

# **2011 International Conference on Communication Systems and Network Technologies**

**(CNST 2011)**

**Katra, Jammu, India  
3-5 June 2011**



**IEEE Catalog Number: CFP1118P-PRT  
ISBN: 1-978-4577-0543-4**

# 2011 International Conference on Communication Systems and Network Technologies

## CSNT 2011

### Table of Contents

Welcome from the General Chairs.....	xvi
Welcome from the Program Chairs.....	xviii
Conference Committees and Reviewers.....	xix
Plenary Keynotes.....	xxii

---

#### Track-A: Mobile Communication, Ad hoc, Vehicular, Sensor Networks & Security

Analysis of Different Clustering Approaches for Grouping Users on the Basis of GSM Call Logs.....	1
<i>S.S. Deshpande and N.A. Chauhan</i>	
Flexible Assignment of OVFS Codes for Data Calls in CDMA Wireless Networks.....	5
<i>Vipin Balyan and Davinder S. Saini</i>	
An Approach Using Genetic Algorithm on Channel Assignment in Cellular Network.....	10
<i>Shyam Sunder Gupta, Fanindra Mohan Sharma, and Deepak Gupta</i>	
Performance Evaluation of Routing Protocols in MANET with Different Traffic Loads.....	13
<i>Laxmi Shrivastava, Sarita S. Bhadauria, and G.S. Tomar</i>	
Tabu Search Algorithm for Core Selection in Multicast Routing.....	17
<i>Satya Prakash Sahoo, Manas Ranajan Kabat, and Asis Kumar Sahoo</i>	
A New Framework for Credit Card Transactions Involving Mutual Authentication between Cardholder and Merchant.....	22
<i>Shalini Gupta and Rahul Johari</i>	
Proposed Modification in ETSI GSM 06.10 Full Rate Speech Codec for High Rate Data Hiding and its Objective Evaluation of Performance Using Simulink.....	27
<i>Ninad Bhatt, Yogeshwar Kosta, and Vishal Tank</i>	
Wireless Sensor Network Based Remote Irrigation Control System and Automation Using DTMF Code.....	34
<i>Vandana Dubey, Nilesh Dubey, and Shailesh Singh Chouhan</i>	
Analysis of Hamming Network and MAXNET of Neural Network Method in the String Recognition.....	38
<i>Amit Kumar Gupta and Yash Pal Singh</i>	

Detection of Mobile Agent’s Blocking in Secure Layered Architecture .....	43
<i>Shashank Srivastava and G.C. Nandi</i>	
Extraction and Verification of Mobile Message Integrity .....	49
<i>Rakesh Kumar Verma, Deepak Singh Tomar, and Shashi Kant Rathore</i>	
Routing Techniques for Reliable Wireless Sensor Networks .....	54
<i>Samir Agarwal, Susant K. Satpathy, and Lokesh K. Sharma</i>	
MLF: A Technology beyond ALF for Network Security .....	58
<i>Rajesh Sodhani, A.K. Goyal, and Basant Singh Rathore</i>	
Design of Wireless Sensor Networks for Dynamic Regulation of Water Delivery Structures at Subminor Level .....	62
<i>Kamlendu Kumar Pandey and S.V. Patel</i>	
Analysis and Comparison of Performance of TCP-Vegas in MANET .....	67
<i>Pratap K. Meher and P.J. Kulkarni</i>	
Data Caching with Intelligent Prefetching in Mobile Ad Hoc Networks .....	71
<i>Naveen Chauhan, L.K. Awasthi, and Narottam Chand</i>	
Performance Analysis of AES and TwoFish Encryption Schemes .....	76
<i>S.A.M. Rizvi, Syed Zeeshan Hussain, and Neeta Wadhwa</i>	
A Comparative Analysis & Enhancement of NTRU Algorithm for Network Security and Performance Improvement .....	80
<i>Rashmi Jha and Anil Kumar Saini</i>	
Token Based Authentication Using Mobile Phone .....	85
<i>Parekh Tanvi, Gawshinde Sonal, and Sharma Mayank Kumar</i>	
A New Symmetric Key Cryptography Algorithm Using Extended MSA Method: DJSA Symmetric Key Algorithm .....	89
<i>Dripto Chatterjee, Joyshree Nath, Suvadeep Dasgupta, and Asoke Nath</i>	
An Algorithm for Channel Assignment in a Cellular Communication System .....	95
<i>S.V.R. Kondala Rao and G. Singh</i>	
A Hierarchical Architecture for Mobile Ad Hoc Network with Internet Using Cluster Head Gateway .....	100
<i>R. Gowri and Ashish Bagwari</i>	
Comparitive Study of Three Mobile Ad-hoc Network Routing Protocols Under Different Traffic Source .....	104
<i>Rachit Jain, Naresh B. Khairnar, and Laxmi Shrivastava</i>	
An Efficient Method to Factorize the RSA Public Key Encryption .....	108
<i>B.R. Ambedkar, Ashwani Gupta, Pratiksha Gautam, and S.S. Bedi</i>	
Implementation of Modular Multiplication for RSA Algorithm .....	112
<i>Sushanta Kumar Sahu and Manoranjan Pradhan</i>	
The Evolution of RFID Security and Privacy: A Research Survey .....	115
<i>R.K. Pateriya and Sangeeta Sharma</i>	

Elliptic Curve Cryptography in Constrained Environments: A Review .....	120
<i>R.K. Pateriya and Shreeja Vasudevan</i>	
New Symmetric Key Cryptographic Algorithm Using Combined Bit Manipulation and MSA Encryption Algorithm: NJJSAA Symmetric Key Algorithm .....	125
<i>Neeraj Khanna, Joyshree Nath, Joel James, Sayantan Chakraborty, Amlan Chakrabarti, and Asoke Nath</i>	
Power Aware and Signal Strength Based Routing Algorithm for Mobile Ad Hoc Networks .....	131
<i>G. Varaprasad</i>	
Enhancing Cache Invalidation Techniques in IVANET .....	135
<i>Anurag Singh, Narottam Chand, and Lalit Kr. Awasthi</i>	
Voronoi-based Continuous Query Processing for Mobile Users .....	139
<i>R. Srikanth and L.K. Awasthi</i>	
Security Aspects of the Extended Playfair Cipher .....	144
<i>Shiv Shakti Srivastava and Nitin Gupta</i>	
RRDD: Reliable Route Based Data Dissemination Technique in VANETs .....	148
<i>Brij Bihari Dubey, Naveen Chauhan, and Sudhanshu Pant</i>	
A Survey on Next-Generation Hybrid Wireless Architectures .....	152
<i>Ritu Chandana and Shweta Jain</i>	
End-to-end Congestion Control Techniques for Router .....	157
<i>Bhasutkar Mahesh, Maninti Venkateswarlu, and M. Raghavendra</i>	
Enhanced Reliable Distributed Energy Efficient Protocol for WSN .....	162
<i>Shamneesh Sharma, Robin Prakash Mathur, and Dinesh Kumar</i>	
Comparative Analysis of Methods for Distribution of Certificate Revocation Information in Mobile Environment .....	166
<i>Meenal Ingle and Manoj Kumar</i>	
TCP and UDP Based Analysis of AODV and OLSR in Mobile Ad-Hoc Networks .....	170
<i>Shaista Anjum and Sarita Singh Bhadauria</i>	
<b>Track-B: Soft Computing</b>	
Tuning of Particle Swarm Optimization Parameter Using Fuzzy Logic .....	174
<i>Sanjeev Kumar and D.K. Chaturvedi</i>	
Application Research Based on Artificial Neural Network (ANN) to Predict No-Load Loss for Transformer's Design .....	180
<i>Amit Kr. Yadav, Abdul Azeem, Akhilesh Singh, Hasmat Malik, and O.P. Rahi</i>	
Cost Analysis of Transformer's Main Material Weight with Artificial Neural Network (ANN) .....	184
<i>Amit Kr. Yadav, Akhilesh Singh, Hasmat Malik, and Abdul Azeem</i>	

Precise and Accurate Multifunctional Prosthesis Control Based on Fuzzy Logic Techniques .....	188
<i>Kuldeep Singh, Hardeep S. Ryait, and Richa Bhatia</i>	
Enhanced Bangla Character Recognition Using ANN .....	194
<i>Piu Upadhyay, Sumana Barman, Debnath Bhattacharyya, and Manish Dixit</i>	
A Moving Base Station Strategy Using Fuzzy Logic for Lifetime Enhancement in Wireless Sensor Network .....	198
<i>Abhijeet Alkesh, Ashutosh Kumar Singh, and N. Purohit</i>	
<b>Track-C: Microwave Circuits and Antenna Design</b>	
Size Reduction of Microstrip Patch Antenna Using Defected Microstrip Structures .....	203
<i>Vivek Singh Kushwah and Geetam Singh Tomar</i>	
Microstrip Patch Antenna Incorporated with Left Handed Metamaterial at 2.4 GHz .....	208
<i>Bimal Garg, Arpita Sabharwal, Gunjan Shukla, and Mayank Gautam</i>	
Dispersion Analysis of a Microstrip Line at Higher Frequencies by Using Sonnet and Matlab .....	211
<i>Shravan Kumar Sable and Puran Gour</i>	
A CPW Fed Complementing C-Shaped Patch Antenna for Broadband Communication .....	216
<i>R. Suryanarayana, Una Chandra Sekhar, Ashutosh Mohanty, Asit K. Panda, and Rabindra K. Mishra</i>	
L- Slotted Rectangular Microstrip Patch Antenna .....	220
<i>Dinesh Yadav</i>	
A Printed Monopole Antenna with Symmetric Meandered Arms for WLAN, WiMAX Applications .....	224
<i>Asit K. Panda, R. Suryanarayana, Abhishek Sahoo, Jayanta Nayak, and Rabindra K. Mishra</i>	
Application of Antenna Diversity in HIDMA Scheme Using Gold Codes .....	228
<i>Rohit Bansal, Sankalp Anand, Dheeraj Purwar, and Aasheesh Shukla</i>	
Design of Factored “X” Shaped Metamaterial Structure for Enhancement of Patch Antenna Gain .....	232
<i>Bimal Garg, Rahul Tiwari, Ashish Kumar, and Tilak Chitransh</i>	
Ring-Resonator Integrated Hemi-Elliptical Lens Antenna at Terahertz Frequency .....	236
<i>Kumud Ranjan Jha and G. Singh</i>	
Dual-Band Dielectric Rod Antenna for Satellite Communication System .....	242
<i>Krishna Kumar, Jagmeet Singh Sandhu, Bharat Bisht, Pragya Gupta, and G. Singh</i>	
UWB Reconfigurable Microstrip Antenna for Wireless Sensor Networks Applications .....	246
<i>Hetal Pathak</i>	
Microstrip Low-Pass Filter Using Hexagonal Patch with Wide Stopband .....	250
<i>Kumud Ranjan Jha and G. Singh</i>	
Fuzzy Inference System (FIS) for the Synthesis of Rectangular Microstrip Antennas with Thin and Thick Substrates .....	253
<i>Rakesh K. Maurya, Sarvesh S. Yadav, Avani K. Singh, Samar B. Yadav, and Amit Kant Pandit</i>	

## Track-D: Data and Web Mining, Security Algorithms

Analysis of Square and Circular Diaphragms for a MEMS Pressure Sensor Using a Data Mining Tool .....	258
<i>K.Y. Madhavi, K.A. Sumithradevi, M. Krishna, and M.N. Vijayalakshmi</i>	
New Data Hiding Algorithm in MATLAB Using Encrypted Secret Message .....	262
<i>Agniswar Dutta, Abhirup Kumar Sen, Sankar Das, Shalabh Agarwal, and Asoke Nath</i>	
A Statistical Approach for Automatic Text Summarization by Extraction .....	268
<i>Munehs Chandra, Vikrant Gupta, and Santosh Kr. Paul</i>	
A Methodology for Extracting Head Contents from Meaningful Tables in Web Pages .....	272
<i>Madhuri M. Chavan and S.K. Shirgave</i>	
SPARQL Semantics and Execution Analysis in Semantic Web Using Various Tools .....	278
<i>Rupal Gupta and Sanjay Kumar Malik</i>	
A Framework for Agriculture Ontology Development in Semantic Web .....	283
<i>Nishu Bansal and Sanjay Kumar Malik</i>	
On the Ontology-based Description of Temporal Services Interfaces in Asynchronously Communicating Services .....	287
<i>Amit Bhandari and Manpreet Singh</i>	
Feature Selection with Efficient Initialization of Clusters Centers for High Dimensional Data Clustering .....	293
<i>Dharmveer Singh Rajput, P.K. Singh, and M. Bhattacharya</i>	
A Novel Wireless Heterogeneous Data Mining (WHDM) Environment Based on Mobile Computing Environments .....	298
<i>Smriti Pandey, Nitesh Gupta, and Ashutosh K. Dubey</i>	
Clustering the Data Points to Obtain Optimum Backbones for the Bounded Diameter Minimum Spanning Trees .....	303
<i>Sakshi Arora and M.L. Garg</i>	
Comparison of Data Warehouse Design Approaches from User Requirement to Conceptual Model: A Survey .....	308
<i>Shashank Saroop and Manoj Kumar</i>	
Analysis with Data Mining and Ant Colony Algorithm for Implementing of Object Pool Optimization .....	313
<i>Farha Haneef, Ganesh Raj Kushwaha, and Ashutosh K. Dubey</i>	
Step-up Analysis and Generalization Approach for Trusted NFC Application Development for Enhancing Real Time Use Location .....	318
<i>Ashutosh K. Dubey, Manish Giri, Mahendra Sahare, and Animesh Kumar Dubey</i>	
A Framework for Discovering Internal Financial Fraud Using Analytics .....	323
<i>Prabin Kumar Panigrahi</i>	

## **Track E: Robotics, Metronics & Control System and Computer Vision**

Gesture Recognition Using Modified HSV Segmentation .....	328
<i>Mokhtar M. Hasan and Pramoud K. Misra</i>	
Human Identification by Partial Iris Segmentation Using Pupil Circle Growing Based on Binary Integrated Edge Intensity Curve .....	333
<i>Hemal Patel, Chintan K. Modi, Mita C. Paunwala, and Suprava Patnaik</i>	
Skew Correction for Vehicle License Plates Using Principal Component of Harris Corner Feature .....	339
<i>Nipa D. Modi, Chirag N. Paunwala, Chintan K. Modi, and Suprava Patnaik</i>	
Backstepping Control of Discrete-Time Nonlinear System Under Unknown Dead-zone Constraint .....	344
<i>Vinay Kumar Deolia, Shubhi Purwar, and T.N. Sharma</i>	
Illumination Reduction for Camera Captured Documents Using Block Processing and Homomorphic Filtering Technique .....	350
<i>H.K. Chethan and G. Hemantha Kumar</i>	
Robust Face Recognition in Low Dimensional Subspace Using Reconstructive and Discriminative Features .....	355
<i>Mahesh Goyani, Gunvantsinh Gohil, and Amit Chaudhari</i>	
Intelligent Load Frequency Control of Two-Area Interconnected Power System and Comparative Analysis .....	360
<i>Sathans and Akhilesh Swarup</i>	
A Comparison of Peak to Average Power Reduction Schemes for OFDM .....	366
<i>Yogeshver Khandagre, Sudesh Gupta, Anoop Tiwari, and Ravi Shanker Mishra</i>	
IGCEGA: A Novel Heuristic Approach for Personalisation of Cold Start Problem .....	370
<i>Mohd Abdul Hameed, S. Ramachandram, and Omar Al Jadaan</i>	
Application of Modern Technology for Fault Diagnosis in Power Transformers Energy Management .....	376
<i>Hasmat Malik, R.K. Jarial, Abdul Azeem, and Amit Kr. Yadav</i>	
Sliding Mode Control Based Anti-Synchronization Scheme for Hyperchaotic Lu Systems .....	382
<i>Satmesh Singh and B.B. Sharma</i>	
Sliding Mode Speed Control of a DC Motor .....	387
<i>Ch. Uma Maheswararao, Y.S. Kishore Babu, and K. Amaresh</i>	
Design of Resistorless Low Temperature Coefficient Band Gap Reference Bias Circuit .....	392
<i>Soniya Gupte and Pradnya Zode</i>	
Application of Radio Frequency Controlled Intelligent Military Robot in Defense .....	396
<i>Saradindu Naskar, Soumik Das, Abhik Kumar Seth, and Asoke Nath</i>	
FF Based Instrumentation and Control System for Turbine Test Laboratory .....	402
<i>Viral Shah, H.K. Verma, and M.L. Dewal</i>	

Pyrometric Human Presense Detection System .....	406
<i>Shreyansh Jain and Geetam S. Tomar</i>	

## **Track F: VLSI & Embedded Systems**

Design of FPGA Based Instruction Fetch & Decode Module of 32-bit RISC (MIPS) Processor .....	409
<i>Rupali S. Balpande and Rashmi S. Keote</i>	
Low Cost, Low Power QRS Detection Module Using PIC .....	414
<i>Praveen Kumar, Monika Jain, and Sagar Chandra</i>	
Innovative Cost Effective Approach for Cell Phone Based Remote Controlled Embedded System for Irrigation .....	419
<i>Vasif Ahmed and Siddharth A. Ladhake</i>	
Static Task Graph Scheduling in Real Time Homogenous Multiprocessor Systems Using Learning Automata .....	423
<i>Yosef Masoudi, Shahriar Lotfi, Davod Karimzadgan, Farhad Fathy, and Kiomars Abdi</i>	
Comparision of Hierarchial Mixed-Size Placement Algorithms for VLSI Physical Synthesis .....	430
<i>B. Sekhara Babu, R. Rajine Swetha, and K.A. Sumithra Devi</i>	
Organic Thin Film Transistor Architecture, Parameters and their Applications .....	436
<i>Poornima Mittal, Brijesh Kumar, Y.S. Negi, B.K. Kaushik, and R.K. Singh</i>	
Carbon Nanotubes for Quantum-Dot Cellular Automata Clocking .....	441
<i>Sanjay Modi, Abhineet S. Tomar, and Geetam S. Tomar</i>	
FPGA Implementation of Adaptive Mode PAPR Reduction for Cognitive Radio Applications .....	444
<i>C. Vennila Arasu, Satyashil Nagrale, and G. Lakshminarayanan</i>	
Performance Comparison of AMBA Bus-Based System-On-Chip Communication Protocol .....	449
<i>Anurag Shrivastav, G.S. Tomar, and Ashutosh Kumar Singh</i>	
Design and Implementation of High Performance AHB Reconfigurable Arbiter for Onchip Bus Architecture .....	455
<i>Ashutosh Kumar Singh, Anurag Shrivastava, and G.S. Tomar</i>	
Energy Efficient Adiabatic Logic for Low Power VLSI Applications .....	460
<i>Atul Kumar Maurya and Gagnesh Kumar</i>	
Effect of Gate Finger on Double-Gate MOSFET for RF Switch at 45-nm Technology .....	464
<i>Viranjay M. Srivastava, G. Singh, and K.S. Yadav</i>	
VHDL Environment for Floating Point Arithmetic Logic Unit-ALU Design and Simulation .....	469
<i>Rajit Ram Singh, Asish Tiwari, Vinay Kumar Singh, and Geetam S. Tomar</i>	



## Track G: Image, Speech & Signal Processing

MRI Brain Image Segmentation Using Modified Fuzzy C-Means Clustering Algorithm .....	473
<i>M. Shasidhar, V. Sudheer Raja, and B. Vijay Kumar</i>	
New Method to Compensate Three-Stage Amplifiers Based on Pole and Zero Cancellation Technique .....	479
<i>Ali Jalali, Hassan Rekabi Bana, and Hossain Elahi</i>	
Representation and Calculation of Correlation Constraints of One Dimensional Unipolar Orthogonal Codes .....	483
<i>R.C.S. Chauhan, R. Asthana, and M. Shukla</i>	
Enhancement of Noisy Speech Signals for Hearing Aids .....	490
<i>Anuradha R. Fukane and Shashikant L. Sahare</i>	
Hybrid Approach for Single Image Super Resolution Using ISEF and IBP .....	495
<i>Vaishali Patel, Chintan K. Modi, Chirag N. Paunwala, and Suprava Patnaik</i>	
A Simple Single Seeded Region Growing Algorithm for Color Image Segmentation using Adaptive Thresholding .....	500
<i>Om Prakash Verma, Madasu Hanmandlu, Seba Susan, Muralidhar Kulkarni, and Puneet Kumar Jain</i>	
A Novel Complete Set of Walsh and Inverse Walsh Transforms for Signal Processing .....	504
<i>Zulfikar, Shuja A. Abbasi, and A.R.M. Alamoud</i>	
Performance Evaluation of Modulation Techniques with Iterative IDMA Receivers Using Optimum Tree Based Interleaver .....	510
<i>Kulbhushan Gupta, C.K. Shukla, Shashi Tiwari, and M. Shukla</i>	
Proposal for One Dimensional Optical Orthogonal Codes: Design, Analysis, & Algorithm .....	514
<i>R.C.S. Chauhan, Ratenesh Kumar, M. Shukla, Ashutosh Kumar Sigh, and G.P. Bagaria</i>	
BER Analysis of Space-Frequency Block Coded MIMO-OFDM Systems Using Different Equalizers in Quasi-Static Mobile Radio Channel .....	520
<i>Bhasker Gupta and Davinder S. Saini</i>	
Modeling of Sigma-Delta Modulator Non-Idealities in MATLAB/SIMULINK .....	525
<i>Shashant Jaykar, Prachi Palsodkar, and Pravin Dakhole</i>	
Fragile Watermarking Scheme for Image Tamper Detection .....	531
<i>Prasad Patil and Shefali Sonavane</i>	
Performance Evaluation of Feature Extraction Algorithm on GPGPU .....	536
<i>Namdev Sawant and Dinesh Kulkarni</i>	
Enhancement of Color Image Retrieval Capabilities: Fusion of Color with Texture Optimization .....	541
<i>Md. S.A. Khan, M.A. Ansari, and Javed Miya</i>	

A Proposed Feature Extraction Technique for Dental X-Ray Images Based on Multiple Features .....	545
<i>Jincy Raju and Chintan K. Modi</i>	
Analysis of Channel Capacity of Generalized -K Fading with Maximal-Ratio Combining Diversity Receivers .....	550
<i>Vivek K. Dwivedi and G. Singh</i>	
Part of Speech Tagging for Hindi Corpus .....	554
<i>Nidhi Mishra and Amit Mishra</i>	
A Secure Image Based Watermark for 3D Images .....	559
<i>Sakshi Shrivastava and Siddhartha Choubey</i>	
Left Ventricular Segmentation of 2-D Echocardiographic Image: A Survey .....	563
<i>Shweta Deopujari, Yogita Dubey, and M.M. Mushrif</i>	
An Experimental Study of Different Features for Face Recognition .....	567
<i>M. Hanmandlu, R. Bhupesh Gupta, Farrukh Sayeed, and A.Q. Ansari</i>	
Removal of Ocular Artifacts from EEG Signals Using Adaptive Threshold PCA and Wavelet Transforms .....	572
<i>P. Ashok Babu and K.V.S.V.R. Prasad</i>	
FPGA Based High Speed BCH Encoder for Wireless Communication Applications .....	576
<i>Rajesh Mehra, Garima Saini, and Sukhbir Singh</i>	
Opportunistic Spectrum Sensing by Employing Matched Filter in Cognitive Radio Network .....	580
<i>Shipra Kapoor, SVRK Rao, and Ghanshyam Singh</i>	
A Mixed Model Binary Imaging Strategy Using Wireless Sensors for Brain Imaging .....	584
<i>Anoop Tiwari, Ravi Mishra, Rajesh Nema, and Puran Gaur</i>	
Identifying Resemblance in Local Plastic Surgical Faces Using Near Sets for Face Recognition .....	589
<i>Roshni S. Khedgaonkar, K.R. Singh, and Swati P. Gawande</i>	
Digital Image Watermarking by Using Discrete Wavelet Transform and Discrete Cosine Transform and Comparison Based on PSNR .....	593
<i>Rakhi Dubolia, Roop Singh, Sarita Singh Bhadoria, and Rekha Gupta</i>	
An Improved Image Contrast Enhancement Based on Histogram Equalization and Brightness Preserving Weight Clustering Histogram Equalization .....	597
<i>Ritu Chauhan and Sarita Singh Bhadoria</i>	
A Spectrally Efficient ML Estimation Method for OFDM Systems over Sparse Multipath Channels .....	601
<i>Rekha Gupta and Aditya Trivedi</i>	
Parametric Quintic Spline Solution for Second Order Singularly Perturbed Boundary Value Problem .....	606
<i>Shilpi Bisht and Riyaz A. Khan</i>	

Performance & Benefits of Optical Code Division Multiplexing Access .....	611
<i>Deepak Vyas, K.C. Roy, and Abhishek Katariya</i>	
Global Optimization of Lennard-Jones Potential Using Newly Developed Real Coded Genetic Algorithms .....	614
<i>Kusum Deep, Shashi, and V.K. Katiyar</i>	
<b>Track H: Mathematical Modelling &amp; Simulation</b>	
Need to Understand Uncertainty in the System Development Modeling Process .....	619
<i>Kardile Vilas Vasantrao</i>	
Good Second-Order Nonlinearity of a Subclass of Kasami Function on Five, Seven and Nine Variables .....	624
<i>Manish Garg</i>	
Screening Rural and Urban Indian Population for Osteoporosis Using Heel Ultrasound Bone Densitometer .....	629
<i>Samar, Dev Maletia, Kribakaran Venkatesan, Savita Rana, and M. Anburajan</i>	
Temporal Relevance Improvement Mechanism for Crawler Collection .....	634
<i>Ashutosh Dixit and A.K. Sharma</i>	
Graph Coloring with Minimum Colors: An Easy Approach .....	638
<i>Amit Mittal, Parash Jain, Srushti Mathur, and Preksha Bhatt</i>	
Unsupervised Abnormal Nodes Detection in Semantic Graphs .....	642
<i>Priya S. Sajane and Shefali P. Sonavane</i>	
A Novel Approach to Predict Cancer by Ensembling of Kernel Based Dimension Reduction and Classifier Using DNA Microarrays .....	646
<i>Binod Kumar Mishra, Praneet Saurabh, and Bhupendra Verma</i>	
Modeling and Verification of Kerberos Protocol Using Symbolic Model Verifier .....	651
<i>Punit Mundra, Shobhit Shukla, Madhavi Sharma, Radhika M. Pai, and Sanjay Singh</i>	
Formal Verification of OAuth 2.0 Using Alloy Framework .....	655
<i>Suhas Pai, Yash Sharma, Sunil Kumar, Radhika M. Pai, and Sanjay Singh</i>	
Performance Analysis of Turbo Based Multiple Input Multiple Output Systems .....	660
<i>Suneeta V. Budihal, Priyatam Kumar, and R.M. Banakar</i>	
<b>Track J: High Performance Computing and IT Management</b>	
Cloud Computing: The Fifth Generation of Computing .....	665
<i>Sameer Rajan and Apurva Jairath</i>	
Software Buying Behaviour of Consumer: A Factor Analysis Approach .....	668
<i>Sunil Giri, Hari Govind Mishra, and Vishal Sharma</i>	
Reliability-Aware Genetic Scheduling Algorithm in Grid Environment .....	673
<i>Wael Abdulal and S. Ramachandram</i>	
Trust Based Access Control for Grid Resources .....	678
<i>Bhavna Gupta, Harmeet Kaur, Namita, and Punam Bedi</i>	

ERP Redefined: Optimizing Parameters with Lean Six Sigma for Small & Medium Enterprises .....	683
<i>Rashmi Jha and Anil Kumar Saini</i>	
Green Computing - A New Horizon of Energy Efficiency and Electronic Waste Minimization: A Global Perspective .....	688
<i>Shalabh Agarwal and Asoke Nath</i>	
Non-destructive Quality Evaluation of Chocolate Chip Cookies .....	694
<i>Parth Parikh, Parth Mehta, and Chintan K. Modi</i>	
A Bigraph Model for Multi-route Choice in Urban Rail Transit .....	699
<i>Huawei Zhai, Weishi Zhang, Licheng Cui, Hongbo Liu, and Ajith Abraham</i>	
<b>Track K: Software Engineering &amp; Testing</b>	
An Impact of Cross Over Operator on the Performance of Genetic Algorithm Under Operating System Process Scheduling Problem .....	704
<i>Rajiv Kumar, Sanjeev Gill, and Ashwani Kaushik</i>	
Managing Security in Aspect Oriented Recommender System .....	709
<i>Punam Bedi and Sumit Kr. Agarwal</i>	
Dynamic Programming Approach for Large Scale Unit Commitment Problem .....	714
<i>Prateek Kumar Singhal and R. Naresh Sharma</i>	
Interest-Based Repair of Conflicting Requirements Using Argumentation .....	718
<i>Punam Bedi and Pooja Vashisth</i>	
A Generic Structure of Object Classification Using Genetic Programming .....	723
<i>Arifa S. Tamboli and Medha A. Shah</i>	
Software Reconfigurable State-of-the-Art Communication Suite for Fighter Aircraft .....	729
<i>M. Jayachandran and J. Manikandan</i>	
An Improved Ranking Scheme for Selection of Parents in Multi-Objective Genetic Algorithm .....	734
<i>Rahila Patel, M.M. Raghuvanshi, and L.G. Malik</i>	
A New Method for Measurement of Bioelectrical Impedance .....	740
<i>Padma Batra, Sukhwinder Singh, and Rahul Pratap Singh</i>	
<b>Author Index</b> .....	744