

Table of Contents

Graph Kernels

A Graph Kernel from the Depth-Based Representation	1
<i>Lu Bai, Peng Ren, Xiao Bai, and Edwin R. Hancock</i>	
Incorporating Molecule's Stereoisomerism within the Machine Learning Framework	12
<i>Pierre-Anthony Grenier, Luc Brun, and Didier Villemin</i>	
Transitive State Alignment for the Quantum Jensen-Shannon Kernel ...	22
<i>Andrea Torsello, Andrea Gasparetto, Luca Rossi, Lu Bai, and Edwin R. Hancock</i>	

Clustering

Balanced K -Means for Clustering	32
<i>Mikko I. Malinen and Pasi Fränti</i>	
Poisoning Complete-Linkage Hierarchical Clustering	42
<i>Battista Biggio, Samuel Rota Bulò, Ignazio Pillai, Michele Mura, Eyasu Zemene Mequanint, Marcello Pelillo, and Fabio Roli</i>	
A Comparison of Categorical Attribute Data Clustering Methods	53
<i>Ville Hautamäki, Antti Pöllänen, Tomi Kinnunen, Kong Aik Lee, Haizhou Li, and Pasi Fränti</i>	

Graph Edit Distance

Improving Approximate Graph Edit Distance Using Genetic Algorithms	63
<i>Kaspar Riesen, Andreas Fischer, and Horst Bunke</i>	
Approximate Graph Edit Distance Guided by Bipartite Matching of Bags of Walks	73
<i>Benoit Gaüzère, Sébastien Bougleux, Kaspar Riesen, and Luc Brun</i>	
A Hausdorff Heuristic for Efficient Computation of Graph Edit Distance	83
<i>Andreas Fischer, Réjean Plamondon, Yvon Savaria, Kaspar Riesen, and Horst Bunke</i>	

Graph Models and Embedding

Flip-Flop Sublinear Models for Graphs	93
<i>Brijnesh Jain</i>	
Node Centrality for Continuous-Time Quantum Walks	103
<i>Luca Rossi, Andrea Torsello, and Edwin R. Hancock</i>	
Max-Correlation Embedding Computation	113
<i>Antonio Robles-Kelly</i>	

Discriminant Analysis

Fast Gradient Computation for Learning with Tensor Product Kernels and Sparse Training Labels	123
<i>Tapio Pahikkala</i>	
Nonlinear Discriminant Analysis Based on Probability Estimation by Gaussian Mixture Model	133
<i>Akinori Hidaka and Takio Kurita</i>	

Combining and Selecting

Information Theoretic Feature Selection in Multi-label Data through Composite Likelihood	143
<i>Konstantinos Sechidis, Nikolaos Nikolaou, and Gavin Brown</i>	
Majority Vote of Diverse Classifiers for Late Fusion	153
<i>Emilie Morvant, Amaury Habrard, and Stéphane Ayache</i>	

Joint Session

Entropic Graph Embedding via Multivariate Degree Distributions	163
<i>Cheng Ye, Richard C. Wilson, and Edwin R. Hancock</i>	
On Parallel Lines in Noisy Forms	173
<i>George Nagy</i>	

Metrics and Dissimilarities

Metric Learning in Dissimilarity Space for Improved Nearest Neighbor Performance	183
<i>Robert P.W. Duin, Manuele Bicego, Mauricio Orozco-Alzate, Sang-Woon Kim, and Marco Loog</i>	
Matching Similarity for Keyword-Based Clustering	193
<i>Mohammad Rezaei and Pasi Fränti</i>	

Applications

Quantum vs Classical Ranking in Segment Grouping	203
<i>Francisco Escolano, Boyan Bonev, and Edwin R. Hancock</i>	
Remove Noise in Video with 3D Topological Maps	213
<i>Donatello Conte and Guillaume Damiand</i>	
Video Analysis of a Snooker Footage Based on a Kinematic Model	223
<i>Ayslyu Gabdulkhakova and Walter G. Kropatsch</i>	

Partial Supervision

Evaluating Classification Performance with only Positive and Unlabeled Samples	233
<i>Siamak Hajizadeh, Zili Li, Rolf P.B.J. Dollevoet, and David M.J. Tax</i>	
Who Is Missing? A New Pattern Recognition Puzzle.....	243
<i>Ludmila I. Kuncheva and Aaron S. Jackson</i>	

Poster Session

Edit Distance Computed by Fast Bipartite Graph Matching	253
<i>Francesc Serratos and Xavier Cortés</i>	
Statistical Method for Semantic Segmentation of Dominant Plane from Remote Exploration Image Sequence	263
<i>Shun Inagaki and Atsushi Imiya</i>	
Analyses on Generalization Error of Ensemble Kernel Regressors	273
<i>Akira Tanaka, Ichigaku Takigawa, Hideyuki Imai, and Mineichi Kudo</i>	
Structural Human Shape Analysis for Modeling and Recognition	282
<i>Chutisant Kerdvibulvech and Koichiro Yamauchi</i>	
On Cross-Validation for MLP Model Evaluation	291
<i>Tommi Kärkkäinen</i>	
Weighted Mean Assignment of a Pair of Correspondences Using Optimisation Functions	301
<i>Carlos Francisco Moreno-García and Francesc Serratos</i>	
Chemical Symbol Feature Set for Handwritten Chemical Symbol Recognition	312
<i>Peng Tang, Siu Cheung Hui, and Chi-Wing Fu</i>	

About Combining Metric Learning and Prototype Generation	323
<i>Adrian Perez-Suay, Francesc J. Ferri, Miguel Arevalillo-Herrdez, and Jesús V. Albert</i>	
Tracking System with Re-identification Using a RGB String Kernel	333
<i>Amal Mahboubi, Luc Brun, Donatello Conte, Pasquale Foggia, and Mario Vento</i>	
Towards Scalable Prototype Selection by Genetic Algorithms with Fast Criteria	343
<i>Yenisel Plasencia-Calaña, Mauricio Orozco-Alzate, Heydi Méndez-Vázquez, Edel García-Reyes, and Robert P.W. Duin</i>	
IOWA Operators and Its Application to Image Retrieval	353
<i>Esther de Ves, Pedro Zuccarello, Teresa León, and Guillermo Ayala</i>	
On Optimum Thresholding of Multivariate Change Detectors	364
<i>William J. Faithfull and Ludmila I. Kuncheva</i>	
Commute Time for a Gaussian Wave Packet on a Graph	374
<i>Furqan Aziz, Richard C. Wilson, and Edwin R. Hancock</i>	
Properties of Object-Level Cross-Validation Schemes for Symmetric Pair-Input Data	384
<i>Juho Heimonen, Tapio Salakoski, and Tapio Pahikkala</i>	
A Binary Factor Graph Model for Biclustering	394
<i>Matteo Denitto, Alessandro Farinelli, Giuditta Franco, and Manuele Bicego</i>	
Improved BLSTM Neural Networks for Recognition of On-Line Bangla Complex Words	404
<i>Volkmar Frinken, Nilanjana Bhattacharya, Seiichi Uchida, and Umapada Pal</i>	
A Ranking Part Model for Object Detection	414
<i>Chaobo Sun and Xiaojie Wang</i>	
Regular Decomposition of Multivariate Time Series and Other Matrices	424
<i>Hannu Reittu, Fülöp Bazsó, and Robert Weiss</i>	
Texture Synthesis: From Convolutional RBMs to Efficient Deterministic Algorithms	434
<i>Qi Gao and Stefan Roth</i>	
Improved Object Matching Using Structural Relations	444
<i>Estephan Dazzi, Teofilo de Campos, and Roberto M. Cesar Jr.</i>	

Designing LDPC Codes for ECOC Classification Systems	454
<i>Claudio Marrocco and Francesco Tortorella</i>	
Unifying Probabilistic Linear Discriminant Analysis Variants in Biometric Authentication	464
<i>Aleksandr Sizov, Kong Aik Lee, and Tomi Kinnunen</i>	
Author Index	477