. C. Jannett, "Optimal Threshold for Locating Targets within a Surveillance Region Using a Binary Sensor Network", in Proceedings of the International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE 09), Dec. 2009. 3. Z. X. Luo, "A censoring and quantization scheme for energy-based target localization in wireless sensor networks", To appear in Journal of Engineering and Technology. 4. X. Sheng and Y. H. Hu, "Maximum Likelihood Multiple-Source Localization Using Acoustic Energy Measurements with Wireless Sensor Networks", IEEE Transactions on Signal Processing, vol.53, no.1, pp. 44-53, Jan. 2005. 5. Z. X. Luo and T. C. Jannett, "A Multi-Objective Method to Balance Energy Consumption and Performance for Energy-Based Target Localization in Wireless Sensor Networks", in Proceedings of the 2012 IEEE Southeastcon, Orlando, FL, Mar. 2012, in press. 6. Z. X. Luo and T. C. Jannett, "Modeling Sensor Position Uncertainty for Robust Target Localization in Wireless Sensor Networks", in Proceedings of the 2012 IEEE Radio and Wireless Symposium, Santa Clara, CA, Jan. 2012. 7. R. X. Niu and P. K. Varshney, "Target Location Estimation in Sensor Networks with Quantized Data", IEEE Transactions on Signal Processing, vol. 54, pp. 4519-4528, Dec. 2006. 8. O. Ozdemir, R. X. Niu, and P. K. Varshney, "Channel Aware Target Localization with Quantized Data in Wireless Sensor Networks", IEEE Transactions on Signal Processing, vol. 57, no. 3, pp. 1190-1202, Mar. 2009. 9. Z. X. Luo and T. C. Jannett, "Energy-Based Target Localization in Multi-Hop Wireless Sensor Networks", in Proceedings of the 2012 IEEE Radio and Wireless Symposium, Santa Clara, CA, Jan. 2012. 10. A.S. Rawat, P. Anand, H. Chen, and P.K. Varshney , "Collaborative Spectrum Sensing in the Presence of Byzantine Attacks in Cognitive Radio Networks", IEEE Transactions on Signal Processing, vol.59, no.2, pp.774-786, Feb. 2011. 11. S. Marano, V. Matta, and Lang Tong, "Distributed Detection in the Presence of Byzantine Attacks", IEEE Transactions on Signal Processing, vol.57, no.1, pp.16-29, Jan. 2009 12. Z. X. Luo and T. C. Jannett, "Performance Comparison between Maximum Likelihood and Heuristic Weighted Average Estimation Methods for Energy-Based Target Localization in Wireless Sensor Networks", in Proceedings of the 2012 IEEE Southeastcon, Orlando, FL, Mar. 2012. 13. Z. X. Luo, "Robust Energy-based Target Localization in Wireless Sensor Networks in the Presence of Byzantine Attacks", to appear in International Journal of Innovative Technology and Exploring Engineering. 14. Z. X. Luo, "Modeling and Multi-objective Optimization for Energy-based Target Localization Using Wireless Sensor Networks", PhD Dissertation, The University of Alabama at Birmingham, to be submitted.		**62-66**
15.	**Authors:**	**Priyanka D, B.V.Raghavendra, Subhash P**	
	Paper Title:	**Analysis of A Case study on Fuel Leakage in a Pre-Filter Bowl of a Diesel Engine Fuel Feed Pump Using Ansys**	
	Abstract: Fuel leakage in the pre-filter bowl of a diesel engine feed pump is the common problem in the field. The leakage of fuel is mainly due to the method of assembly and design of the components. Though the threaded fasteners are easy for maintenance and low cost in the assembly of the components, they are not advisable due to its limitation of loosing the threaded fastener under the dynamic loading. A case study has been done in the industry to reduce the rejection of feed pump due to leakage of fuel in pre filter bowl of a diesel engine. In this paper an effort is made to identify the factors which cause the leakage of the fuel. It is found that due to deformation in the wire clip and filter bowl is causing the major problem. Hence analysis of the existing design is made and suggested the improved design using Finite Element Analysis. **Keywords:** FEA, Feed Pump, Filter-bowl, Fuel leakage **References:** 1. N.G. Pai, D.P. "Three-dimensional finite element analysis of threaded fastener Loosening due to dynamic shear load" Engineering Failure Analysis 9 (2002) 383-402. 2. Satoshi Izumi, Takashi Yokoyama, Atsushi Iwasaki, Shinsuke Saka did detailed study on fasteners. 3. Sotoshi izumi, Takashi Yokoyama, Masatake Kimura, Shinsuke Sakai, "Loosening-resistance evaluation of double-nut tightening method and spring washer by three-dimensional finite element analysis", Engineering Failure Analysis, Volume 16, issue 5, pages 1510-1519 4. Cisloiu, M. Lovell, J. Wang "Journal Finite Elements in Analysis and Design", Volume 44, Issue 8, May 2008, Pages 472-482R. 5. "Back to Elements- Tetrahedra Vs Hexahedra" Erke Wang, Thomas Nelson, Rainer Rauch, CAD-FEM GmbH, Munich, Germany 6. P. Beer, E. Russell Johnston, Jr., John T. Dewolf, "Mechanics of Materials", Ferdinand McGraw-Hill International Edition, 2002 7. S S Bhavikatti , "Strength of Materials", Vikas publication house pvt ltd. Third Edition-2008.		**67-72**
16.	**Authors:**	**Deepak Chopra, Dilip Vishwakarma**	
	Paper Title:	**Efficient Frequent Item set Discovery Technique in Uncertain Data**	
	Abstract: Frequent itemset mining, the task of finding sets of items that frequently occur together in a dataset, has been at the core of the field of data mining for the past sixteen years. In that time, the size of datasets has grown much faster than has the ability of existing algorithms to handle those datasets. Consequently, improvements are needed. In this thesis, we take the classic algorithm for the problem, A Priori, and improve it quite significantly by		**73-78**

introducing what we call a vertical sort. We then use the large dataset, web documents to contrast our performance against several state-of-the-art implementations and demonstrate not only equal efficiency with lower memory usage at all support thresholds, but also the ability to mine support thresholds as yet un-attempted in literature. We also indicate how we believe this work can be extended to achieve yet more impressive results

Keywords: Uncertain Databases, Frequent Itemset Mining, Probabilistic Frequent Itemsets.

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Authors: **Monika Agrawal, Pradeep Mishra**

Paper Title: **A Modified Approach for Symmetric Key Cryptography Based on Blowfish Algorithm**

Abstract: The principal goal of designing any encryption algorithm is to hide the original message and send the non readable text message to the receiver so that secret message communication can take place over the web. The strength of an encryption algorithm depends on the difficulty of cracking the original message. A number of symmetric key encryption algorithms like DES, TRIPLE DES, AES, BLOWFISH has been developed to provide greater security affects one over the other. Although the existing algorithms have their own merits and demerits but this paper presents a new approach for data encryption based on Blowfish algorithm. The blowfish algorithm is safe against unauthorized attack and runs faster than the popular existing algorithms. With this new approach we are implementing a technique to enhance the security level of blowfish algorithm and to further reduce the time for encryption and decryption.

Keywords: Symmetric Encryption, Asymmetric Encryption, Cryptography, Cipher text, Plain text, Decryption

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18.

Authors: **Ankur Kumar Shrivastava, Nitisha Payal, Abhinav Kumar, Amod Tiwari**

Paper Title: **Business Contingency Planning: A Road Map to Protect Company from Unforeseen Threats**

Abstract: Unforeseen threats never knock the door before their arrival; they just arrived and destroy everything that comes in the path. Establishing a secure business is not just about supply and demand. It is about the prevention and protection measures that you can put in place against cyber-crime, the consequences of an electronic attack, natural disaster, acts of terrorism and other events that would have a negative impact on your organization. In this paper our major focus on creating an effective and globally accepted business contingency plan, which is applicable on almost all type of business and their processes to handle any crises and smooth operation of their critical functions. This paper also focuses on need of BIA and discusses all the key aspect of BIA model for analysing the impact of an unforeseen threat over a business critical function. In this paper we also try to provide a complete overview of existing business contingency and risk assessment model.

Keywords: BCM (Business Continuity Management), BCP (Business Continuity Plan), BIA (Business Impact Analysis), DRP (Disaster Recovery Plan), Risk Rating, RTP (Risk treatment plan).

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19.

Authors: **Aminreza Noghrehabadi, Amin Samimi**

Paper Title: **Natural Convection Heat Transfer of Nanofluids Due to Thermophoresis and Brownian Diffusion in a Square enclosure**

Abstract: This paper reports a numerical study on natural convection heat transfer and fluid flow in a square cavity filled with CuO–Water nanofluids. Both upper and lower surfaces are being insulated, whilst a uniform constant temperature field applied in horizontal walls. The governing equations of fluid flow are discretized using a finite volume method with a collocated grid arrangement. The numerical results are reported for the effect of Rayleigh number, solid volume fraction and both presence and absence of thermophoresis and Brownian motion effects. The numerical results show that an improvement in heat transfer rate was registered for the whole range of Rayleigh numbers when Brownian and thermophoresis effects are considered.

Keywords: Natural convection; nanofluid; thermophoresis; Brownian motion; cavity

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Authors: **Saumen Chakraborty, Bishnu Charan Sarkar**

Paper Title: **Dynamics of a Nonlinear Digital Resonator in Free Running and Injection Synchronized Mode: A Simulation Study**

Abstract: The structure of a linear digital resonator (DR) has been modified to realize the digital equivalent of Vander Pol Oscillator and the modified system has been found to exhibit several nonlinear dynamical phenomena like synchronization, quasiperiodicity and chaos. Like its linear counterpart, the nonlinear DR can be implemented using common reliable building blocks and so the proposed system can be used as a chaos generator potentially useful in chaos-based communication systems. The dynamics of the nonlinear digital resonator has been studied through numerical simulation.

Keywords: chaos, nonlinear digital resonator, quasiperiodic , synchronization, Vanderpol oscillator.

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Authors: **Ankita Bharaktya, S.G.Reddy**

Paper Title: **Energy Efficient Query Optimization in Wireless Sensor Networks**

Abstract: A wireless sensor network (WSN) is a wireless network consisting of distributed autonomous devices using sensors to cooperatively monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants, at different locations. A WSN Consists of ten to thousand of sensor nodes that communicate through wireless channels for information sharing and cooperative processing. In this our main focus is on base station energy-efficient queries optimization. Different from existing query optimization techniques that consider only query plans for extracting data from sensors at individual nodes, our approach takes into account both of the sensing and communication cost in query plans. When a new query is submitted to the base station, we check whether the new query can be evaluated using the result of currently running queries. If it is possible then we rewrites a new query using currently running queries at the base station without injecting it into the sensor network. Thus optimizing the query processing in Wireless Sensor Network. Simulation results show queries transmitted in merging, rewriting query plans and shows the query plan chosen in our approach consumes significantly less energy than an approach that optimizes on sensing cost only.

Keywords: Energy Efficiency, Query Optimization, Query Sharing, Sensor Networks, Wireless Sensor Networks.

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22.

Authors: **Ajit Kumar Senapati, P.C.Mishra, B.C.Routra, Amitabha Biswas**

Paper Title: **An Extensive Literature Review on Lead Time Reduction in Inventory Control**

Abstract: This article provides a comprehensive introduction about the lead time reduction in inventory control

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research status in relevant fields from a different perspective. First, this paper proposes some key factors which should be considered in the lead time reduction studies; then, from the perspective of study scope, the current literatures are distinguished into four categories on the basis of years i.e. from year 1991 to 2000 is first part, second part is from year 2000 to 2004, third part is from year 2005 to 2008 and final part is from year 2008 to 2012. Literatures in each category are reviewed according to the key factors mentioned. The literature review framework in this paper provides a clear overview of the lead time reduction inventory study field, which can be used as a starting point for further research work.

Keywords: crashing cost, Inventory control, Inventory Model, Lead time, Safety stock

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Authors: **El Sayed M. Saad, Medhat H. Awadalla, Hosam Eldin I. Ali, Rasha F. A. Mostafa**

Paper Title: **Object Manipulation Using a Humanoid Robot**

Abstract: Interaction with its environment is a key requisite for a humanoid robot. Especially the ability to recognize and manipulate unknown objects is crucial to successfully work in natural environments. Visual object recognition, however, still remains a challenging problem. To get the robot capable of identifying the geometric shapes and colors of the objects, a vision system is proposed. The paper proposes a natural language understanding system also, where the robot will be able to effectively communicate with human through a dialogue developed in Arabic language. The developed dialogue and a dynamic object model are used for learning the semantic categories and object descriptions. In this paper, a robot will be developed to interact with the users performing some specified actions. Moreover, integration between the proposed vision and natural language understanding systems has been presented. Finally, a voice-based dialogue between the user and robot will be developed. Intensive experiments have been conducted indoor to address the validity of the complete proposed system. The achieved results show that the overall system performance is high compared with the related literature to the theme of this paper.

Keywords: Vision System, Speech system, object category recognition, Object Detection, Color detection, Natural Language Understanding, Ontology, Syntax, knowledge Representation, Semantic Networks, Motion System.

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24.

Authors: **Barun Mazumdar**

Paper Title: **A new Compact printed antenna for UMTS, WiMAX, HiPERLAN & WLAN applications**

Abstract: A single layer, single feed, multi frequency, and compact rectangular printed antenna is proposed. L slit is introduced at the right edge of the patch to study the effect of the slit on radiation behavior with respect to a conventional microstrip patch. An extensive analysis of the return loss, radiation pattern and efficiency of the

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proposed antenna is shown in this paper. Antenna size has been reduced by 80% when compared to a conventional rectangular microstrip patch.

Keywords: compact, multi frequency, slit, patch, printed antenna.

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25.

Authors: **Gaurav Dwivedi**

Paper Title: **An Ultra Wideband Wide Beam Strip line Fed Taper Slot Antenna for Active Phased Array Jammer**

Abstract: Multi octave bandwidth, wide scanning angle, small interelement spacing and mutual coupling between elements are some of the requirements of Active Phased Array (APA) used for EW Jammer applications. Taper Slot Antenna (TSA) represents a class of antenna elements which is capable enough to meet all these requirements. Keeping the properties of TSA in mind, a Strip line fed Taper Slot Antenna (TSA) has been designed and fabricated to serve as an Antenna element over a large bandwidth from 6 to 18 GHz for an Active Phased Array (APA). This Antenna Element exhibits some attractive features like wide beam width over a wide bandwidth, Gain for a high ERP, compactness and less mutual coupling. The simulated as well as the measured radiation pattern and VSWR have been presented and discussed in this paper. The Antenna element has been designed and optimized in CST Microwave.

Keywords: Taper Slot Antenna (TSA), Beam width, Strip line, Active Phased Array (APA), ECM.

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26.

Authors: **Alaknanda Mane, S.S.Pimplikar**

Paper Title: **Dispute Resolution Process in Construction Sector: Causes and Prevention**

Abstract: Over 200 construction contracts with DRBs start every year, worth over US $7 billion. An estimated 200 disputes are settled each year through the use of DRBs. More importantly, it is often reported that more disputes are avoided by ongoing interaction with the DRB than are actually heard.
Increased use of advisory opinions has contributed to the avoidance of disputes. This process is inexpensive, rapid, informal, and is implemented prior to the parties becoming entrenched in adversarial positions. The reported success of advisory opinions is nearly 100%.

Keywords: Increased use of advisory opinions has contributed to the avoidance of disputes.

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27.

Authors: **Parimal Kumar Giri, Akshaya Kumar Behera**

Paper Title: **Power of Network Stochasticity**

Abstract: Network coding protocol that allows intermediate nodes, not only to XORs packets together, but also to broadcast coded packets. The COPE system architecture is implementing between IP and MAC layers, which identifies coding opportunities and benefits from them by forwarding multiple packets in a single transmission using

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XORs. Our work is based on the theory of network coding, which allows the routers to mix the information content in the packets before forwarding them. Prior work on network coding is mainly theoretical and focuses on multicast traffic.

Keywords: Coded packets; Network coding; COPE; Opportunistic listening; Opportunistic coding

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Authors: **Raksha Iyer, R. M. Potdar, Neelam Dewangan, Jayant Rajpurohit**

Paper Title: **Advancement of Low-cost Medicare System for the Measurement of Physiological Parameters of Human Body**

Abstract: This paper represents a design and implementation of a reliable, cheap, low powered non-intrusive and accurate system that can measure many parameters of human body and keep the records of each patient. It gives an idea to make a database of each patient so that whenever the patient comes to the doctor he doesn't have to keep his record with him manually. Such a device can be handled by non technical personnel also and can be used both in small clinics and big hospitals. This paper is presented with a motto of saving time of both the doctor and patients. As the device can measure the vital signs in a very less time it can save time of doctor and no. of patients can be observed. This paper specifically deals with the signal conditioning and data acquisition of three vital signs: heart rate, body temperature, and weight. The vital signs that have been taken are temperature, heart rate and oxygen in blood,blood pressure and body mass index. The heart rate is measured by Heart beat sensor which works on the principle of light modulation by blood flow through finger at each pulse.To measure the oxygen amount in blood we use pulse oximeter. The pulse oximeter measures the ratio of red to infrared pulsating absorption, which is directly proportional to the oxygen saturation. The temperature is measured by using LM34 which measures the temperature directly in Fahrenheit and does not need external calibrations. And the weight is measured by load cell. Here a simple circuit is designed by using AT89S52 microcontroller as heart of the circuit. The three sensors are connected with microcontroller via signal conditioning equipments. The data is also easily accessible by both the doctor and patient as complete record of output can be generated by using VB as programming language.

Keywords: physiological parameter, vital signs of human body, blood Pressure, heart rate, obesity, BMI, oximeter.

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29.

Authors: **Anuj Kanchan, Shashank Dwivedi**

Paper Title: **Comparison of BER Performance in OFDM Using Different Equalization Techniques**

Abstract: The effects of frequency-selective channel conditions, for example fading caused by multipath propagation, can be considered as constant (flat) over an OFDM sub-channel if the sub-channel is sufficiently narrow-banded (i.e., if the number of sub-channels is sufficiently large). This makes frequency domain equalization possible at the receiver, which is far simpler than the time-domain equalization used in conventional single-carrier modulation. In OFDM, the equalizer only has to multiply each detected sub-carrier (each Fourier coefficient) in each OFDM symbol by a constant complex number, or a rarely changed value.

Some of the sub-carriers in some of the OFDM symbols may carry pilot signals for measurement of the channel conditions (i.e., the equalizer gain and phase shift for each sub-carrier). Pilot signals and training symbols (preambles).

Here we modelled OFDM system with equalizers. Two different equalizers, namely Zero Forcing (ZF) and Minimum Mean Square Error (MMSE), along with different tapping are used. The modulation with multicarrier is employed, which provides advantages like inter symbol interference (ISI) reduction, high reliability, and better performance in multi-path fading. These equalizers are adopted to remove the ISI generated in the transmitted data under various fading environments. The results show that, with MMSE and ZFE equalizers, the bit error rate (BER) performance is improved. Further, the BER performance of MMSE is superior to ZFE equalizer.

Keywords: Orthogonal Frequency Division Multiplexing (OFDM), multipath propagation, fading channel, inter symbol interference (ISI).

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Authors: **Amir Aliabadian, Ali Delavari Ghara**

Paper Title: **New Blind Digital Signature Based On Modified Elgamal Signature in Electronic Voting**

Abstract: The electronic election is an electoral system that allows voters to submit their vote with the highest safety and protection coefficient. Such electronic form of election can reduce holding costs and increase the public participation as well. The wide variety of Protocols in the fields of Electronic voting has been introduced, that each of these projects paid attention to how to have the safe and secure elections. Of course each of these projects had problems. With regard to the security and wide range of usage and high efficiency, the requirement for a blind digital signature mechanism seems to be necessary for the future information society. Then there should be embedded a way to eliminate the negative factors of progress. Chvam presented many projects in the field of blind signatures that each of them were provided in order to increase the security. Nowadays the use of the public key encryption systems is highly regarded. This paper presented a new generalized blind signature scheme based on modified Elgamal signature. The new design has an important property that ensures if a message is signed multiple times, the corresponding signatures are different (this property is one of the properties of Elgamal signature). This property in addition to the property of not to be identified of the blind signature is seen in our plan. In this new signature for reaching to our goal we used of number theory and Mathematical integrity techniques. With the blind signature scheme proposed in this paper, one with the use of quality of common Elgamal signature can produces the blind signature. New design in comparison with RSA blind signature scheme has less computational complexity and is faster as well. Our plan which is presented in comparing to the previous blind signatures which were based on the modified Elgamal signature has less computational complexity.

Keywords: blind signature, Elgamal signature, Number theory, RSA blind signature

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31.

Authors: **Meysam Chegini, Milad Chegini, Payam Khazael Pour, Bani Rezaei**

Paper Title: **Design Analysis and Characterization of a Piezoelectric Actuated Microvalve for Drug Delivery Applications**

Abstract: one of the stumbling blocks for successful miniaturization and commercialization of fully integrated micro fluidic systems was the development of reliable micro valves. In this study, a micro valve is designed and analyzed by employing two analytical software's namely ANSYS and FLUENT. This work gives also a brief overview of micro valves, actuation mechanisms and focuses on piezoelectric as one type of actuation mechanisms. Applications of the micro valves include flow regulation, on/off switching and sealing of liquids, gases or vacuums. Even though great progress has been made during the last 20 years, there is plenty of room for further improving the performance of existing micro valves. Results showed that maximum displacement is at the forward of the beam and FLUENT software demonstrated the logical response about behavior of fluid passing through channel of the micro valve system

Keywords: Micro valve, piezoelectric, analytical analysis, miniaturization

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6. ANSYS, GAMBIT & FLUENT software

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32.

Authors: **S.A.N. Sandeep, P. Malyadri**

Paper Title: **ARM-based Embedded Ethernet Interface Design Using DAC System**

Abstract: Now a days we are using many Networked embedded systems for monitoring and control the home or industrial devices. With the scalable networking solution The server enables Web access to distributed measurement/control systems and provides optimization for educational laboratories, instrumentation, Industrial and home automation. Currently device with microcontroller has been widely used in industrial field. However, a large

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number of devices don't have the network interface and the data from them can not be transmitted in network. A design of ARM processor-based embedded Ethernet interface is presented. In the design, an existing SPI serial device can be converted into a network interface peripheral to obtain compatibility with the network. The design mainly consists of SPI communication module, processor module and Ethernet interface module. In the design, embedded real time operating system μC / Linux is transplanted into the microcontroller LM3S8962 and the data can be transmitted between remote SPI serial devices and host computer. After the design is completed, the system is tested and the results show that Ethernet is connected between the host and ARM Cortex and the terminal data can be transmitted via Ethernet.

Keywords: ARM processor; interface; Ethernet; SPI, Linux

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33.

Authors: **Amir Aliabadian**

Paper Title: **Zone Radius Optimization Based On Maximum Node Velocity, Number of Transmitting Nodes and Total Number of Nodes**

Abstract: ZRP (Zone Routing Protocol) is a hybrid routing Protocol specifying routs within a region of a network, called routing zone. ZRP can be configured for a particular network by adjusting the routing zone radius. Routing zone radius (R) is defined based on the number of hops. So, a routing zone maintains some nodes that their distances to a specified node are at most R hops. In fact, ZRP is designed for optimizing the (Query/reply) mechanism efficiency. ZRP is a combination of proactive and reactive protocols; within the zone, it is in proactive and between zones is reactive. The first one is called IARP and the latter one IERP. In this paper, we intend to evaluate the ZRP Performance in a network. To do this, we change the zone radius and performance is evaluated by measuring the control traffic generated during routing process. In fact, control traffic is viewed as the sum of the IARP routing update packets and the transmission of IERP request/reply/failure packets. Our results determine the optimum zone radius considering the node velocity, the number of transmitting nodes and the total number of nodes.

Keywords: Zone routing protocol, Ad-hoc networks, zone radius, node velocity.

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34.

Authors: **Vibha Pandey, Sanjivani Shantaiya**

Paper Title: **A Novel Approach for Signature Verification using Artificial Neural Network**

Abstract: This paper presents a new technique for off-line signature verification and recognition. The proposed system is based on morphological features (Shape features).Feature extraction stage is the most essential and difficult stage of any off-line signature verification system. The accuracy of the system depends mainly on the effectiveness of the signature features use in the system. The present research work incorporates a novel feature extraction technique for off-line signature verification system. There are nine features extracted from a static image of signatures using this technique. From the experimental results, the new features proved to be more robust than other related features used in the earlier systems. This approach is implemented in MATLAB and it verifies signatures taking into consideration several novel features and success rate achieved is 99.5%.

Keywords: Signature, Morphological, Feed Forward Neural Network, Feature Extraction, offline- signature recognition & verification.

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35.

Authors: **Pushpendra Singh, Om Prakash Yadav, Yojana Yadav**

Paper Title: **ECG Signal Compression Implementation by a New 2-Dimensional Transform Technique**

Abstract: Electrocardiogram signal compression algorithm is needed to reduce the amount of data to be transmitted, stored and analyzed, without losing the clinical information content. This work investigates a set of ECG signal compression schemes to compare their performances in compressing ECG signals. These schemes are based on transform methods such as discrete cosine transform (DCT), fast fourier transform (FFT), discrete sine transform (DST), and their improvements. An improvement of a discrete cosine transform (DCT)-based method for electrocardiogram (ECG) compression is also presented as DCT-II. A comparative study of performance of different transforms is made in terms of Compression Ratio (CR) and Percent root mean square difference (PRD).The

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appropriate use of a block based DCT associated to a uniform scalar dead zone quantiser and arithmetic coding show very good results, confirming that the proposed strategy exhibits competitive performances compared with the most popular compressors used for ECG compression. Each specific transform is applied to a pre-selected data segment from the CSE database, and then compression is performed.

Keywords: Compression Ratio, Compression factor, Compression time, ECG, PRD.

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36.

Authors:	**N. Rajasekhar Reddy, R.Saraswati**
Paper Title:	**Intelligent Classification and Retrieval of Software Components**

Abstract: This work proposes a new methodology for smart classification and retrieval of software mechanism based onuser–defined necessities. The classification proposal utilizes a dedicated genetic algorithm which evolves a tiny number of classifiers by dividing the position of available components stored in a database into positive subsets (clusters). Each classifier consequently becomes the leader-representative of its cluster. When a customer wishes to trace a component he/she identifies the preferred characteristics (component profile) which are then compared with the distinctiveness of the available classifiers. The neighboring classifier matching the required distinctiveness over a user-defined threshold will effect in the "winning" set of components belong to its cluster that is accessible to the user in descending matching strength. We have validated our methodology over a artificial dataset of components and the consequences obtained were very encouraging. Last, we here the web application developed to bear the proposed intelligent categorization method.

Keywords: Each classifier consequently becomes the leader-representative of its cluster

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	Authors:	**Md. Anisa Shereen**
	Paper Title:	**Optimal Allocation of DG Units for Radial Distribution Systems using Genetic Algorithm**

37. **175-179**

Abstract: This paper proposes a Genetic Algorithm (GA) based technique for the optimal allocation of Distributed Generation (DG) units in the power systems. In this paper the main aim is to decide optimal number, type, size and location of DG units for voltage profile improvement and power loss reduction in distribution network. GA fitness function is introduced including the active, reactive power losses and the cumulative voltage deviationvariables with selecting weight of each variable. Two types of DGs are considered and the distribution load flow is used to calculate exact loss. Load flow algorithm is combined appropriately with GA till access to acceptable results of this operation. The suggested method is programmed under MATLAB software. The effectiveness of the proposed methodology was tested on Standard IEEE33 bus system and found maximum loss reduction for each of two types of optimally placed multi-DGs.

Keywords: Genetic Algorithm, Distributed Generators, Cumulative Voltage Deviation, Active and Reactive Power Loss, Weight, Load Flow.

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	Authors:	**P. K. Trivedi, N. B.Vasava**
	Paper Title:	**Effect of Variation in Pitch of Tube on Heat Transfer Rate in Automobile Radiator by CED Analysis**

38. **180-183**

Abstract: The demand for more powerful engines in smaller hood spaces has created a problem of insufficient rates of heat dissipation in automotive radiators. This has lead to the increased demand on the power packed radiators, which can dissipate maximum amount of heat for any given space. The geometry of the finned-tube heat exchanger is an intricate one and there are no analytical optimization schemes available to optimize their design, while experimental trial and error is far too time consuming. The radiator designs at present depend on the empirical methods, wherein existing experimental data is used as the thumb rules for the design process. However, for any preliminary design the performance of the radiator can be accessed through Computational Fluid Dynamics (CFD) in prior to the fabrication and testing. In this thesis, first of all solid modeling of heat exchanger in Solid works is prepared and then this solid model is transferred to ANSYS Workbench mesh module for meshing. After completing meshing, this meshed model is transferred to ANSYS CFX for CFD Analysis. Once CFD Analysis is completed with ANSYS CFX, all the flow parameters like heat transfer rate, temperature contour etc. is identified. After getting all the flow parameter it is possible to examine how the heat transfer rate of radiator can be enhanced. For that purpose one geometrical parameter e.g. pitch of tube is varied. As a result of this parametric study, the effect of pitch of tube for best configured radiator for optimum performance is suggested.

Keywords: CFD, Heat transfer, Modeling, Pitch, radiator design, Simulation, etc.

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Authors: **R.Naveen, K.Thanushkodi, C.Saranya**

Paper Title: **Sleep Pass Gate Approach for Static Power Reduction in 8*8 Wallace Multiplier**

Abstract: As the VLSI technology and supply/threshold voltage continue scaling down, leakage power has become more and more significant in the power dissipation of today's CMOS circuits. The leakage power dissipation is projected to grow exponentially during the next decade according to the International Technology Roadmap for Semiconductors (ITRS).This affects the portable battery operated devices directly. The multipliers are the main key for designing an energy efficient processor, where the multiplier design decides the digital signal processors efficiency. In this paper, a sleep pass gate method is used to reduce the static power dissipation in 8*8 Wallace tree multiplier architecture which has been designed by using 1-bit full adders. This method uses two complementary sleep transistors connected in parallel forming a gate pass structure. In our proposed leakage reduction method, the actual output logic state is maintained in both active and standby mode of operation. The main objective of our work is to calculate leakage power in 8*8 Wallace tree multiplier with sleep pass gate and it is compared with the 8*8 Wallace tree full adder multiplier. The proposed method reduces upto half of the static power dissipation with lesser area and delay.

Keywords: Static leakage power, Sleep transistor, Subthreshold leakage, Wallace multiplier, 1- bit full adder

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Authors: **Y. Jahnavi, Y. Radhika**

Paper Title: **A Cogitate Study on Text Mining**

Abstract: The vast amount of digitalized textual content has given rise to the need for sophisticated text mining techniques. Text Mining is the process of analyzing and extracting the useful information from a set of semi structured and unstructured documents by applying machine learning and natural language processing techniques. It is easy for the people to assimilate from the categorized text documents. Even though a large research has evolved into this problem, there is a survey that indicated trends and directions. In this paper a cogitate study on preprocessing, term weighting algorithms, concept based term weighting algorithms, pattern discovery, categorization, domain ontology based frame work for text mining and summarization techniques is presented. In addition, a number of successful applications of text mining are discussed.

Keywords: Classifiers, Term Weighting, Text Mining.

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Authors: **Saumendra das, Prasant Kumar Padhy, K.Venugopal, Santosh Ranganath .N**

Paper Title: **Supply Chain Management: A Business Centric Approach**

Abstract: Many research personnel’s primary attention in the study of supply networks has focused on the product or transportation mechanism and also on the relevant information flows, much less central to the study of supply chain management and its inherent bond with cash flows. Networked organizations are receiving increasing attention in management literature because of their perceived success in terms of fast growth, increased flexibility and efficiency of operations, lower overhead costs, and effective competitive positioning. For all firms, the choice of which activities to perform internally and which to outsource is a critical issue. Cost information can play a fundamental role in the decision about how much “market” and how much “hierarchy.” Indeed, outsourcing is, basically, a cost and benefits evaluation. Management accounting and strategic management studies have, so far, not addressed this perspective explicitly. Management accounting is too internally focused on the costs of the firm rather than the entire supply chain. The strategic management perspective, on the contrary, focuses its attention on the supply chain, but only deals very generally with those transaction costs which emerge while using the market. Both

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approaches fall short in providing a well articulated financial rationale for the segregation, which activities should be outsourced and which should be entrusted to the market. Neither approach does much to help managers understand where value is created in the value chain, nor the costs of the activities involved including their cost drivers. Cash Flow Management (CFM) studies provide a useful cost analysis framework which is too often missing in the strategic decision making process. Competitive analysis, value or supply chain mapping, and cost driver analysis are, in particular, the tools of CFM. This paper considers a number of central issues related to the study of this under-researched issue. Specifically, we raise the issues of cash flows and their cost as well as risk implications, explore the value that can be derived from optimizing and reorganizing cash flows, and consider the role of current banking services arrangements and their implications for change and improvement of cash flows in supply chain networks where both vertically integrated and network organizations exist. The financial impact arising because of the complexity involved in different organization models and its impact on profitability and competitive position is our main theme.

Keywords: Multinational companies; Key resource area; Cash flow management; HP; SCOR and GSC

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42.

Authors: **Mangala S Joshi, K Nirmala Kumari, Saumil G Merchant**

Paper Title: **Job Execution Framework for Performance Testing**

Abstract: Performance Testing [2] determines the system behavior under specific system workloads. The process involves identifying the attributes and acceptance criteria followed by design of tests and configuration of test environment. These tests are implemented and executed on the system. Validation of tests, results collection and analysis of the same is carried out in the next step. Implementing and executing a number of tests either at the instant or schedule it to execute at a particular time on the system would be easier and helpful as it saves tester's effort and time. Job Execution Framework (JEF) is generic in nature and fulfills the above requirement. It supports 10 functions of which 8 are open to users. This paper gives detailed description of all the functions and their usage.

Keywords: JEF

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43.

Authors: **Akshay Goswami, Roopali Goel**

Paper Title: **Security and Privacy in Vanets**

Abstract: Technologies have both advantages and disadvantages. Now a day's a vehicle can be tracked by its location, traffic status and position based on transmission of signals, when vehicles communicated to other vehicles.

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In the above paper, we discuss the different aspects of security and privacy measures in VANET'S. Vanet communication can be enhanced to provide optimized working of security and privacy measures, for flexible communication between interconnected vehicles..

Keywords: Now a day's a vehicle can be tracked by its location

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44.

Authors: **Manjunath Lakkannavar, Ashwini Desai**

Paper Title: **Design and Implementation of OFDM (Orthogonal Frequency Division Multiplexing) using VHDL and FPGA**

Abstract: Orthogonal Frequency Division Multiplexing (OFDM) is a multi carrier modulation technique which divides the available spectrum into many carriers. OFDM uses the spectrum efficiently compared to FDMA by spacing the channels much closer together and making all carriers orthogonal to one another to prevent interference between the closely spaced carriers. OFDM provides high bandwidth efficiency because the carriers are orthogonal to each others and multiple carriers share the data among themselves. The main advantage of this transmission technique is their robustness to channel fading in wireless communication environment. The main objective of this project is to design and implement a base band OFDM transmitter and receiver using FPGA. This project focuses on the core processing block of an OFDM system, which are the Fast Fourier Transform (FFT) block and the Inverse Fast Fourier Transform (IFFT). The work also includes in designing a mapping module, serial to parallel and parallel to serial converter module. The 8 points IFFT / FFT decimation-in-frequency (DIF) with radix-2 algorithm is analyzed in detail to produce a solution that is suitable for FPGA implementation. The FPGA implementation of the project is performed using Very High Speed Integrated Circuit (VHSIC) Hardware Descriptive Language (VHDL). This performance of the coding is analyzed from the result of timing simulation using Xilinx.

Keywords: FFT, FPGA, IFFT, OFDM, VHDL

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45.

Authors: **Rakesh Kumar, Jyotishree**

Paper Title: **Novel Encoding Scheme in Genetic Algorithms for Better Fitness**

Abstract: Genetic algorithms are optimisation algorithms. Every search and optimisation algorithm needs a representation which represents a solution to a specific problem. The major issue is to represent the parameter of the problem in the form of the chromosome. Choosing the right method of encoding chromosome is a crucial task and largely effects solving of optimization problem. This paper studies different encoding techniques and their associated genetic operations and then proposes a new encoding scheme to overcome the limitations of existing encoding techniques.

Keywords: building blocks, encoding, genetic algorithm, schema theorem.

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46.

Authors: **S. M Rajbhoj, P. B. Mane**

Paper Title: **An Improved binarization based algorithm using minutiae approach for Fingerprint Identification**

Abstract: The long history of fingerprint, their extensive use in forensics and with need of automatic personal identification in recent years, fingerprints is receiving a lot of attention. There is misconception that fingerprint identification is a fully solved problem. However numerous fingerprint systems currently available which use minutiae based approach still do not meet performance requirement of several civilian applications. Performance of these systems degrades with deterioration in the quality of fingerprint image. In absence of an a priori enhancement step most of the binarization based techniques do not provide satisfactory results when applied to low quality images. Thus trying to eliminate these shortcomings we present an improved approach for fingerprint recognition providing accurate automatic personal identification. In this approach we use optical sensor which captures image of excellent quality with large capture area and superior reliability. The recognition algorithm first use histogram equalization technique to improve the global contrast of an image, then enhancement of the image is done by an efficient enhancement technique. We then use binarization based method to extract minutiae. False minutiae are removed using thresholding technique. The matching is based on determining the total number of matched minutiae based on Euclidian distances. This system is tested on two different databases. The experimental result shows that incorporating a fast enhancement technique and using an optical scanner increase the accuracy of the system for lower values of False accept rate.

Keywords: Fingerprint identification, Minutiae, Enhancement, Binarzation, Extraction, Thresholding, Euclidian distances.

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47.

Authors: **Jyoti Jadhav, Lata Ragha, Vijay Katkar**

Paper Title: **Incremental Frequent Pattern Mining**

Abstract: Association rule discovery is widely used Data Mining technique for Market Basket Analysis. It discovers interesting correlations and frequent patterns from the database. In real life, new transactions are continuously added to the database as time advances. This result in; periodic change in correlations and frequent patterns present in database. Incremental Association Rule mining is used to handle this situation. Most of the existing Incremental rule mining methods are highly dependent on availability of main memory. If sufficient amount of main memory is not available, they fail to generate the results. This paper presents a novel method for incremental discovery of frequent patterns using Main Memory database Management System to eliminate this drawback. Experimental results are provided to support the efficiency of proposed method.

Keywords: Apriori, FP-tree, Incremental Association Rule Mining, Main memory database Management System

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Authors:	**B.S.Vamsi Krishna, P.Satheesh, Suneel Kumar R.**
Paper Title:	**Comparative Study of K-means and Bisecting k-means Techniques in Wordnet Based Document Clustering**

Abstract: Document clustering plays major role in the fast developing information explosion. It is considered as tool for performing information based operations. Document clustering generates clusters from whole document collection automatically and used in many fields. It is the process of grouping text documents into category groups. It has found applications in various domains in information retrieval and web information systems. Ontology-based computing is considered as a natural evolution of existing technologies to cope with the information onslaught. In current paper, background knowledge derived from Word Net as Ontology is applied during preprocessing of documents for Document Clustering. Document vectors constructed from WordNet Synsets is used as input for clustering. Comparative analysis is done between clustering using k-means and clustering using bi-secting k-means. Results indicate that the bi-secting k-means clustering technique is better than standard k-means clustering technique. These results based on the analysis of specifics of clustering algorithm and nature of document data.

Keywords: bisecting k-means, document clustering, standatd k-means, wordnet.

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Authors: **Madhusudan Ghosh, Tanmoy Banerjee, Bishnucharan Sarkar**

Paper Title: **Nonlinear Dynamics and Chaos in Second Order ZC1- DPLLs with Inherent Time Delay**

Abstract: The present paper examines the dynamics of a delayed second order zero crossing digital phase locked loop (DSZC1-DPLL). Some inherent time delay is inevitable in the loop response due to the non-ideal behaviour of loop digital filter and other constituent blocks. The possibility of chaos and bifurcation in the system has been investigated analytically and numerically. Since the order of the second order loop increases due to loop time delay, the stability limit of the loop will be decreased. Further the inherent time delay in the loop results in period doubling route to chaos. The stability and nonlinear dynamical behaviour of the delayed system has been investigated through standard technique of stability analysis. Chaotic dynamics of the system has been quantified with the help of nonlinear dynamical measures like bifurcation diagram, Lyapunov exponent, Correlation dimension, Kolmogorov entropy etc.

Keywords: ZC1-DPLL, Loop time delay, Stability Zone, Bifurcation Diagram, Layapunov Exponent, Correlation dimension, Kolmogorov entropy.

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Authors: **Daljit Singh, Kamaljeet Kaur**

Paper Title: **Classification of Abnormalities in Brain MRI Images Using GLCM, PCA and SVM**

Abstract: Accurate automatic detection and classification of images is very challenging task whether they are medical images or other natural images. This paper presents a hybrid technique for automatic classification of MRI images as well as natural images. The proposed method consists of two stages: feature extraction and classification. In first stage, features are extracted from images using PCA and GLCM. In the next stage, extracted features are fed as input to SVM classifier. It classifies the images between normal and abnormal along with type of disease depending upon features. Also it classifies between natural images. For Brain MRI images; features extracted with GLCM gives 100% accuracy with SVM -RBF kernel function. Similarly for natural images; features extracted by GLCM gives 91.67% accuracy with SVM-RBF kernel function. Software used is MATLAB R2011a. Main focus is given on Brain MRI images classification as it deals with precious human life.

Keywords: Feature, GLCM, Kernel, MRI, PCA, SVM.

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51.

Authors: **Navneet Sharma, Vijay Singh Rathore**

Paper Title: **Role of Biometric Technology over Advanced Security and Protection in Auto Teller Machine Transaction**

Abstract: In modern era, security is one of an important tool of each organization. If we talk about money it gives

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major importance. In the banking system, it is also a very confidential issue. The major issue in each bank to safeguard the public deposits and to provide better and effective liquidity. For this purpose, the ATM was developed to facilitate cash availabity to the consumers (public) in any time i.e. 24 X 7.

The main object of ATM machines to keep safeguard of money and provide availability of cash very fast. But, in present era, there are several security problems arise in ATM's. The customers are very conscious about their funds and they afraid to use the machines. Over the last few years banking and Auto Teller Machine frauds increasing day by day. For banking financial operation user are now more dependent on ATM outside the bank premises .Mostly bank are providing the single (PIN) password authentication to their customers for ATM transactions but now a day it is not sufficient to protect the information and verify the authentic user. It is so easy for fraudsters to get the PIN and make fake operation on ATM. To protect these type of frauds bank can use dual user verification system so that banking operations make more safe. To make dual verification system we can use any biometric technology for security. In this paper, different biometric techniques related security topics regarding ATM has been discussed. An effort has been made to explain these issues in easy language in a layman style so a layman can understand it easily. in this paper list few biometric technologies which may use for dual authentication and user verification.

Keywords: Auto Teller Machine, Biometric, Fingerprint, Iris, PIN, Vein Pattern.

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52.

Authors: **Rakesh Birle, Lalit Bandil**

Paper Title: **Design and FPGA Implementation of Systolic Array Architecture for Matrix Multiplication**

Abstract:
Matrix multiplication is the kernel operation used in many image and signal processing applications. This paper demonstrates an effective design for the Matrix Multiplication using Systolic Architecture. This architecture increases the computing speed by using the concept of parallel processing and pipelining into a single concept. The selected platform is a FPGA (Field Programmable Gate Array) device since, in systolic computing, FPGAs can be used as dedicated computers in order to perform certain computations at very high frequencies. The description language used as an entry tool to model the hardware architecture is VERILOG HDL.

Keywords: FPGA implementation, Matrix multiplication, Systolic Arrays, VERILOG HDL.

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53.

Authors: **Sable K.S., Patil Archana A**

Paper Title: **Comparision between Optimization and Conventional Catilever Retaining Wall by Using Optimtool in Matlab**

Abstract: Optimization of concrete retaining walls is an important task in geotechnical and structural engineering. However other than stability considerations very often in such design the settlement aspects is neglected. As such, attention to various aspects of geotechnical engineering design needs to be considered. However, consideration of all these aspects makes the design complicated. To economize the cost under such situation needs to vary the dimensions of the wall several times making it very tedious and monotonous. As it is extremely difficult to obtain a design satisfying all the safety requirements, it is necessary to cast the problem as one of the mathematical non linear programming techniques. A program is developed for analysis and designing low-cost or low-weight cantilever reinforced concrete retaining walls with and without base shear key in matlab for optimtool. The optimtool is used to find the minimum cost and weight for concrete retaining walls. Illustrative cases of retaining wall are solved, and their results are presented and discussed by using Interior point method from optimtool. The comparison between the

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conventional design from known designer and optimum cost and weight values which are observed from optimtool shows effectively by cost and weight minimization model and graph. The optimum design formulation allows for a detailed sensitivity analysis to be made for variation in top thickness of stem, surcharge load and internal angle of friction with different height.

Keywords: Optimization, Minimum cost, Interior point method,

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54.

Authors: **Ashish Xavier Das, Charlie Eapen, A. Ashok, Sudhanshu Tripathi, Ridha Mabruk Shadi**

Paper Title: **Dynamic Event Based Energy Efficient Routing Protocol For Wireless Sensor Networks (WSNs)**

Abstract: Wireless sensor networks (WSNs) are being increasingly deployed for various applications such as object tracking and monitoring, precision agriculture, controlling nuclear reactors, detecting seismic activities, security and surveillance, navigational activities, industrial automation, and so on. The main purpose of such networks is to gather information from the environments and deliver the same to the applications. The smartness in functioning of smart environments rely primarily on gathering sensory data through WSNs. The sensor nodes are typically resource deficient with energy being the most critical of all the resources. The nodes in a WSN are connected typically to a powerful controlling node called the base station.

Keywords: Wireless Sensor Network (WSN), EBEERP, LEACH, PEGASIS, Data Gathering Decimation (DGD), Cluster-Head (CH).

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55.

Authors: **M.Seetha, Y.J.Sudha Rani**

Paper Title: **A Comprehensive study on threat classification and security service in P2P**

Abstract: Peer-to-Peer overlay network provide various services for the feature of storing, discovering and locating resources efficiently. P2P platform raise more security-related challenges while providing more services. WhenP2P security mainly focusing on the security problems on Overlay, this paper first shows the how to we classify threat. and how to we provide the security mechanisms to that network. This paper also discuss about the various security services.

Keywords: peer peer, threat classification, security services, overlay, underlay

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Authors: **P.C.Chenna Reddy, R. Siva Sankara Reddy**

Paper Title: **K- Means Algorithm with Different Measurements in Clustering Approach**

Abstract: Clustering techniques have been used by many intelligent software agents in order tretrieve, filter and categorize document available on the World Wide Web .Clustering isalso useful in extracting salient features of related web documents to automatic ally formulate queries and search for other similar documents on the Web. In this paper, we introduce two new clustering algorithm withs K-Means Clustering in GeneLinker™ that can effectively cluster documents, even in the presence of a veryhighdimensional feature space.These clusteringtechniques, which are based on generalizations of graphpartitioning, do not require prespecifiedad hoc distance functions, and are capable of automatically discovering document similarities or associations. We conduct several experiment son real Web data using various feature selection and find out the no off clusters in the data documenting this paper also discuss about the real example. In this example we are find out the no.Of clusters.

Keywords: clustering, categorization, World Wide Web documents, K-means alogrithmg, Genelinker ™

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Authors: **Nanda Kumar Easwaramoorthy, R. Dhanasekaran**

Paper Title: **Optimal Solution Of 14 Bus System Using MATLAB Simulation Incorporating With FACTS Devices**

Abstract: This research work presents a new approach for optimal location of FACTS controllers in a multi machine power system using MATLAB coding. Using the proposed method, the location of FACTS controller, their type and rated values are optimized simultaneously. Among the various FACTS controllers, Thyristor Controlled Series Compensator (TCSC) and Unified power Flow Controller (UPFC) are considered. Optimal Power Flow (OPF) is one of the most important processes in power system, which improves the system performance by satisfying certain constraints. Generally, different optimization methods are used in the literature to solve the OPF problem. In some research works, the optimization process is done by considering total fuel cost or by considering the environmental pollution that occurs during power generation. But in some other research works, FACTS controllers are used to improve the power flow without considering the power generation cost.

The OPF problem is one of the most extensively studied topics in the power system community. In power system operation, OPF is an extended problem of economic dispatch (ED) which consider several parameters such as generator voltage, transformer tap change, SVC, and include constraints such as transmission line and transformer loading limits, bus voltage limit, and stability margin limit . The main function of OPF is to select the optimal operation state of a power system, in the time of meeting some particular constraints. OPF study plays a key role in the Energy Management System (EMS), where the entire operation of the system is regulated in each possible real time intervals.

Keywords: OPF, EP, TS, SA, ITS, IEP, TCVR, FACTS controller, SVC, UPFC

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Authors: **P.Muralidhar, A.Vishnupriya, C.B.RamaRao**

Paper Title: **Complexity Reduction of Fast Block Matching Algorithm**

Abstract: This paper presents a new block matching motion estimation algorithm using the macro block features to reduce the computational complexity of motion estimation in video encode applications. Motion estimation block is the computationally intensive block in video encoders. To reduce computational cost various motion estimation algorithms have been proposed. Global Elimination is an algorithm based on pixel averaging to reduce the complexity of motion search while keeping performance close to that of full search. Here adaptive version of Global elimination is proposed that uses macro block features like variance and Hadamard transform to further reduce the computational complexity of motion estimation. Performance achieved is close to the full search method and global elimination. Operational complexity is reduced compared to global elimination method.

Keywords: Block Matching Motion Estimation Algorithm, Global Elimination, Matching complexity reduction, Feature based partitioning.

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Authors: **Arun Kumar Shukla, Sudhanshu Tripathi, Charlie Eapen, A. Ashok**

Paper Title: **Ambient Data Collection with Modeling and Implementation of QoS in Wireless Sensor Networks**

Abstract: One of the most important applications for wireless sensor networks (WSNs) is Data Collection, where sensing data are collected at sensor nodes and forwarded to a central base station for further processing. Since using battery powers and wireless communications, sensor nodes can be very small and easily attached at specified locations without disturbing surrounding environments. This makes WSN a competitive approach for data collection comparing with its wired counterpart. With these features in mind, we then discuss issues and prior solutions on the data gathering protocol design. Our discussion also covers different approaches for message dissemination and problem of Quality of Service (QoS) provisioning to assess the relevance of using multipath routing to improve the reliability and packet delivery in wireless sensor networks while maintaining lower power consumption levels, which is a critical component for network control and management and greatly affects the overall performance of a data collection WSN system.

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Keywords: Wireless Sensor Network (WSN), Quality of Service(QoS), Dynamic Source Routing (DSR), Ad hoc

On-demand Distance Vector (AODV), ECMP.

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Authors: **G. Suresh, T.V. Sreerama Reddy**

Paper Title: **Analysis of Spasm and Periodic Leg Movement in Spinal Cord Injury**

Abstract: Spinal Cord Injury (SCI) is an injury to the spinal cord that results in paralysis and loss of sensation. Successful recovery depends upon how well these chronic conditions are handled day to day. SCI people have very often periodic leg movement and severe spasm. Both are serious problems in the SCI population which is not always managed effectively. This is likely due to the fact that the syndrome can have various presentations, each with their own specific etiology. Hence this paper presents the overview of analysis of spasm and periodic leg movement in spinal cord injured persons using electro-myogram signals. There is a need for better understanding the syndrome of periodic leg movement and spasticity in SCI persons. So, the main purpose of this paper is to provide an integrated source of information that reflects the most useful knowledge about the main problems of SCI like periodic leg movement and severe spasm from different perspectives.

Keywords: Spinal cord injury, Periodic leg movement, Spasticity, Electromyogram

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Authors: **Ranjan Sarukkalige**

Paper Title: **Management of Storm Water Quality in Urban Areas**

Abstract: The main aim of this paper is to highlight the importance of the management of storm water quality in enhancing their activities to improve regional water quality. The procedure on developing storm water management strategies consists of reviewing existing water quality data, identifying water quality issues and developing a decision making tool for the officers, managers and decision makers. It was found that land use activities are the main factor affecting the water quality. Therefore, activities, sources and pollutants related to different land use types including residential, industrial, agricultural and commercial are given high importance during the study. Different management groups and authorities were analyzed in order to understand the associated management framework and issues. The issues identified were used in preparing the decision making tool. Variables associated with the defined "value versus threat" decision making tool are obtained from the intensive literature review. The main recommendations provided for improvement of water quality, include non-structural, structural and management controls.

Keywords: Storm water, water quality management, pollutants, land use.

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Authors: **Manisha Bajpai**

Paper Title: **Effectiveness of Developing Concepts in Photo Electric Effect Through Virtual Lab Experiment**

Abstract: The ultimate goal of the authors is to examine the effectiveness of virtual labs as an instructional tool; and initial purpose here is to glean student perceptions of the tool from an evaluative perspective. In this way the purpose of this study was to investigate the effect of Virtual Lab Experimentation (VLE) on students' conceptual understanding of photo electric effect. To achieve this, a pre–post comparison study design was used that involved 50 undergraduate students. Two groups were set up for this study. Participants in the control group used RLE to learn photo electric effect, whereas, participants in the experimental group used VLE. Achievement test was given to the groups before and after the application as pre-test and post test. The independent samples t- test, were used for testing the data obtained from the study. According to the results of analyzes, the experimental group was found more successful than the control group. It is hoped that findings from this study will provide useful information for instructional improvement as well as adding to the literature in this area

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Keywords: Computer Based Teaching, Java, Physics Education, Virtual Laboratory.

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