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Technical Advisory Board

1.

Authors: A.K.M. Al-Shaikhli, Amanoeel Thomas Mika

Paper Title: Analysis and Construction of The Multicoil Induction Cookers

Abstract: Induction cooker is one of the domestic appliances that enjoins increased demand at the present time, because it has proved its efficiency compared to traditional cookers. Some features of the advantage of the induction cooker are speed in heating and good performance in heat distribution. This paper deals with multicoil induction cookers which can be classified into three types. The first type discuss how to heat any kind of metal loads (magnetic or non-magnetic), while the second type discuss how to increase the diameter of the coil (obtain adaptable – diameter burners formed by concentric planar windings). Finally, the third type discuss the effect of two considerations on the characteristic of the control circuit in the double coil induction cooker, the first is the gap length between the load and heating coil, and the second is the kinds of the load.

Keywords: Induction cooker, multicoil induction cookers, adaptable – diameter burners, gap length between the load and heating coil , kinds of the load.

References:

1. Prof .Dr. A.K.M.Al-Shaikhli and Amanoeel Thomas Meka "Design and Implementation of Practical Induction Heating Cooker," International Journal of Soft Computing and Engineering (IJSCE),Vol.4, September 2014.
2. Acero, R. Alonso, J.M. Burdio, L.A. Barragain, and C. Carretero, "Model of Losses in Twisted-Multi Stranded Wires for Planar Windings Used in Domestic Induction Heating Appliances ", in Proc. IEEE Appl. Power Electron. Conf. (APEC), pp. 1247-1253, 2007.
3. Teruya Tanaka, " A New Induction Cooking Range for Heating Any Kind of Metal Vessels " , IEEE Trans., Vol. 35, No. 3, August 1989.
4. Jesus Acero, Claudio Carretero, Ignacio Millan, Oscar Lucia, Jose- Miguel Burdio, and Rafael Alonso, " Modeling of Adaptable-Diameter Burners Formed by Concentric Planar Windings for Domestic Induction Heating Applications" 2010 Twenty-Fifth Annual IEEE Applied Power Electronics Conference and Exposition (APEC), pp . 92-97, 2010.
5. Amanoeel Thomas Mika,M.Sc.Disswtation,"Study of the Multicoil Induction Cookers", Unverisity of Technology, Baghdad, Iraq, 2015 (to be submitted).
6. Hironobu Yonemori, and Miki Kobayashi, "On the Heating Characteristic and Magnetic Flux of a Double-Coil Drive Type Induction Heating Cooker " IEEE Trans, 2006. [10] S. K. V.M. Primiani, and G. Cerri, "Rigorous electromagnetic model of an induction cooking system," IET Sci. Meas. Technol., vol. 6, issue 4, pp. 238-246, 2012.
7. Hironobu Yonemori, Miki Kobayashi, and Kouhei Suzuki," Temperature Control of a Double- Coil Drive Type IH Cooker By Means of The PDM Control Provided with Audio Noise Suppression", IEEE Trans, 2008.

2.

Authors: Alhamzah Taher Mohammed

Paper Title: Design and Performance of Frequency Domain Equalization for IEEE 802.11a Physical Layer in SUI Channels

Abstract: this research investigates the performance of adaptive equalization processing for Broadband Wireless Access (BWA) is a promising technology which can offer high speed voice, video and data service up to the customer end. Due to the absence of any standard specification, earlier BWA systems were based on proprietary standard. IEEE 802.11a Wireless MAN standard specifies a Medium Access Control (MAC) layer and a set of PHY layers to provide fixed and mobile Broadband Wireless Access (BWA) in broad range of frequencies. The OFDM has adopted in IEEE 802.11a PHY layer for the equipment manufacturer due to its robust performance in multipath environment. The paper investigates the simulation performance of IEEE 802.11a OFDM PHY layer. The overall performance analysis of the proposed equalization technique over Stanford University interim (SUI) channels was performed .The evaluation was done in simulation developed in MATLAB.

Keywords: (BWA), IEEE, BWA, MAN, (MAC), OFDM, PHY, (SUI)

References:

1. IEEE 802.11 Task Group, "Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications: High-speed Physical Layer in the 5 GHz Band, 1999.," 1999.
2. B. O'Hara, and Al Petrick,, "The IEEE 802.11 Handbook: A Designer's Companion, New York, IEEE Press, 1999.," 1999.
3. "A Brief Tutorial on the PHY and MAC layers of the IEEE 802.11b standard" Benjamin E. Henry july 12.
4. R.W. Lucky, "Automatic Equalization for Digital Communications," Bell System Technical Journal, Vol. 44, No. 4, April 1965, pp. 547-588, 1965.
5. R.W. Lucky, "Techniques for Adaptive Equalization of Digital Communications," Bell System Technical Journal, Vol. 45, pp. 255-286, 1965.
6. B. Widrow, "Adaptive Filters, I: Fundamentals", Stanford Electronics Laboratory, Stanford University, Standord, CA, Technical Report No. 6764-6, December 1966," 1966.
7. D. M. T. K. Rupali V. Mane, "Implementation of Adaptive Filtering Algorithm for Speech Signal on FPGA," INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN ELECTRICAL, ELECTRONICS, INSTRUMENTATION AND CONTROL ENGINEERING Vol. 2, Issue 3, March 2014, 2014.
8. J.I. Nagumo and A. Noda, "A learning method for system identification", IEEE Transactions on Automated Control, Vol. AC-12, No. 3, June 1967, pp. 282-287," 1967.
9. A.E. Albert and L.S. Gardner, " "Stochastic Approximation and Nonlinear Regression", MIT Press, Cambridge, ," 1967.
10. R.R. Bitmead and B.D.O. Anderson, ""Performance of adaptive estimation algorithms in dependent random environments", IEEE Transactions on Automated Control, Vol. AC-25, No. 4, August 1980, pp. 788-794," 1980.
11. N. D. V. Muhammed O. Sayin, and Suleyman Serdar Kozat,, "A Novel Family of Adaptive Filtering Algorithms Based on the Logarithmic Cost," IEEE TRANSACTIONS ON SIGNAL PROCESSING, VOL. 62, NO. 17, SEPTEMBER 1, 2014, 2014.
12. M.E. Austin, ""Decision-feedback equalization for digital communication over dispersive channels", MIT Lincoln Lab., Lexington, MA, USA, Technical Report 437, August " 1967.
13. D.N. Godard, ""Channel Equalization Using a Kalman Filter for Fast Data Transmission", IBM Journal of Research and Development, Vol. 18, , pp. 267-273," 1974.
14. A.H. Sayed and T. Kailath, " "A State-Space Approach to Adaptive RLS Filtering", IEEE Signal Processing Magazine, Vol. 11, July 1994, pp. 18-60," 1994.

15. S. Haykin, ""Adaptive Filter Theory – Third Edition", Prentice Hall, ISBN 0-13- 322760-X, 1996," 1996.
16. M. Praneet Soni "Kalman Filter Based Channel Equalizer: A Literature Review," International Journal of Emerging Technology and Advanced Engineering Website: www.ijetae.com (ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 4, Issue 5, May 2014), 2014.
17. M. C. Ms.Manpreet kaur, "Design of an Adaptive Equalizer Using Lms Algorithm," IOSR Journal of Electronics and Communication Engineering (IOSR-JECE) -ISSN: 2278-2834,p- ISSN: 2278-8735.Volume 9, Issue 1, Ver. I (Jan. 2014), PP 25-29, 2014.
18. Daniel S. Baum " "Stanford University, Simulating the SUI Channel Models." IEEE Transactions on Consumer Electronics.," 2001.

3.

Authors: **Nguyen Tien Duy, Nghiem Van Tinh, Nguyen Tuan Anh**

Paper Title: **Nonlinear Interpolation in Hedge Algebras Associating Genetic Algorithm to Solve the Bell-Shaped Function Approximation Problems**

Abstract: Recently, there have been many works published related to approximation ability of the function using fuzzy logic and hedge algebras. These results showed that the approximation has a large error. In this paper, we propose a new method in improving the approximation accuracy of the function using hedge algebra by executing the normalization and denormalization by nonlinear interpolation. Moreover, we apply genetic algorithm to optimize the algorithms of hedge algebra. The function we choose to be approximate is the bell-shaped function. It is proved in the result that approximation bell surface has a significant decrease compared with the last results. Therefore, the effectiveness of hedge algebra in solving the approximation problems using algorithm can be revealed; as a result, it is advisable that nonlinear interpolation in hedge algebra to these problems such as nonlinear function approximation, fuzzy control be used,

Keywords: Approximation inference, identification, function approximation, hedge algebras.

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References:

1. Cao Z. and Kandel A., (1989), "Applicability of some fuzzy implication operators", Fuzzy Sets and Systems 31, 151-186.
2. Cat Ho Nguyen, Nhu Lan Vu, Tien Duy Nguyen, Thiem Pham Van, (2014) "Study the ability of replacing fuzzy and PI controllers with the Hedge - Algebras - Based controller for DC motor", Journal of science and technology, Vol 52, N.1, 35-48.
3. Ho N. C., Wechler W. (1990), "Hedge algebra: An algebraic approach to structures of sets of linguistic truth values", Fuzzy Sets and Systems 35, pp. 281–293.
4. Ho Nguyen Cat, Lan Vu Nhu, Duy Nguyen Tien, (2014) "Hedge-Algebra-Based Voltage Controller for a Self-Excited Induction Generator", The 7th National Conference on Fundamental and Applied IT Research, Thainguyen.
5. Phạm Thanh Hà, (2010), Phát triển các phương pháp lập luận mờ sử dụng đại số gia tử và ứng dụng, Viện công nghệ thông tin.
6. Satish Kumar (1999), "Managing Uncertainty in the Real World – Part Fuzzy Sets", Resonance, Vol.4, No.2, pp.37 – 47.
7. TS. Nguyễn Đình Thúc, (2008), Trí tuệ nhân tạo - Lập trình tiến hoá, NXB Giáo Dục.
8. Vũ Như Lân, Nguyễn Tiến Duy, (2007), "Nhận dạng mô hình hệ dựa trên luật sử dụng đại số gia tử", Tạp chí Khoa học và Công nghệ, tập 45, số 1.

4.

Authors: **Ravikumar.A.G, Manjunath M**

Paper Title: **Investigation on Waste Plastic Fibre Reinforced Concrete using Manufactured Sand as Fine Aggregate**

Abstract: Concrete is the main construction material in the world. It consist of cement, fine aggregate, coarse aggregate and water as main ingredients. Now days due to high global consumption of natural sand, sand deposit are being depleted and causing serious threat to environment as well as society. River sand is becoming a scarce commodity and hence an exploration alternative to it has become imminent. Manufactured sand is the good alternative to river sand and it is purposely made, fine crushed aggregate produced under controlled conditions from a suitable sand source rock. Plastics are non biodegradable common environmental polluting materials. Which are going to affect the fertility of soil. In present study the detailed experimental investigation is carried out on plastic fibre reinforced concrete by partial replacement of normal sand by manufactured sand with different percentages(0%, 20%, 40%, 60%,80%,100%) and adding fixed percentage (0.5% of weight cement)) of plastic fibres.The mechanical properties of concrete like compressive strength, tensile strength and flexural strength are studied here.

Keywords: Fibre reinforced concrete, manufactured sand, compressive strength, split tensile strength, flexural strength

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References:

1. R. kandasamy and R. Murugesan , "Study on fibre reinforced concrete using manufactured sand as fine aggregate and domestic waste plastics as fibre". vol. 40,No.6, Feb-March 2014, pp. 521-531
2. R.Mahendra Chitlange and S Prakash Pajgade "Strength appraisal of artificial sand as fine aggregate in SFRC" ARPN Journal of Engineering and Applied Science (2010), Volume 5,No.10, Oct-2010,ISSN 1819-6608 pp. 34-38
3. S.Elavenil and B.Vijaya "Manufacture sand, A solution and an alternative to river sand and in concrete manufacturing" Journal of Engineering, Computers & Applied Science (JEC&AS) Volume 2, No.2, Feb-2013 pp.20-24, ISSN NO.2319-5606.
4. B.Sawant, M.B.Kumthekar And S.G.Sawant "Utilization of Neutralized Industrial waste in concrete" International Journal of inventive Engineering and Sciences (IJIES) ISSN: 2319-9598, Volume-1, Issue-2,Jan-2013.
5. R.Kandasamy and R.Murugesan "Fibre Reinforced self compacting concrete using domestic waste plastics as fibres" Journal of Engineering and applied science Volume7 (6), pp 405-410, 2012 ISSN: 1816-949X.
6. Balasubramaniam.M, K.S.Anandha. K.Vetrivel. and Iftekar Gull "An experimental investigation on use of post consumed E-plastic waste in concrete" International Journal of Engineering Research, Volume 2,ISSUE 2,PP 260-268, April-2014
7. R.Gobinath, V.Vijayan and Sivakumar "Strength of concrete by partially replacing the fine aggregate using M-sand" Scholars Journal of Engineering and Technology (SJET), Volume 1, ISSN 2321-435X, pp 238-246, 2013.
8. M.S.Shetty "Concrete Technology" S.C.Chand and Co.Ltd.New Delhi.
9. M.L Gambir. "Concrete Technology" Tata McGraw-Hill Publications, New Delhi
10. A.R.Santhakumar. "Concrete Technology" Oxford University Press, New Delhi,2007

5.

Authors: **Adrian Titi Pascu, Daniel Băcescu, Constantin Anton Micu**

Paper Title: **Calculation Specifics for The Customized Contact Lenses**

Abstract: This paper presents the theoretical and practical aspects regarding the design and manufacturing of the customized contact lenses based on a proposal for a customized contact lens with a non-circular shape. Are proposed

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an oval shape and an approximate trapezoid shape for which arises the idea to calculate a coverage percentage that allows a comparison between the contour shapes of the contact lenses with regard to the direct oxygen transmission degree to the cornea. Another approach regards the possible combinations of surfaces of the customized contact lens, the determination of the curvature radiuses or the equation of the surfaces, while attempting to follow the closest shape to the geometry of the cornea and also the minimization of the aberration of the optical transfer function. Is presented an oval shaped contact lens manufactured in a fast-cast type system during laboratory conditions.

Keywords: Contact lens, customized, elliptical, coverage factor.

References:

1. A.T. Pascu,The role, design and manufacture of contact lenses,(in romanian) ,Ed. Atkins, Bucharest,2000
2. T.Pascu , D. Băcescu , Completing the Lotmar model for the human eye with the crystalline lens refraction index variation function,JOAM, iss.5-6,2015
3. D.Băcescu , Visual system modeling ,(in romanian) ,PUB- Course notes,2012
4. A.T.Pascu , D. Băcescu,C.A.Micu, Checking the corrective lenses for the spherical diopters hypothesis and preparing the approach for the aspherical diopters hypothesis,Sci.Bul.UPB,to be published
5. W.Grimm, vorlesungsskript, 12. durchgesehene Auflage
6. IACLE, Contact lens course module 2,First Ed.2003,cd-rom versiune
7. G. Heiting, Custom Contact Lenses http://www. allaboutvision.com/,
8. N.Dumitrescu , Contact lens. Course notes, (in romanian),Bucharest 2001
9. R.Varsha,M.Mandathara,S.Preeji,D.Srikanth, Contact lens in keratoconus,PubMed, 2013-08-01
10. P .Erickson, M.Robboy, A. Apollonio, W. F. Jones, Optical design considerations for contact lens bifocals, PubMed, 1988-03-01
11. P. Huang, J.Weissman, A. Barry, Is contact lens "T" still important? ,PubMed, 2004-03-01
12. J.M.Garr-Peters,C.S.Ho,Oxygen transfer in the corneal-contact lens system,PubMed, 1987-01-01
13. G.Manea, Lens prescription for rigid contact lenses in keratoconus,PubMed, 2012-01-01
14. H. Cavanagh, R. Dwight, M.Danielle; W. M. Petroll, J. V.,Jester, Forty Years in Search of the Perfect Contact Lens,PubMed Central, 2010-01-01

6.

Authors: **Majzoob Kamal Aldein Omer**

Paper Title: **Network Services Application to Controlling and Develop Institute Computer LABs**

Abstract: The research aims to develop a system that helps the use of computer labs devices in the colleges optimal use, through the imposition of a range of settings and restrictions, such as the controlling operations on the devices in the network, by using a series of commands such as closed, and select a specific time to run student education programs, identify the type of software used after checked and validated, enables the administrator to control and restrict the network access to specific destinations and process of controlling the students access to network services such as the Internet, where the management process include blocking non-useful sites which cause a bottleneck in the network, leading to weakness in the efficiency of the network, but sometimes leads to a break, the program determine the specific sites is preventing access to it even increases the efficiency of the network. The System operates on a set of related LAN devices facilitate the take actions settings and services on the devices expeditiously, the system provides settings and restrictions from one central point facilitates the management processing, cause there is a specific central device in the network (server) allows to control network devices from a single location .

Keywords: Computer labs, Network services, student user, administrator user, client services, services administration program

References:

1. V. Ajanovski (FCSE, UKIM), Access Control and Monitoring for Campus Computer Labs, Produced by the MARNET-led working group on network security and monitoring, April 2015.
2. UTEP Computer Lab Management Policy,2006
3. Steve Liu, Willis Marti, Wei Zhao, Virtual Networking Lab (VNL): its concepts and implementation, Proceedings of the 2001 American Society for Engineering Education Annual Conference & Exposition
4. Gustavo R.Alves, Manual G.Gericota, Juarez B.Silva, Joao Bosco Alves, Large and Small Scale Network of Remote Labs, 2007
5. Luis Gomez and Javier Garcia – zubia(eds) , Advances on Remote Laboratories and E-Learning Experiences, 2007.

7.

Authors: **Kushal Dinkar Badgujar, Suneet Singh**

Paper Title: **Numerical Solution of Generalised Burgers-Huxley Equation Using Nodal Integral Method**

Abstract: In this article, a modified nodal integral method (MNIM) is developed to solve generalised Burgers-Huxley equation which is governing equation for various nonlinear wave phenomena. Nodal integral methods have been earlier used for solving differential and partial differential equations in various areas of physics. These methods have been known to be significantly more accurate than traditional finite volume/difference approaches. The developed scheme is verified by comparing it to analytical solutions of the equation for different values of parameters present in this equation. It is observed that MNIM yields quite accurate results even with coarse grids.

Keywords: modified nodal integral method, solve generalised Burgers-Huxley equation, nonlinear wave phenomena. Nodal integral methods.

References:

[1] X. Y.Wang, Z. S. Zhu & Y. K. Lu, "Solitary Wave Solutions of the Generalised Burgers-Huxley Equation" Journal of Physics A: Mathematical and General, Vol. 23, No. 3, pp. 271-274 (1990).
[2] O.Y. Yefimova, N.A. Kudryashov, "Exact Solutions of the Burgers-Huxley Equation", Journal of Applied Mathematics and Mechanics, Vol. 68, Issue 3, pp. 413–420 (2004).
[3] Macias-Diaz, J. Ruiz-Ramirez, J. Villa, "Numerical Solution of a Generalized Burgers-Huxley Equation Through a Conditionally Bounded and Symmetry-Preserving Method", Computers & Mathematics with Applications, Vol. 61, Issue 11, pp. 3330-3342 (2011)
[4] U.M. Ascher, S.J. Ruuth, R.J. Spiteri,"Implicit-Explicit Runge-Kutta Methods for Time Dependent Partial Differential Equation",

Applied Numerical Mathematics, Vol. 25, Issues 2–3, pp.151-167, (1997).
[5] H. N. A. Ismail, K. Raslan, and A. A. A. Rabboh, Adomian decomposition method for Burger's–Huxley and Burger's-Fisher equations, Appl. Math. Comput. 159, 291–301, (2004).
[6] I. Hashim, M. S. M. Noorani, and M. R. Said Al-Hadidi, Solving the generalized Burger's–Huxley equation using the domian decomposition method, Math. Comput. Model. 43, pp. 1404–1411, (2006).
[7] I. Hashim, M. S. M. Noorani, and B. Batiha, A note on the Adomian decomposition method for the generalized Huxley equation, Appl. Math. Comput. 181, pp. 1439–1445, (2006).
[8] B. V. Rathish Kumar, V. Sangwan, S. V. S. S. N. V. G. K. Murthy, and M. Nigam, A numerical study of singularly perturbed generalized Burger's–Huxley equation using three-step Taylor-Galerkin method, Comput. Math. Appl. 62, pp. 776–786, (2011).
[9] A. Kaushik and M. D. Sharma, A uniformly convergent numerical method on non-uniform mesh for singularly perturbed unsteady Burger's–Huxley equation, Appl. Math. Comput. 195, pp. 688–706, (2008).
[10] M. Sari, G. Gürarslan, and A. Zeytino˘glu, High-order finite difference schemes for numerical solutions of the generalized Burger's–Huxley equation, Numer. Methods. Partial. Diff. Eq. 27, pp. 1313– 1326, (2011).
[11] Reza Mohammadi, "B-Spline Collocation Algorithm for Numerical Solution of the Generalized Burger's-Huxley Equation", Wiley Periodicals Inc., DOI 10.1002/num.21750, (2012).
[12] T.J. Burns, J.J. Dorning, A new computational method for the solution of multidimensional neutron problems, in: Proceedings of the Joint NEACRP/CSNI Specialists_ Meeting on New Developments in Three-Dimensional Neutron Kinetics and Review of Kinetics Benchmark Calculations, Laboratorium fur Reaktorregelung and Anlagensicherung, Garching, Munich, Germany, pp. 109–130, (1975).
[13] T.J. Burns, The partial current balance method: a local Green_s function technique for the numerical solution of multidimensional diffusion problems, Ph.D. Thesis, University of Illinois, (1975).
[14] R.D. Lawrence, A nodal Green's function method for multidimensional diffusion calculations, Ph.D. Thesis, University of Illinois, (1979).
[15] R.D. Lawrence, J.J. Dorning, A nodal Green's function method for multidimensional neutron diffusion calculations, Nucl. Sci. Engrg. 76, pp. 218–231, (1980).
[16] R.D. Lawrence, J.J. Dorning, A discrete nodal integral transport theory method for multidimensional reactor physics and shielding, in: Proceedings of the ANS Conference on Advances in Reactor Physics and Shielding, Sun Valley, Idaho, (1980).
[17] H.D. Fischer, H. Finnemann, The nodal integration method – a diverse solver for neutron diffusion problems, Atomkernenergie,Kerntechnik 39 , pp. 229–236, (1981).
[18] R.D. Lawrence, Progress in nodal methods for the solutions of the neutron diffusion and transport equations, Prog. Nucl. Energy 17 (3) , pp.271–301, (1986).
[19] W.C. Horak, J.J. Dorning, A nodal coarse-mesh method for the efficient numerical solution of laminar flow problems, J. Comp. Phys. 59, pp.405–440, (1985).
[20] G.L. Wilson, R.A. Rydin, Y.Y. Azmy, Time-dependent nodal integral method for the investigation of bifurcation and nonlinear phenomena in fluid flow and natural convection, Nucl. Sci. Engrg. 100 , pp.414–425, (1988).
[21] P.D. Esser, R.J. Witt, An upwind nodal integral method for incompressible fluid flow, Nucl. Sci. Engrg. 114 , pp.20–35, (1993).
[22] E.P.E. Michael, J.J. Dorning, Rizwan-uddin, Studies on nodal integral methods for the convection–diffusion heat equation, Nucl. Sci. Engrg. 137 , pp.380–399, (2001).
[23] J.P. Hennart, A general family of nodal schemes, SIAM J. Sci. Stat. Comp. 7 (1) 264–287, (1986).
[24] H.D. Fischer, H. Finnemann, The nodal integration method – a diverse solver for neutron diffusion problems, Atomkernenergie Kerntechnik 39 , pp.229–236, (1981).
[25] Y.Y. Azmy, J.J. Dorning, A nodal integral approach to the numerical solution of partial differential equations, in: Advances in Reactor Computations, vol. II, American Nuclear Society, LaGrange Park, IL, pp. 893–909, (1983).
[26] Y.Y. Azmy, Nodal method for problems in fluid mechanics and neutron transport, Ph.D. thesis, University of Illinois, (1985).
[27] P.D. Esser, R.J. Witt, An upwind nodal integral method for incompressible fluid flow, Nucl. Sci. Engrg. 114 , pp. 20–35, (1993).
[28] E.P.E. Michael, J.J. Dorning, Rizwan-uddin, Studies on nodal integral methods for the convection–diffusion heat equation, Nucl. Sci. Engrg. 137, pp. 380–399, (2001).
[29] C. Gunther, Conservative versions of the locally exact consistent upwind scheme of second order (LECUSSO-SCHEME), Int. J. Numer. Methds Engrg. 34, pp. 793-804, (1992).
[31] Rizwan-Uddin, "An Improved Coarse-Mesh Nodal Integral Method for Partial Differential Equations", Numerical Methods for Partial Differential Equations, John Wiley and Sons Inc., pp. 113-145, (1997).
[32] Y. Y. Azmy, "A nodal integral method for the numerical solution of incompressible fluid flow problems," Master's Thesis, University of Illinois, 1982.

8.	**Authors:**	**Abhijeet Chakrey, Priya Pawar**	
	Paper Title:	**Advantages of Mechanical Concrete Road Over Conventional Road**	
	Abstract: Mechanical Concrete is unicellular confined aggregate unit, it binds aggregates into a singular confinement to support lateral soil pressure, also binds aggregates tighter into a load bearing cell. It basically supports the aggregates used in conventional road, confining it into a single cellular structure. The cellular structure of the mechanical concrete confines the stones used as aggregates. The confinement can be tire derived or any hollow cylindrical confinement, the paper mostly emphasizes on the cost effectiveness of the road also enhancing its strength and durability hence recycled tires are used in Mechanical Concrete Road. Mechanical concrete is a thin walled cylinder of uniform circular shape made up of a single material that is plastic or rubber. The paper consists of the test results and analysis using rubber as a binding cylinder. Mechanical concrete can be manufactured from any suitable material having sufficient tensile and proper size to resist the lateral pressure exerted on it when the aggregates are placed under load. Here the preference is given to any recycled auto or truck tire having its side walls removed. Hence the tire used does not bear the properties of the tire but through manufacturing becomes Tire-Derived cylinder.		**43-46**
	Keywords: Confined Aggregates, Conventional road, Reuse of waste tires, tire derived cylinders.		
	References:1. Pam Kasey (2006-06-08). "Bonasso Devises New Use for Old Tires". The State Journal. 2. US patent 7470092, Samuel G. Bonasso, "System and method for reinforcing aggregate particles, and structures resulting there from", issued 2008-12-30 3. Pam Kasey (2009-01-15). "W.Va. Engineer Patents Way to Reuse Old Tires". The State Journal. 4. Dana Arquilla (2011-08-12). "Mechanical Concrete Concept May Go International". WBOY.com. 5. More Old Tires Put to New Uses; Scrap Tire Piles Receding. Rubber Manufacturers' Association, June 2009 6. IRC 37: 2012 "Design of Flexible Pavement"		
9.	**Authors:**	**Khandaker Samin Atif, Saurav Barua, Md. Firoz Mahmood**	
	Paper Title:	**An Assessment on Turning Restriction of Vehicle at Intersections in an Arterial Road**	

Abstract: Urbanization and population growth accompanied by high travel demand increasing pressure on transportation system and creating traffic congestion. Mega cities with large population cannot cope with high traffic demand due to lack of finance and shortage of adequate land for construction of new roads. However, capacity of existing road can be many folded and performance of the arterials can be augmented through proper traffic management. In this study, we have discussed on a survey study conducted in Mirpur road of Dhaka city—which is one of the busiest arterial there. Grid lock Traffic jam is a common phenomenon and right turning vehicle at intersections worsen the situation. Restricting right turning vehicle in the intersections in lieu of allowing those vehicle to pass through the U-turn in the mid block section can resolve this problem feasibly. CORSIM simulation model is used for Mirpur road (Science Laboratory to Asad Gate). Through the sections of CORSIM simulation model is reviewed, selection of study area and roadway network performance are investigated. An idealistic model for Mirpur road is developed, calibrated and applied to analyze planning options.

Keywords: Traffic Congestion, Simulation, CORSIM, Traffic Management, arterials.

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References:

1. Ahmed, S.M. and Hoque, M.M. Transportation and Traffic in Dhaka- Review of The Past, Present and Outlook for the Future. Proceedings, Seminar on Dhaka 2000 Ad, 1988.
2. Alam, J.B. Traffic Assignment Model for Simulation and Optimization of Road Network. M.Sc. Thesis, Department Of Civil Engineering, BUET, Dhaka, 1992
3. Baquee, L. A Study of Traffic in Old Dacca City. An MURP. Thesis, Department of Urban and Regional Planning, BUET, 1979.
4. Canadian Capacity guide for signalized intersections-3rd edition. February 2008.
5. DUTP (Dhaka Urban Transport Project), Phase II, Draft Final Report, Prepared by PPK, Mot MacDonald and Development Design Consultant (DDC), Dhaka,1998.
6. Monayem, M. A. Evaluation of Traffic Operation Conditions on Two Urban Arterials in Metropolitan Dhaka. M.Eng. Thesis, Department of Civil Engineering, BUET, Dhaka, 2001.
7. Owen L. E., Zhang Y. and Rao L. Traffic Flow Simulation Using CORSIM, 2000.

10.

Authors:	**Abdullah M. Alnajim**
Paper Title:	**A Country Based Model Towards Phishing Detection Enhancement**

Abstract: In this research, a novel country based model to detect phishing attacks is presented. The aim is to enhance the phishing countermeasures applied on a country's Internet infrastructure. This is because of that the anti-phishing framework in Saudi Arabia is exposed to users when they fall to phishing attacks. This paper proposes enhancing anti-phishing behaviors by training them to detect phishing instead of only blocking phishing websites. A prototype proof of concept implementation is discussed and shows the model is exposed to phishing victims who are inside the country deployed it (e.g. Saudi Arabia).

Keywords: Blacklists, Content Filters, Data Service Provider, e-Commerce Security, Network Proxy, Online Banking Security, Phishing , Saudi Arabia.

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References:

1. CyberSource. (2008). 9th Annual Online Fraud Report. Available: http://www.cybersource.com, last access on 20/3/2007.
2. Alnajim, and M. Munro, 2009. "An Approach to the Implementation of the Anti-Phishing Tool for Phishing Websites Detection". Proc. International Conference on Intelligent Networking and Collaborative Systems (INCoS 2009). Barcelona, Spain: IEEE Press, pp. 105 - 112.
3. S. A. Robila and J. W. Ragucci, "Don't be a Phish: Steps in User Education". Proc. 11th annual SIGCSE conference on innovation and technology in computer science education. New York: ACM Press, 2006, pp. 237 – 241.
4. Symantec. (2004). Mitigating Online Fraud: Customer Confidence, Brand Protection, and Loss Minimization. Available: http://www.antiphishing.org/sponsors_technical_papers/symantec_online_fraud.pdf, last access on 21/3/2007.
5. Alnajim and M. Munro, "Effects of Technical Abilities and Phishing Knowledge on Phishing Websites Detection". Proc. the IASTED International Conference on Software Engineering (SE 2009), Innsbruck, Austria, ACTA Press, 2009, pp. 120-125.
6. Alnajim and M. Munro, "An Anti-Phishing Approach that Uses Training Intervention for Phishing Websites Detection". Proc. 6th IEEE International Conference on Information Technology - New Generations (ITNG). Las Vegas, IEEE Computer Society, 2009, pp. 405-410.
7. Alnajim and M. Munro, "An Evaluation of Users' Tips Effectiveness for Phishing Websites Detection". Proc. 3rd IEEE International Conference on Digital Information Management ICDIM, London, IEEE Press, 2008, pp. 63-68.
8. Alnajim, "High Level Anti-Phishing Countermeasure: A Case Study". Proc. The The World Congress on Internet Security (WorldCIS-2011), London, UK, IEEE Press, 2011, pp. 139 – 144.
9. J. S. Downs, M. B. Holbrook and L. F. Cranor, "Decision strategies and susceptibility to phishing". Proc. the 2nd symposium on usable privacy and security. New York, USA: ACM Press, 2006, pp. 79 – 90.
10. Y. Zhang, J. I. Hong and L. F. Cranor, "Cantina: a content-based approach to detecting phishing web sites". Proc. 16th international conference on WWW. New York: ACM Press, 2007, pp. 639 – 648.
11. Microsoft Corporation. (2007). Microsoft Security for Home Computer Users Newsletter. Available: http://www.microsoft.com/protect/secnews/default.mspx, last access on 16 March 2007.
12. S. Sheng, B. Magnien, P. Kumaraguru, A. Acquisti, L. F. Cranor, J. Hong and E. Nunge, "Anti-Phishing Phil: the design and evaluation of a game that teaches people not to fall for phish". Proc. 3rd symposium on usable privacy and security SOUPS. New York: ACM Press, 2007, pp. 88 – 99.
13. P. Kumaraguru, Y. Rhee, A. Acquisti, L. F. Cranor, J. Hong and E. Nunge,"Protecting people from phishing: the design and evaluation of an embedded training email system". Proc. the SIGCHI conference on Human factors in computing systems. New York, USA: ACM Press, 2007, 905 – 914.
14. Communications and Information Technology Commission CITC. (2010). Internet in Saudi Arabia. Available: http://www.internet.gov.sa/learn-the-web/guides/internet-in-saudi-arabia/view?set_language=en, last access on 22 November 2010.
15. Miniwatts Marketing Group. (2015). Internet World Stats. Available: http://www.internetworldstats.com/middle.htm, last access on 14 March 2015.
16. Communications and Information Technology Commission CITC. (2007). Content filtering in Saudi Arabia. Available: http://www.internet.gov.sa/learn-the-web/guides/content-filtering-in-saudi-arabia, last access on 20 June 2007.
17. Communications and Information Technology Commission CITC. (2007). Data Service Provider. Available: http://www.internet.gov.sa/learn-the-web/glossary/data-service-provider-dsp/view?set_language=en, last access on 20 June 2007.
18. Communications and Information Technology Commission CITC. (2007). List of Service Providers. Available: http://www.internet.gov.sa/learn-the-web/guides/list-of-service-providers/view?set_language=en, last access on 20 June 2007.
19. Communications and Information Technology Commission CITC. (2007). Internet Service Provider. Available:

http://www.internet.gov.sa/learn-the-web/glossary/internet-service-provider, last access on 20 June 2007.

11.	**Authors:**	**Supriya Pansare, C. V. Kulkarni**
	Paper Title:	**Design of Congestion Control Protocol for WMSN**

Abstract: A Wireless Multimedia Sensor Network (WMSN) is formed with a large number of distributed embedded devices equipped with camera modules. These devices are able to retrieve multimedia content from the environment and are able to extract video and audio streams, still images as well as the scalar sensor data from the multimedia content. WMSNs have generated much interest in recent years due to their huge applications such as surveillance systems, traffic control systems, environment monitoring, control of manufacturing processes in industry., Multimedia traffic produces busty high-load traffic in the network. Therefore probability of congestion in WMSNs is higher than traditional Wireless Sensor Networks (WSNs). It causes a waste of communication which reduces energy efficiency. In addition, it negatively affects reliability due to the packet losses and degrades overall performance of the network and quality of- service (QoS) of the application. To address this challenge, we propose a novel energy efficient congestion control scheme for sensor networks, called ECODA (Enhanced congestion detection and avoidance)which comprises three mechanisms: 1) Use dual buffer thresholds and weighted buffer difference for congestion detection; 2) Flexible Queue Scheduler for packets scheduling; 3) A bottleneck-node-based source sending rate control scheme.

Keywords: Wireless Sensor Networks; multimedia; Congestion; QOS

References:

[1] Li Qiang Tao; Feng Qi Yu, "Enhanced Congestion Detection and Avoidance for Multiple Class of Traffic in Sensor Networks", IEEE Transactions, vol.56, issue 3,pp. 1387-1394, Sept. 2010.
[2] Y. Sankarasubramaniam, O. Akan, I. Akyildiz, "ESRT: Event-to-Sink Reliable Transport in Wireless Sensor Networks," in Proc. of ACM MobiHoc '03.
[3] C.-Y. Wan, S.B. Eisenman, A. T. Campbell, "CODA: Congestion detection and avoidance in sensor networks", in Proc. ACM SenSys ,Nov.2003.
[4] I. Akyildiz, W. Su, Y. Sankarasubramaniam, and E.Cayirci , "A survey on sensor networks," IEEE Commu. Mag., vol.40, no. 8, pp. 102-104, Aug. 2002.
[5] EBOOK On "WIRELESS SENSOR NETWORKS Technology, Protocols, and Applications " BY KAZEM SOHRABY DANIEL MINOLI TAIEB ZNATI
[6] C.-T. Ee R. Bajcsy, "Congestion control and fairness for many-to-one routing in sensor networks", in Proc. ACM Sensys, Nov. 2004.
[7] B. Hull, K. Jamieson, H. Balakrishnan, "Mitigating congestion in wireless sensor networks", in Proc, ACM Sensys, Nov. 2004.
[8] Scott Pudlewski , TommasoMelodia, "DMRC: Distortion minimizing rate control for Wireless Multimedia Sensor Networks", IEEE Conference, PP . 563-572, 2009.
[9] Shahin Mahdizadeh Aghdam, Mohammad Khansari, Hamid R. Rabiee, Mostaf Salehi, "UDDP: A User Datagram Dispatcher Protocol for Wireless Multimedia Sensor Networks", IEEE Conference, PP. 765-770, 2012.
[10] Cagatay Sonmez, Sinan Isik, Mehmet Yunus Donmez, Ozlem Durmaz Incel, Cem Ersoy, "SUIT: A Cross Layer Image Transport Protocol with Fuzzy Logic Base Congestion Control for Wireless Multimedia Sensor Networks",2012.
[11] Vivek deshpande, Prachi sarode and Sambhaji Sarode "Root cause analysis of Congestion in WSN", International Journal of Computer Applications, Vol. 1 No. 18, pp.27-30, 2010.
[12] F.Stann and J. Herdemann, "RMST: Reliable data transport in sensor networks," in Pro. 1st IEEE Workshop SNPA, Anchorage, AK, Nov. 2003, pp. 102-112.
[13] P. Jeongyeup, G. Ramesh "RCRT: Rate-Controlled Reliable Transport for Wireless Sensor Networks," in Proc, ACM SenSys, Nov. 2007
[14] S. Rangwala, R. Gummadi, R. Govindan, and K. Psounis, "Interference-Aware Fair Rate Control in Wireless Sensor Networks," In Proc. Of ACM SIGCOMM'06. Page 63-74.

12.	**Authors:**	**Leodivina P. Tagama**
	Paper Title:	**Hybrid Instruction in Teacher Education Programs of State Universities and Colleges in Region III**

Abstract: Higher education is currently in the early stages of a major revolutionary change. Social, economic and technological factors are converging to shape the system of higher education to a new form, one providing a much more flexible form of delivery of instruction. In this time of transition towards digital revolution, hybrid instruction is used. It is any format of instruction which combines dynamically both technology and human instruction. The exemplary formats of hybrid instruction include computed mediated instruction, web-based courseware, distance learning as distribution channel and in-class use of technology as used in teaching professional education subjects enriched the learning opportunities of students and improvement of the instructional delivery as well. The study was conducted to assess hybrid instruction in nine (9) HEIs in Region 3 offering Teacher Education degree programs. The specific problems focused on the photo-tag of the faculty members; distribution of the faculty members to the Professional Education in subjects; extent of utilization of hybrid instruction; extent of attainment of lesson objectives using hybrid instruction as perceived by student respondents; administrative support extended; and problems encountered in the utilization of hybrid instruction.

Keywords: hybrid instruction, computer mediated instruction, web-based courseware, distance learning, in class – use technology.

References:

1. Aquino, Federico. (2007). Utilization of Technical Support for Information Technology Among Comprehensive Higher Educational Institutions in Region III. Unpublished Dissertation, Tarlac State University, Tarlac City.
2. Atkinson, Roger. (2000). Multimedia Application. http://www.quasar.ualberta.
3. Belanger, F. (2000). Evaluation and Implementation of Distance Learning:Tachnologies, Tools and Techniques. Herskey, PA: Idea Group Publishing, 2000.
4. Bennet, Frederick. (2000). Computers as Tutors: Solving the Crisis in Education. http://www.crisis.com/faben/summary.html.
5. Berbano, Tomas Benjamin. (2000). Reinvening Instructing in Data Structure, Unpublished Master's Thesis, AMA Computer University, Quezon City, 2000.

6. Brandsford J. (2007) http://www.21st century skills.org/documents/21st century skills curriculum and instruction.pdf. http:/its.leesummit.K12.mo.us/
7. Bruner, J. (1993). Going Beyond the Information Given, New York: Norton, 1993
8. Cagalitan, E.B. (2004). The Effectiveness of Computer-Enhanced Instruction in High School Physics, Unpublished Doctoral Dissertation, University of St. La Salle, Bacolod City
9. Carlos, Mirela A. (2000). Developemnt and Validation of a Multimedia Instruction Software on the Geometry of Conic Section. Unpublished Master's Thesis, Tarlac State University, Tarlac City
10. Conally, Bill. (2000). Status of the Internet in the Philippines: A Case Study, Unpublished Master's Thesis, South East Asian School, Manila.
11. Ehrman, Stephen C. (2000). Educational Technology Strategies-asking the right questions; http://www.learning.org/edtech/rseheva//right questions.html.
12. Freire, P. (1999). Translated by Myra Bergman Ramos, Pedagogy of the oppressed, New York: The Continuum Publishing Corporation, 1999.
13. Gurung, Wilma. (2000). Utilization of Internet Technology Among Selected Educational Institution, Unpublished Doctoral Dissertation, Baguio City
14. Hu, B.Y. (2015) Intergrating Technology into Higher Education (Educational Technology Society-359-360)
15. Lachman, H. Salazmann C. Gillet, D. and Kim, J. (2001). Learning on Demand – A Hybrid Synchronous/asynchronous, May Vol. 44 no. 2.
16. Lerner, Matt. (2000). The Current State technology and Education: how computers are used ink 12 Brown Universities Classroom. http://www.netspace.org?mrl?handbook?inted.html.
17. Madamba, Rhea B. (2010). Utilization of information and Communication Technology for Classroom Instruction Among Public Elementary School Teachers in Region III: An Ealuation, Unpublished Doctoral Dissertation Tarlac State University, Tarlac City.
18. Martyn, Margic. (2003). The Hybrid Online Model: Good Practice Educause Quarterly.
19. Novestera, Jesusa A. (2008). Evaluation Blended Learning Program of AMA Education System (AMAES). Unpublished Doctoral Dissertation, Tarlac State University, Tarlac City.
20. Ona, Louella F. (2000). Maintenance and support system for information and communication technology (ICT) Resources in State Universities and Colleges in Region III. Unpublished Doctoral Dissertation Tarlac State University, Tarlac City.
21. Percy, Bernard. (2000). The Importance of Reliable Online Sources, Master's Thesis, University of California, USA.
22. Quioc, Mary Ann F. (2005). The Effectiveness if CH-E-Learning Modules as a Tool in Teaching Programming. Unpublished Master's Thesis, Tarlac State University, Tarlac City.
23. Reyes, R. Dela Crus, A. (2002). Integrating Technology into Students' Learning Experiences at AMA Computer University. Unpublished Master's Thesis, AMA Computer University, Quezon City.
24. Samson, Paulo Xavier V. (2009). Development and Validation of an Interactive Computer Aided Instructional Software and Complex Numbers Unpublished Master's Thesis Tarlac State University, Tarlac City
25. Schilke, R.A. (2001). A Case Study of Attrition in Web-based instruction for adults: Updating Garland's Model of Carrieis to Persistence in Distance Education, Unpublished Doctoral Dissertation, Northern Illinois University.
26. Sigle, J. et al. (2004) Tools for Hybrid Instruction Classroom and Distance Education in Synchronous and Asynchronous Modes, Louisian State University, Shreveport, Louisiano, USA.
27. Solijon, Ma. Theresa DL. (2009). Comparison of Multimedia Instruction and Traditional Methods in Teaching Biochemistry among 2nd year BSRT Students of IDC, AY 2007-2008, Unpublished Mater's Thesis, University of San Agustin, Iloilo City
28. Sternberg, R and Subotrik, R; eds. (2006). Optimizing Student Success with the Other Three Rs: Reasoning, Resilience, ad Responsibility, Greenwich, CT:
29. Wagner, T Kegan, R et.al (2006) Change Leadership: A Practical Guide to Transforming Our Schools, Jossey Bass
30. Zhang D., Zhao, J, Zhou, L. and Nunamaker, J. (2004). Can E-learning Replace Classroom Learning?, CACM. Pp. 75-79

13.

Authors:	**Mili Rosline Mathews, Sreelekha Sreedharan**
Paper Title:	**Detection and Localization of Video Copy-Move Forgery in Temporal and Spatial Domain**

Abstract: Digital videos are widely used and accessed nowadays. Moreover several video editing softwares are also available. Forgeries done within a single video cannot be recognized easily. The signs of forgery are very low in such cases. So the credibility of a video clip in the court as a proof is crucial for legal applications. Different types of video forgeries exist. Copy-move forgery is one of the most common type of video forgery. Our approach is detection and localization of forgery in temporal and spatial domain. The forgeries which can be done within a single video are considered for detection of forgery. For the detection of temporal copy-move forgery the structural similarity between the frames of a video is used. The difference of pixels between adjacent frames is used for identifying the spatially forged region in each frame. We propose an effective system to detect the copy-move forgery in videos.

Keywords: Copy-move forgery, Difference operation, Structural similarity index measure, Video forgery.

References:

1. Wang W, Farid H, ``Exposing digital forgeries in video by detecting double MPEG compression," In: Proceedings of the 8th workshop on multimedia and security, doi: 10.1145/1161366.1161375, 2006.
2. Wang W, Farid H, ``Exposing digital forgeries in video by detecting double quantization," In: Proceedings of the 11th ACM workshop on multimedia and security. doi:10.1145/1597817.1597826, 2009.
3. Weihong W, Hany F, ``Exposing digital forgeries in video by detecting duplication," In:Proceedings of the 9th workshop on multimedia and security. doi: 10.1145/1288869.1288876, 2007.
4. Lin G-S, Chang J-F, ``Detection of frame duplication forgery in videos based on spatial and temporal analysis," Int J Pattern Recognit Artif Intell 26(7):1–18, 2012.
5. Wan Wang, Xinghao Jiang, Shilin Wang, ``Identifying Video Forgery Process Using Optical Flow," IWDW, pp. 244–257, 2013.
6. Qi Wang, Zhaohong Li, Zhenzhen Zhang, Qinglong Ma, ``Video Inter-frame Forgery Identification Based on Optical Flow Consistency," Sensors and Transducers, Vol. 166, Issue 3, pp. 229-234., 2014.
7. Fugui Li. Tianqiang Huang, ``video copy-move forgery detection and localization based on structural similarity," Proceedings of the 3rd International Conference on Multimedia Technology, 2013.
8. Simone Milani, Marco Fontani, Paolo Bestagini, Mauro Barni, Alessandro Piva, Marco Tagliasacchi and Stefano Tubaro, ``An overview on video forensics," APSIPA TransSignal Inf Process.1:e2. doi:10.1017/ATSIP.2012.2, 2012.
9. Wang Z, Bovik AC, Sheikh HR, Simoncelli EP, ``Image quality assessment: from error visibility to structural similarity" IEEE Trans Image Process 13(4):600–612,2004.

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14.

Authors:	**Jagdish Shivhare, B. V. R. Reddy**
Paper Title:	**A High Selectivity and Small Sized Double Fold Microstrip Hairpin Line Bandpass Filter for L-Band RF/Wireless Communication Systems**

Abstract: This technical paper presents a new type of double folded hairpin line microstrip bandpass filter with high selectivity, low cost and 40-50% reduction in size compared to a conventional hairpin line bandpass filter. The filters are not only compact size due to the slow-wave effect, but also have a wider upper stopband resulting from the dispersion effect. These attractive features make the resonator filters hold promise for RF/wireless, mobile communications and other ground and space applications. The design topology has the advantage of desirable narrowband, high selectivity, reasonable return loss, small sized and low cost microstrip filters, make the design more simpler for wider applications in the modern wireless radio communication systems. The expected frequency responses have been simulated by using the Agilent-make ADS and IE3D-Zealand softwares. The measured and simulated results show good agreement.

Keywords: Folded-hairpin line resonator, microstrip filters, slow wave, cross couplings, dielectric constant.

References:

1. Ilia G. Iliev and Marin V Nedelchev "CAD of Cross Coupled Miniaturized Hairpin Bandpass Filters" Microwave Review, December 2002, pp.49-52
2. S. Jovanovic, A Nesic "Microstrip bandpass filters with new type of capacitive coupled resonators, Electronics Letters 41,(1), 2005, page 19-21
3. Hong, J. S. and M. J. Lancaster, "Coupling Microstrip Square Open-Loop Resonators for Cross-Coupled Planar Microstrip Filters" IEEE Trans.Microw.Theory Tech. Vol. No. 5, October 2006. .
4. S Zhang,Y Li, S.-W. Ma, J.-K. and S. Xiao "Compact microstrip band pass filters" Journal of Electromagnetic Waves & Applications,Vol.21, No.3, 2007, 329-339.
5. M D Pozar, Microwave Engineering , Third Edition, Wiley2005, pp. 416-438
6. Deng,P.H., Y. S. Lin, C. H Wang, C. H. Chen "Compact Microstrip bandpass filters with good stopband rejection" IEEE Transactions on Microwave Theory and Techniques,Vol.54, No.2, Feb 2007, 533-539
7. Jen-Tasi Kuoet, Ming-Jyh Maa and Ping-han Lu, "Microstrip filter with Compact miniaturized hairpin line resonators" IEEE Microwave Theory and Guided Letters,Vol. 10,No.3, March 2005, pp 94-95
8. Tsai,C.-M.,S.-Y. Lee,and H.–M. Lee), "Transmission line filters with capacitively Coupled lines" IEEE Trans.Microw.Theory and Tech.Vol.51,No.15, 2003, page 1517-1524.
9. Zhu, Y.Z, Y.J. Xie and Y. Feng "Novel microstrip bandpass filters" Progerss in Electronics Research PIER, 2007, pp. 29-41.
10. Xiao, J.K., S W Maa, S Zhang and Y. Li "Novel compact band pass filters "Journal of Electromagnetic Waves and Applications, Vol.21, No.10, 2007, page 1341-1351
11. Moon-Seok Chung, I-Soo Kim, and Sang-Won Yun,"Hairpin Line bandpass filter with an attenuation pole" presented at APMC 2005 Volume 4, Dec. 2005, pp 4-7.
12. ADS Agilent-make Softwares for Design and Simulation, 2013 by M/S Agilent Technology Ltd.
13. Ansoft-HFSS-3D software for Electromagetnic modeling, 2013 by M/S Ansoft Software Corporation
14. Zealand Software IE3D for Simulation and Optimization, 2014 by M/s Zealand Software Corporation.

15.

Authors: **Remya R. S, Anupama Pradeep**

Paper Title: **Machine Learning Approach to Detect Tampering in H.264 Video**

Abstract: Now a days there are plenty of software's available to access and edit digital videos. Therefore video tampering detection is crucial for legal, medical and surveillance applications. Digital videos are considered as more reliable source of evidence than still images. The abundance of compressed video forms a potential thread of evidence in court rooms. In case of artifacts and possibility of fraud videos court usually calls forensic investigators for examining the problem of authenticating multimedia content. An automated objective assessment of digital video helps to increase the accuracy of videos. Existing schemes are based on MPEG codec. This paper proposes a novel technique to detect tampering in H.264 videos by using neural network. This paper identifies video tampering by using a feature called sequence of average residual of P-frames (SARP). Then time and frequency domain features of sequence of average residual of P-frames are calculated. The detection system is trained with these features. Then the detection system is applied to the video sequence under examination. This method identifies video tampering by differences in time domain and frequency domain features of tampered video from original video. By using machine learning approach, it classifies type of tampering such as insertion, deletion and copy-move. PNN is used for training. The proposed method is applicable for different codec.

Keywords: video tampering detection, SARP, Time domain feature, Frequency domain feature, Training.

References:

1. W.Wang and H.Farid "Exposing Digital Forgeries in video by detecting double MPEG compression, ACM"MM & Sec'06, Geneva, Switzerland, September 26-27, 2006.
2. W.Wang and H.Farid" Exposing Digital Forgeries in video by detecting double Quantization" , ACM, MM & Sec'09, Geneva, Switzerland, September 6-7,2009
3. Michihiro Kobayashi, Takahiro Okabe, and Yoichi Sato ,"DetectingVideo Forgeries based on Noise characteristics" , Springer-Verlag Berlin, pp.306-317, 2009
4. H. Phelippeau, H. Talbot, M. Akil, H. Phelippeau and S. Bara. "Shot noise Adaptive bilateral Filtering. " University Paris -Est, Laboratoire A2SI Group ESIEE,2010.
5. Fulu Li, James Barabas, Ankit Mohan and Ramesh Raskar ,"Analysis of Errors due to Photon Noise and Quantization Process with Multiple Images "IEEE, 2010
6. Evan Ribnick, Stefan Atev, Osama Masoud, Nikolaos Papanikolopoulos, And Richard Voyles , " Rea l - Time Detection of Camera Tampering", IEEE Computer Society ,2006.
7. W. Wang and H. Farid , " Exposing Digital Forgeries in video by detecting Duplication ", ACM, MM&Sec'07, September 20–21, 2007
8. Guo - Shiang Lin, and Jie - Fan Chang," Detection of Frame Duplication Forgery in videos based on Spatial and Temporal analysis", IJPRAI,2012
9. Matthew C. Stamm , W. Sabrina Lin and K. J. Ray Liu, " Temporal Forensics and Anti – Forensics for Motion Compensated Video",2006
10. Gironi M. Fontaniy , T. Bianchi A. Piva and M. Barnix, "A Video Forensic Technique For Detecting Frame Deletion And Insertion"FET programme , 2012
11. Tamer Shanableh,"Detection of frame deletion for digital videoforensics" Elsevier, Digital investigation,2013

12. Yanqiang Lei, Weiqi Luo, Yuangen Wang and Jiwu Huang," Video sequence matching based on the invariance of color correlation.", ACM Digital Library,2012
13. Fugui Li, Tianqiang Huang ," Video Copy - Move Forgery Detectionand Localization Based on Structural Similarity " , Springer Proceedings of the 3rd International Conference on Multimedia Technology (ICMT), 2013
14. Hongmei Liu, Songtao Li, and Shan Bian, "Detecting frame deletion in H.264 video", ISPEC , LNCS 8434, pp. 262–270, 2014
15. Gary J. Sullivan, Jens - Rainer Ohm, Woo - Jin Han and Thomas Wiegand," Overview of the High Efficiency Video Coding (HEVC) Standard", IEEE , VOL. 22, NO. 12, December 2012.