

# Contents

<b>Improvement in Hungarian Algorithm for Assignment Problem . . . . .</b>	<b>1</b>
Kartik Shah, Praveenkumar Reddy and S. Vairamuthu	
<b>Vertex Cover Problem—Revised Approximation Algorithm. . . . .</b>	<b>9</b>
Kartik Shah, Praveenkumar Reddy and R. Selvakumar	
<b>A Simple Control Strategy Technique for a Single-phase Bridgeless Active Rectifier with High Power Factor and Voltage Stabilization Using Partial Digital Implementation . . . . .</b>	<b>17</b>
Rahul Ganpat Mapari and D.G. Wakde	
<b>Ensemble Neural Network Algorithm for Detecting Cardiac Arrhythmia. . . . .</b>	<b>27</b>
S. Aruna and L.V. Nandakishore	
<b>An Efficient Invasive Weed Optimization Algorithm for Distribution Feeder Reconfiguration and Loss Minimization . . . . .</b>	<b>37</b>
K. Sathish Kumar, K. Rajalakshmi, S. Prabhakar Karthikeyan and R. Rajaram	
<b>Implementation of Generative Crossover Operator in Genetic Algorithm to Solve Traveling Salesman Problem. . . . .</b>	<b>47</b>
Devasenathipathi N. Mudaliar and Nilesh K. Modi	
<b>A 4-bit 9 KS/s Distortionless Successive Approximation ADC in 180-nm CMOS Technology . . . . .</b>	<b>55</b>
P. Dipu, B. Saidulu, K. Aravind, Johny S. Raj and K. Sivasankaran	
<b>EEG-based Automatic Detection of Drowsy State . . . . .</b>	<b>65</b>
Jinu Jai, Geevarghese Titus and S. Purushothaman	

<b>WIDS Real-Time Intrusion Detection System Using Entrophical Approach . . . . .</b>	<b>73</b>
Kamalanaban Ethala, R. Sheshadri and S. Sibi Chakkaravarthy	
<b>Optical Character Recognition for Alphanumerical Character Verification in Video Frames . . . . .</b>	<b>81</b>
Sheshank Shetty, Arun S. Devadiga, S. Sibi Chakkaravarthy, K.A. Varun Kumar, Ethala Kamalanaban and P. Visu	
<b>Modified AODV Routing Protocol for Multi-hop Cognitive Radio Ad Hoc Networks . . . . .</b>	<b>89</b>
Melvin Mathew, G. Shine Let and G. Josemin Bala	
<b>Theoretical Framework of the Algorithm to Thwart MAC Spoofing DoS Attack in Wireless Local Area Infrastructure Network . . . . .</b>	<b>99</b>
M. Durairaj and A. Persia	
<b>PCA-Based Feature Selection for MRI Image Retrieval System Using Texture Features . . . . .</b>	<b>109</b>
N. Kumaran and R. Bhavani	
<b>A Survey of Location Prediction Using Trajectory Mining . . . . .</b>	<b>119</b>
B.A. Sabarish, R. Karthi and T. Gireeshkumar	
<b>Survey on Router Policies Providing Fairness and Service Differentiation Favoring Real-Time Data Transfers in Internet . . . . .</b>	<b>129</b>
Jyothish K. John and R.V. Siva Balan	
<b>Exploration of the Effect of Demographic and Clinical Confounding Variables on Results of Voxel-Based Morphometric Analysis in Schizophrenia . . . . .</b>	<b>139</b>
Anupa A. Vijayakumari, Priyadarshini Thirunavukkarasu, Ammu Lukose, Vikram Arunachalam, Jitender Saini, Sanjeev Jain, Bindu M. Kutty and John P. John	
<b>A Novel Method for Secure Image Steganography . . . . .</b>	<b>151</b>
S. Anjana and P.P. Amritha	
<b>Techniques for Enhancing the Performance of TCP in Wireless Networks . . . . .</b>	<b>159</b>
MD. Sirajuddin, Ch. Rupa and A. Prasad	

<b>Analysis of Classification Models Using Image Statistics and Data Miner for Grade Prediction of Astrocytoma . . . . .</b>	<b>169</b>
M. Monica Subashini, Sarat Kumar Sahoo, S. Prabhakar Karthikeyan and I. Jacob Raglend	
<b>Object Detection in Cluttered Environment Using 3D Map . . . . .</b>	<b>181</b>
Deepesh Jain, Renuka Ramachandran, Anuhya Vunnam and P. Vignesh	
<b>Smart Energy Meter with Instant Billing and Payment . . . . .</b>	<b>187</b>
Dhananjayan Ravi, J. Shibu and E. Shanthi	
<b>GA-Based Compiler Parameter Set Tuning. . . . .</b>	<b>197</b>
N.A.B. Sankar Chebolu, Rajeev Wankar and Raghavendra Rao Chillarige	
<b>An Intelligent Intrusion Detection System Using Average Manhattan Distance-based Decision Tree . . . . .</b>	<b>205</b>
R. Selvi, S. Saravan Kumar and A. Suresh	
<b>Intelligent Medical Diagnosis System Using Weighted Genetic and New Weighted Fuzzy C-Means Clustering Algorithm . . . . .</b>	<b>213</b>
P.S. Jeetha Lakshmi, S. Saravan Kumar and A. Suresh	
<b>Security Analysis in Cloud Environment. . . . .</b>	<b>221</b>
M.S. Akshay, Ashina Kakkar, K. Jayasree, P. Prudhvi and Prathibha Shridhara Metgal	
<b>A Bi-level Clustering Analysis for Studying About the Sources of Vehicular Pollution in Chennai . . . . .</b>	<b>229</b>
Gunaselvi Manohar, S. Prasanna Devi and K. Suryaprakasa Rao	
<b>Investigation of Fault Detection Techniques for an Industrial Pneumatic Actuator Using Neural Network: DAMADICS Case Study . . . . .</b>	<b>237</b>
V. Elakkiya, K. Ram Kumar, V. Gomathi and S. Rakesh Kumar	
<b>Design of Portable Security System Using Face Recognition with Back-Propagation Algorithm and MATLAB . . . . .</b>	<b>247</b>
M. Hareesh Babu, M. Bala Naga Bhushanamu, B. Benarji and M. Purnachandra Rao	
<b>Model-Based Control for Moisture in Paper Making Process. . . . .</b>	<b>257</b>
C. Karthik, K. Suresh, K. Valarmathi and R. Jacob Rajesh	

<b>Elimination of Harmonics in Seven-Level Cascaded Multilevel Inverter Using Particle Swarm Optimization Technique . . . . .</b>	<b>265</b>
W. Razia Sultana, Sarat Kumar Sahoo, S. Prabhakar Karthikeyan, I. Jacob Raglend, Pasam Harsha Vardhan Reddy and Gangireddy Taraka Rajasekhar Reddy	
<b>Optimization and Quality-of-Service Protocols in VANETs: A Review . . . . .</b>	<b>275</b>
K.R. Jothi and A. Ebenezer Jeyakumar	
<b>Object Detection Using Robust Image Features . . . . .</b>	<b>285</b>
Khande Bharath Kumar and D. Venkataraman	
<b>Service-Adaptive Fuzzy Multi Criteria Based Intelligent Vertical Handover Decision Algorithm for Heterogeneous Wireless Networks. . . . .</b>	<b>297</b>
V. Anantha Narayanan, A. Rajeswari and V. Sureshkumar	
<b>Automatic Traffic Classification Using Machine Learning Algorithm for Policy-Based Routing in UMTS-WLAN Interworking . . . . .</b>	<b>305</b>
V. Anantha Narayanan, V. Sureshkumar and A. Rajeswari	
<b>Sequential Decision Making Using Q Learning Algorithm for Diabetic Patients . . . . .</b>	<b>313</b>
Pramod Patil, Parag Kulkarni and Rachana Shirsath	
<b>Design of Quantum Cost and Delay-Optimized Reversible Wallace Tree Multiplier Using Compressors . . . . .</b>	<b>323</b>
A.N. Nagamani and Vinod Kumar Agrawal	
<b>A Novel Authentication Framework for Hadoop . . . . .</b>	<b>333</b>
P.K. Rahul and T. GireeshKumar	
<b>Fuzzy ART-Based User Behavior Trust in Cloud Computing . . . . .</b>	<b>341</b>
M. Jaiganesh, M. Aarthi and A. Vincent Antony Kumar	
<b>Semi-supervised Learning Algorithm for Online Electricity Data Streams . . . . .</b>	<b>349</b>
Pramod Patil, Yogita Fatangare and Parag Kulkarni	

<b>An Efficient Continuous Speech Recognition System for Dravidian Languages Using Support Vector Machine . . . . .</b>	<b>359</b>
J. Sangeetha and S. Jothilakshmi	
<b>Video Surveillance Based Tracking System . . . . .</b>	<b>369</b>
R. Venkatesan, P. Dinesh Anton Raja and A. Balaji Ganesh	
<b>Stroke Detection in Brain Using CT Images . . . . .</b>	<b>379</b>
S. Neethu and D. Venkataraman	
<b>Preemptive Appliances Scheduling in Smart Home Using Genetic Algorithm . . . . .</b>	<b>387</b>
A. Ranjini and B.S.E. Zoraida	
<b>Credible Secure Data Aggregation in Wireless Sensor Networks . . . . .</b>	<b>395</b>
M.P. Anuradha and Gopinath Ganapathy	
<b>Zumkeller Labeling Algorithms for Complete Bipartite Graphs and Wheel Graphs . . . . .</b>	<b>405</b>
B.J. Balamurugan, K. Thirusangu and D.G. Thomas	
<b>An Unidentified Location-Based Efficient Routing Protocol in VANET. . . . .</b>	<b>415</b>
P. Dharani, S. Sibi Chakkaravarthy, M. Ganesan, Ethala Kamalanaban, P. Visu, Pravin R. Patil and C. Mahesh	
<b>A Secure and Efficient Binding Update Scheme with Decentralized Design for Next Generation IP Mobility . . . . .</b>	<b>423</b>
Senthil Kumar Mathi, M.L. Valarmathi and Srilakshmy	
<b>Stego with Color Cue. . . . .</b>	<b>433</b>
N.R. Raajan, G. Balasubraminayan, B. Barath Krishna, S. Ramya, M. Malligaraj and K. Karthikeyan	
<b>Secure Seed-Based Sturdy OTP via Convenient Carry-on Device. . . . .</b>	<b>447</b>
Ashok Kumar Mohan and T. Gireesh Kumar	
<b>A <math>(t, n)</math> Secure Sum Multiparty Computation Protocol Using Multivariate Polynomial Secret Sharing Scheme . . . . .</b>	<b>457</b>
K. Praveen and Nithin Sasi	

<b>Small-World Particle Swarm Optimizer for Real-World Optimization Problems</b> . . . . .	465
Megha Vora and T.T. Mirmalinee	
<b>A Comparative Study of Feature Ranking Methods in Recognition of Handwritten Numerals</b> . . . . .	473
Abhinaba Roy, Nibaran Das, Amit Saha, Ram Sarkar, Subhadip Basu, Mahantapas Kundu and Mita Nasipuri	
<b>Performance Evaluation of PET Image Reconstruction Using Radial Basis Function Networks</b> . . . . .	481
T. Arunprasath, M. Pallikonda Rajasekaran, S. Kannan and Shaeba Mariam George	
<b>Clustering for Knowledgeable Web Mining.</b> . . . .	491
B.S. Charulatha, Paul Rodrigues, T. Chitralekha and Arun Rajaraman	
<b>Effective Path Discovery Among Clusters for Secure Transmission of Data in MANET.</b> . . . .	499
P. Madhavan, P. Malathi and R. Abinaya	
<b>Quality-of-Service Analysis of AOMDV and AOMDV-MIMC Routing Protocols for Mobile Ad hoc Networks</b> . . . . .	511
P. Periyasamy and E. Karthikeyan	
<b>Particle Swarm Optimization-Based SONAR Image Enhancement for Underwater Target Detection</b> . . . . .	523
P.M. Rajeshwari, G. Kavitha, C.M. Sujatha and Dhilsha Rajapan	
<b>Intelligent Modeling and Optimization of ECM Process Parameters</b> . . . . .	533
T.M. Chenthil Jegan, D. Ravindran and M. Dev Anand	
<b>An Effective Automation Testing Framework for OATS Tool</b> . . . . .	543
Gobi Ramasamy and Sathishkumar Ramalingam	
<b>Multimodal Biometric Authentication System Based on Score-Level Fusion of Palmprint and Finger Vein</b> . . . . .	551
C. Murukesh, K. Thanushkodi, Padmanabhan Preethi and Feroze Naina Mohamed	
<b>Synergistic Clinical Trials with CAD Systems for the Early Detection of Lung Cancer</b> . . . . .	561
G. Vijaya and A. Suhasini	

<b>A Unified Framework for Network Bandwidth and Link Latency Detector Based on Cloud Computing . . . . .</b>	<b>569</b>
S. Suguna and A. Suhasini	
<b>Development of Concatenative Syllable-Based Text to Speech Synthesis System for Tamil . . . . .</b>	<b>585</b>
B. Sudhakar and R. Bensraj	
<b>Design of Low-Power Blink Detector for Minimally Invasive Implantable Stimulator (SoC) Using 180 nm Technology . . . . .</b>	<b>593</b>
J. Joselyn Priyadarshini and S. Ravindrakumar	
<b>Energy- and Trust-Based AODV for Quality-of-Service Affirmation in MANETs . . . . .</b>	<b>601</b>
Sridhar Subramaniam and Baskaran Ramachandran	
<b>Classification of Remote Sensing Image Based on Different Similarity Measures . . . . .</b>	<b>609</b>
Kartik Shah, Shantanu Santoki, Himanshu Ghetia and D. Aju	
<b>A Start to Fail Frequency Technique for Detecting Hardware Trojan . . . . .</b>	<b>621</b>
Sharmila Durai, Prasanna Kumar and Srinivasan Ramasamy	
<b>A Novel Approach Privacy Security Protocol Based SUPM Method in Near Field Communication Technology . . . . .</b>	<b>633</b>
S. Kannadhasan, M. Isaivani and G. Karthikeyan	
<b>Gabor Transform for the Time–Frequency Localization of Impulse Faults in a Transformer . . . . .</b>	<b>645</b>
N. Vanamadevi, S. Santhi and M. Arivamudhan	
<b>A Modified Priority-Based Multischeduler (PBMS) for Optical Network . . . . .</b>	<b>657</b>
A. Adaikalam, S. Manikandan and V. Rajamani	
<b>Comparative Analysis of Digital Watermarking in Discrete Wavelet Transform and Mojette Transform . . . . .</b>	<b>667</b>
Chandini Rajeev and K.P. Girish	
<b>A Three Factor Authentication System for Smartcard Using Biometric, Visual Cryptography and OTP . . . . .</b>	<b>673</b>
Akhitha S. Kumar and K.P. Girish	

<b>Identifying Sound of RPW In Situ from External Sources . . . . .</b>	<b>681</b>
Betty Martin, P.E. Shankaranarayanan, Vimala Juliet and A. Gopal	
<b>VNS-Based Heuristic for Identical Parallel Machine Scheduling Problem . . . . .</b>	<b>693</b>
S. Bathrinath, S. Saravana Sankar, S.G. Ponnambalam and I. Jerin Leno	
<b>Green Algorithm for Virtualized Cloud Systems to Optimize the Energy Consumption . . . . .</b>	<b>701</b>
P. Prakash, G. Kousalya, Shriram K. Vasudevan and K.S. Sangeetha	
<b>Lecture Notes in Computer Science: S Transform for the Analysis of Impulse Faults in Transformer . . . . .</b>	<b>709</b>
N. Vanamadevi, S. Santhi and R. Saranya	
<b>Defensive Mechanism to Guard Against Packet Droppers in Mobile Ad Hoc Network . . . . .</b>	<b>721</b>
S. Madhurikkha and R. Sabitha	
<b>Real-Time Intrusion Prediction Using Hidden Markov Model with Genetic Algorithm . . . . .</b>	<b>731</b>
T. Divya and Kandasamy Muniasamy	
<b>Detection of Power Quality Disturbances Based on Adaptive Neural Net and Shannon Entropy Method . . . . .</b>	<b>737</b>
D. Kavitha, P. Renuga and M. Seetha Lakshmi	
<b>Texture Feature Extraction Using MGRLBP Method for Medical Image Classification. . . . .</b>	<b>747</b>
Suganya Ramamoorthy, R. Kirubakaran and Rajaram Siva Subramanian	
<b>A Novel Lightweight Protocol for Address Assignment in Ad Hoc Networks Based on Filters. . . . .</b>	<b>755</b>
M. Anusuya Shyamala and R. Velayutham	
<b>Structural Refinement: An Effective OCL-Based Testing Approach . . .</b>	<b>765</b>
A. Jalila and D. Jeya Mala	
<b>Dynamic Architecture and Performance Analysis of Secure and Efficient Key Management Scheme in Multicast Network . . . . .</b>	<b>775</b>
N.M. Saravanakumar, R. Keerthana and G.M. Mythili	



<b>Mining Undemanding and Intricate Patterns with Periodicity in Time Series Databases . . . . .</b>	<b>785</b>
S. Sridevi, P. Saranya and S. Rajaram	
<b>Group-Based Access Technique for Effective Resource Utilization and Access Control Mechanism in Cloud . . . . .</b>	<b>793</b>
Lavanya Selvaraj and Saravana Kumar	
<b>Design of Fuzzy Logic-Based pH Controller for High-Pressure-Rated Modified CSTR System . . . . .</b>	<b>803</b>
Jithin Kannangot, Ponnusamy Lakshmi and Keppayan Thiruppathi	
<b>Level Control of Quadruple Tank Process with Finite-Time Convergence Using Integral Terminal Sliding Mode Controller . . . . .</b>	<b>813</b>
Sekaran Sankaranarayanan, Lakshmi Ponnusamy and Sangapillai Sutha	
<b>An Enhanced Security Framework for a Cloud Application . . . . .</b>	<b>825</b>
B. Balamurugan and P. Venkata Krishna	
<b>Enhanced Role-Based Access Control for Cloud Security . . . . .</b>	<b>837</b>
B. Balamurugan and P. Venkata Krishna	
<b>Model Predictive Controllers for Nonminimum-phase Quadruple-tank Process. . . . .</b>	<b>853</b>
Keerthi Chacko, Lakshmi Ponnusamy and Sangapillai Sutha	

Artificial Intelligence and Evolutionary Algorithms in  
Engineering Systems

Proceedings of ICAEES 2014, Volume 1

Suresh, L.P.; Dash, S.S.; Panigrahi, B.K. (Eds.)

2015, XVII, 862 p. 376 illus., Softcover

ISBN: 978-81-322-2125-8