## Contents

Multi-objective Design Optimization of Three-Phase Induction Motor Using NSGA-II Algorithm ...................................................... 1  
Soumya Ranjan and Sudhansu Kumar Mishra

A Comparative Study of Different Feature Extraction Techniques for Offline Malayalam Character Recognition .......................... 9  
Anitha Mary M.O. Chacko and P.M. Dhanya

A Context Sensitive Thresholding Technique for Automatic Image Segmentation ................................................................. 19  
Anshu Singla and Swarnajyoti Patra

Encryption for Massive Data Storage in Cloud ............................................. 27  
Veeralakshmi Ponnuramu and Latha Tamilselvan

An Integrated Approach to Improve the Text Categorization Using Semantic Measures .......................................................... 39  
K. Purna Chand and G. Narsimha

An Android-Based Mobile Eye Gaze Point Estimation System for Studying the Visual Perception in Children with Autism .......... 49  
J. Amudha, Hitha Nandakumar, S. Madhura, M. Parinitha Reddy and Nagabhairava Kavitha

FPGA Implementation of Various Image Processing Algorithms Using Xilinx System Generator ............................................... 59  
M. Balaji and S. Allin Christe

A Study of Interestingness Measures for Knowledge Discovery in Databases—A Genetic Approach ............................................ 69  
Goyal Garima and Jyoti Vashishtha
Efficient Recognition of Devanagari Handwritten Text
Teja C. Kundaikar and J.A. Laxminarayana

Quality Assessment of Data Using Statistical and Machine Learning Methods
Prerna Singh and Bharti Suri

Design of Biorthogonal Wavelets Based on Parameterized Filter for the Analysis of X-ray Images
P.M.K. Prasad, M.N.V.S.S. Kumar and G. Sasi Bhushana Rao

An Efficient Multi-view Based Activity Recognition System for Video Surveillance Using Random Forest
J. Arunnehru and M.K. Geetha

Position and Orientation Control of a Mobile Robot Using Neural Networks
D. Narendra Kumar, Halini Samalla, Ch. Jaganmohana Rao, Y. Swamy Naidu, K. Alfoni Jose and B. Manmadha Kumar

Fuzzy C-Means (FCM) Clustering Algorithm: A Decade Review from 2000 to 2014
Janmenjoy Nayak, Bighnaraj Naik and H.S. Behera

Character Recognition Using Firefly Based Back Propagation Neural Network
M.K. Sahoo, Janmenjoy Nayak, S. Mohapatra, B.K. Nayak and H.S. Behera

Analyzing Data Through Data Fusion Using Classification Techniques
Elizabeth Shanthi and D. Sangeetha

Multi-objective Particle Swarm Optimization in Intrusion Detection
Nimmy Cleetus and K.A. Dhanya

Vision Based Traffic Personnel Hand Gesture Recognition Using Tree Based Classifiers
R. Sathya and M. Kalaiselvi Geetha

Optimization of the Investment Casting Process Using Genetic Algorithm
Sarojrani Pattnaik and Sutar Mihir Kumar
Cyclostationary Feature Detection Based Spectrum Sensing Technique of Cognitive Radio in Nakagami-\(m\) Fading Environment .......................... 209
Deborshi Ghosh and Srijibendu Bagchi

A Modified Real Time A* Algorithm and Its Performance Analysis for Improved Path Planning of Mobile Robot .......................... 221

Optimum Design and Performance Analysis of Dipole Planar Array Antenna with Mutual Coupling Using Cuckoo Search
Algorithm ................................................................. 235
Hrudananda Pradhan, Biswa Binayak Mangaraj and Iti Saha Misra

Model Based Test Case Generation from UML Sequence and Interaction Overview Diagrams .......................... 247
Ajay Kumar Jena, Santosh Kumar Swain and Durga Prasad Mohapatra

Enhancing HMM Based Malayalam Continuous Speech Recognizer Using Artificial Neural Networks ........................................ 259
Anuj Mohamed and K.N. Ramachandran Nair

Classification of Heart Disease Using Naïve Bayes and Genetic Algorithm ............................................................... 269
Santosh Kumar and G. Sahoo

Solution for Traversal Vulnerability and an Encryption-Based Security Solution for an Inter-cloud Environment ............... 283
S. Kirthica and Rajeswari Sridhar

Efficient Spread of Influence in Online Social Networks .................. 293
Gypsy Nandi and Anjan Das

Adaptive FIR Filter to Compensate for Speaker Non-linearity .......... 301
Varsha Varadarajan, Kinnera Pallavi, Gautam Balgovind and J. Selvakumar

A Pi-Sigma Higher Order Neural Network for Stock Index Forecasting ............................................................ 311
S.C. Nayak, B.B. Misra and H.S. Behera

Comparison of Statistical Approaches for Tamil to English Translation .......................................................... 321
R. Rajkiran, S. Prashanth, K. Amarnath Keshav and Sridhar Rajeswari
An Integrated Clustering Framework Using Optimized K-means with Firefly and Canopies ........................................... 333
S. Nayak, C. Panda, Z. Xalxo and H.S. Behera

A Cooperative Intrusion Detection System for Sleep Deprivation Attack Using Neuro-Fuzzy Classifier in Mobile Ad Hoc Networks .... 345
Alka Chaudhary, V.N. Tiwari and Anil Kumar

Improving the Performance of a Proxy Cache Using Expectation Maximization with Naive Bayes Classifier ......................... 355
P. Julian Benadit, F. Sagayaraj Francis and U. Muruganantham

Comparative Study of On-Demand and Table-Driven Routing Protocols in MANET .................................................. 369
G. Kumar Pallai, S. Meenakshi, A. Kumar Rath and B. Majhi

A Novel Fast FCM Clustering for Segmentation of Salt and Pepper Noise Corrupted Images ................................. 381
B. Srinivasa Rao and E. Srinivasa Reddy

Non Linear Autoregressive Model for Detecting Chronic Alcoholism ................................................................. 393
Surendra Kumar, Subhojit Ghosh, Shashank Sawai, Pillutla Soma Sunder and Rakesh Kumar Sinha

Theoretical Analysis of Expected Population Variance Evolution for a Differential Evolution Variant ....................... 403
S. Thangavelu, G. Jeyakumar, Roshni M. Balakrishnan and C. Shunmuga Velayutham

Quantification and 3D Visualization of Articular Cartilage of Knee Joint Using Image Processing Techniques ................. 417
M.S. Mallikarjunaswamy, Mallikarjun S. Holi and Rajesh Raman

Application of Particle Swarm Optimization and User Clustering in Web Search .................................................. 427
Sumathi Ganesan and Sendhilkumar Selvaraju

Analyzing Urban Area Land Coverage Using Image Classification Algorithms ................................................. 439
T. Karthikeyan and P. Manikandaprabhu
CALAM: Linguistic Structure to Annotate Handwritten Text Image
Corpus ................................................................. 449
Prakash Choudhary and Neeta Nain

A Novel PSO Based Back Propagation Learning-MLP (PSO-BP-MLP) for Classification ........................................ 461
Himansu Das, Ajay Kumar Jena, Janmenjoy Nayak, Bighnaraj Naik and H.S. Behera

Quantum Based Learning with Binary Neural Network ............ 473
Om Prakash Patel and Aruna Tiwari

Graphene Nano-Ribbon Based Schottky Barrier Diode as an Electric Field Sensor ........................................ 483
Dipan Bandyopadhyay and Subir Kumar Sarkar

Dynamic Slicing of Object-Oriented Programs in Presence of Inheritance ......................................................... 493
S.R. Mohanty, M. Sahu, P.K. Behera and D.P. Mohapatra

Prediction of Heart Disease Using Classification Based Data Mining Techniques .................................................. 503
Sujata Joshi and Mydhili K. Nair

An Empirical Analysis of Software Reliability Prediction Through Reliability Growth Model Using Computational Intelligence ................................................................. 513
Manmath Kumar Bhuyan, Durga Prasad Mohapatra, Srinivas Sethi and Sumit Kar

A Harmony Search Based Gradient Descent Learning-FLANN (HS-GDL-FLANN) for Classification ............................... 525
Bighnaraj Naik, Janmenjoy Nayak, H.S. Behera and Ajith Abraham

Improved AODV Performance in DOS and Black Hole Attack Environment ......................................................... 541
Anurag Gupta, Bhupendra Patel, Kamlesh Rana and Rahul Pradhan

Airfoil Self Noise Prediction Using Linear Regression Approach .... 551
Shiju Sathyadevan and M.A. Chaitra

Detection of Outliers in an Unsupervised Environment ............. 563
M. Ashwini Kumari, M.S. Bhargavi and Sahana D. Gowda
Discovering Latent Relationships Among Learning Style Dimensions Using Association Rule Mining .......................... 575
C. Beulah Christalin Latha, E. Kirubakaran and Ranjit Jeba Thangaiah

Empirical Analysis of Low Power and High Performance Multiplier .......................... 585
K. Hemavathi and G. Manmadha Rao

Facial Expression Recognition Using Modified Local Binary Pattern .......................... 595
Suparna Biswas and Jaya Sil

On Multigranular Approximate Rough Equivalence of Sets and Approximate Reasoning .......................... 605
B.K. Tripathy, Prateek Saraf and S.Ch. Parida

Spatial and Temporal Analysis of VOC Concentration in Capital City of Odisha in Indian Sub-continent .......................... 617

Generating Prioritized Test Sequences Using Firefly Optimization Technique .......................... 627
Vikas Panthi and D.P. Mohapatra

Directional Multi-scaled Fusion Based Median Filter for Removal of RVIN .......................... 637
Aparna Sarkar, Suvamoy Changder and J.K. Mandal

Design of Area Optimized Sobel Edge Detection .......................... 647
Sunil Kumar Kuppili and P.M.K. Prasad

Accelerated FFT Computation for GNU Radio Using GPU of Raspberry Pi .......................... 657
S. Sabarinath, R. Shyam, C. Aneesh, R. Gandhiraj and K.P. Soman

Feature Extraction and Performance Analysis of EEG Signal Using S-Transform .......................... 665
Monorama Swain, Rutuparna Panda, Himansu Mahapatra and Sneha Tibrewal

Image Super Resolution Reconstruction Using Iterative Adaptive Regularization Method and Genetic Algorithm .......................... 675
S.S. Panda, G. Jena and S.K. Sahu
Semi-markov Process Based Cooperation Enforcement Mechanism for MANETs ........................................... 683
J. Sengathir and R. Manoharan

Reduction Combination Determination for Efficient Microarray Data Classification with Three Stage Dimensionality Reduction Approach ........................................... 695
Rasmita Dash and B.B. Misra

Author Index .......................................... 705
Computational Intelligence in Data Mining - Volume 2
Proceedings of the International Conference on CIDM,
20-21 December 2014
Jain, L.C.; Behera, H.S.; Mandal, J.K.; Mohapatra, D.P.
(Eds.)
2015, XXVIII, 707 p. 276 illus., Hardcover
ISBN: 978-81-322-2207-1