

Contents

Content-Based Load Balancing Using Web Clusters and Service Rankings	1
T.N. Anitha and R. Balakrishna	
A Fast Adaptive Kalman Filtering Algorithm for Speech Enhancement Under Stationary Noise Environment.	11
C.N. Prabhavathi and K.M. Ravikumar	
Reliability Assessment and Economic Evaluation of Offshore Wind Farm Using Stochastic Probability	25
Ahmed M. Atallah, Almoataz Y. Abdelaziz, Mohamed Ali, R.K. Saket and O.P. Bharti	
Charge Pump with Improved High-Swing Cascode Current Source for Accurate Current Matching in DPLL.	39
D.S. Rajeshwari, P.V. Rao and V. Rajesh	
Recent Research and Various Techniques Available for Efficiency Improvement of IGCC Power Plants	49
Ruchi Pandey, V.K. Sethi, Mukesh Pandey and Maneesh Choubey	
An Involuntary Data Extraction and Information Summarization Expending Ontology	59
R. Deepa and R. Manicka Chezian	
DWT–SVD-Based Watermarking Scheme Using Optimization Technique.	69
Sarthak Nandi and V. Santhi	
Fireworks Algorithm-Based Maximum Power Point Tracking for Uniform Irradiation as Well as Under Partial Shading Condition	79
K. Sangeetha, T. Sudhakar Babu and N. Rajasekar	

Design of Low Power Efficient Median Filter for Noise Reduction in Image.	89
M. Vinothini and B. Syed Ibrahim	
A Cycle Detection-Based Efficient Approach for Constructing Spanning Trees Directly from Nonregular Graphic Sequences.	97
Prantik Biswas, Shahin Shabnam, Abhisek Paul and Paritosh Bhattacharya	
Differential Illumination Enhancement Technique for a Nighttime Video	111
G. Abirami and S. Padmavathi	
Low-Cost Appliance Control System for Home Automation and Energy Management Using Image Processing	125
Nagaraj Shet, C. Shreesha, P.V. Rao and Abdullah Gubbi	
Design of Wireless Sensor Network for Submarine Detection	135
Anjali Arunan and R.D. Aryadevi	
Underground Tunnel Detection Across Border Areas	151
K.V. Nibi, K.A. Unnikrishna Menon and Preeja Pradeep	
Communication Network of Wide Area Measurement System for Real-Time Data Collection on Smart Micro Grid	163
Varna C. Prakash, P. Sivraj and K.K. Sasi	
Accoustic Modeling for Development of Accented Indian English ASR.	173
Partho Mandal, Gaurav Ojha, Anupam Shukla and S.S. Agrawal	
Improved Identity Anonymization Using Hashed-TOR Network	185
Gaurav Ojha, Rakesh Singh and Anupam Shukla	
A Tokenized Binding Update Scheme for Next Generation Proxy IP Mobility.	193
P.N. Anbarasi and Senthilkumar Mathi	
VLSI Implementation and Analysis of Kidney Stone Detection from Ultrasound Image by Level Set Segmentation and MLP-BP ANN Classification	209
K. Viswanath and R. Gunasundari	
Simulation Framework for Modeling Magnetic Induction Based Wireless Underground Channel	229
P. Ajith, K.A. Unnikrishna Menon and Vrinda N. Menon	
A Generic Algorithm for Segmenting a Specified Region of Interest Based on Chanvase's Algorithm and Active Contours.	239
Pranshu Agrawal, Gaurav Ojha and Mahua Bhattacharya	

Static Noise Margin Analysis of 6T SRAM Cell	249
Abinkant A. Jose and Nikhitha C. Balan	
Topology Preserving Map Generation for Multiple Mobile Fishing Vessels	259
N. Sruthi, P. Divya and Maneesha Vinodini Ramesh	
Accumulator Design in Cadence 90 nm Technology	273
Nikhitha C. Balan and Abinkant A. Jose	
Placement Chance Prediction: Clustering and Classification Approach	285
M.V. Ashok, A. Apoorva and V. Chethan	
Cluster-Based Distributed Key Architecture Scheme for MANETs . . .	295
B. Rajanna and R. Rajeswara Rao	
Design and Implementation of 270-Tap Finite Impulse Response Filter	307
T. Vandana Raj and S. Sreelakshmi	
Implementation of 18-Bit High-Speed Binary Multipliers	315
S. Sreelakshmi and T. Vandana Raj	
A New Approach to Object-Oriented Programming Language for Remote Power Quality Monitoring and Analysis Considering Harmonics	323
Vidula S. Jape and D.G. Bharadwaj	
Dynamic Programming Parallelization of Matrix Chain Multiplication on GPU: A Comparative Study	333
Tausif Diwan and S.R. Sathe	
Data Mining for Healthy Tomorrow with the Implementation of Software Project Management Technique.	345
K. Venkata Rao, R. Balakrishna, H. Aditya Pai and Piyush Kumar Pareek	
Real-time Implementation of Electromyography for Hand Gesture Detection Using Micro Accelerometer.	357
Subhendu Roy, Sraboni Ghosh, Aratrika Barat, Madhurima Chattopadhyay and Debjyoti Chowdhury	
RSA Public Key Acceleration on CUDA GPU	365
Jitendra V. Tembhurne and S.R. Sathe	
Low-Power Home Embedded Surveillance System Using Image Processing Techniques.	377
K. Arathi and Anju S. Pillai	

Performance Analysis of a Software Defined Network Using Mininet.	391
Chaitra N. Shivayogimath and N.V. Uma Reddy	
Comparative Analogy on Classification and Clustering of Genomic Signal by a Novel Factor Analysis and F-Score Method	399
R.C. Barik and R. Mishra	
Planar Crossover Using Microstrip Patch Antenna for Beamforming Networks	411
Mirav Mehta, K.A. Naveen, Vishnu Rajan, Rahul R. Pillai and Sreedevi K. Menon	
Energy-Efficient Communication in Wireless Sensor Network for Precision Farming	417
T.V. Aneeth and R. Jayabarathi	
Design and Evaluation of 3D NoC Routers with Quality-of-Service (QoS) Mechanism for Multi-core Systems.	429
Pournamy Mohan and K. Somasundaram	
Single-Stage Boost Rectifier for Wireless Charging of Portable Devices Through Magnetic Resonant Coupling.	443
Ria George, M. Sreekala and K. Deepa	
Big Data Analytics for Network Congestion Management Using Flow-Based Analysis	453
Yasmeen Arafath and R. Ranjith Kumar	
A Real-Time Intelligent Microcontroller-Based Harmonic Computing with Smart Phone Connectivity	459
Haripriya H. Kulkarni, D.G. Bharadwaj, Dipti B. Yeolekar and Sheetal B. Mhetre	
Performance Improvement of Compressed Sensing Reconstruction Using Modified-AMP Algorithm	471
Nissy Sara Mathai and R. Gandhiraj	
Diagnosis of Corneal Arcus Using Statistical Feature Extraction and Support Vector Machine.	481
S.V. Mahesh Kumar and R. Gunasundari	
Hospital-Based Screening for Osteoporosis in Both Sexes Aged Above 50 Years Using Prototype US Bone Densitometer.	493
Moataz Samir and M. Anburajan	
Real-Time ECG Acquisition and Detection of Anomalies.	503
S. Kalaivani, I. Shahnaz, Shaikh Rizwana Shirin and C. Tharini	

Weight-Based Data Center Selection Algorithm in Cloud Computing Environment.	515
Sunny Nandwani, Mohit Achhra, Raveena Shah, Aditi Tamrakar, Kiran Joshi and Sowmiya Raksha	
Real-Time Remote Monitoring of Indoor Air Quality Using Internet of Things (IoT) and GSM Connectivity	527
Siva V. Girish, R. Prakash and A. Balaji Ganesh	
Energy Conservation in Multi-storey Buildings at Indian Cities by Daylighting Control—A Study	535
M. Abdul Rahman Rafi and N. Albert Singh	
Enhancement in the Performance of Routing Protocols for Wireless Communication Using Clustering, Encryption, and Cryptography. . . .	547
Kanchan Dhote and G.M. Asutkar	
Design and Implementation of an Efficient Level Set Segmentation and Classification for Brain MR Images.	559
C.M. Naveen Kumar, B. Ramesh and J. Chandrika	
Robotic Imitation of Human Hand Using RGB Color Gradient Mapping.	569
T. Thyagaraj, Kumar Abhishek, N.S. Brunda, Rakesh Ranjan and Nikita Kini	
A Data Activity-Based Server-Side Cache Replacement for Mobile Devices.	579
Kottilingam Kottursamy, Gunasekaran Raja and K. Saranya	
Privilege-Based Scoring System Against Cross-Site Scripting Using Machine Learning.	591
N. Shyam Sunder and T. Gireeshkumar	
Content-Based Cricket Video Shot Classification Using Bag-of-Visual-Features.	599
M. Ravinder and T. Venugopal	
HDTCV: Hybrid Detection Technique for Clickjacking Vulnerability	607
D. Kavitha, S. Chandrasekaran and S.K. Rani	
QUANCE: Quality-Driven Automated Negotiation for Composite Web Services	621
Kanchana Rajaram and Chitra Babu	
The Analysis of PQ Sequences Generated from Continued Fractions for Use as Pseudorandom Sequences in Cryptographic Applications	633
Jayashree S. Pillai and T. Padma	

A Novel Approach to Adopt Scrum by an Enterprise 645
B. Reddaiah, R. Pradeep Kumar Reddy, C. Nagaraju
and V. Harsha Sree

**Review on Security Attacks and Mechanism in VANET
and MANET.** 655
S. Balasubramani, S.K. Rani and K. Suja Rajeswari

**Security of Networks Using Efficient Adaptive Flow Counting
for Anomaly Detection in SDN** 667
Gagandeep Garg and Roopali Garg

**A Novel Low Power Multiply–Accumulate (MAC) Unit Design
for Fixed Point Signed Numbers** 675
N. Jithendra Babu and Rajkumar Sarma

Optimizing Technical Ecosystem of Digital Marketing 691
Smitha Rao, V. Srivatsala and V. Suneetha

**An Efficient Image Encryption Technique Based on Optimized Key
Generation in ECC Using Genetic Algorithm** 705
K. Shankar and P. Eswaran

**Optimization of Fuel Consumption and Emission for Hybrid
Electric Vehicle.** 715
Soham Dey, Sushma Kamlu and Sudhansu Kumar Mishra

Classification Scheme for Software Reliability Models. 723
Dalbir Kaur and Monika Sharma

**Secure Spectrum Leasing in Cognitive Radio Networks via Secure
Primary–Secondary User Interaction** 735
Meenakshi Malhotra and Inderdeep Kaur Aulakh

**Traffic Signal Synchronization Using Computer Vision and Wireless
Sensor Networks.** 743
Shivani Desai and Param Trivedi

**Nature-Inspired Moving Sink Energy Efficient Data Gathering
Protocol for Wireless Sensor Network** 753
Biswaranjan Swain and Siddhartha S. Satapathy

**Mining Frequent Itemsets in Association Rule Mining Using Improved
SETM Algorithm** 765
D. Kerana Hanirex and K.P. Kaliyamurthie

**An Efficient Approach for Evolution of Functional Requirements
to Improve the Quality of Software Architecture** 775
M. Sunil Kumar and A. Rama Mohan Reddy

Pitch Frames Classification in a Cricket Video Using Bag-of-Visual-Words	793
M. Ravinder and T. Venugopal	
Retinal Abnormality Risk Prediction Model: A Hybrid Approach Based on Vessel Characteristics and Exudates	803
M. Aiswarya Raj and Shinu Acca Mani	
BER and RSSI Analysis-Based Frequency Adaptive Technique for Radio Frequency Transceiver.	819
A. Balasubramanian, A. Ahamad Meeran Mydeen and P.K. Dhal	
A Two-Stage 0.18 μm CMOS Differential Low-Noise Amplifier with Integrated LC Balun for 2.4 GHz Applications	831
J.L. Lakshmi and Premanand V. Chandramani	
Energy Harvesting in Wireless Sensor Networks.	841
R. Ramya, G. Saravanakumar and S. Ravi	
Implementation of Z-Ternary Content-Addressable Memory Using FPGA	855
G.P. Mullai and C. Sheeba Joice	
Design of Visual Aid for Blind People	865
Rajalakshmi Pushparaman	
Implementing Fusion to Improve the Efficiency of Information Retrieval Using Clustering and Map Reduction	879
B. Gomathi and P. Sakthivel	
Cellular Automata-Based LDPC Decoder.	885
C. Abisha Queen, M. Anbuselvi and S. Salivahanan	
A Game Theoretic Model to Detect Cooperative Intrusion Over Multiple Packets	895
Purbita Chakraborty, Koushik Majumder and Anurag Dasgupta	
Filtration of Noise in Images Using Median Filter.	909
Vigya and Tirthadip Ghose	
PVDF Polymer-Based MEMS Cantilever for Energy Harvesting	917
G. Dinesh Ram and S. Praveenkumar	
Separation of Blood Cells Using Silicon-Based Microfilter.	925
K. Swarnalatha, T. Sripriya and S. Praveenkumar	
Optimal Image Enhancement Method Based on Histogram Analysis	933
S.J. Monisha Selas and E.T. Jaba Jasphin	

Epileptic Seizure Characterization Using Transform Domain	941
Sushree Sangita Biswal, Itishree Biswal and Mihir Narayan Mohanty	
WSN Backbone Formation Using Non-probabilistic Spanning Tree Algorithm.	953
Rachita Nagpal and Roopali Garg	
Design Specifications of Reversible Logic Using CMOS and Quantum Dot Cellular Automata	961
Shaik Shabeena and Jyotirmoy Pathak	
Effective Models for Segmentation and Shape Tracking of Cells	973
J. Himayavardhini and R. Ramesh	
Real-Time Rule-Based Scheduling System for Integrated Delivery in a Semiconductor Manufacturing Using Evolutionary Algorithm-Based Simulation Approach	981
V.K. Manupati, A.S. Revanth, K.S.S.L. Srikanth, A. Maheedhar and M.B.S. Sreekara Reddy	
Least Square Mean Optimization-Based Real Object Detection and Tracking	991
Sanjay Rao, Deepak Jhanwar, Diwakar Gautam and Anand Choudhary	
Improving Efficiency and Fairness in Mobile Ad Hoc Networks	1001
Varun Manchikalapudi and Sk. Khadar Babu	
A Novel Content-Based Image Indexing and Retrieval Framework Using Clockwise Local Difference Binary Pattern (CWLDBP).	1009
M. Ravinder and M. Tirupathamma	
Self-organization Strategies for Hierarchical Network Structure in Wireless Ad Hoc Networks: A Short Survey.	1019
Dinesh A. Kulkarni and Suhas H. Patil	
Efficient-Fused Architectures for FFT Processor Using Floating-Point Arithmetic.	1029
D. Tamil Eniyan and J. Harirajkumar	
Design, Test and Evaluation of Trace-Buffer Inserted FPGA System	1039
R.S. Karpagam and B. Viswanathan	
Mining-Based Device Control for Home Automation.	1049
C. Ganesh Kumar, S. Januja Josephine and Premanand V. Chandramani	
Methods and Materials for Adsorbing the Benzene Molecule Based on Micro Electro Mechanical System	1059
D. Lingaraja and S. Praveen Kumar	

A Multi-parametric Hybrid Cooperative Localization Scheme for Mobile Communication Network	1067
D. Pavankumar and H.R. Mahadevaswamy	
Interface and Control of Appliances by the Analysis of Electrooculography Signals	1075
S.V. Arthi and Suresh R. Norman	
An Advanced Magnetic Resonance Imaging Technique for the Detection of Abnormal Changes Using Artificial Neural Network	1085
P. Balasubramanian and S. Manju	
Implementation of a Hybrid Renewable Energy Plant with Remote Monitoring Feature	1093
Ersan Kabalci and Ramazan Bayindir	
Artificial Neural Network Control Strategy for Multi-converter Unified Power Quality Conditioner for Power Quality Improvements in 3-Feeder System	1105
Karthikrajan Senthilnathan and K. Iyswarya Annapoorani	
Investigations on Multidimensional Maximum Power Point Tracking in Partially Shaded Photovoltaic Arrays with PSO and DE Algorithms	1113
R. Sridhar, S. Jeevananthan and B. Sai Pranahita	
Study on Effect of Series Compensation on Double-Circuit Transmission Lines	1127
S. Radha Krishna Reddy, J.B.V. Subrahmanyam and A. Srinivasula Reddy	
Optimal Scheduling of Microgrid with Energy Storage System Considering Islanding Constraints	1145
N. Jayalakshmi and B. Ashokvannan	
Voltage Sensitivity-Based Reactive Power Injection Using Fuzzy Inference System in Power System	1169
Prem Pratik, Prem Prakash and R.C. Jha	
Residential House Electrical Energy Audit Case Study with ETAP	1181
K. Keerthi Jain, N. Kishore Kumar, S. Muralikrishnan and L. Ramesh	
Bidirectional Buck–Boost Converter-Fed DC Drive	1195
P. Karthikeyan and V. Siva Chidambaramanathan	

Asymmetrical Multilevel Inverter Using Renewable Energy System	1205
V. Kala and C. Bhuvaneswari	
High Efficient Power Supply for Ozone Generator System with Input Power Factor Correction Converter	1215
G. Udhayakumar, M.R. Rashmi, K. Patel and A. Suresh	
Performance Comparison for Feed Forward, Elman, and Radial Basis Neural Networks Applied to Line Congestion Study of Electrical Power Systems	1227
Pradyumna K. Sahoo, Ramaprasad Panda, Prasanta K. Satpathy and Mihir N. Mohanty	
Design and Analysis of PEM Fuel Cell with Multilevel Inverter Using Multicarrier PWM Techniques.	1239
M. Muthuselvi and K. Antony Samson	
Power Quality Enhancement in a Distribution System Using Inductive Active Filtering Technique.	1253
K. Naresh Kumar, R. Siva and S. Srinath	
Optimization of Impedance Mismatch in Distance Protection of Transmission Line with TCSC.	1265
M. Arun Bhaskar, A. Indhirani and S. Premalatha	
Reconfigurable WSN Interface for Water Quality Measurement	1279
Ajin Mathew Sam and C. Balaji	
Optimization of Micro Thermoelectric Generator for Renewable Source of Energy	1287
Y. Jeyashree, A. Vimala Juliet, C. Prantik Barua, J. Sree Harsha and Abhilash Mallick	
Optimal Design of a Fuzzy PID Controller for Inverted Pendulum System	1297
Sadhna Malik and Sudhansu Kumar Mishra	
Kalman Filter Based MPC with Dead Band for a Ball Mill.	1309
Punit Krishna, M. Guruprasath, K. Ramkumar, S. Venkatesh and G. Balasubramanian	
Design of Optimal Controller for Magnetic Levitation System Using Brownian Bat Algorithm	1321
K. Sundaravadivu, C. Ramadevi and R. Vishnupriya	
Meta-Heuristics Based Approach for Workflow Scheduling in Cloud Computing: A Survey	1331
Poonam, Maitreyee Dutta and Naveen Aggarwal	

**Brain MRI Segmentation for Lesion Detection Using Clustering
with Fire-Fly Algorithm 1347**
Pramita Manna and Tapas Si

Author Index 1357

Artificial Intelligence and Evolutionary Computations in
Engineering Systems

Proceedings of ICAIECES 2015

Dash, S.S.; Bhaskar, M.A.; Panigrahi, B.K.; Das, S. (Eds.)

2016, XX, 1360 p. 813 illus. in color. In 2 volumes, not
available separately., Softcover

ISBN: 978-81-322-2654-3