Volume 1 Issue 7, June 2013

International Journal of Innovative Science and Modern Engineering

ISSN : 2319 - 6386 (Online)
Website: www.ijisme.org

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Khajuri Kala, BHEL-Piplani, Bhopal (M.P.)-462021, India
Website: www.blueeyesintelligence.org
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S. No	Volume-1 Issue-7, June 2013, ISSN: 2319–6386 (Online) Published By: Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.	Page No.

Authors: Mohd Omar Fatehah, Md. Sohrab Hossain, Tjoon Tow Teng

Paper Title: Comparative Study on Natural and Commercial Coagulants: Treatment of Semiconductor Wastewater in Sludge Production and Removal of Heavy Metals

Abstract: The objective of this study is to determine the coagulation efficiencies on total solids (TS) removal from semiconductor wastewater by applying various locally available starches as natural coagulants. Two commercial coagulants such as alum [Al2(SO4)3•18H2O] and polyaluminium chloride (PAC) were also utilized in this study in order to compare the coagulation efficiency with the natural coagulants. The EDX analysis of the raw semiconductor wastewater showed that it contained silica dioxide (SiO2) with a concentration of 90%. It appeared that the natural coagulants employed in the study have similar coagulation characteristics with the commercial coagulants. However, the natural coagulants possess better metal adsorption capability than the commercial coagulants. A 3 level factorial experimental design was used in the Response Surface Methodology (RSM) analysis and indicated that starches are capable to remove TS from the semiconductor wastewater and the removal performance were almost similar to alum and higher than PAC.

Keywords: Heavy metals, natural coagulants, response surface methodology, semiconductor wastewater, total solids.

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	Biochemistry, vol. 41(3), 2006, pp. 730-733.		
2.	**Authors:**	**S. Sri Abirami, S. J Grace Shoba**	
	Paper Title:	**Glaucoma Images Classification Using Fuzzy Min-Max Neural Network Based On Data-Core**	
	Abstract: Glaucoma is the major cause of blindness in worldwide. It is an ophthalmologist disease characterized by an increase in Intraocular Pressure (IOP). The types of glaucoma are primary open angle or chronic glaucoma (POAG) and closed angle (or) acute glaucoma (CAG) which causes a slow (or) rapid rise in Intraocular Pressure (IOP). The iridocorneal angle between the iris and the cornea is the key used to differentiate OAG and CAG. The stratus Anterior Optical Coherence Tomography (AS-OCT) images with these diseases are detected and classified from the normal images using the proposed fuzzy min-max neural network based on Data-Core (DCFMN). Data-core fuzzy min-max neural network (DCFMN) has strong robustness and high accuracy in classification. DCFMN contains two classes of neurons: classifying neurons (CNs) and overlapping neurons (OLNs).CNs are used to classify the patterns of data. The OLN can handle all kinds of overlap in different hyper boxes. A new type of membership function considering the characteristics of data and the influence of noise is designed for CNs in the DCFMN. The membership function of Overlapping Neurons (OLNs) deals with the relative position of data in the hyper boxes. This algorithm is performed on a batch of 39 anterior segment- Optical Coherence Tomography (AS-OCT) images obtained from the Vasan Eye Care Hospital, Chennai. The performance of the proposed system is excellent and a classification rate of 97% is achieved. Hence using this neural network, the performance of classification of normal or abnormal (glaucoma affected images) is improved. This method also reduces the time taken for the diagnosis by the ophthalmologist. **Keywords:** Glaucoma, DCFMN, AS-OCT image. **References:** 1. Swindale, N.V., Stjepanovic, G., Chin, A., Mike berg, F.S.: "Automated analysis of normal and glaucomatous optic nerve head topography images" Investing Ophthalmic Vis Sci 41(7) (2000) 1730{1742}. 2. Jun Cheng, Jiang Liu, Beng Hai Lee, Damon Wing Kee Wong, Fengshou YinTin Aung, Mani Baskaran, Perera Shamira, Tien Yin Wong " Closed Angle Glaucoma Detection in RetCam Images" International Conference of the IEEE EMBS Buenos Aires, Argentina, August 31 - September 4, 2010. 3. Rudiger Bocka, b,*, Jorg Meiera, Laszlo G.Nyulc, Joachim Horneggera, b, Georg Michelsond, b, e, "Glaucoma risk index: "Automated glaucoma detection from color fundus images" Medical image analysis 14(2010)471-481. 4. Journal of Theoretical and Applied Information Technology k.narasimhan, 2 dr.k.vijayarekha "An efficient automated system for glaucoma detection using fundus image" November 15, 2011 vol. 33 no.1. 5. IEEE transactions on neural networks, vol. 22, no. 12, December 2011 2339 "Data-core-based fuzzy min–max neural network for pattern classification" huaguang zhang, senior member, ieee, dazhong ma,and zhanshan wang, member, ieee. 6. J. Meier, R. Bock, G. Michelson, J. Honegger, and L. G. Nyquil, "Effects of preprocessing eye fundus images on appearance based glaucoma classification," 12th International Conference on Computer Analysis of Images and Patterns, Lect Notes Computer Science 4673, CAIP, pp. 165–173, (Berlin), 2007. 7. I. I. K. Ahmed AND L. D. Mackeen, "A new approach for imaging the angle", Glaucoma Today, pp. 27-30, JULY/AUGUST 2007. 8. M. Wolf a, R. Chrastek a, K. Donath,"Automated segmentation of the optic nerve head for diagnosis of glaucoma", Medical Image Analysis in Elsevier, journal of Functional Imaging and Modeling of the Heart, August 2005, pp 297-314. 9. Bryan S. Morse. Lecture 15: "Segmentation" (edge based, Hough transform). Brigham Young University: Lecture Notes, (2000). 10. Lester, M., Galway-Heath, D., Lemij, and H.: "Optic Nerve Head and Retinal Nerve Fibber Analysis" European Glaucoma Society (2005) 11. Alsbirk PH. "Primary angle-closure glaucoma": coulometer, epidemiology and genetics in a high risk population. Acta Ophthalmic 1976; 54:5-31. 12. D Minckler, P Foster and PT Hung, "Angle Closure Glaucoma Classification and Racial Variation", Asian Journal of Ophthalmology, vol. 3, no. 3, 4, 2001. 13. P. Simpson, "Fuzzy min-max neural networks," in Proc. 1991 Int. Joint Con Neural Networks (Singapore), Nov. 18-21, 1991, pp. 1658-1669. 14. John F. Salmon, The diagnostic importance of gonioscopy,http://www.glaucomaworld.net/english/019/e019a01t.html. 15. Zhou Zhang, Jiang Liu, Wing Kee Wong, "Neuro-Retinal Optic Cup Detection in Glaucoma Diagnosis", IEEE Proceedings of the 2nd International Conference on Biomedical Engineering and Informatics, Oct 2009, pp 1-4.		**9-15**
3.	**Authors:**	**Vijay Kumar, Sunil Kumar, Ajay Kumar Singh**	
	Paper Title:	**Outlier Detection: A Clustering-Based ApproachOutlier Detection: A Clustering-Based Approach**	
	Abstract: Outlier detection is a fundamental issue in data mining; specifically it has been used to detect and remove anomalous objects from data. It is an extremely important task in a wide variety of application domains. In this paper, a proposed method based on clustering approaches for outlier detection is presented. We first perform the Partitioning Around Medoids (PAM) clustering algorithm. Small clusters are then determined and considered as outlier clusters. The rest of outliers (if any) are then detected in the remaining clusters based on calculating the absolute distances between the medoid of the current cluster and each one of the points in the same cluster. Experimental results show that our method works well. **Keywords:** PAM, Clustering, Clustering-based outliers, Outlier detection. **References:** 1. J. Queen Mac, "Some methods for classification and analysis of multivariate observations", Proc. 5th Berkeley Symp.		**16-19**

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4.

Authors: **S. M. Nandhagopal, S. N. Sivanandam**

Paper Title: **Analysis of Data Delivery Issues in MANET Using Implementation of MTOOR Algorithm**

Abstract: This research paper addresses the issues of reliable data delivery in mobile ad- hoc network and implies a new (Moving Target Oriented Opportunistic Routing) Algorithm for which existing routing protocols are not suitable. This algorithm is implemented in Wireless Routing protocol (WRP) which is good in delivering the data in highly dynamic MANETs. This WRP has an issue in the over heading problem and less data security. So I propose a new proactive routing algorithm known as MTOOR routing algorithm. This algorithm provides good result for delivering data in highly dynamic ad-hoc networks by searching the target node and updating all the information for delivering data without over heading. This proposed scheme works efficiently in a large network of high mobility nodes and this concept is implemented using OMNeT++ environment. The main Objective of the paper is to reduce the high overheads and improve the routing performance in a proactive protocol WRP by reducing the Overheads.

Keywords: Moving Target oriented Opportunistic Routing, WRP, and Data Delivery.

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Authors: **Deval G. Patel**

Paper Title: **Point Pattern Matching Algorithm for Recognition of 36 ASL Gestures**

Abstract: Hand gesture recognition is a way to create a useful, highly adaptive interface between machines and their users. The recognition of gestures is difficult because gestures exhibit human variability. Sign languages are used for communication and interface . There are various types of systems and methods available for sign languages recognition. Our approach is robust and efficient for static hand gesture recognition. The main objective of this paper is to propose a system which is able to recognize 36 static hand gestures of American Sign Language (ASL) for letter A- Z and digits 0-9 successfully and also it is able to perform the classification on static images correctly in real time. We proposed a novel method of pattern recognition to recognize symbols of the ASL based on the features extracted by SIFT algorithm and its performance is compared it with widely used methods such as PCA and Template Matching.

5.

Keywords: ASL, Hand Gesture Recognition System, PCA, Point Pattern Matching Algorithm.

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6.

Authors: **Kirubhakar Gurusamy, Venkatesh Chakrapani**

Paper Title: **An assessment of Identity Security in Data Mining**

Abstract: Privacy preserving becomes an important issue in the development progress of data mining techniques. Privacy preserving data mining has become increasingly popular because it allows sharing of privacy-sensitive data for analysis purposes. So people have become increasingly unwilling to share their data. This frequently results in individuals either refusing to share their data or providing incorrect data. In turn, such problems in data collection can affect the success of data mining, which relies on sufficient amounts of accurate data in order to produce meaningful results. In recent years, the wide availability of personal data has made the problem of privacy preserving data mining an important one. A number of methods have recently been proposed for privacy preserving data mining of multidimensional data records. This paper intends to reiterate several privacy preserving data mining technologies clearly and then proceeds to analyze the merits and shortcomings of these technologies.

Keywords: Privacy preserving; data mining.

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Authors: **G. Mahalakshmi, A. Sivasankar**

7.	**Paper Title:**	**Lossless Compression of Hyperspectral Images Using Hybrid Based Clustering DPCM**	
	Abstract: This project explores the use of hybrid clustering technique for lossless compression method for Hyperspectral images. It is based on the joint use of fuzzy c means and nearest neighbor algorithms. In this method, linear prediction is performed using coefficients optimized for each spectral cluster separately. The difference between the prediction and original values is entropy coded using an adaptive range coder for each cluster. The result shows that this method has lower bit-per-pixel value. It is an extension to the existing lossless compression algorithm. Better partitioning of data is achieved. The technique starts with the fuzzy c means algorithm, performed as the first stage for an adequately high number of centroids and continues with the nearest neighbour algorithm executed for the clusters obtained in the first stage, as the set of initial objects to be merged for relatively complex shapes. **Keywords:** Hyperspectral images, image compression, lossless compression. **References:** 1. J. Mielikainen, "Lossless compression of hyperspectral images using clustered linear prediction with adaptive prediction length," IEEE Signal Process. Lett., vol. 9, no. 6, pp. 157–160, mar. 2012. 2. J.Mielikainen and P. Toivanen, "Lossless Hyperspectral-image compression using context based conditional average," IEEE Trans. Geosci. Remote Sens., vol. 41, no. 12, pp. 2943–2946, Dec. 2009. 3. C.-C. Lin and Y.-T.Hwang, "Hyperspectral image compression using three dimensional wavelet coding," IEEE Geosci.RemoteSens.Lett., vol. 7, no. 3, pp. 558 562, Nov. 2009. 4. M. Slyz and L. Zhang, "A block-based inter-band lossless Hyperspectral image compressor," in Proc. IEEE Data Comp. Conf., 2005, pp. 427–436,Sep.2009. 5. A. Abrardo, M. Barni, E. Magli, and F. Nencini, "Error-resilient and low-complexity onboard lossless compression of hyperspectral images by means of distributed source coding," IEEE Trans. Geosci. Remote Sens., vol. 48, no. 4, pp. 1892–1904, Mar. 2009. 6. B. Huang and Y. Sriraja, "Lossless compression of hyperspectral imagery via lookup tables with predictor selection," in Proc. SPIE, 2006, pp. 63 650L.1–63 650L.8. 7. B. Aiazzi, L. Alparone, and S. Baronti, "Quality issues for compression of Hyperspectral imagery through spectrally adaptive DPCM," in SatelliteData Compression. New York: Springer-Verlag. 8. A. K. Jain, "Data clustering: 50 years beyond k-means," Pattern Recognit. Lett., vol. 31, no. 8, pp. 651–666, Jun. 2010. 9. A. B. Kiely and M. A. Klimesh, "Exploiting calibration-induced artifacts in lossless compression of hyperspectral imagery," IEEE Trans. Geosci.Remote Sens., vol. 47, no. 8, pp. 2672–2678, Aug. 2009.	**32-34**
8.	**Authors:**	**P. Keerthana, A. Sivasankar**	
	Paper Title:	**The Impact of Lossy Compression on Hyperspectral Data Adaptive Spectral Unmixing and PCA Classification**	
	Abstract: In the past, scientific data have been almost exclusively compressed by means of lossless methods, in order to preserve their full quality. However, more recently, there has been an increasing interest in the lossy compression which has not yet globally accepted by the remote sensing community, mainly because it is sensed that the lossy compressed images may affect the results of posterior processing stages. Hence here, the influence of lossy compression on two standard approaches for hyperspectral data exploitation known as adaptive spectral unmixing, and supervised classification using PCA are considered. The experimental result states that the adaptive spectral unmixing provides a user defined spatial scale which improves the process of extraction of end members and PCA improves the classification accuracy. It is also observed that, for certain compression techniques, a higher compression ratio may lead to more accurate classification results. This work further provides recommendations on best practices when applying lossy compression prior to hyperspectral data classification and/or unmixing. **Keywords:** Hyperspectral data lossy compression, end member extraction, adaptive spectral unmixing, wavelet transform, support vector machine (SVM), Principal component analysis. **References:** 1. G. Motta, F. Rizzo, and J. A. Storer, Eds., Hyperspectral Data compression Berlin, Germany: Springer-Verlag, 2006. 2. J. Serra-Sagristà and F. Aulí-Llinàs, "Remote Sensing Data Compression," in Computational Intelligence for Remote Sensing. Berlin, Germany: Springer-Verlag, Jun. 2008, pp. 2761. 3. B. Penna, T. Tillo, E. Magli, and G. Olmo, "Transform coding techniques for lossy hyperspectral data compression," IEEE Trans. Geosci. Remote Sens., vol. 45, no. 5, pp. 1408–1421, May 2007. 4. C.-I Chang and Q. Du, "Estimation of number of spectrally distinct signal sources in hyperspectral imagery," IEEE Trans. Geosci. Remote Sens., vol. 42, no. 3, pp. 608–619, Mar. 2004. 5. A. Plaza, P. Martínez, R. Pérez, and J. Plaza, "A quantitative and comparative analysis of endmember extraction algorithms from hyperspectral data," IEEE Trans. Geosci. Remote Sens., vol. 42, no. 3, pp. 650–663, Mar. 2004. 6. M. E. Winter, "N-FINDR: An algorithm for fast autonomous spectral end-member determination in hyperspectral data," in Proc. SPIE ImageSpectrometry V, vol. 3753, pp. 266–277, 2003. 7. J. M. P. Nascimento and J. M. Bioucas-Dias, "Vertex component analysis: A fast algorithm to unmix hyperspectral data," IEEE Trans. Geosci.Remote Sens., vol. 43, no. 4, pp. 898–910, Apr. 2005.	**35-37**
	Authors:	**V. Amirthavalli, S. Veluchamy**	
	Paper Title:	**Deployment of Mobile Sensor Node and Asynchronous Power Management**	
	Abstract: The main motivation is to reduce power consumption in wireless transmission networks. In Wireless transmission networks power management and node deployment are the important factors in wireless transmission networks. In the previous methods, power can be reduced even though the nodes are remains in sleep mode. But the novel approach is proposed to reduce power in active condition. The main advantage is that the nodes are deployed in automatic manner which overcomes manual		

9.	deployment. Nodes are used to cover maximum area with highly accurate localization mechanism can be done by ECDH protocol. Grid deployment is used for automatic node deployment in networks. The grid with minimum value technique is the important method to place the mobile node in the networks. Node uses power only in the active condition, whenever it needs to transmit data. **Keywords:** Dynamic Power Management, Grid Deployment., Mobile Sensor Node Deployment, Particle filter algorithm. **References:** 1. Kejie Lu, Yi Qian, Jiankun Hu., "A Framework for Distributed Key Management Schemes in Heterogeneous Wireless Sensor Networks," in 2006 IEEE. 2. Makhamisa Senekane, Sehlabaka Qhobosheane, and B.M. Taele., "Elliptic Curve Diffie-Hellman Protocol Implementation Using Picoblaze," IJCSNS International Journal of Computer Science and Network Security., VOL.11 No.6, June 2011. 3. Christian Lederer, Roland Mader, Manuel Koschuch, Johann Großsch¨adl, Alexander Szekely, and Stefan Tillich.," Energy-Efficient Implementation of ECDH Key Exchange for Wireless Sensor Networks" in IFIP International Federation for Information Processing 2009. 4. S.Pradheepkumar, V.Vijayalakshmi and G. Zayaraz, "Implementation of Pseudo-Random Route-Driven ECDH Scheme for Heterogeneous Sensor Networks" International Journal of Communication Networks and Information Security (IJCNIS) Vol. 2, No. 1, April 2010 5. Edoardo S. Biagioni, Galen Sasaki, "Wireless Sensor Placement For Reliable and Efficient Data Collection,"proceedings of the 36th Annual Hawaii international Conference System Sciences, 2003, 6-9 Jan 2003. 6. Heo .N. and Varshney.P.K., "A distributed self-spreading algorithm for mobile wireless sensor networks," in Proc. WCNC, Mar. (2003), vol. 3,pp. 1597–1602. 7. Howard.A.,Matari'c.M.J., and Sukhatme.G.S., "Mobile sensor network deployment using potential fields: A distributed, scalable solution to the area coverage problem," in Proc. 6th Int. Symp. DARS, Jun. 25–27, 2002, pp. 299–308. 8. Poduri.S.and Sukhatme.G.S., "Constrained coverage for mobile sensor networks," in Proc. IEEE ICRA, May (2004), vol. 1, pp. 165–171. 9. Rahimi.M., Shah.H., Sukhatme.G., Heidemann.J., and Estrin.D., "Studying the feasibility of energy harvesting in a mobile sensor network," in Proc. ICRA, Sep. (2003), vol. 1, pp. 19–24. 10. Wang. G., Cao.G., and Porta.T.F.L., "Movement-assisted sensor deployment," in Proc. 23rd Annu.Joint Conf. IEEE Comput.Commun. Soc.(INFOCOM), Mar. (2004), vol. 4, pp. 2469–2479. 11. Gungor.V.C. and Hancke.G.P., "Industrial wireless sensor networks: Challenges, design principles, and technical approaches," IEEE Trans.Ind. Electron., vol. 56, no. 10, pp. 4258–4265, Oct. (2009). 12. R. C. Luo, L. C. Tu, and O. Chen, "Auto-deployment of mobile nodes in wireless sensor networks using grid method," in Proc. IEEE ICIT, Hong Kong, 2005, pp. 359–364. 13. Abraham O. Fapojuwo and Alejandra Cano-Tinoco, "Energy Consumption and Message Delay Analysis of QoS Enhanced Base Station Controlled Dynamic Clustering Protocol for Wireless Sensor Networks," IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS, VOL. 8, NO. 10, OCTOBER 2009 14. Maisam-Mohammadian†1Nasser-Mozayani, "2 Way Authentications for IMS by ECDH," in J. Basic. Appl. Sci. Res., 2(9)9378-9382, 2012. 15. Patrick Traynor, Raju Kumar, Heesook Choi, Guohong CaoSencun Zhu, and Thomas La Porta., "Efficient Hybrid Security Mechanisms for Heterogeneous Sensor Networks," IEEE TRANSACTIONS ON MOBILE COMPUTING, VOL. 6, NO. 6, JUNE 2007.	**38-44**
10.	**Authors:**	**Yukthi B. R, Savitha A. P, M. B. Anandaraju, Nuthan A. C**
	Paper Title:	**FPGA Based Implementation of Image Encryption Using Scan Patterns and Carrier Images**
	Abstract: This paper presents an FPGA implementation of image encryption method using carrier images and scan patterns generated by scan methodology. The scan is a language-based two-dimensional spatial-accessing methodology which can efficiently specify and generate a wide range of scanning paths. Then scanning paths sequence fill in original image. The carrier image is created with the help of alphanumeric keyword. Each alphanumeric key will be having a unique 8bit value generated by 4 out of 8-code.This newly generated carrier image is added with the original image to obtain encrypted image. The scan methodology is applied to either original image or carrier image, after the addition of original image and carrier image to obtain the highly distorted encrypted image. By applying the reverse we get the decrypted image. Reversible logic is most popular concept in energy efficient computations and this will be demand for upcoming future computing technologies. The proposed paper will be simulated using Xilinx simulator and implemented in Xilinx FPGA platform. **Keywords:** Carrier image, Encryption, Scan patterns, 4 out of 8-code. **References:** 1. S.R.M Prasanna, Y.V. Subba Rao and A. Mitra., "An Image Encryption method with Magnitude and Phase Manipulation using carrier images", IJCS, vol. 1,No 2, pp.132-137,2006. 2. Chao Shen Chen and Rong Jian Chen "Image encryption and decryption using SCAN methodology," Proc. PDCAT, 2006. 3. S.S. Maniccam and N.G.Bourbakis, "Image and video encryption using SCAN patterns," Pattern Recognition, vol.37, pp.725-737, 2004. 4. Panduranga H.T, Naveenkumar s.k, "A novel 3-step combinational approach for image encryption", IJCEIT, vol 03, 2009. 5. Panduranga H.T, Naveenkumar s.k, "A novel image encryption method using 4outof8 code", Proc. CommV'09, pp 460-462, 2009.	**45-47**
	Authors:	**Vandana, Yusuf Mulge**
	Paper Title:	**A Review on QoS Multicast Routing Protocols for MANETs & Internet**
	Abstract: Multicasting is a technique used for distributing data packets from one or more sources to a set of receivers on interconnected networks. Currently developing network applications bring specific quality of service (QoS) requirements like bounded delay, minimum bandwidth, and	

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maximum data loss rate. Providing the required quality of service addresses routing and resource reservation concepts. In this study, a literature survey is carried out on traditional and QoS multicast routing protocols, and the need for QoS routing protocols is investigated. Multicasting can minimize the link bandwidth consumption and reduce the communication cost by sending the same data to multiple participants. Multicast service is critical for applications that need collaboration of team of users. Multicasting in MANETs and internet becomes a hot research area due to the increasing popularity of group communication applications such as video conferencing and interactive television. Recently, multimedia and group-oriented computing gains more popularity for users of ad hoc networks. In this paper we are presenting an overview of set of the most recent QoS multicast routing protocols that have been proposed in order to provide the researchers with a clear view of what has been done in this field and how modified protocols can be designed using these protocols.

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Keywords: MANETs, Multicasting, QoS, Routing.

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Authors:	**S. Ahmed, S. M. Nirkhi**
Paper Title:	**Fuzzy Forensic Analysis System for DDoS Attack in MANET Response Analysis**

Abstract: Mobile Ad Hoc Networks (MANET) are wireless communication network; in which self capable mobile nodes can dynamically self organize into ad hoc topologies. Seamless interconnection with each other without pre-existing infrastructure makes MANET scalable. In turn scalability also increases the scope of security threats. Dynamic nature of MANET calls for self route management routing algorithm like DSR. Attacks at discovery phase of DSR to discover the route could be launched by attacker/malicious node by flooding (violating broadcasting rules) the route request message (RREQ) and prohibit the normal working of network for duration of time. Flooding is a kind of denial of service (DoS/DDoS) attack. When an attack on the target system is successful enough to hamper the normal working of network, this event triggers investigation. Network forensic analysis is done to analyze the attack scenario and to come up with digital proof against the attacker/attackers. To gather the proof there is the need to empirically analyze the evidential knowledge. Fuzzy logic is good choice for empirical analysis. So, we have implemented a fuzzy forensic analysis system. In this paper, we analyzed the response of fuzzy forensic analysis system that we have implemented.

52-55

Keywords: DDoS attack; Dynamic source routing; Fuzzy logic; MANET; Network forensics analysis.

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Authors: **Naveen Kumar**

Paper Title: **Comparative Study and Approach to Enhanced the Range and Power Requirement for Basic Memory Segment Analog Design**

Abstract: Now a day, analogy designing with dynamic range in high in demand. The minimum dissipation for power factor can be achieved only with improved range of system. Current mirror component is being researched from mainly of the years to achieve it’s grated extend voltage level for power consumption. To comparative study of various current mirror with enhanced technology top design analogy circuit of most extend. This paper comes with achieve a logic for the communication system to achieve such a system which can be run over low power and low voltage supply. This paper also includes the theorem and result table by which it is easy to access the need of such a technology. CMOS S-RAM design is the basic element of memory design which can be achieved and comparative study is also given to minimize future works.

Keywords: VMS, Low Voltage Low Power Current Mirror, Basic Current Mirror.

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Authors: **B. Annapoorani, N. Kumaran**

Paper Title: **Image Denoising Based On Fast Noise Estimation Methods and Median Algorithm**

Abstract: Impulse noise detection is a critical issue when re- moving impulse noise and impulse/Gaussian mixed noise. In this paper, we propose a new detection mechanism for universal

14.	noise and a universal noise-filtering framework based on the nonlocal means (NL-means). The operation is carried out in two stages, i.e., detection followed by filtering. For detection, first, we propose the robust outlyingness ratio (ROR) for measuring how impulse like each pixel is, and then all the pixels are divided into four clusters according to the ROR values. Second, different decision rules are used to detect the impulse noise based on the absolute deviation to the median in each cluster. In order to make the detection results more accurate and more robust, the from-coarse-to-fine strategy and the iterative framework are used. In addition, the detection procedure consists of two stages, i.e., the coarse and fine detection stages. For filtering, the NL-means are extended to the impulse noise by introducing a reference image. Then, a universal denoising framework is proposed by combining the new detection mechanism with the NL-means (ROR-NLM). Finally, extensive simulation results show that the proposed noise detector is su- perior to most existing detectors, and the ROR-NLM produces excellent results and outperforms most existing filters for different noise models. Unlike most of the other impulse noise filters, the proposed ROR-NLM also achieves high peak signal-to-noise ratio and great image quality by efficiently removing impulse/Gaussian mixed noise. **Keywords:** Image denoising, impulse noise, mixed noise, noise detector, nonlocal means (NL-means). **References:** 1. R. C. Gonzalez and R. E. Woods, Digital Image Processing. Engle- wood Cliffs, NJ: Prentice-Hall, 2002. 2. V. Katkovnik, A. Foi, K. Egiazarian, and J. Astola, "From local Kernel to nonlocal multiple-model image denoising," Int. J. Comput. Vis., vol. 86, no. 1, pp. 1–32, Jan. 2010. 3. A. Buades, B. Coll, and J. M. Morel, "A review of image denoising algorithms, with a new one," Multiscale Model. Simul., vol. 4, no. 2,pp. 490–530, 2005. 4. A. Buades, B. Coll, and J. M. Morel, "A non-local algorithm for image denoising," in Proc. Int. Conf. Comput. Vis. Pattern Recognit., 2005,pp. 60–65. 5. M. Elad and M. Aharon, "Image denoising via sparse and redundant representations over learned dictionaries," IEEE Trans. Image Process., vol. 15, no. 12, pp. 3736–3745, Dec. 2006. 6. K. Dabov, A. Foi, V. Katkovnik, and K. Egiazarian, "Image denoising by sparse 3-D transform-domain collaborative filtering," IEEE Trans.Image Process., vol. 16, no. 8, pp. 2080–2095, Aug. 2007. 7. I. Pitas and A. N. Venetsanopoulos, "Order statistics in digital image processing," Proc. IEEE, vol. 8, no. 12, pp. 1893–1921, Dec. 1992. 8. T. S. Huang, G. J. Yang, and G. Y. Tang, "A fast two-dimensional me-dian filtering algorithm," IEEE Trans. Acoust. Speech Signal Process., vol. ASSP-27, no. 1, pp. 13–18, Feb. 1979. 9. D. Brownrigg, "The weighted median filter," Commun. ACM, vol. 27,no. 8, pp. 807–818, Aug. 1984. 10. A. Nieminen, P. Heinonen, and Y. Neuvo, "A new class of detail-pre- serving filters for image processing," IEEE Trans. Pattern Anal. Mach.Intell., vol. PAMI-9, no. 1, pp. 74–90, Jan. 1987. 11. S. J. Ko and Y. H. Lee, "Center weighted median filters and their ap- plications to image enhancement," IEEE Trans. Circuits Syst., vol. 38, no. 9, pp. 984–993, Sep. 1991. 12. E. J. Coyle, J.-H. Lin, and M. Gabbouj, "Optimal stack filtering and the estimation and structural approaches to image processing," IEEE Trans. Acoust., Speech Signal Process., vol. 37, no. 12, pp. 2037–2066, Dec. 1989. 13. T. Sun and Y. Neuvo, "Detail-preserving median based filters in image processing," Pattern Recognit. Lett., vol. 15, no. 4, pp. 341–347, Apr.1994. 14. T. Chen and H. R. Wu, "Space variant median filters for the restora- tion of impulse noise corrupted images," IEEE Trans. Circuits Syst. II, Analog Digit. Signal Process. vol. 48, no. 8, pp. 784–789, Aug. 2001. 15. T. Chen, K. K. Ma, and L. H. Chen, "Tri-state median filter for image denoising," IEEE Trans. Image Process., vol. 8, no. 12, pp. 1834–1838, Dec. 1999. 16. T. Chen and H. R. Wu, "Adaptive impulse detection using center-weighted median filters," IEEE Signal Process. Lett., vol.8, no. 1, pp. 1–3, Jun. 2001. 17. V. Crnojevic, V. Senk, and Z. Trpovski, "Advanced impulse detection based on pixel-wise MAD," IEEE Signal Process. Lett., vol. 11, no. 7,pp. 589–592, Jul. 2004. 18. S. Akkoul, R. Ledee, R. Leconge, and R. Harba, "A new adaptive switching median filter," IEEE Signal Process. Lett., vol. 17, no. 6, pp. 587–590, Jun. 2010. 19. Y. Q. Dong and S. F. Xu, "A new directional weighted median filter for removal of random-valued impulse noise," IEEE Signal Process. Lett., vol. 14, no. 3, pp. 193–196, Mar. 2007. 20. W. Luo, "A new efficient impulse detection algorithm for the re- moval of impulse noise," IEICE Trans. Fundam. Electron., Commun., Comput., vol. E88-A, no. 10, pp. 2579–2586, Oct. 2005.	**61-66**