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1.

Authors: Rekha Patil., Pooja Aspalli

Paper Title: Adaptive Probablistic Broadcasting in Vanet

Abstract: VANET is an autonomous dynamic topology network where moving vehicles exchange their position information with each other. The basic objective of VANET is that all the nodes should be able to gather information about position of all the other nodes. Based on position information of other nodes, nodes can determine their course of action like changing route or changing speed and so on. Due to broadcasting nature of the message, Network runs a risk at broadcasting too many packets which puts a constraint on bandwidth, node battery and packet delivery success due to increased packet collision. Thus suitable technique should be adopted at the network layer that can limit both L2 and L3 type broadcasting depending upon the information about previous transmission, Neighbour state. Hence in this work we emphasize on adaptive probabilistic broadcast based routing from one unicast group to another and compare the performance with Probabilistic Broadcast based routing. In Probabilistic Broadcast every node broadcast packet with a probability P which depends upon several parameters including bit rate, number of transmitting and receiving nodes, path loss etc. To improve the probability of success we opt for adaptive probabilistic broadcast where delay of broadcast is adjusted according to state of success of current node and the same of the neighbour nodes. The adjustment factor is called beta whose values are varied in step to avoid drastic change in data rate. Proposed protocol is simulated with Erlang city's realistic simulation and a custom traffic scenario of road junction developed by us. Thus our simulation results show justifies the proposed technique over the other broadcast based routing protocols.

Keywords: VANET, Probabilistic Broadcast based routing.

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2. RF-GPS: RFID Assisted Localization in VANETs Eun-Kyu Lee, Sungwon Yang, Soon Y. Oh, and Mario Gerla Department of Computer Science University of California, Los Angeles.
3. Vehicular Ad Hoc Networks (VANETs):Challenges and Perspectives Saleh Yousefi1, Mahmoud Siadat Mousavi2, Mahmood Fathy1. Iran University of Science and Technology 2.ITS Persia Institute.
4. Comparing AODV and OLSR Routing Protocols Aleksandr Huhtonen Helsinki University of TechnologyTelecommunication Software and Multimedia Laboratory.
5. Intelligent OLSR Routing Protocol Optimization for VANETs Jamal Toutouh, Jos´e Garc´ıa-Nieto, and Enrique Alba,in press.
6. Probabilistic Broadcasting Protocol In AD HOC Network And Its Advancement: A Review Tasneem Bano1, Jyoti Singhai2 1Department of Computer Science And Engineering, MANIT, Bhopal, India.
7. Department of Electronics And Communication Engineering, MANIT, Bhopal, India, Novmber 2010.

2.

Authors: Farahwahida Mohd, Ezri Hielmi Che Daud

Paper Title: A Study on the Successfulness of Mobile Game: The Case of Angrybirds

Abstract: This research is to study on the successfulness of the mobile game. An Angrybirds game has been chosen as a case study. One of the reasons of using Angry Birds as a case study is due to its high popularity worldwide, including our country Malaysia. It is so popular that even children at the age of 5-12 years old are also very familiar with this title. Due to that matter, a model adopted majorly through the adaptation of mobile game features stated by Mark Overmars and some little combination the Nielsen's Ten Heuristics were used in order to design questionnaire for surveys. This study would identify the relationship among Games Design, Controls, Social Features, Assets and Navigational Features in determining mobile game successfulness. Based on the finding, it seems that there is a significant relationship between Games Design, Controls, Social Features, Assets and Navigational Features in Mobile Game Features.

Keywords: Mobile Game, paper-based survey, online survey.

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Authors: K. P. Tayade, S. S. Bobde

Paper Title: Watermarking On Compressed & Encrypted JPEG 2000 Images Using Rational Dither Modulation

Abstract: Rational Dither Modulation (RDM) is an efficient method of watermarking which is sensitive to variations in the amplitude of signals. In the digital world, images are available in various formats. They are simple to copy and resell without any loss of quality. In Digital Asset Management System (DAMS), media data is handled in compressed and encrypted form. It becomes necessary to watermark this form of data to copyright management purpose, ownership declaration and tamper detection. By watermarking the compressed and encrypted data, there is

3.	degradation of an image quality. Rational Dither Modulation is an alternative to Quantization Index Modulation with volumetric invariance. In the proposed scheme, using compression, the information of raw media is packed and an encryption algorithm randomize the compressed bit stream. Rational Dither Modulation embeds watermark in the compressed and encrypted domain and extraction of watermark can be done in encrypted and decrypted domain. The digital media is often distributed by multiple levels of distributors in encrypted and compressed form. Rational Dither Modulation investigates security, perceptual quality, embedding capacity and robustness. **Keywords:** Rational Dither Modulation, Spread Spectrum, Scalar Costa Scheme and Quantization Index Modulation, Digital Right Management, JPEG2000, Stream Cipher. **References:** 1. A. V. Subramanyam, Sabu Emmanual and Mohan S. Kankanhalli, "Robust Watermarking Of Compressed & Encrypted JPEG2000 Images", IEEE Trans. On Multimedia, vol. 14, no. 3,Jun. 2012. 2. A. Subramanyam, S. Emmanuel, and M. Kankanhalli, "Compressed encrypted domain JPEG2000 image watermarking", in Proc. IEEE Int. Conf. Multimedia and Expo, 2010, pp. 1315–1320. 3. T. Bianchi, A. Piva, and M. Barni, "Composite signal representation for fast and storage-efficient processing of encrypted signals", IEEE Trans. Inf. Forensics Security, vol. 5, no. 1, pp. 180–187, Mar. 2010. 4. T. Thomas, S. Emmanuel, A. Subramanyam, and M. Kankanhalli, "Joint watermarking scheme for multiparty multilevel DRM architecture", IEEE Trans. Inf. Forensics Security, vol. 4, no. 4, pp. 758–767, Dec. 2009. 5. Arvind Kumar Parthsarathy and Subhash Kak, "An Improved Method of Content Based Image Watermarking", IEEE Trans. On Broadcasting, Vol 53, No.2, Jun 2007. 6. F. Perez-Gonzalez, C. Mosquera, M. Barni, and A. Abrardo, "Rational dither modulation: A high-rate data-hiding method invariant to gain attacks", IEEE Trans. Signal Process., vol. 53, no. 10, pt. 2, pp.3960–3975, Oct. 2005. 7. J. Eggers, R. Bauml, R. Tzschoppe, and B. Girod, "Scalar costa scheme for information embedding", IEEE Trans. Signal Process., vol. 51, no. 4, pp. 1003–1019, Apr. 2003. 8. YiweiWang, John F. Doherty, Robert E. Van Dyck "A Wavelet-Based Watermarking Algorithm for Ownership Verification of Digital Images", IEEE Trans. on Image processing , Vol. 11, No. 2, Feb 2002. 9. N. Memon and P. Wong, "A buyer-seller watermarking protocol", IEEE Trans. Image Process., vol. 10, no. 4, pp. 643–649, Apr. 2001. 10. Khalid Sayood, "Introduction to Data Compression", 3rd ed. 11. Chih-Wei Tang and Hsueh-Ming Hang, "A Feature-Based Robust Digital Image Watermarking Scheme", IEEE Transactions on Signal Processing, vol. 51, no. 4, April 2003. 12. Dalel Bouslimi, Gouenou Coatrieux, Michel Cozic, and Christian Roux, "A Joint Encryption/Watermarking System for Verifying the Reliability of Medical Images", IEEE Transactions on Information Technology in Biomedicine, vol. 16, no. 5, September 2012. 13. Xiangyang Wang, Jun Wu, and Panpan Niu, "A New Digital Image Watermarking Algorithm Resilient to Desynchronization Attacks", IEEE Transactions on Information Forensics and Security, vol. 2, no. 4, December 2007. 14. Qibin Sun and Shih-Fu Chang, "A Secure and Robust Digital Signature Scheme for JPEG2000 Image Authentication", IEEE Transactions on Multimedia, vol. 7, no. 3, June 2005.	**11-17**
4.	**Authors:** **Anyaka Boniface Onyemaechi, Elijah** **Paper Title:** **Environmental Impacts of Photovoltaic** **Abstract:** This paper is an overview of the impact of photovoltaic solar energy conversion on the environment. The paper presents development of photovoltaic cells, the need for environmental assessment of energy sources, methodology framework for the assessment and the normalization and valuation. The photovoltaic solar cell is reviewed in respect to hazard like pollution caused by the chemical components and cost incurred. The paper also presents the life-cycle analysis of solar cell. **Keywords:** Silicon, Environment, Photovoltaic, Life-Cycle, Pollution. **References:** 1. Miquel A. Aguado-Monsonet: "The environmental Impact of Photovoltaic Technology (Task 6- Intersudmed Project)" European Commission Joint Research Centre, Spain, January 1998. 2. Chapin, DM, CS Fuller, and GL Pearson, "Applied Physics" 1954. J. Vol. 25, p. 676 3. K. Ladwig : "Potential Health and Environmental Impacts Associated with the Manufacture and Use of Photovoltaic Cells", EPRI, Palo Alto, CA, and California Energy Commission, Sacramento, CA:2003. 1000095. 4. R. Trykozko: "Principles of Photovoltaic Conversion of Solar Energy", Institute of Physics, Warsaw University of Technology, Warszawa, Poland. 1997 5. Anyaka B. O., "Technical and Economic Evaluation of Photovotaic Power Generation", Journal Research in Engineering Vol. 8, No. 3, 2011. Pp. 1-3.	**18-22**
5.	**Authors:** **Abdelelah Kidher Mahmood, Hussam Hamad Taha** **Paper Title:** **Design Fuzzy Logic Controller for Liquid Level Control** **Abstract:** This paper investigates the usage of Fuzzy Logic Controller (FLC) in controlling the liquid level in the second tank of Coupled-Tanks plant through variable manipulation of liquid pump in the first tank. System modeling involves developing a mathematical model by applying the fundamental physical laws of science and engineering. Simulation studies are then conducted based on the developed model using MatlabR2012a for Simulink. In this papers also study behavior system in terms of time response (e.g., steady state error, a certain rise-time, and overshoot) and compare FLC adverse PID controller. **Keywords:** Fuzzy Logic Controller, Simulink, System Model. **References:** 1. Katsuhiko Ogata, "Modern Control Engineering", Fifth Edition, 2010, 905pp. 2. User's Guide of Matlab for Fuzzy Logic Toolbox.2012.B. 3. Elmer P. Dadios," Fuzzy Logic – Controls, Concepts, Theories and Applications", First Edition ,Janeza Trdine 9, 51000 Rijeka, Croatia,	**23-26**

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6.

Authors: **S. R. Chaudhari**

Paper Title: **Relaxation Study at Microwave Frequency Using Time Domain Reflectometry**

Abstract: The dielectric relaxation study at microwave frequency gives information about solute(Methanol)–solvent (Balantkadha)-interaction and liquid structure of mixture. The objective of the present paper is to report the dielectric relaxation study of above system using Time Domain Reflectometry (TDR) in the temperature range 150C to 450C.The information related to the solute-solvent interaction has been carried out related to the static dielectric permittivity and relaxation time in the mixture of Ayurvedic Medicine-Balantkadha and Methanol. Dielectric relaxation study of Balantkadha used in Gynaec problems has been carried out at 150C, 250C, 350C and 450C in the frequency range 10 MHz to 20 GHz for 11 different concentrations of the system. Time Domain Reflectometry (TDR) Technique in reflection mode has been used to measure dielectric parameters viz. Dielectric loss (□ □), Static dielectric permittivity (□ 0) and relaxation Time (□). Further, Fourier transforms and least square fit method has been used to obtain dielectric parameters. With change in concentration and temperature, the systematic changes in dielectric parameters are observed.

Keywords: Dielectric loss, Permittivity, Relaxation time, Time domain Reflectometry.

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7.

Authors: **Simarjeet Kaur, B. K. Sawhney, Sandeep Kaur**

Paper Title: **Design and Development of Software for Insect Pest Management of Vegetable Crops using Web Technology**

Abstract: The accurate and timely advice for the effective insect pest management is an important component in controlling the pest on vegetables crops. This web based insect pest management system aims to transfer the pest management practices in different vegetable crops recommended by Punjab Agricultural University to the farmers for their guidance to take quick and timely actions for pest management in their fields. This system has been developed using PHP, HTML, CSS, JavaScript and Ajax and database has been designed using MySQL. The proposed system is advantageous as it is easy to use, effective and efficient in controlling the insect pests by providing accurate and timely information at affordable cost.

Keywords: HTML, JavaScript, MySQL, PHP, Web based Insect Pest Management System.

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32-35

Authors: **Ajita Babar, S. O. Rajankar**

8.	**Paper Title:**	**Wind Turbine Load Mitigation Using FX-RSL Feed-Forward Algorithm**	
	Abstract: A wind turbine is a device that converts kinetic energy from the wind, into mechanical energy; energy known as wind energy or wind power. The turbines are used for an increasingly important source of wind power-produced commercial electricity. The utilization of wind turbines can be a great way to capture the energy of the wind in a bid to convert this into useable electricity. Harnessing the winds energy with a wind turbine can provide a source of clean and renewable electricity for large or small industries. Wind energy is undoubtedly one of the cleanest forms of producing power from a renewable source. There is no pollution, there is no burning of fossil fuels, and unless something very drastic happens, you don't run out of wind. But it's not like we can erect a wind turbine anywhere and it will start generating power. There are lots of factors that can make an impact on the amount of energy we can generate out of wind, such as wind speed, height or altitude & the rotor size. Recent researches have been done to regulate the rotor speed & reduction of the component loads with the help of feed forward controllers. Wind speeds measured by light detection & ranging system (LIDAR) will give information of wind variations at various distances and so are used along with FX-RLS feed forward controllers for better tracking & better load reduction when the wind turbine is running at beyond its operating point.	**36-40**
	Keywords: FX-RLS feed forward algorithm, LIDAR.		
	References:1. A.Wright,"Modern Control Design for Flexible Wind Turbines" National Renewable Energy Laboratory, 2004 2. K.Stol and M.Balas, "Periodic disturbance accommodating control for blade load mitigation in wind turbines" ASME J. Solar Energy Eng., vol.125, no 4, pp.379-385,2003. 3. Laks, J., Pao, L., Wright, A., Kelley, N., and Jonkman, B., "Blade pitch control with preview wind measurements," in Proc. 48th AIAA Aerospace Sciences Meeting, Orlando, FL, AIAA-2010-251, Jan. 2010. 4. Dunne, F., Pao, L., Wright, A., Jonkman, B., and Kelley, N. "Combining standard feedback controllers with feedforward blade pitch control for load mitigation in wind turbines," in Proc. 48th AIAA Aerospace Sciences Meeting, Orlando, FL, AIAA-2010-250, Jan. 2010. 5. Laks, J., Pao, L., and Wright, A., "Combined feedforward/feedback control of wind turbines to reduce blade flap bending moments," in Proc. 47th AIAA Aerospace Sciences Meeting, Orlando, FL, AIAA-2009-687, Jan. 2009. 6. Laks, J, Pao, L., Simley, E., Wright, A., Kelley, N. , and Jonkman, B.,"Model predictive control using preview measurements from LIDAR," in Proc. 49th AIAA Aerospace Sciences Meeting, Orlando, FL, Jan. 2011.		
9.	**Authors:**	**Anjali S. Ashtekar, Bhagsen J. Parvat, Chandrakant B. Kadu**	
	Paper Title:	**Application of MODBUS to Communicate the PLC and Lab VIEW for Real Time Process Control**	
	Abstract: This paper presents the State-of-the-Art and recent trends of SCADA system Architecture, which is usually three layer SCADA system architecture depending on open system technology rather than a vendor controlled, Proprietary technology. A Real-time Industrial process is simulated (water level controller), and a complete three-layer model SCADA system is developed for this process: supervision control layer, Process control layer and field Instrument layer. National Instrument's LabVIEW with the associated Data Logging and Supervisory Control Toolset (DSC) is used to develop the SCADA/HMI in supervision layer. Industrial Programmable Logic Controllers (PLCs) from Delta, DVP 14SS and related software package are used to build up process control layer. Finally simulation unit is designed and developed to be used as field instrument layer. MODBUS protocol is used to solve compatibility problem raised from different vendors' tools. This work represented the real time implementation of water level application and gives its results for showing its effective implementation. This is made by communicating Delta DVP-14SS PLC to the PC with LabVIEW 2011 via MODBUS for controlling water level.	**41-45**
	Keywords: SCADA, DCS, RTU, LabVIEW.		
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	Authors:	**Anil Kumar Kamboj, Paramjeet Singh, Shaveta Rani**	
	Paper Title:	**Routs Comparison Concept for New Request Static Link Proactive Survivable Wavelength Division Multiplexing Routing algorithm for Optical Fiber Networks**	
	Abstract: Here, we proposed the algorithm which is being used to compare the Integrated route cost of all available routes in NRSL algorithm [1] get designed by us. It finds out the best two routes from all the available routes. Out of these two, the best is selected as the primary path and second one as backup path. Finally, we alleviated the overall		

network cost to improve the Cost effectiveness of Optical Fiber networks by minimizing the required capacity, or wavelengths, needed for a given demand. We put our concern to decide the classic optimization parameters of any optimization problem.

10.

Keywords: WDM, Survivability, Restoration, Cost Effectiveness, Resource optimization, OEO.

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Authors:	**Laura Sullivan-Green, Charles H. Dowding, Martina Hausner**
Paper Title:	**Colonization, Cultivation and Visualization of Bacteria on Topographic Surfaces under Zero-Shear Conditions**

Abstract: This research established visualization and growth methods that were initially developed for smooth, nonporous materials for application to rough, porous materials for the purpose of evaluating sparse biofilms. The basic concept of using fluorochromes and confocal laser scanning microscopy (CLSM) to visualize and quantify biota established using smooth surfaces has been extended to topographic surfaces by using additional analyses described herein. The study established that rough, opaque, porous surfaces like mortar colonized with biota can be visualized using CLSM and topographic relief of rough surfaces can be identified by collecting light reflected off the material surface. Volumes of biomass per unit area of surface can be established using optical sectioning to generate image stacks and simple stochastic modeling. Thus, growth accumulation on rough surfaces can be visualized and measured.

11.

Keywords: Confocal Laser Scanning Microscopy, Crack Dating, Forensic Engineering, Infrastructure Health.

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Authors:	**Narinder Singh, Narinder Kumar, S. K. Mahla**
Paper Title:	**Experimental Studies on Single Cylinder CI Engine using Mahua Oil and Ethanol Blends**

Abstract: Continuous rise in the conventional fuel prices and shortage of its supply have increased the interest in the field of the alternative sources for petroleum fuels. In this present work, experimentation was carried out to study the performance and emission characteristics of mahua oil and ethanol blends. For this experiment a single cylinder, four stroke, air cooled diesel engine was used. Initially the engine was run on diesel fuel and the readings were recorded.

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Then the engine was run on mahua oil and its different blends with ethanol. The blends containing 5, 10 and 15 percent ethanol fuel by volume were denoted as M5, M10 and M15 respectively. The tests were carried out over entire range of engine operation at varying conditions of load. The engine performance parameters studied were brake horse power, brake specific fuel consumption and brake thermal efficiency. The emission characteristics studied are CO, HC, CO2 and smoke opacity. Brake thermal efficiency is high at low and medium loads. For M5 there is 5.1% increase in brake thermal efficiency compared to diesel at low loads. From emission of blends, it is found that HC reduces 11%, CO and smoke decreases by 19% and 33.7% when compared to those of diesel. The present experimental results show that mahua oil and ethanol blends can be used as an alternative fuel in diesel engine.

Keywords: Biodiesel, Mahua Oil, Transesterification, Ethanol, Performance, Emissions.

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Authors:	**Muhammad Junaid Rabbani, Asim-ur-Rehman Khan**
Paper Title:	**Design & Implementation of State Estimation Based Optimal Controller Model Using MATLAB/SIMULINK**

Abstract: This paper proposes model based technique to control the horizontal position of a helicopter. The main constraint in the controller design is that not many states are measurable, and that the available sensor information is highly corrupted by noise. Here, the change in the declining angle of rotor is used to steer the helicopter in a straight line. The design is constrained to keep other parameters within the specified limits. The controller design is based on a combination of Kalman filter observer along with optimal linear quadratic Gaussian (LQG) controller. The design is implemented in two steps. First, Kalman filter is used to design an observer that estimates two desired states of a helicopter: rotator angle and horizontal position. Second, state feedback controller gain is estimated using the linear quadratic criterion function. The state controller enhances the regulation performance, while minimizing cost of control effort. Simulation results prove the credibility of Kalman filter observer by comparing the estimated states such as position and angle with the model output. In addition, the performance of LQG controller is examined by incorporating servo control mode that reduces the effort to compute error between reference and measured position.

Keywords: Helicopter system, Kalman filter observer, linear quadratic gaussian controller, state space model.

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14.	**Authors:**	**Md. Galib Hasan, Md. Kamrul Hasan, Ragib Ahsan, Tania Sultana, R. C. Bhowmik**
	Paper Title:	**Evaluation of a Low-Cost MEMS IMU for Indoor Positioning System**

Abstract: Indoor Positioning Systems (IPS) have gained popularity for their potential application to track people in risky environments or in rescue missions. This paper looks at how an Arduino combined with a foot-mounted inertial measuring unit (IMU) can be used to provide absolute positioning despite the presence of drift in the inertial unit. The IMU we have used contains a tri-axis accelerometer, a tri-axis gyroscope and a tri-axis magnetometer. The orientation was calculated using quaternion output from the IMU which uses gyroscope with drift correction performed by referencing the earth's gravity for pitch and roll and the geomagnetic field from magnetometer for heading. Acceleration signal outputted by the IMU is doubly integrated with time that yields the travelled distance. During the preceding time instants, the position information becomes increasingly untrustworthy and the validity of the position updates decays. So, we used a smoother algorithm based Kalman filter for better estimation accuracy in position estimation. A second method for distance measurement was implemented which uses an algorithm that measures the distance traveled by counting the number of steps. The step length determination was made by an algorithm that takes the angle between legs made by the accelerometer and gyroscope. Experiments were conducted on different scenarios and the results were compared which indicate that the typical positioning accuracy is below 5% for both methods. Issues and proposed improvements to the system are also discussed in this work.

Keywords: IPS, IMU, Kalman Filter, Arduino, Quaternion.

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15.	**Authors:**	**M. Pitchaimani, R. Asokan**
	Paper Title:	**Existence and Estimation of Negative Critical Allometry Model Parameter**

Abstract: In this paper, we provide an interval of existence of negative critical mortality rate parameters Mr and b in Allometry survival model, in the absence of age-speci c mortality data by age.

Keywords: Allometry, critical age, exponential growth, linear growth, mortality rate, , negative critical age.

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