

2013 IEEE Symposium on Computational Intelligence and Data Mining

(CIDM 2013)

**Singapore
16 – 19 April 2013**



**IEEE Catalog Number: CFP13IDM-POD
ISBN: 978-1-4673-5894-1**

TABLE OF CONTENTS

Interpretable Models from Distributed Data via Merging of Decision Trees	1
<i>A. Andrzejak, F. Langner, S. Zabala</i>	
Regularization And Improved Interpretation Of Linear Data Mappings And Adaptive Distance Measures	10
<i>M. Strickert, B. Hammer, T. Villmann, M. Biehl</i>	
Quantitative Measurements Of Model Interpretability For The Analysis Of Spectral Data	18
<i>A. Backhaus, U. Seiffert</i>	
Automated Selection of Interaction Effects in Sparse Kernel Methods to Predict Pregnancy Viability	26
<i>V. Belle, P. Lisboa</i>	
Interpreting Individual Classifications of Hierarchical Networks	32
<i>W. Landecker, M. Thomure, L. Bettencourt, M. Mitchell, G. Kenyon, S. Brumby</i>	
Kernel Spectral Clustering For Predicting Maintenance Of Industrial Machines	39
<i>R. Langone, C. Alzate, B. Ketelaere, J. Suykens</i>	
Machine Learning of Engineering Diagnostic Knowledge from Unstructured Verbatim Text Descriptions	46
<i>Y. Huang, Y. Murphey, Y. Ge</i>	
A Novel Fuzzy Classification to Enhance Software Regression Testing	53
<i>Z. Xu, Y. Liu, K. Gao</i>	
Ready-to-Use Activity Recognition for Smartphones	59
<i>P. Siirtola, J. Roning</i>	
How to Extract Meaningful Shapes from Noisy Time-Series Subsequences?	65
<i>Y. Kang, K. Smith-Miles, D. Belusic</i>	
Discovery of Topological Relations for Spatial Activity Recognition	73
<i>K. Bouchard, A. Bouzouane, B. Bouchard</i>	
Spatio-Temporal Event Detection Using Probabilistic Graphical Models (PGMs)	81
<i>A. Mousavi, M. Duckham, R. Kotagiri, A. Rajabifard</i>	
Combining Semi-Supervised and Active Learning for Hyperspectral Image Classification	89
<i>M. Li, R. Wang, K. Tang</i>	
Detecting Abnormal Ozone Levels using PCA-based GLR Hypothesis Testing	95
<i>F. Harrou, M. Nounou, H. Nounou</i>	
Business Models Enhancement through Discovery of Roles	103
<i>A. Burattin, A. Sperduti, M. Veluscek</i>	
Discovering Signature Patterns from Event Logs	111
<i>R. Bose, W. Aalst</i>	
A Principled Approach to Mining From Noisy Logs Using Heuristics Miner	119
<i>P. Weber, B. Bordbar, P. Tino</i>	
Wanna Improve Process Mining Results? It's High Time We Consider Data Quality Issues Seriously	127
<i>R. Bose, R. Mans, W. Aalst</i>	
A Two-Step Fast Algorithm for the Automated Discovery of Declarative Workflows	135
<i>C. Ciccio, M. Mecella</i>	
Supervised Novelty Detection	143
<i>V. Jumutc, J. Suykens</i>	
A Hierarchy of Independence Assumptions for Multi-relational Bayes Net Classifiers	150
<i>O. Schulte, B. Bina, B. Crawford, D. Bingham, Y. Xiong</i>	
Detecting Pixel-Value Differencing Steganography Using Levenberg-Marquardt Neural Network	160
<i>E. El-Alfy</i>	
Improving Genetic Programming Classification For Binary And Multiclass Datasets	166
<i>N. Al-Madi, S. Ludwig</i>	
Unsupervised Multimodal VAD using Sequential Hierarchy	174
<i>R. Ahmad, S. Raza, H. Malik</i>	
A Semantic Subspace Learning Method to Exploit Relevance Feedback Log Data for Image Retrieval	178
<i>L. Zhang, L. Wang, W. Lin</i>	
Web Product Ranking Using Opinion Mining	184
<i>Y. Huang, H. Lin</i>	
Transaction-Based Link Strength Prediction in a Social Network	191
<i>H. Khosravi, A. Bozorgkhan, O. Schulte</i>	

SAE: Social Adaptive Ensemble Classifier for Data Streams	199
<i>H. Gomes, F. Enembreck</i>	
Software Cost Estimation By Classical And Fuzzy Analogy For Web Hypermedia Applications: A Replicated Study	207
<i>A. Idri, A. Zahi</i>	
Predicting YouTube Content Popularity via Facebook Data: A Network Spread Model for Optimizing Multimedia Delivery	214
<i>D. Soysa, D. Chen, O. Au, A. Bermak</i>	
E-mail Address Categorization based on Semantics of Surnames	222
<i>S. Veluru, Y. Rahulamathavan, P. Viswanath, P. Longley, M. Rajarajan</i>	
A Self-Organizing Time Map for Time-to-Event Data	230
<i>P. Sarlin</i>	
Interpretable Magnification Factors for Topographic Maps of High Dimensional and Structured Data	238
<i>N. Gianniotis</i>	
Automatic Service Composition Using POMDP and Provenance Data	246
<i>M. Naseri, S. Ludwig</i>	
A Comprehensive Benchmarking Framework (CoBeFra) for Conformance Analysis between Procedural Process Models and Event Logs in ProM	254
<i>S. Broucke, J. Weerd, J. Vanthienen, B. Baesens</i>	
Nonnegative Matrix Factorization and Artificial Immune Based Classification for Fault Diagnosis of Diesel Valve Train	262
<i>Y. Yang, Y. Zhu, G. Li, Y. Zhang</i>	
Automotive Diagnosis Typo Correction Using Domain Knowledge And Machine Learning	267
<i>Y. Huang, Y. Murphey, Y. Ge</i>	
Revised Online Learning with Kernels for Classification and Regression	275
<i>G. Li, N. Ning, K. Ramanathan, L. Shi</i>	
A Novel Quantum Cooperative Co-evolutionary Algorithm for Large-Scale Minimum Attribute Reduction Optimization	280
<i>W. Ding, Q. Shi, S. Chen, Z. Guan, J. Wang</i>	
Selection of a Robust Experimental Design for the Effective Modeling of Nonlinear Systems using Genetic Programming	287
<i>A. Garg, K. Tai</i>	
GPU-accelerated eXtended Classifier System	293
<i>M. Abedini, M. Kirley, R. Chiong, T. Weise</i>	
Semantic Annotation Tools Survey	301
<i>P. Oliveira, J. Rocha</i>	
Class-Dependent Canonical Correlation Analysis for Scalable Cross-Lingual Document Categorization	308
<i>M. Hady, M. Asham</i>	
Assessment of Voting Ensemble for Estimating Software Development Effort	316
<i>M. Elish</i>	
Author Index	