

2013 Third International Conference on Advances in Computing and Communications (ICACC 2013)

**Kochi, Kerala, India
29 – 31 August 2013**



**IEEE Catalog Number: CFP1311T-POD
ISBN: 978-1-4799-0854-7**

2013 Third International Conference on Advances in Computing and Communications

ICACC 2013

Table of Contents

Message from the Chairs.....	xiv
Organizing Committee.....	xvi

Artificial Intelligence and Knowledge Computing

Fractional Fuzzy PID Controller for Speed Control of DC Motor	1
<i>Sujit Kr. Gupta and Pragya Varshney</i>	
Multidimensional Data Mining for Anomaly Extraction	5
<i>Pratima R. Patil and Mamta Bhamare</i>	
Modeling of Non-convex Obstacle Detection and Avoidance Mobile Robot by Hybrid Cellular Automata	9
<i>K.P. Krishna Kumar and Mathew Varghese Vaidyan</i>	
A Proposal for Improving Data Deduplication with Dual Side Fixed Size Chunking Algorithm	13
<i>P.K. Krishnaprasad and Biju Abraham Narayamparambil</i>	
CRLRM: Category Based Recommendation Using Linear Regression Model	17
<i>Gourav Jain, Nishchol Mishra, and Sanjeev Sharma</i>	
Knowledge-Augmented Genetic Algorithms for Effective Instruction Template Selection in Compilers	21
<i>P.R. Mahalingam</i>	
Design of a BCI System for Piloting a Wheelchair Using Five Class MI Based EEG	25
<i>G. Reshmi and A. Amal</i>	
Application of Modified Spectral Bisection for Segmenting Malayalam Documents	29
<i>P.M. Dhanya and M. Jathavedan</i>	

DCA: An Approach for Face Recognition through Component Analysis	34
<i>P. Shamna C. Tripti and Paul Augustine</i>	
Prediction of Missing Items Using Naive Bayes Classifier and Graph Based Prediction	39
<i>Sherica Lavinia Menezes and Geeta Varkey</i>	
Adaptive Neuro-fuzzy Classifier for Weapon Detection in X-Ray Images of Luggage Using Zernike Moments and Shape Context Descriptor	46
<i>Annet Deenu Lopez, Eldho S. Kollialil, and K. Gopika Gopan</i>	
A Novel Technique for Efficient Text Document Summarization as a Service	50
<i>Anusha Bagalkotkar, Ashesh Kandelwal, Shivam Pandey, and S. Sowmya Kamath</i>	
Stress Management Using Artificial Intelligence	54
<i>V.J. Madhuri, Madhumitha R. Mohan, and R. Kaavya</i>	
Anomaly Detection Using Motion Patterns Computed from Optical Flow	58
<i>R. Parvathy, Soumya Thilakan, Meenu Joy, and K.M. Sameera</i>	
Reduction of MAI Using Optical Normaliser in an Optical CDMA System	62
<i>Anila John and S. Sharath Raj</i>	
Prioritization of Messages on Community Based and Non Community Based Protocols in DTN	66
<i>Anmol Aggarwal and Preeti Nagrath</i>	
Convergent Replicated Data Structures that Tolerate Eventual Consistency in NoSQL Databases	70
<i>Clarence Tauro, Aby Easo, Samson Mathew, and Gnesan N</i>	

Modeling and Analysis of Communications Systems

Enhanced Design of UWB Antenna with Dual Tapered Conical Wave Launcher for Biomedical Application	76
<i>M. Sasikala, A. Petrishia, and M. Durai Samy</i>	
Energy Efficient and Reputation Based CDS Model for Mobile Ad Hoc Networks	80
<i>Sangheethaa Sukumaran, Surya Rani Sunny, and Lakshmi Ramachandran</i>	
Performance Analysis of Thresholded MRC Scheme for Cooperative Diversity under Rayleigh Fading Channel	84
<i>B. Shamla and M.G. Jibukumar</i>	
An Alternative Selection Based Detection Method for Spectrum Sensing for Cognitive Radio	90
<i>V.C. Abdul Rahim, H.S. Mruthyunjaya, and K. Vishnamurthy Kedalya</i>	
OFDM Channel Estimation Using Compressed Sensing L1-Regularized Least Square Problem Solver	94
<i>Vijitha Rajan, Arun A. Balakrishnan, and K.E. Nissar</i>	

Freespace Optical Communication Using Aperture Averaging and Spatial Diversity in Log Normal Channel	98
<i>M.C. Neethu Mohan and B. Shamla</i>	
A New Digital Distance Relaying Algorithm for First-Zone Protection for Series-Compensated Double-Circuit Transmission Lines	102
<i>Ranjeet Kumar, Amrita Sinha, and G.K. Choudhary</i>	
Formulation of Resonant Length for Triple Band Rectangular Microstrip Antennas	107
<i>Amit A. Deshmukh, Tejal A. Tirodkar, Ankita R. Jain, Apurva A. Joshi, and K.P. Ray</i>	
Effect of Mobile Phone Radiation on EEG	111
<i>C.K. Smitha and N.K. Narayanan</i>	
Registry Based Discovery Model for Android Application	115
<i>John Paul Martin, M. Sarith Divakar, and Hareesh M. Joseph</i>	
A Simple In-Service Monitoring System for Passive Optical Networks	118
<i>Karthika Mohandas, V.K. Jayasree, and Samuel Varghese</i>	
Miniaturization of Square Patch Antenna using Complementary Split Ring Resonators	122
<i>Princy Maria Paul, C. Priya Annmary, N. Sneha Mol Treesa, Sherry Ann Sacharias, Savya Joseph, and Deepti Das Krishna</i>	
Optimization of Cooperative Spectrum Sensing under AWGN and Rayleigh Channels in Cognitive Radio Network	126
<i>G. Vidyadhar Reddy and N.S. Murthy</i>	
A Framework to Monitor Cloud Infrastructure in Service Oriented Approach	130
<i>John Prakash Veigas and K. Chandra Sekaran</i>	
Towards Efficient and Secure Cloud	134
<i>Tarek Radwan, Marianne Azer, and Nashwa Abdelbaki</i>	
 Signal Processing Architectures and Models	
Mixed Mode Circuit Simulation of a Junction-Less Transistor and a Comparative Study with CMOS Inverter	141
<i>Nitha M. Biju, M. Aswathy, and Rama Komaragiri</i>	
Time Domain Adaptive Beamformer for Sonar Signal Processing	145
<i>B. Deepa, V. Jojish Joseph, D. Subhadra Bhai, and A. Anitha Varghese</i>	
Comparison of a 30nm Tunnel Field Effect Transistor and CMOS Inverter Characteristics	149
<i>M. Aswathy, Nitha M. Biju, and Rama Komaragiri</i>	
A Wavelet Based MFCC Approach for the Phoneme Independent Pathological Voice Detection	153
<i>C.M. Vikram and K. Umarani</i>	

Iterative Region Merging and Object Retrieval Method Using Mean Shift Segmentation and Flood Fill Algorithm	157
<i>Neeraj Bhargava, Prakriti Trivedi, Akanksha Toshniwal, and Himanshu Swarnkar</i>	
Reconstruction of Beat Signal in Radar Altimeter Using Signal Processing	161
<i>Geomol George, Arun A. Balakrishnan, and T.J. Apren</i>	
Application of Adaptive Filter Using Adaptive Line Enhancer Techniques	165
<i>R.G. Soumya, N. Naveen, and M.J. Lal</i>	
Cumulative Acoustic Signal Based Traffic Density State Estimation	169
<i>Prashant Borkar and L.G. Malik</i>	

Image Processing and Information Retrieval

Enhancement of Data Embedding Technique Using Adaptive Pixel Pair Matching for Security	173
<i>C.A. Nafsiya, Vidya Hari, and A. Neela Madheswari</i>	
Automatic Grading of Severity of Diabetic Macular Edema Using Color Fundus Images	177
<i>K.S. Sreejini and V.K. Govindan</i>	
Exploitation of Regression Line Potentiality to Track the Object through Color Optical Flow	181
<i>M.H. Sidram and Nagappa U. Bhajantri</i>	
A Novel Method of Medical Image Denoising Using Bilateral and NLM Filtering	186
<i>M.R. Mahesh Mohan and V.S. Sheeba</i>	
Counting of Frozen Semen Straws Using Image Processing	192
<i>Amit R. Chavan, A.R. Shastri, R.K. Shastri, and S.B. Deosarkar</i>	
Finger Vein Identification Based on Minutiae Feature Extraction with Spurious Minutiae Removal	196
<i>Preethy Prabhakar and Tony Thomas</i>	
Investigation on Multi Focus Images Using Block Based Feature Level Method	200
<i>S. Mary Praveena, Ila Vennila, and A.K. Kavitha</i>	
Cardiac Ischemia Diagnosis Using Stress ECG Analysis	204
<i>A. Amal and G. Reshmi</i>	
An SVM Based Skin Disease Identification Using Local Binary Patterns	208
<i>Nibaran Das, Anabik Pal, Sanjoy Mazumder, Somenath Sarkar, Dwijendranath Gangopadhyay, and Mita Nasipuri</i>	
Content Based Video Retrieval Using SURF Descriptor	212
<i>S. Asha and M. Sreeraj</i>	
Evaluation of Color Spaces for Feature Point Detection in Image Matching Application	216
<i>B. Sirisha and B. Sandhya</i>	

Feature Based Image Manipulation	220
<i>S. Gopika and P. Mintu</i>	
A Novel Algorithm for Image Compression and Pattern Matching	224
<i>Shamna P, Tripti C, and Paul Augustine</i>	
Collaborative Warning System for Dense Vehicular Networks Using MUSIC Algorithm DoA	228
<i>Chirag Warty, Richard Wai Yu, and Khaled ElMahgoub</i>	

VLSI Systems and Applications

High Speed VLSI Architecture for Squaring Algorithm Using Retiming Approach	233
<i>S. Jalaja and A.M. Vijaya Prakash</i>	
Implementation of CMNN Based Industrial Controller Using VxWorks RTOS Ported to MPC8260	239
<i>Pankaj Sagar, N. Naveen, Asha Joseph, M. Likhin, and K.H. Abdul Nazer</i>	
90nm CMOS Low Power Multimodulus 32/33/39/40/47/48 Prescaler with METSPC Based Logic	243
<i>V. Mohammed Zackriya and Harish M. Kittur</i>	
Real-time Task Assignment in Heterogeneous Multiprocessor Using Metaheuristic Algorithms	248
<i>K. Prescilla and A. Immanuel Selvakumar</i>	
Design and Implementation of Baseband Digital Modulator for CDMA Communication System	253
<i>P.N. Ravichandran, Satish Sharma, K.K. Raghunandana, Sunil, H.S. Vasudevamurthy, and N. Valarmathi</i>	
Design of a Mesfet Based Low Noise Amplifier with Improved Noise Figure for Low Power Wireless Applications in 2-3 GHz	257
<i>Prameela B and Jagadeesh Kumar P.</i>	

Ubiquitous Intelligence and Cyber-physical Computing

Job Scheduling and VM Provisioning in Clouds	261
<i>A. Chinnu Edwin and A. Neela Madheswari</i>	
Business Process Reengineering of the Workflows in Intensive Care Unit Supported with a Tablet PC Based Automation System	265
<i>K.S. Anju, Anumol Mathew, Joms Antony, Sudhin Joy, Bichu Vijayan, and G.S. Santhoshkumar</i>	
Improving the Accuracy of Ensemble Classifier Prediction Model Based on FLAME Clustering with Random Forest Algorithm	269
<i>Seena Mary Augusty and Sminu Izudheen</i>	

Localization of a Mobile Autonomous Robot Using Extended Kalman Filter	274
<i>Vishwanath Sangale and Abhishek Shendre</i>	
TaskTracker Aware Scheduling for Hadoop MapReduce	278
<i>Jisha S. Manjaly and Varghese S. Chooralil</i>	
Visualization of Information Theoretic Maximum Entropy Model in Real Time Distributed System	282
<i>Rashmi Sharma and Nitin</i>	
Controlling of Back to Back Converter for Load Sharing in Microgrid and Utility Grid	287
<i>Nitin P. Choudhary and Xma R. Pote</i>	
Student's Desk: My Workplace on Android	292
<i>Saurabh Agarwal, Tushark Bansal, Rajat Agarwal, and Mohammed Abdul Qadeer</i>	

Reliability and Information Security

Non Repudiation for Internet Access by Using Browser Based User Authentication Mechanism	296
<i>Nithesh K. Nandhakumar, A. Binu, and Viji Paul</i>	
A Youthful Procedure for Spatial Domain Steganography	300
<i>S. Arya Raj and T. Soumya</i>	
Application: DDoS Attacks Resistance Scheme Using Polynomial Distribution Model	304
<i>A. Vince Paul, K. Prasad, and Sankaranarayanan</i>	
Safety and Security Framework for Exception Handling in Concurrent Programming	308
<i>Faisal Anwer, Mohd. Nazir, and Khurram Mustafa</i>	
LEaCRS: An Extendible Array Based Compression Scheme for High Dimensional Data Using Linearization	312
<i>Md. Rakibul Islam, K.M. Azharul Hasan, and Tatsuo Tsuji</i>	

Scientific and Engineering Computing

A Cycle Based Reversible Logic Synthesis Approach	316
<i>Kamalika Datta, Bhadreswar Ghuku, Devi Sandeep, Indranil Sengupta, and Hafizur Rahaman</i>	
Industrial Power Wheeling and Optimum Power Interchange under Availability Based Tariff	320
<i>Jani Das and S. Ashok</i>	
Near Duplicate Web Page Detection with Analytic Feature Weighting	324
<i>Rasia Naseem, Sheena Anees, K. Muneer, and K. Syed Farook</i>	

Theoretical Computation of Boundary Layer Separation Point over an Impeller Vane Pressure Surface in Centrifugal Pump	328
<i>Swapnil Urankar, Sharad Raikar, N. Bharath, R. Naveen, and Sourabh Gupta</i>	
Pressure Detection at Molecular Level Using Pyroelectric Sensor	332
<i>Ashutosh Patri, Sritam Rout, and Shashiketan Samal</i>	
Design Aspects of Solar Thermal Power Generation in an Educational Institute	336
<i>Prasad B. Joshi and Ravindra M. Moharil</i>	
UDDI Rated Web Services	340
<i>M. Sarith Divakar M and K.S. Mathew</i>	
A Novel Single-Phase Single-Stage Inverter for Solar Applications	343
<i>K. Muhammedali Shafeeque and P.R. Subadhra</i>	
Design of 3-D Phantoms for Human Carotid Vasculature	347
<i>Ankita Banerjee, Sudipta Dey, Shubhankar Parui, Mita Nasipuri, and Subhadip Basu</i>	
MIMO System Using Transmit Diversity and Relay Selection Algorithm	351
<i>Sanjeenani Jenekar and Manoj Demde</i>	
Placement of PMUs for Power System Observability Using Biogeography Based Optimization	355
<i>K. Jamuna, Yugin L. Selva, and Gnanasekaran</i>	
Modeling and Design of a Novel Control Algorithm for Grid Connected Photovoltaic (PV) Inverter System	359
<i>Ayaz Ahmad and L. Rajaji</i>	

Performance Evaluation and Measurement

Workflow Model for Distributed Access Control	363
<i>Manoj V. Thomas and K. Chandra Sekaran</i>	
Selection of Wind Generators for Optimal Utilization of Wind Energy Using Reliability Constraint	367
<i>Ajinkya U. Mohiley and R.M. Moharil</i>	
Analysis of Conventional Inverter Topologies in Shunt Applications for Unbalanced and Non-linear Loads	372
<i>R.P. Tondare, S.P. Gawande, and M.R. Ramteke</i>	
Peak to Average Power Ratio Reduction in Filter Bank Based Multicarrier System	377
<i>T.S. Mishmy and V.S. Sheeba</i>	
Leveraging Information Bus with In-Memory Caching for Service Oriented Architecture	382
<i>Anil Patil and Rajesh Ingle</i>	

Joint Adaptive Channel Estimation and Transceiver Design for Two-Way Relay Systems	389
<i>Arun Joy and Vijay Kumar Chakka</i>	
Empirical Measuring IPv4/IPv6 Network Performance on Microsoft Windows Operating Systems	393
<i>Shibendu Debbarma and Abhijit Das</i>	
Performance Analysis of Magnetic Resonance Image Denoising Using Contourlet Transform	396
<i>S.J. Padmagireeshan, Renoh C. Johnson, Arun A. Balakrishnan, Veena Paul, Ajith V. Pillai, and A. Abdul Raheem</i>	
Comparative Study of Multiclass Classifiers for Underwater Target Classification	400
<i>T.A. Feroze Babu and R. Pradeepa</i>	

Advances in Wireless and Microwave Technology

Broadband Proximity Fed Modified Circular Microstrip Antenna	404
<i>Amit A. Deshmukh, Ankita R. Jain, Apurva A. Joshi, Tejal A. Tirodkar, and K.P. Ray</i>	
Broadband Proximity Fed Half U-Slot Cut Rectangular Microstrip Antennas	408
<i>Amit A. Deshmukh, Apurva A. Joshi, Ankita R. Jain, Tejal A. Tirodkar, and K.P. Ray</i>	
Sensor Localization and Obstacle Boundary Detection Algorithm in WSN	412
<i>Supantha Das, Indrajit Banerjee, and Tuhina Samanta</i>	
Memory Efficient, High Speed Implementation of MAX LOG MAP Decoder for CCSDS Turbo codes	416
<i>Bibin Varghese, V.K. Ansha, S. Sreelal, and N. Shanu</i>	
Integrating Encryption Technique in Authentication of Multicast Protocol for Ad-Hoc Networks	423
<i>Tintu Devasia and R. Visakh</i>	
Design of 3-Bit Digital DMTL Phase Shifter for C- to Ku-Band Applications	427
<i>Jitendra Singh Sengar, Anamika Das, and Manish Puri</i>	
Quadrature Detection Methods for FM Demodulation	433
<i>Sona Sunny, Jaison Varghese John, and T.J. Apen</i>	
Design and FPGA Implementation of a Programmable Data Rate PSK Digital Demodulator for Onboard and Ground Applications	437
<i>Mahesh Kumar, V.K. Tank, and T.V.S. Ram</i>	
Demand Based Data Replication in MANETs	441
<i>K.G. Priya, Mujeebudheen Khan, and K.G. Preetha</i>	
Efficient Optimal Route Stability Routing Protocol in MANET Using Gauss-Markov Mobility Model	445
<i>Bhabani Sankar Gouda, Pinaki Prasad Panigrahi, and Rabindra Kumar Shial</i>	

Author Index 449