

Contents

Invited Paper

Recent Advances in Recommender Systems and Future Directions	3
<i>Xia Ning and George Karypis</i>	

Foundations of Machine Learning

On the Number of Rules and Conditions in Mining Data with Attribute-Concept Values and “Do Not Care” Conditions	13
<i>Patrick G. Clark and Jerzy W. Grzymala-Busse</i>	
Simplifying Contextual Structures	23
<i>Ivo Düntsch and Günther Gediga</i>	
Towards a Robust Scale Invariant Feature Correspondence.	33
<i>Shady Y. El-Mashad and Amin Shoukry</i>	
A Comparison of Two Approaches to Discretization: Multiple Scanning and C4.5	44
<i>Jerzy W. Grzymala-Busse and Teresa Mroczek</i>	
Hierarchical Agglomerative Method for Improving NPS.	54
<i>Jieyan Kuang, Zbigniew W. Raś, and Albert Daniel</i>	
A New Linear Discriminant Analysis Method to Address the Over-Reducing Problem	65
<i>Huan Wan, Gongde Guo, Hui Wang, and Xin Wei</i>	

Image Processing

Procedural Generation of Adjustable Terrain for Application in Computer Games Using 2D Maps	75
<i>Izabella Antoniuk and Przemysław Rokita</i>	
Fixed Point Learning Based 3D Conversion of 2D Videos	85
<i>Nidhi Chahal and Santanu Chaudhury</i>	
Fast and Accurate Foreground Background Separation for Video Surveillance.	95
<i>Prashant Domadiya, Pratik Shah, and Suman K. Mitra</i>	

Enumeration of Shortest Isothetic Paths Inside a Digital Object.	105
<i>Mousumi Dutt, Arindam Biswas, and Bhargab B. Bhattacharya</i>	
Modified Exemplar-Based Image Inpainting via Primal-Dual Optimization . . .	116
<i>Veepin Kumar, Jayanta Mukhopadhyay, and Shyamal Kumar Das Mandal</i>	
A Novel Approach for Image Super Resolution Using Kernel Methods	126
<i>Adhish Prasoon, Himanshu Chaubey, Abhinav Gupta, Rohit Garg, and Santanu Chaudhury</i>	
Generation of Random Triangular Digital Curves Using Combinatorial Techniques.	136
<i>Apurba Sarkar, Arindam Biswas, Mousumi Dutt, and Arnab Bhattacharya</i>	
Image Retrieval	
Tackling Curse of Dimensionality for Efficient Content Based Image Retrieval.	149
<i>Minakshi Banerjee and Seikh Mazharul Islam</i>	
Face Profile View Retrieval Using Time of Flight Camera Image Analysis. . .	159
<i>Piotr Bratoszewski and Andrzej Czyżewski</i>	
Context-Based Semantic Tagging of Multimedia Data	169
<i>Nisha Pahal, Santanu Chaudhury, and Brejesh Lall</i>	
Image Tracking	
Real-Time Distributed Multi-object Tracking in a PTZ Camera Network	183
<i>Ayesha Choudhary, Shubham Sharma, Indu Sreedevi, and Santanu Chaudhury</i>	
Improved Simulation of Holography Based on Stereoscopy and Face Tracking.	193
<i>Łukasz Dąbala and Przemysław Rokita</i>	
Head Pose Tracking from RGBD Sensor Based on Direct Motion Estimation.	202
<i>Adam Strupczewski, Błażej Czupryński, Władysław Skarbek, Marek Kowalski, and Jacek Naruniec</i>	
Pattern Recognition	
A Novel Hybrid CNN-AIS Visual Pattern Recognition Engine	215
<i>Vandna Bhalla, Santanu Chaudhury, and Arihant Jain</i>	

Modified Orthogonal Neighborhood Preserving Projection for Face Recognition	225
<i>Purvi Koringa, Gitam Shikkenawis, Suman K. Mitra, and S.K. Parulkar</i>	
An Optimal Greedy Approximate Nearest Neighbor Method in Statistical Pattern Recognition	236
<i>Andrey V. Savchenko</i>	
Ear Recognition Using Block-Based Principal Component Analysis and Decision Fusion	246
<i>Alaa Tharwat, Abdelhameed Ibrahim, Aboul Ella Hassanien, and Gerald Schaefer</i>	
Data Mining Techniques for Large Scale Data	
Binarizing Change for Fast Trend Similarity Based Clustering of Time Series Data	257
<i>Ibrahim K.A. Abughali and Sonajharia Minz</i>	
Big Data Processing by Volunteer Computing Supported by Intelligent Agents	268
<i>Jerzy Balicki, Waldemar Korhub, and Jacek Paluszak</i>	
Two Stage SVM and kNN Text Documents Classifier	279
<i>Marcin Kępa and Julian Szymański</i>	
Task Allocation and Scalability Evaluation for Real-Time Multimedia Processing in a Cluster Environment	290
<i>Jerzy Proficz and Henryk Krawczyk</i>	
Fuzzy Computing	
Concept Synthesis Using Logic of Prototypes and Counterexamples: A Graded Consequence Approach	303
<i>Soma Dutta and Piotr Wasilewski</i>	
Fuzzy Rough Sets Theory Reducts for Quantitative Decisions – Approach for Spatial Data Generalization	314
<i>Anna Fiedukowicz</i>	
Fuzzy Rough Sets Theory Applied to Parameters of Eye Movements Can Help to Predict Effects of Different Treatments in Parkinson’s Patients	325
<i>Anna Kubis, Artur Szymański, and Andrzej W. Przybyszewski</i>	
Determining OWA Operator Weights by Maximum Deviation Minimization	335
<i>Włodzimierz Ogryczak and Jarosław Hurkala</i>	

Fuzzy Set Interpretation of Comparator Networks	345
<i>Łukasz Sosnowski and Dominik Ślęzak</i>	

Inverted Fuzzy Implications in Backward Reasoning	354
<i>Zbigniew Suraj and Agnieszka Lasek</i>	

Rough Sets

Generating Core Based on Discernibility Measure and MapReduce	367
<i>Michał Czołombitko and Jarosław Stepaniuk</i>	

Music Genre Recognition in the Rough Set-Based Environment	377
<i>Piotr Hoffmann and Bożena Kostek</i>	

Scalability of Data Decomposition Based Algorithms: Attribute Reduction Problem	387
<i>Piotr Hońko</i>	

Application of Fuzzy Rough Sets to Financial Time Series Forecasting	397
<i>Mariusz Podsiadło and Henryk Rybinski</i>	

A New Post-processing Method to Detect Brain Tumor Using Rough-Fuzzy Clustering	407
<i>Shaswati Roy and Pradipta Maji</i>	

Rough Set Based Modeling and Visualization of the Acoustic Field Around the Human Head	418
<i>Piotr Szczuko, Bożena Kostek, Józef Kotus, and Andrzej Czyżewski</i>	

Global Optimization of Exact Association Rules Relative to Coverage	428
<i>Beata Zielosko</i>	

Bioinformatics

PDP-RF: Protein Domain Boundary Prediction Using Random Forest Classifier	441
<i>Piyali Chatterjee, Subhadip Basu, Julian Zubek, Mahantapas Kundu, Mita Nasipuri, and Dariusz Plewczynski</i>	

A New Similarity Measure for Identification of Disease Genes	451
<i>Pradipta Maji, Ekta Shah, and Sushmita Paul</i>	

MaER: A New Ensemble Based Multiclass Classifier for Binding Activity Prediction of HLA Class II Proteins	462
<i>Giovanni Mazzocco, Shib Sankar Bhowmick, Indrajit Saha, Ujjwal Maulik, Debotosh Bhattacharjee, and Dariusz Plewczynski</i>	

Selection of a Consensus Area Size for Multithreaded Wavefront-Based Alignment Procedure for Compressed Sequences of Protein Secondary Structures	472
<i>Dariusz Mrozek, Bożena Małysiak-Mrozek, Bartek Socha, and Stanisław Kozielski</i>	
Supervised Cluster Analysis of miRNA Expression Data Using Rough Hypercuboid Partition Matrix	482
<i>Sushmita Paul and Julio Vera</i>	
Analysis of AmpliSeq RNA-Sequencing Enrichment Panels	495
<i>Marek S. Wiewiorka, Alicja Szabelska, and Michal J. Okoniewski</i>	
Consensus-Based Prediction of RNA and DNA Binding Residues from Protein Sequences	501
<i>Jing Yan and Lukasz Kurgan</i>	
Applications of Artificial Intelligence	
Fusion of Static and Dynamic Parameters at Decision Level in Human Gait Recognition	515
<i>Marcin Derlatka and Mariusz Bogdan</i>	
Web Search Results Clustering Using Frequent Termset Mining	525
<i>Marek Kozłowski</i>	
Effective Imbalanced Classification of Breast Thermogram Features	535
<i>Bartosz Krawczyk and Gerald Schaefer</i>	
Rician Noise Removal Approach for Brain MR Images Using Kernel Principal Component Analysis	545
<i>Ashish Phophalia and Suman K. Mitra</i>	
Climate Network Based Index Discovery for Prediction of Indian Monsoon	554
<i>Moumita Saha and Pabitra Mitra</i>	
Using Patterns in Computer Go	565
<i>Leszek Stanisław Śliwa</i>	
Event Detection from Business News	575
<i>Ishan Verma, Lipika Dey, Ramakrishnan S. Srinivasan, and Lokendra Singh</i>	
Author Index	587

Pattern Recognition and Machine Intelligence

6th International Conference, PReMI 2015, Warsaw,

Poland, June 30 - July 3, 2015, Proceedings

Kryszkiewicz, M.; Bandyopadhyay, S.; Rybinski, H.; Pal,
S.K. (Eds.)

2015, XXVII, 588 p. 191 illus., Softcover

ISBN: 978-3-319-19940-5