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Authors: Thilagavathi K, Kavitha M

Paper Title: Spark Med: A Framework for Multimedia Medical Data Integration of Adaptive Mobile Object in Heterogeneous Systems

Abstract: Spark Med is Self-managing, Pervasive Automated netwoRK for Medical Enterprise Data (SparkMed). It is a framework for mobile healthcare which is obtained from the improved network wireless technologies. It allows a wide range of heterogeneous medical software and database system to be dynamically incorporated in to peer to peer multimedia data. SparkMed incorporates techniques from multimedia streaming, rich Internet applications (RIA), and remote procedure call (RPC) .This framework allows medical data applications to share data among mobile host over wireless.

Keywords: RPC, RIA, HL7; Automated systems; biomedical engineering; handheld computing; m-Health; middleware.

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Authors: Wasen Abdul Ameer Ali, Wisam Abdul Ameer Farid, Abdul Muttalib Abdullah Al-Eed

Paper Title: Hydrocarbons Distribution in Shatt Al-Arab River Bacteria and Fungi

Abstract: The hydrocarbons in bacteria and fungi of Shatt Al-Arab River were estimated. The bacteria contained n–alkanes from C13 to C33. While, the n-alkanes in fungi ranged from C13 to C35. The two patterns of carbon atoms numbers of n–alkanes were observed in bacteria, the low molecular weight (<20) with the predominance of C16 to C19 and the high molecular weight (>20) with the predominance of C21, C22, and C24 to C29. In fungi, the carbon atoms numbers of n-alkanes were characterized by the other two patterns, the first in the range C13 to C23 with the predominance of C13, C14, C16 and C19 to C22, and the second in the range >23 with the predominance of C27 to C30. The pristane compound was only revealed in fungi samples. The distribution patterns of carbon atoms numbers of n-alkanes and the carbon preference index (CPI) values of bacteria and fungi suggested the biogenic origin of hydrocarbons.

Keywords: Shatt Al-Arab River, biogenic hydrocarbons, bacterial hydrocarbons, fungal hydrocarbons, n-alkanes distribution.

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3.

Authors: **I. Yugashini, S. Vidhyasri, K. Gayathri Devi**

Paper Title: **Design and Implementation of Automated Door Accessing System With Face Recognition**

Abstract: In the last two decades face recognition has received significant attention and an important issue in many applications such as access control, security systems, credit card verification and criminal identification. This paper proposes three main sub systems namely face recognition, face detection and automatic door access control. The face recognition and detection process is implemented by modifying principal component analysis (PCA) approach to fast based principal component analysis (FBPCA) approach, by which the captured image is detected using a web camera and compared with the image in the database. If the image is an authenticated one the door will be opened automatically else an SMS will be generated using a GSM modem to the user that an unauthorized person has entered home.

Keywords: Face recognition (FR), Face detection (FD), Fast Based Principle Component Analysis (FBPCA) algorithm, GSM.

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4.

Authors: **Rameshwr T. Murade, MD. Manan Mujahid, M. A. M. Sabir**

Paper Title: **The Design and Implementation of a Programmable Cyclic Redundancy Check (CRC) Computation Circuit Architecture Using FPGA**

Abstract: Many communication systems use the cyclic redundancy code (CRC) technique for protecting key data fields from transmission errors by enabling both single-bit error correction and multi-bit error detection.[6] Cyclic redundancy check (CRC) coding is an error-control coding technique for detecting errors that occur when a message is transmitted. Data integrity is imperative for many network protocols, especially data-link layer protocols.[4] Techniques using parity codes and Hamming codes can be used for data verification, but CRC is the preferred and most efficient method used for detecting bit errors produced from medium related noise. For example, Ethernet uses a 32-bit CRC polynomial for error detection. Data storage is another area where CRC error detection is becoming increasingly important. iSCSI implementations that utilize the TCP/IP protocol to implement Storage Area Networks (SANs) require error detection to be deployed. These operate using multi-gigabit connection speeds and thus require CRC checks to be executed at high speed as well. [9]

Keywords: CRC, Error Correction, implementation with CRC 32, FPGA CRC.

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2. FPGA Implementation of CRC with Error CorrectionWael M El-Medany
3. VLSI Implementation of Parallel CRC Using Pipelining, Unfolding and Retiming Sangeeta Singh1, S. Sujana2, I. Babu3, K. Latha4
4. Design and Synthesis of a Field Programmable CRC Circuit Architecture K.V.GANESH*,D.SRI HARI**,M.HEMA***
5. CHIPSCOPE Implementation of CRC circuit architecture G.Shanthi1, Dr.L.Padmasree
6. CRC Look-up Table Optimization for Single-Bit Error CorrectionPAN Yun , GE Ning , DONG Zaiwang
7. IEEE 802.3 Cyclic Redundancy Check Author: Chris Borrelli
8. 32-Bit Cyclic Redundancy Codes for Internet Applications Philip Koopman ECE Department & ICES
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5.

Authors: **Rahul Umesh Kale, MD. Manan Mujahid, N. Venkataramana**

Paper Title: **Implementation of VLSI Architecture for Lifting Scheme Based DWT**

Abstract: To The discrete wavelet transform (DWT) plays a central role in a number of signal and image processing applications. Owing to its importance in real-time signal processing systems, its first hardware implementation has been proposed. Subsequently, significant research effort has been made to optimize DWT/inverse DWT (IDWT) implementation, like architectures based on the folded digit-serial approach and low-complexity architectures with a reduced number of multipliers. However, these hardware architectures do not adequately address the power and area consumption issues, which often are the two most important metrics in today's high-performance signal processing systems. The main power consuming operation in DWT/IDWT computation is filtering, which requires a significant number of multiplications. The lifting scheme is a new algorithm proposed for the implementation of the wavelet transform. It can reduce the computational complexity of DWT involved with the convolution implementation. Furthermore, the extra memory required to store the results of the convolution can also be reduced by in place computation of the wavelet coefficient with the lifting scheme. The lifting scheme consists of the following three steps associated with the lifting scheme based DWT for the one-dimensional signal:(1) Split step: The input samples are split into even samples and odd samples ,(2) Predict step (P): The even samples are multiplied by the predict factor and then the results are added to the odd samples to generate the detailed coefficients;(3) Update step (U): The detailed coefficients computed by the predict step are multiplied by the update factors and then the results are added to the even samples to get the coarse coefficients. One of the elegant features of the

lifting scheme is that the inverse transform is a mirror of the forward transform.

Keywords: Discrete Wavelet Transform, Lifting schemes, VLSI architectures, Inverse lifting scheme.

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	Authors:	**Mukesh, Sanjeev Sharma**
	Paper Title:	**Effect of Parameters on Weld Pool Geometry in 202 Stainless Steel Welded Joint Using Tungsten Inert Gas (TIG) Process**

Abstract: Tungsten inert gas welding is found important in those applications where it is required to control the weld bead shape and metallurgical characteristics. To consider the quality characteristics, Taguchi method is applied in order to analyze the effect of each welding process parameters on the weld geometry. Orthogonal array L9 is applied for conduct the experimentation. Three input machine parameters namely current, welding speed and gas flow rate were varied at three different levels to find out the influence of parameters on weld bead geometry i.e. weld bead width and weld bead height. The quality and accuracy of the weld joint was studied along with microstructure. This paper deals with the study of weld bead geometry of austenitic stainless steel 202 using tungsten inert gas (TIG) welding. Experimental results are provided to illustrate the proposed approach and an optimal value of 0.35 mm is obtained in case of weld bead height and 8.63 mm in weld bead width. Microstructure of weld metal structure shows delta ferrite in matrix of austenite.

Keywords: GTAW welding, Stainless steel 202, TIG welding, Weld bead geometry, Taguchi method.

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6. **25-31**

	Authors:	**I. D. Soubache, P. Sudhakara Reddy**
	Paper Title:	**Economic Dispatch Problem Using Shuffled Frog Leaping Algorithm**

Abstract: A new evolutionary algorithm known as the shuffled frog leaping algorithm is presented in this paper, to solve the economic dispatch (ED) problem of thermal plants. The proposed optimization technique can take care of economic dispatch problems involving constraints such as transmission losses, power balance and generation capacity. The feasibility of the proposed method is demonstrated for three units and six units systems, and is compared with Particle Swarm Optimization (PSO) and Genetic Algorithm (GA) and methods in terms of the solution quality and computation efficiency. Compared with the other existing techniques, the proposed algorithm has been found to perform better in a number of cases. Considering the quality of the solution obtained, this method seems to be a promising alternative approach for solving the ED problems in practical power system.

Keywords: Shuffled frog leaping algorithm (SFLA), Economic Dispatch (ED), Particle Swarm Optimization (PSO), Genetic Algorithm (GA).

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Authors:	**Divya Mittal, Sukhjinder Kaur**
Paper Title:	**Enhanced Location-Aware Routing Protocol for Wireless Sensor Network**

Abstract: Minimizing Energy consumption is considered as one of the most important principles in the development of routing protocols for Wireless Sensor Networks (WSN). In this, we propose a Location based Energy-Aware Reliable routing protocol (LEAR) for WSN based on sensor position and clustering. Clustering-based routing protocols are more useful in the context of energy efficiency where several sensor nodes in the communication range of one another form a cluster. Each cluster has a cluster head (CH), which coordinates all the nodes of a cluster. There may be a number of base stations (BS) also known as sink in a WSN that communicate with other networks. Most of the existing geographic routing protocols make use of greedy routing to forward packets from source to destination. Enhance Greedy Forwarding is proposed to perform a geographic, efficient and reliable routing for WSN. A comprehensive simulation study illustrates that the lifetime of WSN can be consequentially extended with LEAR. Finally, LEAR algorithm has been developed, tested and validated through a set of experiments to illustrate the relative advantages and capabilities of a proposed algorithm. Existing cluster-based mobile routing protocols such as LEACH-Mobile, LEACH-Mobile-Enhanced and CBR-Mobile consider only the energy efficiency of the sensor nodes. However, reliability of routing protocols by incorporating fault tolerance scheme is significantly important to identify the failure of

data link and sensor nodes and recover the transmission path. In this study the authors, we propose a location-aware and fault tolerant clustering protocol for mobile WSN (LFCP-MWSN) that is not only energy efficient but also reliable. LFCP-MWSN also incorporates a simple range free approach to localize sensor nodes during cluster formation and every time a sensor moves into another cluster.

Keywords: Wireless Sensor Network, Location Based Energy Aware Reliable Routing Protocol (LEAR), Base Station.

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Authors:	**Usha Rani K. R, Ravishankar S, H. M. Mahesh, Nandan Nayak, Vijay Singh**
Paper Title:	**Broad Band Transmission Over Residential Power Lines Employing VDSL2: The Channel Capacity Analysis**

Abstract: Bridging and Transmission of VDSL2 broadband over power lines has received considerable attention recently to cater to broadband distribution within the premises of a residence. Power lines are fundamentally different from telephone lines both in topology and load impedance. Power lines have a thicker gauge and shorter straight lengths, apart from a large number of bridge taps (BT) with inductive load terminations, which are not matched to line impedances. In this paper ABCD parameters of the individual sections are used to analyze the power line channel of upto 10 bridge taps over a 600 meter length. The noise profiles considered include periodic impulse noise which is predominant over power line sections, apart from AWGN. Impulse noise PSD has been computed.Tone loading profiles have been obtained using Discrete Multitone Transmission (DMT) as in VDSL2 over a bandwidth of 30 MHz. This analysis points to the fact that lower Transmit PSD would suffice to match the rates achievable by traditional VDSL2 when bridge taps are open. However with inductive loads in the BTs as is typical in residences, we recommend a two-step approach of (a) equipping existing VDSL2 modem front end hybrids with settable impedances that would approach a conjugate match of the loaded line along with (b) capability to nominally increase the Transmit PSD and added subbands to achieve the desired rates in a seamless manner as in VDSL2.

Keywords: Channel modelling, discrete multitone, Power line communication.

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Authors:	**C. Veeramani, G. Mohan**
Paper Title:	**Dynamic Performance Analysis and Voltage Regulation of a Wind Energy Conversion System with STATCOM**

Abstract: Aim of this paper is to present the model and control design of a conventional wind energy system by employing induction generator. The system is divided into three stages whereas stage one consists of induction generator engendered by horizontal axis wind turbine and bordered to function by a twofold overhead transmission line. Second stage is to interface a static synchronous compensator (STATCOM) with the induction generator's terminal in order to regulate its voltage level. The third stage deals with controlling the mechanical power unit by blade pitch-angle. The proposed system has been evaluated using MATLAB/SIMULINK software. The simulation result proves the efficiency of the closed loop system beneath various sorts of disturbances.

Keywords: Induction generator, Static synchronous compensator (STATCOM), Wind turbine, PI controller.

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11.	**Authors:**	**Shaik Nahid, Srinivas Padala, V. Samson Deva Kumar**
	Paper Title:	**Design and Development of Train Tracking System in South Central Railways**

Abstract: Rail tracking system (RTS) is an advanced method used to track and monitor any train equipped with a MCU unit that receives and transfers signals through GPS satellite. RTS is a combination of Global Positioning System (GPS) that provides actual geographic real time position of each train. The entire transmission mechanism of RTS setup depends on GPS satellite, a receiver on the train, a GSM system and controller based tracking for dispatch. The GSM communication system is generally the same as cellular phone network. The two most common RTS systems are like GPS based and Signpost based. The Signpost-based RTS system was used earlier but with the development of modern satellites GPS used technology is more use now. This Automatic rail Tracking system is now widely used in a variety of market system that offers excellent communication or train tracking solution. This project is aimed to track the vehicles that which mean to locate the position of the train. The location of the train is indicated using GPS (global positioning system) technology. Communication link is made possible through a GPS receiver. GPS will give the information of parameters like longitude, latitude and attitude. Here the communication takes place between GPS receiver and GPS satellite. GPS satellite continuously tracks the missing train and the position of the train is send to the controller from GPS receiver. train is associated with LCD display which sends the continuous information about the position of the train to the control unit and the train position should be send to the GSM.

Keywords: The entire transmission mechanism of RTS setup depends on GPS satellite.

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