

Contents

Data Mining and Knowledge Discovery

Screening a Case Base for Stroke Disease Detection	3
<i>José Neves, Nuno Gonçalves, Ruben Oliveira, Sabino Gomes, João Neves, Joaquim Macedo, António Abelha, César Analide, José Machado, Manuel Filipe Santos, and Henrique Vicente</i>	
SemSynX: Flexible Similarity Analysis of XML Data via Semantic and Syntactic Heterogeneity/Homogeneity Detection	14
<i>Jesús M. Almendros-Jiménez and Alfredo Cuzzocrea</i>	
Towards Automatic Composition of Multicomponent Predictive Systems	27
<i>Manuel Martin Salvador, Marcin Budka, and Bogdan Gabrys</i>	
LiCord: Language Independent Content Word Finder	40
<i>Md-Mizanur Rahoman, Tetsuya Nasukawa, Hiroshi Kanayama, and Ryutaro Ichise</i>	
Mining Correlated High-Utility Itemsets Using the Bond Measure.	53
<i>Philippe Fournier-Viger, Jerry Chun-Wei Lin, Tai Dinh, and Hoai Bac Le</i>	
An HMM-Based Multi-view Co-training Framework for Single-View Text Corpora	66
<i>Eva Lorenzo Iglesias, Adrián Seara Vieira, and Lourdes Borrajo Diz</i>	
Does Sentiment Analysis Help in Bayesian Spam Filtering?	79
<i>Enaitz Ezpeleta, Urko Zurutuza, and José María Gómez Hidalgo</i>	
A Context-Aware Keyboard Generator for Smartphone Using Random Forest and Rule-Based System	91
<i>Sang-Muk Jo and Sung-Bae Cho</i>	
Privacy Preserving Data Mining for Deliberative Consultations.	102
<i>Piotr Andruszkiewicz</i>	
Feature Selection Using Approximate Multivariate Markov Blankets	114
<i>Rafael Arias-Michel, Miguel García-Torres, Christian Schaerer, and Federico Divina</i>	

Student Performance Prediction Applying Missing Data Imputation in Electrical Engineering Studies Degree	126
<i>Concepción Crespo-Turrado, José Luis Casteleiro-Roca, Fernando Sánchez-Lasheras, José Antonio López-Vázquez, Francisco Javier de Cos Juez, José Luis Calvo-Rolle, and Emilio Corchado</i>	
Accuracy Increase on Evolving Product Unit Neural Networks via Feature Subset Selection	136
<i>Antonio J. Tallón-Ballesteros, José C. Riquelme, and Roberto Ruiz</i>	
Time Series	
Rainfall Prediction: A Deep Learning Approach	151
<i>Emilcy Hernández, Victor Sanchez-Anguix, Vicente Julian, Javier Palanca, and Néstor Duque</i>	
Time Series Representation by a Novel Hybrid Segmentation Algorithm	163
<i>Antonio Manuel Durán-Rosal, Pedro Antonio Gutiérrez-Peña, Francisco José Martínez-Estudillo, and César Hervás-Martínez</i>	
A Nearest Neighbours-Based Algorithm for Big Time Series Data Forecasting.	174
<i>Ricardo L. Talavera-Llames, Rubén Pérez-Chacón, María Martínez-Ballesteros, Alicia Troncoso, and Francisco Martínez-Álvarez</i>	
Active Learning Classifier for Streaming Data	186
<i>Michał Woźniak, Bogusław Cyganek, Andrzej Kasprzak, Paweł Ksieniewicz, and Krzysztof Walkowiak</i>	
Bio-inspired Models and Evolutionary Computation	
Application of Genetic Algorithms and Heuristic Techniques for the Identification and Classification of the Information Used by a Recipe Recommender.	201
<i>Cristian Peñaranda, Soledad Valero, Vicente Julian, and Javier Palanca</i>	
A New Visualization Tool in Many-Objective Optimization Problems	213
<i>Roozbeh Haghnazar Koochaksaraei, Rasul Enayatifar, and Frederico Gadelha Guimarães</i>	
A Novel Adaptive Genetic Algorithm for Mobility Management in Cellular Networks	225
<i>Zakaria Abd El Moiz Dahi, Chaker Mezioud, and Enrique Alba</i>	

Bio-Inspired Algorithms and Preferences for Multi-objective Problems	238
<i>Daniel Cinalli, Luis Martí, Nayat Sanchez-Pi, and Ana Cristina Bicharra Garcia</i>	
Assessment of Multi-Objective Optimization Algorithms for Parametric Identification of a Li-Ion Battery Model.	250
<i>Yuviny Echevarría, Luciano Sánchez, and Cecilio Blanco</i>	
Comparing ACO Approaches in Epilepsy Seizures	261
<i>Paula Vergara, José R. Villar, Enrique de la Cal, Manuel Menéndez, and Javier Sedano</i>	
Estimating the Maximum Power Delivered by Concentrating Photovoltaics Technology Through Atmospheric Conditions Using a Differential Evolution Approach	273
<i>Cristobal J. Carmona, F. Pulgar, Antonio Jesús Rivera-Rivas, Maria Jose del Jesus, and J. Aguilera</i>	
A Hybrid Bio-inspired ELECTRE Approach for Decision Making in Purchasing Agricultural Equipment	283
<i>Dragan Simić, Jovana Gajić, Vladimir Ilin, Vasa Svirčević, and Svetlana Simić</i>	
Learning Algorithms	
Evaluating the Difficulty of Instances of the Travelling Salesman Problem in the Nearby of the Optimal Solution Based on Random Walk Exploration	299
<i>Miguel Cárdenas-Montes</i>	
A Nearest Hyperrectangle Monotonic Learning Method	311
<i>Javier García, José-Ramón Cano, and Salvador García</i>	
Knowledge Modeling by ELM in RL for SRHT Problem.	323
<i>Jose Manuel Lopez-Guede, Asier Garmendia, and Manuel Graña</i>	
Can Metalearning Be Applied to Transfer on Heterogeneous Datasets?	332
<i>Catarina Félix, Carlos Soares, and Alípio Jorge</i>	
Smart Sketchpad: Using Machine Learning to Provide Contextually Relevant Examples to Artists	344
<i>Michael Fischer and Monica Lam</i>	
An Analysis of the Hardness of Novel TSP Iberian Instances	353
<i>Gloria Cerasela Crişan, Camelia-M. Pintea, Petrică Pop, and Oliviu Matei</i>	

A Data Structure to Speed-Up Machine Learning Algorithms on Massive Datasets	365
<i>Francisco Padillo, J.M. Luna, Alberto Cano, and Sebastián Ventura</i>	
A Sensory Control System for Adjusting Group Emotion Using Bayesian Networks and Reinforcement Learning	377
<i>Jun-Ho Kim, Ki-Hoon Kim, and Sung-Bae Cho</i>	
Video and Image	
Identification of Plant Textures in Agricultural Images by Principal Component Analysis	391
<i>Martín Montalvo, María Guijarro, José Miguel Guerrero, and Ángela Ribeiro</i>	
Automatic Image-Based Method for Quantitative Analysis of Photosynthetic Cell Cultures	402
<i>Alzbeta Vlachynska, Jan Cerveny, Vratislav Cmiel, and Tomas Turecek</i>	
Fall Detection Using Body-Worn Accelerometer and Depth Maps Acquired by Active Camera	414
<i>Michal Kepski and Bogdan Kwolek</i>	
Classification of Melanoma Presence and Thickness Based on Computational Image Analysis	427
<i>Javier Sánchez-Monedero, Aurora Sáez, María Pérez-Ortiz, Pedro Antonio Gutiérrez, and Cesar Hervás-Martínez</i>	
Classification and Cluster Analysis	
Solution to Data Imbalance Problem in Application Layer Anomaly Detection Systems	441
<i>Rafał Kozik and Michał Choraś</i>	
Ordinal Evolutionary Artificial Neural Networks for Solving an Imbalanced Liver Transplantation Problem	451
<i>Manuel Dorado-Moreno, María Pérez-Ortiz, María Dolores Ayllón-Terán, Pedro Antonio Gutiérrez, and Cesar Hervás-Martínez</i>	
A Fuzzy-Based Approach for the Multilevel Component Selection Problem . . .	463
<i>Andreea Vescan and Camelia Șerban</i>	
A Clustering-Based Method for Team Formation in Learning Environments . . .	475
<i>Marta Guijarro-Mata-García, Maria Guijarro, and Rubén Fuentes-Fernández</i>	

R Ultimate Multilabel Dataset Repository.	487
<i>Francisco Charte, David Charte, Antonio Rivera, María José del Jesus, and Francisco Herrera</i>	
On the Impact of Dataset Complexity and Sampling Strategy in Multilabel Classifiers Performance	500
<i>Francisco Charte, Antonio Rivera, María José del Jesus, and Francisco Herrera</i>	
Managing Monotonicity in Classification by a Pruned AdaBoost.	512
<i>Sergio González, Francisco Herrera, and Salvador García</i>	
Model Selection for Financial Distress Prediction by Aggregating TOPSIS and PROMETHEE Rankings	524
<i>Vicente García, Ana I. Marqués, L. Cleofas-Sánchez, and José Salvador Sánchez</i>	
Combining k-Nearest Neighbor and Centroid Neighbor Classifier for Fast and Robust Classification.	536
<i>Wiesław Chmielnicki</i>	
A First Study on the Use of Boosting for Class Noise Reparation.	549
<i>Pablo Morales Álvarez, Julián Luengo, and Francisco Herrera</i>	
Ensemble of HOSVD Generated Tensor Subspace Classifiers with Optimal Tensor Flattening Directions.	560
<i>Bogusław Cyganek, Michał Woźniak, and Dariusz Jankowski</i>	
Applications	
Evaluation of Decision Trees Algorithms for Position Reconstruction in Argon Dark Matter Experiment.	575
<i>Miguel Cárdenas-Montes, Bárbara Montes, Roberto Santorelli, and Luciano Romero, on behalf of Argon Dark Matter Collaboration</i>	
A Preliminary Study of the Suitability of Deep Learning to Improve LiDAR-Derived Biomass Estimation	588
<i>Jorge García-Gutiérrez, Eduardo González-Ferreiro, Daniel Mateos-García, and José C. Riquelme-Santos</i>	
Fisher Score-Based Feature Selection for Ordinal Classification: A Social Survey on Subjective Well-Being.	597
<i>María Pérez-Ortiz, Mercedes Torres-Jiménez, Pedro Antonio Gutiérrez, Javier Sánchez-Monedero, and César Hervás-Martínez</i>	

A Soft Computing Approach to Optimize the Clarification Process in Wastewater Treatment	609
<i>Marina Corral Bobadilla, Roberto Fernandez Martinez, Ruben Lostado Lorza, Fatima Somovilla Gomez, and Eliseo P. Vergara Gonzalez</i>	
A Proposed Methodology for Setting the Finite Element Models Based on Healthy Human Intervertebral Lumbar Discs	621
<i>Fatima Somovilla Gomez, Ruben Lostado Lorza, Roberto Fernandez Martinez, Marina Corral Bobadilla, and Ruben Escribano Garcia</i>	
Passivity Based Control of Cyber Physical Systems Under Zero-Dynamics Attack	634
<i>Fawad Hassan, Naeem Iqbal, Francisco Martínez-Álvarez, and Khawaja M. Asim</i>	
The Multivariate Entropy Triangle and Applications	647
<i>Francisco José Valverde-Albacete and Carmen Peláez-Moreno</i>	
Motivational Engine with Sub-goal Identification in Neuroevolution Based Cognitive Robotics	659
<i>Rodrigo Salgado, Abraham Prieto, Pilar Caamaño, Francisco Bellas, and Richard J. Duro</i>	
Bioinformatics	
TRIQ: A Comprehensive Evaluation Measure for Triclustering Algorithms . . .	673
<i>David Gutiérrez-Avilés and Cristina Rubio-Escudero</i>	
Biclustering of Gene Expression Data Based on <i>SimUI</i> Semantic Similarity Measure.	685
<i>Juan A. Nepomuceno, Alicia Troncoso, Isabel A. Nepomuceno-Chamorro, and Jesús S. Aguilar-Ruiz</i>	
Discovery of Genes Implied in Cancer by Genetic Algorithms and Association Rules	694
<i>Alejandro Sánchez Medina, Alberto Gil Pichardo, Jose Manuel García-Heredia, and Maria Martínez-Ballesteros</i>	
Extending Probabilistic Encoding for Discovering Biclusters in Gene Expression Data	706
<i>Francisco Javier Gil-Cumbreras, Raúl Giráldez, and Jesús S. Aguilar-Ruiz</i>	

Hybrid Intelligent Systems for Data Mining and Applications

A Hybrid Approach to Closeness in the Framework of Order of Magnitude Qualitative Reasoning	721
<i>Alfredo Burrieza, Emilio Muñoz-Velasco, and Manuel Ojeda-Aciego</i>	
Hybrid Algorithm for Floor Detection Using GSM Signals in Indoor Localisation Task	730
<i>Marcin Luckner and Rafał Górak</i>	
Hybrid Optimization Method Applied to Adaptive Splitting and Selection Algorithm	742
<i>Pedro Lopez-Garcia, Michał Woźniak, Enrique Onieva, and Asier Perallos</i>	
Hybrid Intelligent Model for Fault Detection of a Lithium Iron Phosphate Power Cell Used in Electric Vehicles	751
<i>Héctor Quintián, José-Luis Casteleiro-Roca, Francisco Javier Perez-Castelo, José Luis Calvo-Rolle, and Emilio Corchado</i>	
Author Index	763

Hybrid Artificial Intelligent Systems
11th International Conference, HAIS 2016, Seville,
Spain, April 18-20, 2016, Proceedings
Martínez-Álvarez, F.; Troncoso, A.; Quintián, H.;
Corchado, E. (Eds.)
2016, XIX, 765 p. 211 illus., Softcover
ISBN: 978-3-319-32033-5