Volume 4 Issue 6, November 2014

International Journal of Innovative Technology and Exploring Engineering

IJITEE

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

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

Address:
22, First Floor, ShivLoke Phase-IV,
Khajuri Kala, BHEL-Piplani, Bhopal (M.P.)-462021, India
Website: www.blueeyesintelligence.org
Email: director@blueeyesintelligence.org, blueeyes@gmail.com
Cell #: +91-9669981618, **WhatsApp #:** +91-9669981618, **Viber #:** +91-9669981618
Skype #: beiesp, **Twitter #:** beiesp

Technical Advisory Board

Managing Editor

Editorial Board

1.

Authors: Priyanka R. K. Shrivastava, Shraddha Panbude, Geeta Narayanan

Paper Title: Digitization of ECG Paper Records using MATLAB

Abstract: Electrocardiogram (ECG) is the most important and widely used method to study the heart related diseases. The detailed study of ECG graph by the medical practitioner helps him to understand and identify the condition of the heart. Based on the information retrieved from the ECG graph the patient can be given proper treatment. The person having a medical history of heart ailments will have to maintain a record of all the ECG papers for timely analysis and diagnosis of the diseases. This process requires large storage space and extensive manual effort. The conventional technique of visual analysis to inspect the ECG signals by doctors or physicians are not effective and time consuming. Therefore, an automatic system which involves digital signal integration and analysis is required. In this study a MATLAB-based tool is being designed to convert electrocardiography (ECG) information from paper charts into digital ECG signals. Here we develop a method that involves processing of ECG paper records by an efficient and iterative set of digital image processing techniques for the conversion of ECG paper image data to time series digitized signal form, resulting in convenient storage and retrieval of ECG information. In addition, this tool can be used to potentially integrate digitized ECG information with digital ECG analysis programs and with the patient's electronic medical record.

Keywords: ECG, Compression, Segmentation, image retrieval, Digitization. Laplacian filtering.

References:
1. "Novel Tool for Complete Digitization of Paper Electrocardiography Data" Lakshminarayan Ravichandran, Chris Harless, Amit J. Shah3, Carson A. Wick , James H. Mcclellan, And Srini Tridandapani.
2. "New Method for Digitization and Computerized Analysis of Paper Recordings of Standard 12-Lead Electrocardiograms" WT Lawson, GS Wagner, RS Startt-Selvester, GA Ybarra Department of Cardiology.
3. "Image Processing on ECG Chart for ECG Signal Recovery", TW Shen, TF Laio Tzu Chi University, Hualien, Taiwan, Computers in Cardiology 2009;36:725−728.
4. "ECG Paper Records Digitization through Image Processing Techniques", Deepak Kumar Garg, Diksha Thakur, Seema Sharma, Shweta Bhardwaj, International Journal of Computer Applications (0975 – 888) Volume 48– No.13, June 2012.
5. "Converting ECG and Other Paper Legated Biomedical Maps into Digital Signals", A.R.Gomes e Silva, H.M. de Oliveira, and R.D. Lins, Federal University of Pernambuco- UFPE, Signal Processing Group.
6. "ECGScan: a method for conversion of paper electrocardiographic printouts to digital electrocardiographic files", Fabio Badilini, PhD,T, TanjuErdem, PhD, WojciechZareba, MD, Arthur J. Moss, F. Badilini et al. / Journal of Electrocardiology 38 (2005) 310– 318.
7. "Electrocardiogram Display Data Capturing and Digitization Based on Image Processing Techniques" Lai Khin Wee, Eko Supriyanto, New Aspects Of Applied Informatics, Biomedical Electronics & Informatics And Communications, ISBN: 978-960-474-216-5.
8. Gonzalez RC, Woods R.E, "Digital Image Processing", 3rd Ed., Addison-Wesley, Reading, MA, Longman, New York, 2008.
9. Gonzalez RC, Woods R.E, "Digital Image Processing using Matlab", 3rd Ed., Addison-Wesley, Reading, MA, Longman, New York, 2008.

2.

Authors: Hossien Hossieni, Kani M. Rauf, Gulstan S. Ezat, Nzar R. Abdullah

Paper Title: Estimation of Walk-Run Transition Speed and Oxygen Consumption on Planets of Solar System

Abstract: The present work has analyzed and discussed the effect of gravitational force on the walk-run transition speed on the planets of the solar system. A walk-run transition speed at different gravity level has been calculated. Our results suggested that by increasing gravity level, the walk-run transition speed occurred at faster speed whereas the corresponding Froude numbers remain constant in normal and high gravities. The most significant effect of gravity on the Froude number was observed for the planets with gravity lower than the earth. In addition, the rates of oxygen consumption at the walk-run transition speed for these celestial objects have been predicted. The results showed that the rate of oxygen consumption for the planets are at the highest for those which have a gait transition at Froude number of greater than 0.5.

Keywords: Froude numbers, solar system, walk-run transition, oxygen consumption.

References:
1. HILDEBRAND, M., Walking and running. In Functional Vertebrate Morphology (ed. M. Hildebrand, D. M. Bramble, K. F. Liem and D. B. Wake), pp. 38–57. Cambridge: Belknap Press (1985) .
2. MARGARIA, R. , Biomechanics and Energetics of Muscular Exercise, Oxford: Clarendon Press,146pp. (1976).
3. HRELJAC, A. , Preferred and energetically optimal gait transition speeds in human locomotion. Med. Sci. Sports Exerc. 25, 1158–1162, (1993).
4. MERCIER, J., LE GALLAIS, D., DURAND, M., GOUDAL, C., MICALLEF, J. P. AND PREFAUT, C. ,Energy expenditure and cardiorespiratory responses at the transition between walking and running, Eur. J. appl. Physiol. 69, 525–529. (1994).
5. MINETTI, A. E., ARDIGO, L. P. AND SAIBENE, F. ,The transition between walking and running in humans: metabolic and mechanical aspects at different gradients, Acta physiol. scand. 150, 315–323. (1994).
6. HOYT, D. F. AND TAYLOR, C. R. ,Gait and energetics of locomotion in horses, Nature 292, 239–240. (1981).
7. FARLEY, C. T. AND TAYLOR, C. R. 'A mechanical trigger for the trot–gallop transition in horses.' Science 253, 306–08. (1991).
8. Minetti, A. E., L. P. Ardigo, and F. Saibene. "The transition between walking and running in humans: metabolic and mechanical aspects at different gradients." Acta physiologica scandinavica 150.3, 315-323 (1994).
9. Brisswalter J, Mottet D.' Energy cost and stride duration variability at preferred transition gait speed between walking and running', Canadian Journal of Applied Physiology, vol 21, 471-80. (1996).
10. CAVAGNA, G. A., HEGLUND, N. C. AND TAYLOR, C. R. ,Mechanical work in terrestrial locomotion: two basic mechanisms for minimizing energy expenditure, Am. J. Physiol. 233, R243–R261 (1977).
11. HRELJAC, A. 'Determinants of the gait transition speed during human locomotion: kinetic factors. Gait Post. 1, 217–223 (1993).
12. Nilsson, Johnny, and Alf Thorstensson. "Ground reaction forces at different speeds of human walking and running." Acta Physiologica Scandinavica 136.2 , 217-227 (1989).
13. HRELJAC, A.' Determinants of the gait transition speed during human locomotion: kinematic factors. J. Biomech. 28, 669–677 (1995).

14. Franco Saibene , Alberto E. Minetti, Biomechanical and physiological aspects of legged locomotion in humans, pp 88: 297-316 Eur J Appl Physiol (2003)
15. ALEXANDER, R. MCN. Mechanics and scaling of terrestrial locomotion. In Scale Effects in Animal Locomotion (ed. T. J. Pedley), pp. 93–110. New York: Academic Press. (1977).
16. RODGER KRAM , ANTOINETTE DOMINGO AND DANIEL P. FERRIS Effect of reduced gravity on the preferred walk-run transition speed, The Journal of Experimental Biology 200, 821–826 (1996).
17. ALEXANDER, R. MCN. Optimization and gaits in the locomotion of vertebrates. Physiol. Rev. 69, 1199–1227. (1989).
18. HRELJAC, A. Effects of physical characteristics on the gait transition speed during human locomotion. Human Mov. Sci. 14, 205–216. (1995).
19. Alberto E. Minetti, 'Walking on other planets' Nature, Vol 409 , (2001).
20. Françoise Leurs, Yuri P. Ivanenko, Ana Bengoetxea, Ana-Maria Cebolla, Bernard Dan, Francesco Lacquaniti, and Guy A. Cheron, 'Optimal walking speed following changes in limb geometry' The Journal of Experimental Biology 214, 2276-2282 (2011).

3.

Authors:	**S. Rajasekhara Reddy, P. Surya PrasadS. Rajasekhara Reddy, P. Surya Prasad**
Paper Title:	**Design of an Error Detection and Correction Architecture for Video Coding Testing Applications**

Abstract: Motion estimation plays a vital role in today's media applications. Hence testing of such a module is a significant concern. Even though several algorithms have been proposed in the past testing of motion estimators are seldom addressed. The proposed system describes an Error Detection and Correction (EDCA) design that detects and recovers data in the motion estimator. The system uses the Sum of the Absolute Difference (SAD) method to compute the difference in the current and reference frames. The architecture comprises of an Error Detection Circuit (EDC) and a Data Recovery Circuit (DRC) to recover the original data. A Residue-Quotient code is used to compute the change in value between the error and expected values. Built-in Self test Technique (BIST) is included in the MECA and in each of Processing Element in MECA. Thus by introducing the BIST Concept the testing can be done internally without connecting outside testing requirements. So the area (number of gates) required and time is also reduces.

Keywords: Data recovery, Error detection, Residue quotient, MECA.

7-10

References:

1. Chang-Hsin-Cheng, YuLiu and ChunLung Hsu, Member, IEEE "Design of an error detection and data recovery architecture for motion estimation testing applications" IEEE transactions on VLSI systems,vol.20,no.4,april2012.
2. Y. S. Huang, C. J. Yang, and C. L. Hsu, "C testable ¬motion estimation design for video coding systems," J. Electron. Sci. Technol., vol. 7, no.4, pp. 370-374, Dec. 2009.
3. C. L. Hsu, C. H. Cheng, and Y. Liu, "Built-in self-detection/correction architecture for motion estimation computing arrays," IEEE Trans. Vary Large Scale Integration (VLSI) Systems., vol. 18, no. 2, pp. 319–324, Feb. 2010.
4. C. W. Chiou, C. C. Chang, C. Y. Lee, T. W. Hou, and J. M. Lin, "Concurrent error detection and correction in Gaussian normal basis multiplier over GF", IEEE Trans. Computing, vol. 58, no. 6, pp. 851–857, Jun. 2009.
5. S. Bayat - Sarmadi and M. A. Hasan, "On concurrent detection of errors in polynomial basis multiplication," IEEE Trans. Vary Large Scale Integration(VLSI) Systs., vol. 15, no. 4, pp. 413–426, Apr. 2007.

4.

Authors:	**A. Merdani, A. Kharbach, M. Rahmoun, B. Bellach, M. Elayachi, M. Elhitmy**
Paper Title:	**Local and Global Measure of Dissimilarity between Two Segmentations**

Abstract: the implementation of a segmentation method in a system requires knowledge of the performance of the method in a given situation. Hence, it is highly desirable to have a criterion for measuring the quality of the result obtained by a segmentation algorithm. This study focuses on two measures of dissimilarity between two segmentations, by means of a mapping. The local measure proposed is based on the map of local dissimilarities that capture the differences between two images. This allows a simple way to quantify the local dissimilarities and to determine their spatial distribution. Thus, we are building a global measure based on local measurements. Both measures local and global are successfully tested on synthetic and medical images.

Keywords: k-means, Region Growing, Hausdorff distance, distance transformation, local dissimilarity, global dissimilarity.

11-14

References:

1. E. Baudrier, F. Nicolier, G. Million and S. Ruan, " Binary image comparison with local-dissimilarity quantification", Pattern Recognition, vol. 41, n. 5, pp. 1461–1478, jan. 2008.
2. D.P. Huttenlocher and W.J. Rucklidge, "Comparing images using the hausdorff distance", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 15, n. 9, pp. 850–863, 1993.
3. Takacs, "Comparing faces using the modified Hausdorff distance", Pattern Recognition, vol. 31, no 12, 1998, pp. 1873-1881.
4. J.Paumard, "Robust comparison of binary images", Pattern Recognition Letters, vol. 18, no 10, 1997,pp. 1057-1063.
5. M. Dubuisson and A. Jain, "A modified Hausdorff distance for object matching," Proc. 12th IAPR International Conference on Pattern Recognition, Oct 1994, pp. 566-568.
6. F. MORAIN-NICOLIER, J. LANDRE and S. Ruan, " Détection d'objet par mesure de dissimilarités locales ", XXIIe Colloque GRETSI, Dijon, september 2009.
7. G. Borgefors, "Distance transformations in digital images", Computer Vision graphics and Image processing, vol. 34 n. 3, pp. 344-371, 1986.
8. Rosenfeld and J. Pfaltz,"Distance functions in digital pictures", pattern Recognition, vol. 1, pp 33-61, 1968.
9. J. Muerle and D. Allen, "Experimental evaluation of techniques for automatic segmentation of objects in a complex scene", Pictorial Pattern Recognition, Thompson, Washingthon DC, pp. 3-13, 1968.
10. S.W. Zucker, "Regiong growing: childhood and adolescence", Computer Graphics and Image Processing, Vol. 5, pp. 382-399, 1976.
11. J.Fan, D.K.Y. Yau, Elmagarmid and W.G. Aref, "Automatic image segmentation by integrating color-based and seeded region growing", IEEE Transaction on Image processing, Vol. 26, n 10, pp. 1454-1466, 2001.
12. Elallaoui and all, "Threshold optimization by genetic algorithm for segmentation of medical images by region growing", International journal of emerging trends an technology in computer science, Vol. 1, n. 2 pp. 161-166, 2012.
13. D.E. Goldberg, K. Deb and J.H. Clark, "Genetic algorithms noise, and the sizing of populations", Complex Systems, Vol. 6, pp. 333-362, 1992
14. J.C. Bezdek and R.J. Hathaway, "Optimization of fuzzy clustrtring criteria using genetic algorithms", Proceedings, First IEEE Conference on Evolutionnary Computation, Piscataway, NJ: IEEE Press, Vol. 2, pp. 3-52, 1994.

15. G. Borgefors, "Hierarchical chamfer matching : a parametric edge matching Algorithm", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 10, n. 6, pp. 849–865, 1988.G. O. Young, "Synthetic structure of industrial plastics (Book style with paper title and editor)," in Plastics, 2nd ed. vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15–64.

5.	**Authors:**	**Jagadesh T, Nanammal V**
	Paper Title:	**Design and Implementation of a Novel Combined CFAR/SLB System**

Abstract: In this paper, a novel approach of combined Cell Averaging-Constant False Alarm Rate (CA-CFAR) detector and Sidelobe Blanking (SLB) system is proposed. CFAR based threshold estimation using a Generalized Automatic Sliding Window technique (GASW) is proposed to reduce the memory access and exploits pre-computed values for setting the new threshold for adjacent cell. The designed architecture is fully reconfigurable in terms of the number of reference and guard cells as well as the sampling frequency and the coherent processing interval (number of integrated pulses).

Keywords: CA-CFAR, SLB, GASW, architecture, reconfigurable, Generalized.

References:

1. Bernard,Samuel.D.Stearns,"Adaptive Signal Processing".
2. Merrill Ivan Skolnik "Radar Handbook" Tata Mc-Graw Hill Publications.
3. Magaz.B,Bencheikh.M.L,Hamadouche.M and Belouchrani.A," Design and Real Time Implementation of a Novel Combined CA-FAR/SLB System on TMS320C67x Processor".
4. Magaz.B and Bencheikh.M.L" Real Time Implementation of The Combined SLB/CA-CFAR System with Non Coherent Integration".
5. Farina.A,Gini.F,"Design of SLB systems in the presence of correlated ground clutter"IEEE transactions on Radar,Sonar and Navigations August-2000.
6. Shnidman, D." A.Radar detection probabilities and their calculation." IEEE Transactions on Aerospace and Electronic Systems, AES-31 (July 1995).
7. D. A. Shnidman and S. S. Toumodge, "Sidelobe blanking with integration and target fluctuation," IEEE Trans. on Aerospace and Electronic Systems, vol. 38, no. 3, pp. 1023-1037, July 2002.
8. M. S. Alouini, "Sum of Gamma variates and performance of wireless communication systems over Nakagami-fading channels," IEEE Trans. on Vehicular Technology, vol. 50, no. 6, pp. 1471-1480, November 2001.
9. A. Zaimbashi, M. R. Taban, M. M. Nayebi, and Norouzi Yaser, "Weighted Order Statistic and Fuzzy Rules CFAR Detector for Weibull Clutter, Signal Processing, 558-570, March 2008.

15-17

6.	**Authors:**	**Dipali Salunkhe, Devendra Bahirat, Neha V. Koushik, Deepali Javale**
	Paper Title:	**Study of Hadoop Features for Large Scale Data**

Abstract: The data from hospitals around the area (city, state or country) is huge. Handling it through traditional RDBMS will be inefficient and cumbersome because the data from various hospitals won't be in the same format. Another reason is RDBMS doesn't offer an efficient way to handle unstructured data (i.e. Media files).Thirdly, as the data becomes voluminous the time for retrieval increases exponentially. Hadoop has many advantages if used to store all the medical data of the patient and also media files related to it (i.e. X-Ray reports, sonography reports and videos of operation). This paper gives overview of Hadoop and its components and also comparison between Hadoop and RDBMS.

Keywords: HDFS, Mapreduce, Hbase

References:

1. Apache Hadoop Available at http://hadoop.apache.org
2. Apache HDFS Available at http://hadoop.apache.org/hdfs
3. Apache HBase. Available at http://hbase.apache.org
4. MapReduce Simplified Data Processing on Large Clusters Available at http://labs.google.com/papers/mapreduceosdi04.pdf
5. T. White, Hadoop: The Definitive Guide. O'Reilly Media, Yahoo! Press, June 5, 2009.
6. Hongyong Yu ; Deshuai Wang" Research and Implementation of Massive Health Care Data Management and Analysis Based on Hadoop " Computational and Information Sciences (ICCIS), 2012.
7. Wang F, Qiu J, Yang J, et al. Hadoop high availability through metadata replication [C].Proceeding of the First International Workshop on Cloud Data Management_Hong Kong_China_ November 2009.
8. Sorting, Searching, and Simulation in the MapReduce Framework by Michael T. Goodrich from University of California, Nodari Sitchinava from Aarhus University, Qin Zhang from Aarhus University
9. Complexity Measures for Map-Reduce, and Comparison to Parallel Computing* by Ashish Goel Stanford University and Twitter, Kamesh Munagala Duke University and Twitter in November 11, 2012

18-21

7.	**Authors:**	**Poonam H. Mahajan, Pramod B. Bhalerao**
	Paper Title:	**A Blind Digital Image Watermarking using Joint DCT-DWT and Twin Encoding Methodology**

Abstract: Digital Image Watermarking is that the method that embeds knowledge known as a watermark or digital signature or tag or label into a transmission object such watermark may be detected or extracted later to form associate assertion regarding the ob-ject. There square measure varied techniques with that the method of watermarking may be performed. we've summarized these techniques in brief. In this work, we tend to square measure presenting few recent watermarking algorithms. One ofthem may be a sturdy digital image watermarking algorithmic program supported Joint DWT-DCT Transformation.This methodology exploits strength of 2 common frequency domains method; DCT and DWT, to get more physical property and hardiness. the thought of inserting watermark within the combined rework is predicated on the very fact that joint rework may eliminate the downside of every alternative. then, associate elective watermarking methodology may be obtained. the opposite is powerful Blind Digital Image Watermarking mistreatment DWT and twin coding Technique. This algorithmic program exploits the random sequence generated by Arnold and Chaos transformations. separate ripple transformation of third level decomposition is employed to convert the image into its frequency domain.

22-26

Keywords: Digital Image Watermarking, Blind Digital Image Watermarking, twin coding, Arnold rework, Chaos rework, DWT, DCT

References:

1. Gursharanjeet Singh Kalra,Dr. Rajneesh Talwar, Robust Blind Digi-tal Image Watermarking Using DWT and Dual Encryption Technique , Third International Conference on Computational Intelligence, 2011,
2. Saeed K. Amirgholipour , Ahmad R. Naghsh-Nilchi,,Robust Digital Im-age Watermarking Based on Joint DWT-DCT, Computer Engineering Dept, Isfahan University, IRAN, 2009,
3. Cox, J. Kilian, F. T. Leighton and T. Shamoon, Secure spread spectrum watermarking for multimedia, IEEE Transactions on Image Processing, Vol. 6, Pages: 1673-1687, December,1997,
4. Chunlin Song, Sud Sudirman, Madjid Merabti and David Llewellyn-Jones, IEEE Communications ociety, School of Computing and Mathematical Science, 2010,
5. Thi Hoang Ngan Le, Kim Hung Nguyen, Hoai Bac Le, "Literature Survey on Image Watermarking Tools, Watermark Attacks, and Benchmarking Tools", Second IEEE International Conferences on Advances in Multimedia, 2010, pp.67-73
6. Robust Blind Digital Image Watermarking Using DWT and Dual Encryption Technique, 2011 Third International Conference on Computational Intelligence, Communication Systems and Networks.

8.

Authors: **K. Subramanyam, N. Sreelekha, D. Amaranatha Reddy, G. Murali, R. P. Vijayalakshmi**

Paper Title: **Enhanced Room Temperature Ferromagnetism in Polyethylene Glycol Capped $Sn_{0.99-x}Cu_xCr_{0.01}O_2$ Nanoparticles**

Abstract: $Sn_{0.99-x}Cu_xCr_{0.01}O_2$ (x=0.00, 0.01, 0.03, 0.05 and 0.07) nanoparticles were synthesized by simple chemical co-precipitation method using polyethylene glycol (PEG) as a surfactant for the first time. EDAX spectra confirmed the presence of Cr and Cu in the host material with near stoichiometric ratio. The results from XRD studies indicated that the synthesized samples had a single phase rutile type tetragonal crystal structure as that of ($P4_2/mnm$) SnO_2. TEM analysis revealed that the average particle size lies in the range of 8-10 nm. Optical absorption spectra and corresponding Tauc's plots showed a blueshift in optical absorption band edge, the bandgap widening with increasing Cu concentration in $Sn_{0.99-x}Cu_xCr_{0.01}O_2$ nanoparticles can be well explained in terms Burstein–Moss effect. From magnetization measurements it is noticed that the saturation magnetization increases for 1% of Cu doping, then decreased with increasing the Cu concentration. The observed magnetic behavior is well supported with the bound magnetic polarons (BMPs) model.

Keywords: Cu co-doping, chemical synthesis, Burstein–Moss effect, FTIR spectra, Room temperature ferromagnetism.

References:

1. S.A. Wolf, D.D. Awschalom, R.A. Buhrman, J.M. Daughton, S. Von Molnar, M.L. Roukes, A.Y. Chtchelkanova, D.M. Treger, "Spintronics: A Spin-Based Electronics vision for the Future", Science, vol.294, 2001, pp.1488-1495.
2. G.A. Prinz, "Magnetoelectronics", Science, vol.282 (1998) 1660-1663.
3. J. K. Furdyna, "Diluted magnetic semiconductors", J. Appl. Phys. vol.64, 1988, pp.29-64.
4. S. Datta, B. Das, "Electronic analog of the electro-optic modulator", Appl. Phys. Lett. vol.56, 1990, pp.665–667.
5. C.B. Fitzgerald, M. Venkatesan, A.P. Douvalis, S Huber, J.M.D. Coey, T. Bakas, "SnO2 doped with Mn, Fe or Co: Room temperature dilute magnetic semiconductors", J. Appl. Phys vol.95, 2004, 7390–7392.
6. T. Dietl, H. Ohno, F. Matsukura, J. Cibert, D. Ferrand, "Zener model description of ferromagnetism in zinc-blende magnetic semiconductors", Science vol.287, 2000, pp.1019- 1022.
7. Y. Matsumoto, R. Takahashi, M. Murakami, T. Koida, X. J. Fan, T. Hasegawa, T. Fukumura, M. Kawasaki, S. Y. Koshihara, H. Koinuma, "Ferromagnetism in Co-doped TiO2 rutile thin films grown by laser molecular beam epitaxy", Jpn. J. Appl. Phys. vol.40, 2001, pp.L1204..
8. S. N. Kale, S. B. Ogale, and S. R. Shinde, M. Sahasrabuddhe, V. N. Kulkarni, R. L. Greene T. Venkatesan, "Magnetism in cobalt-doped Cu2O thin films without and with Al, V, or Zn codopants", Appl. Phys. Lett. vol.82, 2003, pp.2100-2102.
9. T. Fukumura, H. Toyosaki, Y. Yamada, "Magnetic oxide semiconductors", Semicond. Sci. Technol. vol.20 (2005) S103–S111.
10. W. Zeng, T. Liu, D. Liu, E. Han, "Hydrogen sensing and mechanism of M-doped SnO2 (M=Cr3+, Cu2+ and Pd2+) nanocomposite", Sens. Actuators. B, vol.160 , 2011, pp.455–462.
11. D.S. Kumar, P.R. Carbarrocas, J.M. Siefert, "In situ invistigations of the optoelectronic properties of transparent conducting oxide/ amorphous silicon interfaces", Appl. Phys. Lett. vol.54, 1989, pp.2088–2090.
12. S. Ferrere, A. Zaban, B.A. Gregg, "Dye sensitization of nanocrystalline tin oxide by perylene derivative", J. Phys. Chem. B, vol.101, 1997, 4490–4493.
13. Y. Tachibana, K. Hara, S. Takano, K. Sayama, H. Arkawa, "Investigations on anodic photocurrent loss processes in dye sensitized solar cells: comparison between nanocrystalline SnO2 and TiO2 films", Chem. Phys. Lett. vol.364, 2002, pp.297–302.
14. D. Wang, S. Wen, J. Chen, S. Zhang, F. Li, Microstructure of SnO2, Phys. Rev. B, vol.49, 1994, 14282–14285.
15. A.S.Yu, R. Frech, "Coating of multi-wall carbon nanotube with SnO2 films of controlled thickness and its applications for Li-ion battery", J. Power Sources. vol.104, 2002, pp.97-102.
16. N. Lavanya, S. Radhakrishnan, C. Sekar, M. Navaneethan, Y. Hayakawa, "Fabrication of Cr doped SnO2 nanoparticles based biosensor for the selective determination of riboflavin in pharmaceuticals", Analyst vol.138, 2013, pp.2061–2067.
17. A.M. Abdel Hakeem, "Structure and magnetic properties of Sn1-xMnxO2", J. Magn. Magn. Mater. vol.324, 2012, pp.95–99.
18. T.R. Cunha, I.M. Costa, R.J.S. Lima, J.G.S. Duque, C.T. Meneses, "Synthesis and Magnetic Properties of Mn-Doped and SnO2 Nanoparticles", J. Supercond. Nov. Magn.vol.26,2013, pp.2299–2302.
19. Punnoose, J. Hays, A. Thurber, M. H. Engelhard, R. K. Kukkadapu, C. Wang, V. Shutthanandan, S. Thevuthasan, "Development of high temperature ferromagnetism in SnO2 and paramagnetism in SnO by Fe doping", Phys. Rev. B vol.72,2005, pp.054402-14.
20. Shendong Zhuang, XiaoyongXu, YaruPang, HeLi, BinYu, Jingguo Hu, "Variation of structural, optical and magnetic properties with Co-doping in Sn1-xCoxO2 nanoparticles", J. Magn. Magn. Mater. vol.327, 2013, 24–27.
21. F.H. Aragon, J.A. H. Coaquira, P. Hidalgo, S.L.M. Brito, D. Gouvea, R.H.R. Castro, "Structural and magnetic properties of pure and Ni doped SnO2 nanopaerticles", J. Phy. Condens. Matter. vol.22, 2010, 496003 (9pp) pp.1-9.
22. K. Nomura, J. Okabayashi, K. Okamura, Y. Yamada, "Magnetic properties of Fe and Co codoped SnO2 prepared by sol-gel method", J. Appl. Phys. vol.110, 2011, 083901-4
23. Jun Okabayashi, Kiyoshi Nomura, Shin Kono, and Yasuhiro Yamada, "Magnetization Enhancement in Room-Temperature Ferromagnetic Fe–Mn Co-Doped SnO2", Jpn. J. Appl. Phys. vol.51, 2012, pp.023003-4.
24. Jasneet kaur, Jaspreet kaur, R.K. Kotnala, Vinay gupta, Kuladeep chand varma, "Co and Fe doped SnO2 nanorods by Ce co-doping and their electrical and magnetic properties", Adv. Mat. Lett. vol.3, 2012, pp.511-514.
25. S. Dalui, S. Rout, A.J. Silvestre, G. Lavareda, L.C.J. Pereira, P. Brogueira, O. Conde, "Structural, electrical and magnetic studies of Co: SnO2 and (Co, Mo): SnO2 films prepared by pulsed laser deposition", Appl. Surf. Sci. vol.278, 2013, pp.127–131.

27-32

26. K. Subramanyam, N. Sreelekha, G. Murali, D. Amaranatha Reddy, R.P. Vijayalakshmi, "Structural, optical and magnetic properties of Cr doped SnO2 nanoparticles stabilized with polyethylene glycol",Physica B, vol.454,2014, pp.86–92.
27. L.B. Duan, X.R. Zhao, J.M. Liu, G.H. Rao, "Room temperature ferromagnetism in Cr doped ZnO nanoparticles", Appl. Phys. A, vol.99, 2010, pp.679-683.
28. Huilian Liu, Xin Cheng, Hongbo Liu, Jinghai Yang, Yang Liu, Xiaoyan Liu, Ming Gao, Maobin Wei, Xu Zhang, Yuhong Jiang, "Structural, optical and magnetic properties of Cu and V co-doped ZnO nanoparticles", Physica E vol.47,2013, pp.1–5.
29. C. Fernandez-Lopez, C. Mateo-Mateo, R.A. Alvarez-Puebla, J.P. Juste, I. P-Santos, L.M. Liz-Marzan, "Highly controlled Silica coating of PEG-capped metal nanoparticles and preparation of SERS-encoded particles", Langmuir vol.25 (24) ,2009, pp.13894–13899.
30. B.D. Cullity, "Elements of X-Ray Diffraction", Wesley, London, 1978.
31. Bouaine, N. Brihi, G. Schmerber, C. Ulhaq-Bouillet, S. Colis, A. Dinia, "Structural, Optical, and Magnetic Properties of Co-doped SnO2 Powders Synthesized by the co-precipitation technique", J. Phys. Chem. C vol.111, 2007, pp.2924-2928.
32. E. Burstein, "Anomalous Optical Absorption Limit in InSb", Phys. Rev. Lett. vol.93, 1953, pp.632.
33. C. Yue-Jian, T. juan, X. Fei, Z. Jia-Bi, G. Ning, Z. Yi-Hua, D. Ye, Ge Liang, Synthesis, self-assemblyand characterization of PEG-coated iron oxide nanoparticles as potential MRI contrast agent, Drug Dev. Ind. Pharm. vol.36,2010, pp.1235–1244.
34. M. Sudha, S. Senthilkumar, R. Hariharan, A. Suganthi, M. Rajarajan, "Synthesis, characterization and study of photocatalytic activity of surface modified ZnO nanoparticles by PEG capping", J. Sol-Gel Sci. Technol. vol.65,2013, pp.301–310.
35. R. Hariharan, S. Senthil kumar, A. Suganthi, M. Rajarajan, "Synthesis and characterization of doxorubicin modified ZnO/PEG nanomaterials and its photodynamic action", J. Photochem. Photobiol. B vol.116, 2012, pp.56-65.
36. S. Gnanam, V. Rajendran, "Preparation of Cd-doped SnO2 nanoparticles by sol–gel route and their optical properties", J Sol-Gel Sci Technol. vol.56, 2010, 128–133.
37. Kaminski and S. Das Sarma, "Polaron percolation in diluted magnetic semiconductors", Phys. Rev. Lett. vol.88, 2002, pp.247202-4.
38. J. M. D. Coey, M. Venkatesan and C. B. Fitzgerald, "Donor impurity band exchange in dilute ferromagnetic oxides", Nat. Mater. vol.4, 2005, pp.173-179.

9.

Authors:	**Anass Ait Laachir, Tarik Jarou, Moulay Brahim Sedra, Abderrahmane El Kachani, Abdelhamid Niaaniaa**
Paper Title:	**Fuzzy Logic Control for Maximum Power Point Tracking of a Photovoltaic Field**

Abstract: Maximizing the power point tracking of photovoltaic systems is currently the purpose of several researches in the context of renewable energies improvement. In this work we optimize and enhance the maximum power point tracking algorithm based on fuzzy logic controller. Our approach focuses on determining the maximum power point in a minimal time in order to get the lowest possible energy loss. The fuzzy logic controller presented in this work provide fast response and good performance against the climatic and load change and uses directly the DC/DC converter duty cycle as a control parameter. After establishing our algorithm, we have performed a comparative study with the classical algorithm used most perturb and observe in various operating conditions. The simulation results using MATLAB/Simulink show that fuzzy logic controller provides better tracking compared to Perturb and observe despite the climatic change (solar insolation and temperature).

Keywords: DC-DC converter, fuzzy logic, MPPT, perturb and observe, Photovoltaic.

References:

1. R. R. Hernandez, S. B. Easter, M. L. Murphy-Mariscal, F. T. Maestre, M. Tavassoli, E. B. Allen, C. W. Barrows, J. Belnap, R. Ochoa-Hueso, S. Ravi, et M. F. Allen, « Environmental impacts of utility-scale solar energy », Renew. Sustain. Energy Rev., vol. 29, p. 766‑779, janv. 2014.
2. D. Streimikiene et I. Siksnelyte, « Electricity market opening impact on investments in electricity sector », Renew. Sustain. Energy Rev., vol. 29, p. 891‑904, janv. 2014.
3. D. P. Hohm et M. E. Ropp, « Comparative study of maximum power point tracking algorithms », Prog. Photovolt. Res. Appl., vol. 11, no 1, p. 47–62, 2003.
4. Ortiz-Conde, F. J. García Sánchez, et J. Muci, « New method to extract the model parameters of solar cells from the explicit analytic solutions of their illuminated I–V characteristics », Sol. Energy Mater. Sol. Cells, vol. 90, no 3, p. 352‑361, févr. 2006.
5. M. Wolf et H. Rauschenbach, « Series resistance effects on solar cell measurements », Adv. Energy Convers., vol. 3, no 2, p. 455‑479, avr. 1963.
6. H. De Battista et R. J. Mantz, « Variable structure control of a photovoltaic energy converter », Control Theory Appl. IEE Proc. -, vol. 149, no 4, p. 303‑310, 2002.
7. Zegaoui, M. Aillerie, P. Petit, J. P. Sawicki, A. Jaafar, C. Salame, et J. P. Charles, « Comparison of Two Common Maximum Power Point Trackers by Simulating of PV Generators », Energy Procedia, vol. 6, p. 678‑687, 2011.
8. N. Kasa, T. Iida, et L. Chen, « Flyback Inverter Controlled by Sensorless Current MPPT for Photovoltaic Power System », IEEE Trans. Ind. Electron., vol. 52, no 4, p. 1145‑1152, 2005.
9. E. Koutroulis, K. Kalaitzakis, et N. C. Voulgaris, « Development of a microcontroller-based, photovoltaic maximum power point tracking control system », IEEE Trans. Power Electron., vol. 16, no 1, p. 46‑54, 2001.

10.

Authors:	**Mohan B. Raut, S. N. Shelke**
Paper Title:	**Optimization of Special Purpose Rotational MIG Welding by Experimental and Taguchi Technique**

Abstract: This paper presents the case study to find the design optimization for special purpose MIG welding operation . The MIG Welding parameters are the most important factors affecting the quality, productivity and cost of welding. This paper presents the effect of welding parameters like welding current, welding voltage, welding speed , gas flow rate, rotational speed of work piece, filler wire feed rate on MIG welding. Experiments are conducted based on Taguchi Technique to achieve the required data. An Orthogonal Array, Signal to Noise (S/N) ratio and analysis of varience (ANOVA) are used to find out the welding characteristics and optimization parameters. Finally the confirmations tests have been carried out to compare the predicted values with the experimental values.

Keywords: MIG welding, optimization, Design of Experiments (DOE), Analysis of Variance (ANOVA), Signal to Noise (SNR) ratio

References:

1. A Review on Optimization of MIG Welding Parameters using Taguchi's DOE Method - Satyaduttsinh P. Chavda, Jayesh V.Desai, Tushar

M.Patel, Department of Mechanical Engineering, KSV University, Gandhinagar, INDIA
2. Design optimization of Process Parameters for TIG Welding based on Taguchi Method - Nirmalendhu ChoudhuryÀ, Ramesh RudrapatiÀ and Asish BandyopadhyayÀ , ÁMechanical Engineering Department, Jadavpur University, Kolkata – 700032, India.
3. OPTIMIZATION OF MIG WELDING PARAMETERS FOR IMPROVING STRENGTH OF WELDED JOINTS - S. R. Patil 1, C. A. Waghmare 2- Mechanical Engineering Dept., Rajarambapu Institute of Technology, Sakharale, Maharashtra, India.
4. Optimization of Process Parameters of Gas Metal Arc welding to improve quality of weld bead geometry-S.R. Meshram1, N.S. Pohokar2-Department of Mechanical Engineering, Prof Ram Meghe Institute of Technology & Research ,Badnera ,Amravati (M.S),India
5. OPTIMIZATION OF WELD BEAD GEOMETRICAL PARAMETERS FOR BEAD ON PLATE SUBMERGED ARC WELDS DEPOSITED ON IS-2062 STEEL USING TAGUCHI METHOD - Meenu Sharma and Dr. M. I. Khan Department of Mechanical Engineering Integral University, Lucknow, India.
6. Optimization of weld bead bead penetration geometrical parameters for bead on plate submerged arc welds deposited on IS-2062 Steel using Taguchi Method
7. Parameter Condition of Being Optimized For MIG Welding Of Austenitic Stainless Steel &Low Carbon Steel Using Taguchi Method -Sonu Prakash Sharma1 Amit Bhudhiraja2 1Post graduate student, SBMN College Asthal Bohar(Rohtak) 2MDU Rohtak(Haryana)INDIA
8. Parametric Optimization of Gas Metal Arc Welding Process by Taguchi Method on Weld Dilution-M. Aghakhani, E. Mehrdad, and E. Hayati
9. PARAMETRIC OPTIMIZATION OF MIG PROCESS PARAMETERS USING TAGUCHI AND GREY TAGUCHI ANALYSIS -Dinesh Mohan Arya* Vedansh Chaturvedi** Jyoti Vimal*
10. Parametric Optimization of Weld Strength of Metal Inert Gas Welding and Tungsten Inert Gas Welding By Using Analysis of Variance and Grey Relational Analysis
11. EFFECT OF MIG WELDING INPUT PROCESS PARAMETERS ON WELD BEAD GEOMETRY ON HSLA STEEL-CHANDRESH.N.PATEL Assistant Professor, Department of Mechanical Engineering, S.P.B.Patel Engineering College Linch, Mehsana. Gujarat (India), PROF. SANDIP CHAUDHARY Assistant Professor, Department of Mechanical Engineering, S.P.B.Patel Engineering College Linch, Mehsana. Gujarat (India)
12. INFLUENCE OF PROCESS PARAMETERS ON DEPTH OF
13. PENETRATION OF WELDED JOINT IN MIG WELDING PROCESS -Biswajit Das 1, B. Debbarma 2, R. N. Rai 3, S. C. Saha 4 1Research Scholar, 2Assistant Professor, 3Associate Professor, 4Professor, National Institute of Technology, Agartala, India
14. Optimization of Weld Bead Width in Tungsten Inert Gas Welding of Austenitic Stainless Steel Alloy -Vinod Kumar, Mechanical Engineering Department, Thapar University, Patiala, India
15. Optimising Process Conditions in MIG Welding of Aluminum Alloys
16. Through Factorial Design Experiments -OMAR BATAINEH (first and corresponding author); ANAS AL-SHOUBAKI; OMAR BARQAWI Department of Industrial Engineering Jordan University of Science and Technology
17. Parameters Optimization for Gas Metal Arc Welding of Austenitic Stainless Steel (AISI 304) &Low Carbon Steel using Taguchi's Technique- Pawan Kumar[1], Dr.B.K.Roy[2], Nishant3 1Post Graduate Student, Om Institute of Technology & Management Hisar, Haryana, INDIA.
18. Optimization of Welding Parameters Using Taguchi Method for Submerged Arc Welding On Spiral Pipes - Pradeep Deshmukh, M. B. Sorte
19. PARAMETRIC OPTIMIZATION OF WELDING PROCESS OF LOW CARBON STEEL (AISI 1019) BY USING TAGUCHI'S APPROACH - S. Naveenkumar 1, Dr. K. SooryaPrakash 2, G. Gokilakrishnan 3, N. V. Kamalesh 4 1,2,3,4 Assistant Professor, Department of Mechanical Engineering 1, 3, 4 Sri Eshwar College of Engineering, Coimbatore, India. 2 Anna University Coimbatore, India.
20. PARAMETRIC OPTIMIZATION OF TIG WELDING PARAMETERS USING TAGUCHI METHOD FOR DISSIMILAR JOINT (Low carbon steel with AA1050) -J.Pasupathy, V.Ravisankar

11.

Authors:	**Leelavathy S. R, Sophia S**
Paper Title:	**Providing Localization using Triangulation Method in Wireless Sensor Networks**

Abstract: the applications of sensor networks which are developed require the location of wireless devices, and localization technique has been developed to meet this requirement. The Wireless sensor networks have been proved useful in many applications, like environment monitoring and military surveillance and many more. Triangulation is one such method that will be examined for localization. For the triangulation based localization uses the geometric properties of triangle to estimate locations, which relies on angle measurements.

Keywords: localization, triangulation, trilateration, time of arrival (toa) time difference of arrival (tdoa.)

References:

1. K. Langendoen and N. Reijers, "Distributed localization in wireless sensor networks: a quantitative comparison," Compute. Networks, vol. 43, no. 4, pp. 499–518, 2003.
2. N. Priyantha , A. Chakraborty, and H. Balakrishnan, "The CRICKET location support system," in Proceedings of the 6th annual international conference on Mobile computing and networking (Mobicom 2000), 2000, pp. 32–43.
3. D. Nicelescu and B. Nath, "Ad hoc positioning (APS) using AOA," in Proceedings of IEEE Infocom 2003, 2003, pp. 1734 – 1743.
4. L. Lazos and R. Poovendran, "SeRLoc: Secure range independent localization for wireless sensor networks," in Proceedings of the 2004 ACM Workshop on Wireless Security, 2004, pp. 21–30.
5. B. H. Wellenhoff, H. Lichtenegger, and J. Collins, Global Positions System: Theory and Practice, Fourth Edition, Springer Verlag, 1997.
6. RongPeng and Mihail L. Sichitiu Department of Electrical and Computer Engineering North Carolina State University Angle of Arrival Localization for Wireless Sensor Networks
7. C. Savories, K. Langendoen, and J. Rabaey, "Robust positioning algorithms for distributed adhoc wireless sensor networks," in Proceedings of USENIX Technical Annual Conference, 2002.
8. D. Nicelescu and B. Nath, "DV based positioning in ad hoc networks," Telecommunication Systems, vol. 22, no. 14, pp. 267–280, 2003.
9. Savvides, H. Park, and M. Srivastava, "The bits and flops of the n hop multilateration primitive for node localization problems," in Proceedings of First ACM International Workshop on Wireless Sensor Networks and Application (WSNA), 2002, pp. 112–121.
10. Y.C. Hu, A. Perrig, and D. Johnson, "Packet leashes: a defense against wormhole attacks in wireless networks," in Proceedings of IEEE Infocom 2003, 2003, pp. 1976–1986.

47-50

12.

Authors:	**Shikha Bharti**
Paper Title:	**New Technique of Edge Detection based on FIS**

Abstract: Edge detection of images is an important aspect in the field of image processing. Edges can be detected from the images by using various derivative edge detection methods, such as Sobel operator, Prewitt operator, Roberts operator, Laplacian operators and Canny operators .With these different approaches the edges are detected but somehow false edges are also detected or some important edges are missed due to the presence of noise. Therefore a new technique of artificial intelligence called fuzzy inference system is used in order to reduce these types of effects.. This paper presents a novel edge detection algorithm based on fuzzy inference system.The proposed

51-55

	approach uses a 3x3 sliding window with eight inputs and the center pixel as the output . ,then the pixel values of window are subjected to various fuzzy rules designed . Based on these set of rules the output of fuzzy is decided whether that particular pixel is an edge or not .Moreover the developed algorithm is compared with sobel ,prewitt etc to find the respective mean square error and peak signal to noise ratio of images containing noise. **Keywords:** Image processing, Fuzzy logic, Fuzzy image processing, MATLAB, Edge detection, fuzzy rules, noise **References:** 1. Shashank Mathur, Anil Ahlawat, "Application Of Fuzzy Logic In Image Detection", International Conference "Intelligent Information and Engineering Systems" INFOS 2008, Varna, Bulgaria, June-July 2008 2. O. R.Vincent and O. Folorunso [2009] "A descriptive algorithm for sobel image edge detection" Proceedings of Informing Science & IT Education Conference (InSITE) 2009 3. L. Liang and C. Looney, "Competitive Fuzzy Edge Detection," Applied Soft Computing, (3), 2003, pp. 123-137. 4. E. Argyle. "Techniques for edge detection," Proc. IEEE, vol. 59, pp. 285-286, 1971. 5. Ayman A. Alyand and Abdallah A. Alshnnaway [2009], "An edge detection and filtering mechanism of two dimensional digital objects 6. Tizhoosh [1997], "Fuzzy Image Processing. based on fuzzyinference"Springer1997. 7. John Canny. [Nov. 1986], "A computational approach to edge detection". Pattern Analysis and Machine Intelligence and IEEE Transactions on and PAMI-8(6):679–698 8. Yasar Becerikli and Tayfun M. Karan, "A New Fuzzy Approach for Edge Detection", Computational Intelligence and Bio inspired Systems" , June 2005. 9. Singh Gill [2010], "Fuzzy logic based image edge detection algorithm in matlab" ©2010 International Journal of Computer Applications (0975 - 8887) Volume 1 – No. 22 10. Devesh D. Nawgaje, Dr. Rajendra and D.Kanphade [Feb 2011], "Implementation of fuzzy inference system for white blood cell cancer detection using dsp tms320c6711."International Journal of Engineering Science and Technology (IJEST) ISSN: 0975-5462 NCICT Special Issue Feb 2011 11. Isha Jain and Babita Rani [Dec. 2010], "Vehicle detection using image processing and fuzzy logic." International Journal of Computer Science & Communication. 1, No. 2, July-December 2010, pp. 255- 257 12. Mamta Juneja and Parvinder Singh Sandhu [2009], "Performance evaluation of edge detection techniques for images in spatial domain" International Journal of Computer Theory and Engineering and Vol. 1 and No. 5 and December and 2009 1793-820 13. I.Nedeljkovic "Image Classification Based On Fuzzy Logic" and MapSoft Ltd and Zahumska 26 11000 Belgrade and Serbia and Montenegro and The International Archives of the Photogrammetry and Remote Sensing and Spatial Information Sciences and Vol.34	
13.	**Authors:**	**Suresh Babu S, Channabasappa Baligar**
	Paper Title:	**ARM Simulation using C++ and Multithreading**
	Abstract: This project is to be produced a software simulation of an ARM processor. A hardware simu¬lator is a piece of software that emulates specific hardware devices, enabling execution of software that is written and compiled for those devices, on alternate systems. Aim of this project is to develop an ARM simulator using C++ and Multithreading, the same is tested with 'GDB' tool in Linux 2.6.37.4. The main feature of the project is the implementation of the ARM simulation with multi-threading. The analysis phase of the project involved detailed studies of different ARM architec¬tures and ARM assembly language. Most of the decisions about hardware components to in¬clude in the simulation and assembly instructions to support were to be made during this stage. This phase also involved identifying the requirements of the simulator. The next stage was design, in which the major parts are identified to develop the si¬mulation part of an ARM processor. The implementation phase involved turning the major parts into code, following the design as closely as possible. C++ programming language is to be used as it is object oriented programming language to implement the project. Multithreading concept is to be adopted to execute decoding function and execute function, so that execution will become faster. GDB is to be used to debug the project. **Keywords:** ARM, Simulation, thumb, multithreading **References:** 1. ARM System Developer's Guide by Andrew N SLOSS, Dominic SYMESS, Chris WRIGHT 2. Alpa Shah, Columbia University, ARM Simulator, Proceedings of the IEEE International Conference 3. Alpa Shah, Columbia University, ARMSim, An Instruction Set Simulator for the ARM Processor, Proceedings of the IEEE International Conference.[ajs248@cs.columbia.edu] 4. M7TDMI ARM Processors User's Manual, Advanced Risc Machines Ltd 5. ARM System Developer's Guide, Designing and Optimizing System Software, by Andrew N Sloss, Dominic Symes and Chris Wright 6. POSIX Threads Programming, Author: Blaise Barney, Lawrence Livermore National Laboratory	**56-60**
14.	**Authors:**	**Cosmas U. Ogbuka, Ogbonnaya Bassey**
	Paper Title:	**Protection Method against Induction Motor Single-Phasing Fault**
	Abstract: This paper proposes a protection scheme for three phase induction motors against single-phasing faults. Dynamic model of the induction motor in the stationary reference frame was adopted and modified to reflect single-phasing fault. A simulation algorithm was proposed, which can help determine the impact of single-phasing on any three phase induction motor. A case study simulation was carried-out with sudden single-phasing using MATLAB/SIMULINK software. A single-phasing protection by means of contactors was reviewed before an enhanced single-phasing protection was designed. A prototype of the enhanced protection method was implemented by the use of ac to dc converter, PIC16F877A and DC relays. The latter, in additional to offering protection against single-phasing, also protects the motor from under-voltage, over-voltage and voltage unbalance. **Keywords:** Single-phasing, Three-phase induction motor, PIC16F877A, ADC, contactor	**61-65**

References:
1. C. Ong. Dynamic Simulation of Electric Machinery Using Matlab/Simulink. New Jersey: Prentice Hall PTR, 1998.
2. E. Wiedenbrug. "Overheating Electric Motors: A Major Cause of Failure." Internet: http://www.mt-online.com/april2003/overheating-electric-motors-a-major-cause-of-failure, [Jun. 6, 2013].
3. I. Litchev and K. M. Yanev. "Implementation of a Single Phasing Protective Circuit for Three Phase Induction Motor." Department of Electrical Engineering, Facullty of Engineering and Technology, University of Botswana, Gaborone, Botswana.
4. R. J. Lawrie."Electric Motor Manual", McGraw-Hill, Inc., USA, 1987, ISBN 0-07-036730-2, pp28-30,95-98.
5. M. Sudha and P. Anbalagan, 2009. A Protection Scheme for Three-Phase Induction Motor from Incipient Faults Using Embedded Controller. Asian Journal of Scientific Research, 2: 28-50.
6. M. Sudha and P. Anbalagan. "A Novel Protecting Method for Induction Motor Against Faults Due to Voltage Unbalance and Single Phasing." Industrial Electronics Society, 2007. IECON 2007. 33rd Annual Conference of the IEEE, pp. 1144 – 1148, 5-8 Nov. 2007.
7. http://www.microchip.com/wwwproducts/Devices.aspx? product=PIC16F877A

15.

Authors: **Jyoti R. Gaikwad, Amruta B. Deshmane, Harshada V. Somavanshi, Snehal V. Patil, Rinku A. Badgujar**

Paper Title: **Credit Card Fraud Detection using Decision Tree Induction Algorithm**

Abstract: With the brisk advancement in the electronic commerce technology and improvements in the communication channels, fraud is scattering all over the world, ensuing in massive financial losses. In machine learning Fraud detection has been an interesting topic. In present day, the major causes of great financial losses is credit card fraud, which affect not only merchants but also individual clients too. Due to enormous raise in credit card transactions, credit card fraud has become more and more rampant in recent years. Clustering model, Gaussian mixture model, Bayesian networks are the presented methods to detect credit card fraud. In Proposed system, data mining technology, classification models based on ID3 decision trees and visual cryptography are applied on credit card fraud detection problem. Thus by the implementation of this approach in fraud detection systems, financial losses due to fraudulent transactions can be decreased more.

Keywords: Data Mining, Credit card fraud, Credit Card Fraud Detection, E-Commerce Security, ID3 Decision Tree, Internet, online shopping, Visual Cryptography.

References:
1. Aleskerov, F., Freisteben, B.. & Rao. B. (1997). CARDWATCH:"A neural network based data mining system for credit card fraud detection. Computational Intelligence for Financial Engineering". 220-226.
2. Bolton. R. J. & Hand. D. J. (2002). "Statistical fraud detection: A review. Statistical Science". 28(3). 235-255.
3. Bradford.). P. Kunz. C.. Kohavi. R.. Brunk.C. & Bradley. C. E. (1998). "Pruning decision tires with misclassification costs". In Proceedings of 10th European conference on machine learning (pp. 131-136). Berlin.
4. Brause, R, Langsdoff, T.. & Heap, M.. (1999)." Neural data mining for credit card fraud detection". In Proceedings of the 1 1 th IEEE international conference on tools with artificial intelligence.
5. Breiman. L. Friedman, Isbell. R. & Stone, C. (1984). "Classification and regression trees". Wadsworth International Group.
6. Bradley. C_ E. (1995). "Automatic selection of split criterion during tree growing based on node location". In Proceedings of 12th intemationa/ conference on. machine learning (ICML-95) (pp. 73-80).
7. Chavda, N.. Bowyer. L. & Kegelmeyer. W. (2002). SMOLT: "Synthetic minority over-sampling technique". Journal of Artificial Intelligence Research, 16, 321-357.
8. Chen. R.. Chiu, M.. Huang, Y., & Chen. L (2004). "Detecting credit card fraud by using questionnaire-responded transaction model based on SVMs". In Proceedings of 1DEAL2004 (pp. 800-806) Exeter. UK.
9. Draper. R. Brod ley. C. L & Utgoff. P. (1994). "Coal-directed classification using linear machine decision trees". IEEE Transactions on Pattern Analysis and Machine Intelligence. 16.888-893.
10. Drummond C.. & Hoke. R. C. (2000). "Explicitly representing expected cost: An alternative to roc representation". In Proc. ACM S1GKDD, int7 cool knowledge discovery and data mining (pp. 198-207).
11. Drummond. C.. & Hotta R C. (2000) "Exploiting the cost (in)sensitivity of decision tree splitting criteria". In Proceedings of the 17th international conference on machine reaming (pp. 239-246).
12. Duman. E..& Ozcelik, ht. H. (2011) "Detecting credit card fraud by genetic algorithm and scatter search. Expert Systems with Applications". 38.13057-13063.
13. Alejandro Correa Bahnsen, Aleksandar Stojanovic, Djamila Aouada and Bj¨orn Ottersten" Cost Sensitive Credit Card Fraud Detection using Bayes Minimum Risk".
14. Tatsuya Minegishi, Ayahiko Niimi "Detection of Fraud Use of Credit Card by Extended VFDT".
15. V.Dheepa,Dr. R.Dhanapal "Analysis of Credit Card Fraud Detection Methods". International Journal of Recent Trends in Engineering, Vol 2, No. 3, November 2009.
16. Krishna Kumar Tripathi, Mahesh A. Pavaskar " Survey on Credit Card Fraud Detection Methods". International Journal of Emerging Technology and Advanced Engineering,Volume 2, Issue 11, November 2012.
17. Y. Sahin and E. Duman" Detecting Credit Card Fraud by Decision Trees and Support Vector Machines".
18. Alka Herenj,Susmita Mishra "Secure Mechanism for Credit Card TransactionFraud Detection System". International Journal of Advanced Research in Computer and Communication EngineeringVol. 2, Issue 2, February 2013.

16.

Authors: **V. S. Jagannatha Rao, Siva Yellampalli**

Paper Title: **Implementation of Formal Verification on Scalable Arbiter**

Abstract: In this paper, the Formal Verification (FV) approach is implemented on a scalable arbiter. Arbiters are a critical component in systems containing shared resources. FV is an approach using mathematical proof of ensuring that a design's implementation matches its specification, and utilizes formal analysis techniques targeted at assertions within the RTL, to find design errors. The FV requires, properties and coverage to be written and the same is required to be coded using system verilog assertions (SVA). The key advantage of FV is that it does not require test benches to run and can be used to verify RTL codes very early in the design process. The implementation requires checking RTL design of arbiter, clock initialization, implementation of assertions, proving properties, coverage and tabulating the results, to ensure successful implementation. The results are analyzed by running the incisive formal verifier, (ifv), tool and checking for the properties and coverage which are written in SVA, for pass or fail.

Keywords: Formal Verification FV,Time to market, system verilog assertions –SVA, Bug free silicon, resusbality.

References:

1. Alok Sanghavi "What is formal verification?" Technical Marketing Manager Jasper Design Automation, eetasia.com | EE Times-Asia.
2. Nathaniel Ayewah, Nikhil Kikkeri and Peter-Michael Seidel, "Challenges in the Formal Verification of Complete State-of-the-Art Processors",page no.603-606- IEEE -2005.
3. Alan J. Hu, Masahiro Fujita, Chris Wilson, "Formal Verification of the HAL Sl System, Cache Coherence Protocol," page 43- IEEE – 1997.
4. C. Richard Ho, Michael Theobald, Martin M. Deneroff, Ron O. Dror, Joseph Gagliardo and David E. Shaw. "Early Formal Verification of Conditional Coverage Points to Identify Intrinsically Hard-to-Verify Logic", Design Automation Conference, DAC 2008. 45th ACM/IEEE, dated – 8-13 June 2008,page no. 268-271.
5. 2004-2006 Cadence Design Systems, Inc. "Formal Analysis Project Methodology,Incisive Formal Verification,,Cadence Design Systems",June -2005, page no.1-3.
6. Marjan Sirjani "Introduction to Formal Verification," Various Contributors, Survey of Formal Verification, IEEE Spectrum , June 1996, pp. 61-67.
7. Kanna Shimizu and David L. Dill, Standford University, ,"Using Formal Specifications for Functional Validation of Hardware Designs" IEEE, Design & Test of Computers, July/August 2002 (Vol. 19, No. 4), pp. 96-106.
8. ifvuser.pdf, Cadence – "Formal Verifier User Guide," Product Version 10.2, September 2011.
9. John Lach, University of Virginia, Scott Bingham, University of Virginia, Carl Elks, University of Virginia, "Accessible Formal Verification for Safety-Critical Hardware Design,", dated – 23-26 Jan. 2006, page no. 29-32.
10. Raj S. Mitra, "Strategies for Mainstream Usage of Formal Verification." Texas Instruments, Bangalore.DAC 2008, June 9-13, 2008, Anaheim, California, page no.800-805.