## Contents

**Part I  Image Processing and Artificial Vision**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Color Image Segmentation Scheme for Extracting Foreground from Images with Unconstrained Lighting Conditions</td>
<td>3</td>
</tr>
<tr>
<td>S. Niyas, P. Reshma and Sabu M. Thampi</td>
<td></td>
</tr>
<tr>
<td>Automatic Diagnosis of Breast Cancer using Thermographic Color Analysis and SVM Classifier</td>
<td>21</td>
</tr>
<tr>
<td>Asmita T. Wakankar and G.R. Suresh</td>
<td></td>
</tr>
<tr>
<td>Enhancement of Dental Digital X-Ray Images based On the Image Quality</td>
<td>33</td>
</tr>
<tr>
<td>Hema P. Menon and B. Rajeshwari</td>
<td></td>
</tr>
<tr>
<td>MRI/CT Image Fusion Using Gabor Texture Features</td>
<td>47</td>
</tr>
<tr>
<td>Hema P. Menon and K.A. Narayanankutty</td>
<td></td>
</tr>
<tr>
<td>Face recognition in videos using Gabor filters</td>
<td>61</td>
</tr>
<tr>
<td>S.V. Tathe, A.S. Narote and S.P. Narote</td>
<td></td>
</tr>
<tr>
<td>Convolutional Neural Networks based Method for Improving Facial Expression Recognition</td>
<td>73</td>
</tr>
<tr>
<td>Tarik A. Rashid</td>
<td></td>
</tr>
<tr>
<td>Composition of DCT-SVD Image Watermarking and Advanced Encryption Standard Technique for Still Image</td>
<td>85</td>
</tr>
<tr>
<td>Sudhanshu Suhas Gonce and Ashok Ghatol</td>
<td></td>
</tr>
<tr>
<td>Performance Analysis of Human Detection and Tracking System in Changing Illumination</td>
<td>99</td>
</tr>
<tr>
<td>M.M. Sardeshmukh, Mahesh Kolte and Vaishali Joshi</td>
<td></td>
</tr>
</tbody>
</table>
Comparative Analysis of Segmentation Algorithms
Using Threshold and K-Mean Clustering ............... 111
S.S. Savkare, A.S. Narote and S.P. Narote

Semi-Supervised FCM and SVM in Co-Training Framework
for the Classification of Hyperspectral Images ............. 119
Prem Shankar Singh Aydav and Sonjharia Minz

Segmentation of Thermal Images Using Thresholding-Based
Methods for Detection of Malignant Tumours .................. 131
Shazia Shaikh, Hanumant Gite, Ramesh R. Manza, K.V. Kale
and Nazneen Akhter

Recognition of Handwritten Benzene Structure with Support
Vector Machine and Logistic Regression a Comparative Study .... 147
Shrikant Mapari and Ajaykumar Dani

Image And Pixel Based Scheme For Bleeding Detection
In Wireless Capsule Endoscopy Images ....................... 161
V. Vani and K.V. Mahendra Prashanth

Leaf Recognition Algorithm for Retriving Medicinal Information ... 177
D. Venkataraman, Siddharth Narasimhan, N. Shankar,
S. Varun Sidharth and D. Hari Prasath

Camouflaged Target Detection and tracking using thermal
infrared and visible spectrum imaging ....................... 193
Supriya Mangale and Madhuri Khambete

Heuristic Approach for Face Recognition using Artificial
Bee Colony Optimization ..................................... 209
Asthag Gupta and Lavika Goel

ILTDS: Intelligent Lung Tumor Detection System on CT Images ... 225
Kamil Dimililer, Yoney Kirsal Ever and Buse Ugur

Blink Analysis using Eye gaze tracker ........................ 237
J. Amudha, S. Roja Reddy and Y. Supraja Reddy

A Survey of Brain MRI Image Segmentation Methods
and the Issues Involved ...................................... 245
Reshma Hiralal and Hema P. Menon

Scene Understanding in Images ............................... 261
S. Athira, R. Manjusha and Latha Parameswaran
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guntha Ramesh, K. Sangeeth and Ramesh Maneesha</td>
<td></td>
</tr>
<tr>
<td>Pramod Ganjewar, S. Barani and Sanjeev J. Wagh</td>
<td></td>
</tr>
<tr>
<td>Secure and Efficient User Authentication Using Modified Otway Rees Protocol in Distributed Networks</td>
<td>297</td>
</tr>
<tr>
<td>Krishna Prakash, Balachandra Muniyal, Vasundhara Acharya and Akshaya Kulal</td>
<td></td>
</tr>
<tr>
<td>Enhancing Group Search Optimization with Node Similarities for Detecting Communities</td>
<td>303</td>
</tr>
<tr>
<td>Nidhi Arora and Hema Banati</td>
<td></td>
</tr>
<tr>
<td>Performance Tuning Approach for Cloud Environment</td>
<td>317</td>
</tr>
<tr>
<td>Gunjan Lal, Tanya Goel, Varun Tanwar and Rajeev Tiwari</td>
<td></td>
</tr>
<tr>
<td>Enhanced User Authentication Model in Cloud Computing Security</td>
<td>327</td>
</tr>
<tr>
<td>Kimaya Ambekar and R. Kamatchi</td>
<td></td>
</tr>
<tr>
<td>A new discrete imperialist competitive algorithm for QoS-aware service composition in cloud computing</td>
<td>339</td>
</tr>
<tr>
<td>Fateh Seghir, Abdellah Khababa, Jaafer Gaber, Abderrahim Chariete and Pascal Lorenz</td>
<td></td>
</tr>
<tr>
<td>Smart feeding in farming through IoT in silos</td>
<td>355</td>
</tr>
<tr>
<td>Himanshu Agrawal, Javier Prieto, Carlos Ramos and Juan Manuel Corchado</td>
<td></td>
</tr>
<tr>
<td>The Use of Biometrics to Prevent Identity Theft</td>
<td>367</td>
</tr>
<tr>
<td>Syed Rizvi, Cory Roger and Aaron Zuchelli</td>
<td></td>
</tr>
<tr>
<td>S. Subbulakshmi, K. Ramar, R. Renjitha and T.U. Sreedevi</td>
<td></td>
</tr>
<tr>
<td>Cluster Based Approach to Cache Oblivious Average Filter Using RMI</td>
<td>397</td>
</tr>
<tr>
<td>Manmeet Kaur, Akshay Girdhar and Sachin Bagga</td>
<td></td>
</tr>
<tr>
<td>Internet of Vehicles For Intelligent Transportation System</td>
<td>409</td>
</tr>
<tr>
<td>Kundan Munjal and Shilpa Verma</td>
<td></td>
</tr>
</tbody>
</table>
Handoff Schemes in Vehicular Ad-Hoc Network: A Comparative Study ...................................................... 421
Prasanna Roy, Sadip Midya and Koushik Majumder

Efficient Television ratings system with Commercial Feedback Applications .......................................................... 433
T.S. Aswin, Kartik Mittal and Shriram K. Vasudevan

A Literature Survey on Malware and Online Advertisement Hidden Hazards ............................................. 449
Priya Jyotiyana and Saurabh Maheshwari

Design & Analysis of Clustering based Intrusion Detection Schemes for E-Governance ..................................... 461
Rajan Gupta, Sunil K. Muttoo and Saibal K. Pal

Part III Intelligent Tools and Techniques

Classroom Teaching Assessment Based on Student Emotions ............ 475
K.S. Sahla and T. Senthil Kumar

Soft Computing Technique Based Online Identification and Control of Dynamical Systems ................................. 487
Rajesh Kumar, Smriti Srivastava and J.P.R. Gupta

Neuro-Fuzzy Approach for Dynamic Content Generation ............ 497
Monali Tingane, Amol Bhagat, Priti Khodke and Sadique Ali

A Comprehensive Review on Software Reliability Growth Models utilizing Soft Computing Approaches .................. 509
Shailee Lohmor and B.B. Sagar

Feature Extraction in Dental Radiographs In Human Extracted and Permanent Dentition ............................... 525
Kanika Lakhani, Bhawna Minocha and Neeraj Gugnani

Multilayered Presentation Architecture in Intelligent eLearning Systems .......................................................... 533
Uma Gopalakrishnan, N. Ramkumar, P. Venkat Rangan and Balaji Hariharan

Inverse Prediction of Critical Parameters in Orthogonal Cutting using Binary Genetic Algorithm ....................... 543
Ranjan Das

Robust Control of Buck-Boost Converter in Energy Harvester: A Linear Disturbance Observer Approach .............. 555
Aniket D. Gundecha, V.V. Gohokar, Kaliprasad A. Mahapatro and Prasheel V. Suryawanshi
Multi Objective PSO Tuned Fractional Order PID Control of Robotic Manipulator ........................................ 567
Himanshu Chhabra, Vijay Mohan, Asha Rani and Vijander Singh

Book Recommender System using Fuzzy Linguistic Quantifier and Opinion Mining ........................................ 573
Shahab Saquib Sohail, Jamshed Siddiqui and Rashid Ali

Bio-inspired Model Classification of Squamous Cell Carcinoma in Cervical Cancer using SVM ........................................ 585
M. Anousouya Devi, S. Ravi, J. Vaishnavi and S. Punitha

Development of KBS for CAD modeling of a two wheeler IC Engine Connecting Rod: An approach ......................... 597
Jayakiran Reddy Esanakula, CNV Sridhar and V. Pandu Rangadu

Development of KBS for CAD modeling of Industrial Battery Stack and its Configuration: An approach .................. 607
Jayakiran Reddy Esanakula, CNV Sridhar and V. Pandu Rangadu

Discrete Sliding Mode Control using Uncertainty and Disturbance Estimator ..................................................... 619
Prasheel V. Suryawanshi, Pramod D. Shendge and Shrivijay B. Phadke

An Overview of Feature Based Opinion Mining ...................... 633
Avinash Golande, Reeta Kamble and Sandhya Waghere

Roadmap for Polarity Lexicon Learning and Resources: A Survey ........ 647
Swati Sanagar and Deepa Gupta

Mining High Utility Itemset Using Graphics Processor ........... 665
Maya Joshi and Dharmesh Bhalodia

The Use of Simulation in the Management of Converter Production Logistics Processes ........................................ 675
Konstantin Aksyonov and Anna Antonova

Precision Capacitance Readout Electronics for Micro sensors Using Programmable System on Chip ..................... 683
A. Abilash and S. Radha

Lattice Wave Digital Filter based IIR SystemIdentification with reduced coefficients ............................................. 695
Akanksha Sondhi, Richa Barsainya and Tarun Kumar Rawat

Factors Affecting Infant Mortality Rate in India: An Analysis of Indian States ...................................................... 707
Vijayakumar Suriyakala, M.G. Deepika, Jyotishi Amalendu and Gupta Deepa
An Area Efficient Built-In Redundancy Analysis for Embedded Memory with Selectable 1-D Redundancy ............................ 721
Gurugubelli Srirama Murthy, Darvinder Singh and Sadulla Shaik

Part IV Applications Using Intelligent Techniques

Performance Analysis and Implementation of Array Multiplier using various Full Adder Designs for DSP Applications:
A VLSI Based Approach .............................................. 731
K.A. Asha and Kunjan D. Shinde

Automatic Agriculture Spraying Robot with Smart Decision Making ................................................................. 743
S. Sharma and R. Borse

Intelligent System for Wayfinding through Unknown Complex Indoor Environment .............................................. 759
S. Sobika and B. Rajathilagam

Genetic Algorithm Based Suggestion Approach for State Wise Crop Production in India .............................................. 771
Saakshi Gusain, Kunal Kansal and Tribikram Pradhan

Fuzzy based Autonomous Parallel Parking Challenges in Real time Scenario ...................................................... 789
Naitik Nakrani and Maulin Joshi

Application of a Hybrid Relation Extraction Framework for Intelligent Natural Language Processing .................... 803
Lavika Goel, Rashi Khandelwal, Eloy Retamino, Suraj Nair and Alois Knoll

Anaphora Resolution in Hindi: A Hybrid Approach ................. 815
A. Ashima, Sukhnandan kaur and C. Rajni Mohana

A Personalized Social Network Based Cross Domain Recommender System ..................................................... 831
Sharu Vinayak, Richa Sharma and Rahul Singh

Diagnosis of Liver Disease Using Correlation Distance Metric Based K-Nearest Neighbor Approach ..................... 845
Aman Singh and Babita Pandey

Sensorless Control of PMSM Drive with Neural Network Observer using a Modified SVPWM strategy ..................... 857
Shoeb Hussain and Mohammad Abid Bazaz
A Multimodel Approach for Schizophrenia Diagnosis using fMRI and sMRI Dataset ........................................... 869
Achin Varshney, Chandra Prakash, Namita Mittal and Pushpendra Singh

An Innovative Solution for effective enhancement of Total Technical Life (TTL) of an Aircraft ......................... 879
A. Balachandran, P.R. Suresh, Shriram K. Vasudevan and Akshay Balachandran

ANFIS Based Speed Controller for a Direct Torque Controlled Induction Motor Drive ........................................ 891
Hadhiq Khan, Shoeb Hussain and Mohammad Abid Bazaz

Design of a Multi-Priority Triage Chair for Crowded Remote Healthcare Centers in Sub-Saharan Africa ............. 903
Santhi Kumaran and Jimmy Nsenga

Inter-Emotion Conversion using Dynamic Time Warping and Prosody Imposition ........................................... 913
Susmitha Vekkot and Shikha Tripathi

Implementing and Deploying Magnetic Material Testing as an Online Laboratory .............................................. 925
Rakhi Radhamani, Dhanush Kumar, Krishnashree Achuthan, Bipin Nair and Shyam Diwakar

Hybrid Associative Classification Model for Mild Steel Defect Analysis .......................................................... 935
Veena N. Jokhakar and S.V. Patel

Improving the performance of Wavelet based Machine Fault Diagnosis System using Locality Constrained Linear Coding ........ 951

Investigation of Effect of Butanol Addition on Cyclic Variability in a Diesel Engine Using Wavelets .................. 965
Rakesh Kumar Maurya and Mohit Raj Saxena

Intelligent Energy Conservation: Indoor Temperature Forecasting with Extreme Learning Machine .................. 977
Sachin Kumar, Saibal K. Pal and Ram Pal Singh

Development of Real Time Helmet based Authentication with Smart Dashboard for Two Wheelers .................. 989
Ashish Kumar Pardeshi, Hitesh Pahuja and Balwinder Singh
A Simplified Exposition of Sparsity Inducing Penalty Functions for Denoising ................................................ 1005
Shivkaran Singh, S. Sachin Kumar and K.P. Soman

Author Index. ............................................................ 1017
Intelligent Systems Technologies and Applications 2016
Corchado Rodriguez, J.M.; Mitra, S.; Thampi, S.M.; El-Alfy, E.-S. (Eds.)
2016, XXII, 1019 p. 446 illus., Softcover
ISBN: 978-3-319-47951-4