Contents

Radiology Information System’s Mechanisms:
HL7-MHS and HL7/DICOM Translation ................................. 1
Hardeep Singh Kang and Kulwinder Singh Mann

Optimal Control of Twin Rotor MIMO System
Using LQR Technique .................................................. 11
Sumit Kumar Pandey and Vijaya Laxmi

Hybrid Synchronous Discrete Distance Time Model
for Traffic Signal Optimization ................................. 23
Sudip Kumar Sahana and Kundan Kumar

Hybrid Gravitational Search and Particle Swarm Based
Fuzzy MLP for Medical Data Classification .......................... 35
Tirtharaj Dash, Sanjib Kumar Nayak and H.S. Behera

HOG Based Radial Basis Function Network for Brain
MR Image Classification ................................................. 45
N.K.S. Behera, M.K. Sahoo and H.S. Behera

Hybrid CRO Based FLANN for Financial Credit Risk
Forecasting .............................................................. 57
S.R. Sahu, D.P. Kanungo and H.S. Behera

Improved Mean Variance Mapping Optimization
for the Travelling Salesman Problem ............................... 67
Subham Sahoo and István Erlich

Partial Segmentation and Matching Technique
for Iris Recognition .................................................. 77
Maroti Deshmukh and Munaga V.N.K. Prasad
Medical Data Mining for Discovering Periodically Frequent Diseases from Transactional Databases .......................................................... 87
Mohammed Abdul Khaleel, G.N. Dash, K.S. Choudhury and Mohiuddin Ali Khan

Bandwidth Enhancement by Direct Coupled Antenna for WLAN/GPS/WiMax Applications and Feed Point Analysis Through ANN .......................................................... 97
Sakshi Lumba, Vinod Kumar Singh and Rajat Srivastava

Optimal Power Flow Using PSO .......................................................... 109
Prashant Kumar and Rahul Pukale

Video Retrieval Using Local Binary Pattern ........................................ 123
Satishkumar Varma and Sanjay Talbar

Mobile Agent Communication Protocols: A Comparative Study .......................................................... 131
Ajay Rawat, Rama Sushil and Lalit Sharm

Automatic Vehicle Identification: LPR with Enhanced Noise Removal Technique .......................................................... 143
Charulata Palai and Pradeep Kumar Jena

GLCM Based Texture Features for Palmprint Identification System .......................................................... 155
Y.L. Malathi Latha and Munaga V.N.K. Prasad

Virtual 3D Trail Mirror to Project the Image Reality .......................................................... 165
Mattupalli Komal Teja, Sajja Karthik, Kommu Lavanya Kumari and Kothuri Sriraman

Data Aggregation Using Dynamic Tree with Minimum Deformations .......................................................... 175
Ashis Behera and Madhumita Panda

An Improved Cat Swarm Optimization Algorithm for Clustering .......................................................... 187
Yugal Kumar and G. Sahoo

Watermarking Techniques in Curvelet Domain .......................................................... 199
Rama Seshagiri Rao Channapragada and Munaga V.N.K. Prasad
Mohd Sadiq and Sahida Sultana

Implementation of an Anti-phishing Technique for Secure Login Using USB (IATSLU) ................................. 221
Amit Solanki and S.R. Dogiwal

Clustering Based on Fuzzy Rule-Based Classifier ......................... 233
D.K. Behera and P.K. Patra

Automatic Contrast Enhancement for Wireless Capsule Endoscopy Videos with Spectral Optimal Contrast-Tone Mapping .................................................. 243
V.B. Surya Prasath and Radhakrishnan Delhibabu

Cuckoo Search Algorithm Based Optimal Tuning of PID Structured TCSC Controller ................................. 251
Rupashree Sethi, Sidhartha Panda and Bibhuti Prasad Sahoo

Design and Simulation of Fuzzy System Using Operational Transconductance Amplifier ......................... 265
Shruti Jain

DFT and Wavelet Based Smart Virtual Measurement and Assessment of Harmonics in Distribution Sector ................. 275
Haripriya H. Kulkarni and D.G. Bharadwaj

Addressing Object Heterogeneity Through Edge Cluster in Multi-mode Networks ................................. 285
Shashikumar G. Totad, A. Smitha Kranthi and A.K. Matta

Microstrip Patch Antenna with Defected Ground Plane for UWB Applications ................................. 293
Bharat Rochani, Rajesh Kumar Raj, Sanjay Gurjar and M. Santosh Kumar Singh

An Enhanced K-means Clustering Based Outlier Detection Techniques to Improve Water Contamination Detection and Classification ................................. 303
S. Visalakshi and V. Radha
A System for Recognition of Named Entities in Odia Text Corpus Using Machine Learning Algorithm .......................... 315
Bishwa Ranjan Das, Srikanta Patnaik, Sarada Baboo
and Niladri Sekhar Dash

A New Grouping Method Based on Social Choice Strategies for Group Recommender System .......................... 325
Abinash Pujahari and Vineet Padmanabhan

An Improved PSO Based Back Propagation Learning-MLP (IPSO-BP-MLP) for Classification .......................... 333
D.P. Kanungo, Bighnaraj Naik, Janmenjoy Nayak, Sarada Baboo
and H.S. Behera

GDFEC Protocol for Heterogeneous Wireless Sensor Network .......................................................... 345
S. Swapna Kumar and S. Vishwas

An ANN Model to Classify Multinomial Datasets with Optimized Target Using Particle Swarm Optimization Technique .......................................................... 355
Nilamadhab Dash, Rojalina Priyadarshini and Rachita Misra

Novel Approach: Deduplication for Backup Systems Using Data Block Size .............................................. 365
K.J. Latesh Kumar and R. Lawrance

Segmentation Google Earth Imagery Using K-Means Clustering and Normalized RGB Color Space .................. 375
Nesdi Evrilyan Rozanda, M. Ismail and Inggih Permana

Texture Based Associative Classifier—An Application of Data Mining for Mammogram Classification .............. 387
Deepa S. Deshpande, Archana M. Rajurkar
and Ramchandra R. Manthalkar

Particle Swarm Optimization Based Higher Order Neural Network for Classification .................................. 401
Janmenjoy Nayak, Bighnaraj Naik, H.S. Behera
and Ajith Abraham

K-Strange Points Clustering Algorithm ........................................ 415
Terence Johnson and Santosh Kumar Singh
Effective Detection of Kink in Helices from Amino Acid Sequence in Transmembrane Proteins Using Neural Network ......................................... 427
Nivedita Mishra, Adikanda Khamari, Jayakishan Meher and Mukesh Kumar Raval

A Novel Semantic Clustering Approach for Reasonable Diversity in News Recommendations ................................. 437
Punam Bedi, Shikha Agarwa, Archana Singhal, Ena Jain and Gunjan Gupta

Prediction of Blood Brain Barrier Permeability of Ligands Using Sequential Floating Forward Selection and Support Vector Machine ........................................ 447
Pooja Gupta, Utkarsh Raj and Pritish K. Varadwaj

Feature Filtering of Amino Acid Sequences Using Rough Set Theory ................................................................. 459
Amit Paul, Jaya Sil and Chitrangada Das Mukhopadhyay

Parameter Optimization in Genetic Algorithm and Its Impact on Scheduling Solutions ......................................... 469
T. Amudha and B.L. Shivakumar

Comparison of Performance of Different Functions in Functional Link Artificial Neural Network:
A Case Study on Stock Index Forecasting ........................................... 479
S.C. Nayak, B.B. Misra and H.S. Behera

Application of RREQ Packet in Modified AODV(m-AODV) in the Contest of VANET .............................................. 489
Soumen Saha, Utpal Roy and Devadutta Sinha

Characterization of Transaction-Safe Cluster Allocation Strategies of TexFAT File System for Embedded Storage Devices .................................................. 503
Keshava Munegowda, G.T. Raju, Veera Manikdandan Raju and T.N. Manjunath

An Efficient PSO-GA Based Back Propagation Learning-MLP (PSO-GA-BP-MLP) for Classification ....................... 517
Chanda Prasad, S. Mohanty, Bighnaraj Naik, Janmenjoy Nayak and H.S. Behera
Analysis of New Data Sources in Modern Teaching and Learning Processes in the Perspective of Personalized Recommendation .......................... 529
G.M. Shivanagowda, R.H. Goudar and U.P. Kulkarni

Hybrid Single Electron Transistor Based Low Power Consuming Odd Parity Generator and Parity Checker Circuit in 22 nm Technology ................................. 541
Sudipta Mukherjee, Anindya Jana and Subir Kumar Sarkar

Comparative Analysis of Decision Tree Algorithms: ID3, C4.5 and Random Forest .................................. 549
Shiju Sathyadevan and Remya R. Nair

Digital Forensic in Cloudsim ........................................ 563
Jagruti Shah and L.G. Malik

A Novel Genetic Based Framework for the Detection and Destabilization of Influencing Nodes in Terrorist Network ........................... 573
Saumil Maheshwari and Akhilesh Tiwari

Analyzing User’s Comments to Peer Recommendations in Virtual Communities ........................................ 583
Silvana Aciar and Gabriela Aciar

Fuzzy-Based Reliable Spectrum Tree Formation for Efficient Communication in Cognitive Radio Ad Hoc Network ................................. 593
Ashima Rout, Srinivas Sethi and P.K. Banerjee

Realization of Digital Down Convertor Using Xilinx System Generator .................................................. 603
Manoj Kumar Sahoo, Kaliprasanna Swain and Amiya Kumar Rath

Probabilistic Ranking of Documents Using Vectors in Information Retrieval ........................................ 613
Balwinder Saini and Vikram Singh

An Approach for Computing Dynamic Slices of Structured Programs Using Dependence Relations .............. 625
Madhusmita Sahu, Swatee Rekha Mohanty and Durga Prasad Mohapatra
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-block Features Based Image Retrieval</td>
<td>637</td>
</tr>
<tr>
<td>Vijaylakshmi Sajwan and Puneet Goyal</td>
<td></td>
</tr>
<tr>
<td>A CRO Based FLANN for Forecasting Foreign Exchange Rates Using FLANN</td>
<td>647</td>
</tr>
<tr>
<td>K.K. Sahu, G.R. Biswal, P.K. Sahu, S.R. Sahu and H.S. Behera</td>
<td></td>
</tr>
<tr>
<td>Performance Analysis of IEEE 802.11 in the Presence of Hidden Terminal for Wireless Networks</td>
<td>665</td>
</tr>
<tr>
<td>Anita, Rishipal Singh, Priyanka and Indu</td>
<td></td>
</tr>
<tr>
<td>Application of Firefly Algorithm for AGC Under Deregulated Power System</td>
<td>677</td>
</tr>
<tr>
<td>Tulasichandra Sekhar Gorripotu, Rabindra Kumar Sahu and Sidhartha Panda</td>
<td></td>
</tr>
<tr>
<td>Base Station Controlled Spectrum Allocation Technique to Detect the PUE Attack in CWSN</td>
<td>689</td>
</tr>
<tr>
<td>Pinaki Sankar Chatterjee and Monideepa Roy</td>
<td></td>
</tr>
<tr>
<td>Object Based Image Steganography with Pixel Polygon Tracing</td>
<td>699</td>
</tr>
<tr>
<td>Ratnakirti Roy and Suvamoy Changder</td>
<td></td>
</tr>
<tr>
<td>Author Index</td>
<td>711</td>
</tr>
</tbody>
</table>
Computational Intelligence in Data Mining - Volume 1
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, 713 p. 327 illus. in color., Hardcover
ISBN: 978-81-322-2204-0