

# **2014 3rd International Conference on Eco-friendly Computing and Communication Systems**

## **(ICECCS 2014)**

**Mangalore, India  
18-21 December 2014**



**IEEE Catalog Number: CFP14WWB-POD  
ISBN: 978-1-4799-6996-8**

# **2014 3rd International Conference on Eco-friendly Computing and Communication Systems**

## **ICECCS 2014**

### **Table of Contents**

<b>Message from the Patron.....</b>	<b>xi</b>
<b>Message from the General Chair.....</b>	<b>xii</b>
<b>Message from the Program Chairs.....</b>	<b>xiii</b>
<b>Message from the Organizing Chairs.....</b>	<b>xiv</b>
<b>Conference Committee.....</b>	<b>xv</b>
<b>Reviewers.....</b>	<b>xvii</b>
<b>Editors.....</b>	<b>xviii</b>

---

### **Session I - General Computer Science**

A Novel SRAM Cell Design Using Reversible Logic .....	1
<i>S. Dinesh Kumar and S.K. Noor Mohammad</i>	
On the Cache Behavior of SPLASH-2 Benchmarks on ARM and ALPHA	
Processors in Gem5 Full System Simulator .....	5
<i>B. Vikas and Basavaraj Talawar</i>	
A New Approach to Directory Based Solution for Cache Coherence Problem .....	9
<i>Shaily Mittal and Nitin</i>	
Word Level Script and Language Identification for Unconstrained Handwritten	
Document Images .....	14
<i>P.V. Prasanthkumar and E.D. Dileesh</i>	
A Crowdsourcing Framework for Toll Plazas: Optimizing Delay at Toll Plazas .....	19
<i>Usha Mahalingam and P. Leela Manju</i>	
Personalisation of News Recommendation Using Genetic Algorithm .....	23
<i>G. Sudha Sadhasivam, K.G. Saranya, and E.M. Praveen</i>	

## **Session II - Software Engineering, Social Networking, and Web Services**

A Sparsification Technique for Faster Hierarchical Community Detection in Social Networks .....	29
<i>S. Karthick, S. Mercy Shalinie, Chidambaram Kollengode, and S.R. Mukuntha Priya</i>	
User Interface for Community Detection in Social Networks .....	35
<i>Galaxy Jadar and V. Umadevi</i>	
Analyzing and Classifying User Search Histories for Web Search Engine Optimization .....	39
<i>Archana Kurian and M. Jayasree</i>	
A Survey of Storage Remote Replication Software .....	45
<i>Anoop Kumar Pandey, Amit Kumar, Nilesh Malviya, and Balaji Rajendran</i>	

## **Session III - Data Mining and Image Processing**

A Roughset Based Data Labeling Method for Clustering Categorical Data .....	51
<i>H. Venkateswara Reddy and S. Viswanadha Raju</i>	
Face Recognition Using Local Ternary Pattern and Booth's Algorithm .....	56
<i>Abdullah Gubbi, Mohammad Fazle Azeem, and Nishatbanu Z.H. Nayakwadi</i>	
Complex Event Processing Based Remote Health Monitoring System .....	61
<i>Ravi Pathak and V. Vaidehi</i>	

## **Session IV - Energy Efficiency**

A Robust and Energy Efficient Dynamic ID Based Remote User Authentication Scheme for Multi-server Environment .....	67
<i>Mrudula Sarvabhatla, Giri Murugan, and Chandra Sekhar Vorugunti</i>	
An Energy Efficient Temporal Credential Based Mutual Authentication Scheme for WSN .....	73
<i>Mrudula Sarvabhatla, Lakshmi Narayana Kodavali, and Chandra Sekhar Vorugunti</i>	
Green Wireless Access Virtualization Implementation: Cost vs. QoS Trade-offs .....	79
<i>M.M. Rahman, Charles Despins, and Sofiène Affes</i>	
Reinforcement Learning Based Service Provisioning for a Greener Cloud .....	85
<i>Vaishnavi Ravi and H. Shahul Hamead</i>	
Software Based DFS Technique for Parallel Applications to Conserve the Power .....	91
<i>C.R. Chaitra, H.A. Sanjay, and N. Preetham</i>	
A Novel Energy-Efficient Sybil Node Detection Algorithm for Intrusion Detection System in Wireless Sensor Networks .....	95
<i>A. Babu Karuppiah, J. Dalfiah, K. Yuvashri, S. Rajaram, and Al-Sakib Khan Pathan</i>	

Game Theoretical Computation Based Energy Efficient Routing for Wireless Sensor Networks .....	99
<i>K. Mohaideen Pitchai, B. Paramasivan, and M. Bhuvaneswari</i>	
Energy Efficient Routing Protocol for Wireless Sensor Networks - An Eco-Friendly Approach .....	105
<i>N. Geetha, A. Sankar, and P.B. Pankajavalli</i>	
An Energy-Conserving Topology Maintenance Algorithm in Manets .....	110
<i>S. Muthuramalingam, V. Vignaraj Ananth, and M. Sathish Kumar</i>	
Energy Efficient and Effective Control Strategy of HVAC System in Large Shopping Complex .....	116
<i>Ashoke Mondal and Shilpi Bhattacharya</i>	

## **Session V - Computer Security**

SSENet-2014 Dataset: A Dataset for Detection of Multiconnection Attacks .....	121
<i>Sangeeta Bhattacharya and S. Selvakumar</i>	
Video Encryption for Secure Multimedia Transmission - A Layered Approach .....	127
<i>T. Pradeep Pai, M.E. Raghu, and K.C. Ravishankar</i>	
Trust Establishment in Mobile Ad Hoc Networks .....	133
<i>Geethu Krishna Kartha and E.A. Neeba</i>	
Understanding Trust and Privacy of Big Data in Social Networks - A Brief Review .....	138
<i>H. Shashi Rekha, Chetana Prakash, and G. Kavitha</i>	
A Replay Attack Resilient System for PKI Based Authentication in Challenge-Response Mode for Online Application .....	144
<i>Sumit Goswami, Sudip Misra, and Mukesh Mukesh</i>	
An Improved Clustering-Based Approach for Wormhole Attack Detection in MANET .....	149
<i>J. Anju and C.N. Sminesh</i>	
Secured Handover Key Management among LTE Entities Using Device Certification .....	155
<i>B. Sridevi, Divya Mohan, and R. Neelaveni</i>	
Unified RB-DAC Approach with Secure Authentication Using Smart Card Architecture .....	161
<i>B. Balamurugan, S. Linkesh, and E. Durga Chowdary</i>	
A Combined Architecture for RBAC and DAC for Inter-cloud Communication .....	167
<i>B. Balamurugan, E. Durga Chowdary, and S. Linkesh</i>	
Proxy Based Model to Protect Cloud Infrastructure as Service (IaaS) Platforms from DDOS Attacks .....	172
<i>B. Rajalaxmi Prabhu and Sandeep Kumar Hegde</i>	

## **Session VI - Computer Networks**

An Algorithmic Perspective of Base Station Switching in Dense Cellular Networks .....	177
<i>Meenaxi M. Raikar, Preeti Doddagoudar, and Meena S. Maralapannavar</i>	
Future Collaboration Prediction in Co-authorship Network .....	183
<i>N. Roopashree and V. Umadevi</i>	
MANET Routing in Dual RF Scenario .....	189
<i>Neeraj Pandey, Rishabh Sood, Shantanu Gussain, Kumar Murugesan, Vinodh Upparapalli, and Manuja Sunilkumar Sapre</i>	
Real Time Computation of Optimal Signal Timing to Maximize Vehicular Throughput for a Traffic Junction .....	194
<i>Rajendra S. Parmar and Bhushan Trivedi</i>	
Resource Optimization Using Software Defined Networking for Smart Grid Wireless Sensor Network .....	200
<i>Ruby Sayyed, Sudeshna Kundu, Chirag Warty, and Shikha Nema</i>	

## **Session VII - Cloud Computing**

A Survey on Process Algebraic Stochastic Modelling of Large Distributed Systems for Its Performance Analysis .....	206
<i>Manish Gaur and Rama Kant</i>	
The Network Model to Prevent the Mobile Malware in the Distributed Environment .....	212
<i>N. Sundareswaran and P. Vinoth</i>	
WSRM: A Relational Model for Web Service Discovery in Enterprise Cloud Bus (ECB) .....	217
<i>Gitosree Khan, Sabnam Sengupta, and Anirban Sarkar</i>	
A Prototype Implementation of Log Acquisition in Private Cloud Environment .....	223
<i>Anand Kumar Mishra, Emmanuel S. Pilli, and M.C. Govil</i>	
DNS Security: Need and Role in the Context of Cloud Computing .....	229
<i>C. Aishwarya, M.S. Sannidhan, and Balaji Rajendran</i>	

## **Session VIII - Electronics and Communication Engineering**

Low Complexity SLM-PTS Method for Reduction of PAPR in OFDM Systems .....	233
<i>Seshanna Katam and P. Muthuchidambaranathan</i>	
PAPR Reduction Using Constant Modulus Algorithm and IDCT in MIMO-OFDM Networks .....	238
<i>S. Sujatha and P. Dananjayan</i>	

A Neuro-C4.5 Paradigm for Audio Steganogram Detection Based on Asymmetric Cost of False Errors .....	242
<i>S. Geetha and S. Muthuramalingam</i>	
Designing of Area and Power Efficient Modulo 2N Multiplier .....	246
<i>R.V. Shalini and P. Sampath</i>	
Inter-carrier Interference Cancellation Technique for Single Carrier OFDM Communication System .....	250
<i>P.M. Deepak and C.K. Ali</i>	
Quantitative Validation of Poka-Yoke Approach for HQLS Using Regression Coefficient and Analysis of Variance .....	255
<i>K.K. Baseer, A. Rama Mohan Reddy, and C. Shoba Bindu</i>	
Autonomous Monitoring and Attendance System Using Inertial Navigation System and GPRS in Predefined Locations .....	261
<i>Sudheer Kumar Nagothu, Om Prakash Kumar, and G. Anitha</i>	
An OFDM Transmitter Implementation Using Cordic Based Partially Reconfigurable IFFT Module .....	266
<i>K.A. Arun Kumar</i>	

## **Session IX - Electrical Engineering**

Multi-attribute Decision Making Using Fuzzy Ranking and Time Varying DE for Optimal Dispatch of Micro Grid .....	271
<i>Archana Pathak, Manjaree Pandit, and Y. Kumar</i>	
Particle Swarm Optimized Sliding Mode Controller for an AC-DC Boost Converter .....	277
<i>P. Nayana Menon and R. Anasraj</i>	

## **Session X - Mechanical Engineering**

An Algorithm to Reduce the Number of Graphs to Be Handled in the Test for Isomorphism among Planetary Gear Trains .....	282
<i>Y.V. Daseswara Rao, K. Sai Manish, V.R. Shanmukhasundaram, and S.P. Regalla</i>	
Design and Development of Sustainable Weed Cutter .....	287
<i>R. Pramod, M. Datta Sandesh, M. Sandeep Jayaram, and Kottakota Kalasagarreddi</i>	
Synthesis and Analysis of Planetary Gear Trains Using Genetic Algorithm .....	293
<i>Taufeeq Rahmani and Y.V.D. Rao</i>	

## **Session XI - Miscellaneous**

Minkowski Metric for GARCH (1,1) .....	295
<i>Kabin Kanjamapornkul, Boonserm Kijisirikul, and Jimson Mathew</i>	
Reliability of Qualitative Data Using Text Analysis - A Queensland Health Case Study .....	303
<i>Raj Gururajan, Kevin Clark, Susan Moller, Sankaran, and Abdul Hafeez Baig</i>	
<b>Author Index .....</b>	<b>309</b>