

Table of Contents – Part I

Discovering Local Subgroups, with an Application to Fraud Detection	1
<i>Rob M. Konijn, Wouter Duivesteijn, Wojtek Kowalczyk, and Arno Knobbe</i>	
PUF-Tree: A Compact Tree Structure for Frequent Pattern Mining of Uncertain Data	13
<i>Carson Kai-Sang Leung and Syed Khairuzzaman Tanbeer</i>	
Frequent Pattern Mining in Attributed Trees	26
<i>Claude Pasquier, J��r��my Sanhes, Fr��d��ric Flouvat, and Nazha Selmaoui-Folcher</i>	
Mining Frequent Patterns from Human Interactions in Meetings Using Directed Acyclic Graphs	38
<i>Anna Fariha, Chowdhury Farhan Ahmed, Carson Kai-Sang Leung, S.M. Abdullah, and Longbing Cao</i>	
ClaSP: An Efficient Algorithm for Mining Frequent Closed Sequences . . .	50
<i>Antonio Gomariz, Manuel Campos, Roque Marin, and Bart Goethals</i>	
Efficient Mining of Contrast Patterns on Large Scale Imbalanced Real-Life Data	62
<i>Jinjiu Li, Can Wang, Wei Wei, Mu Li, and Chunming Liu</i>	
Online Cross-Lingual PLSI for Evolutionary Theme Patterns Analysis	74
<i>Xin Xin, Kun Zhuang, Ying Fang, and Heyan Huang</i>	
F-Trail: Finding Patterns in Taxi Trajectories	86
<i>Yasuko Matsubara, Lei Li, Evangelos Papalexakis, David Lo, Yasushi Sakurai, and Christos Faloutsos</i>	
Mining Appliance Usage Patterns in Smart Home Environment	99
<i>Yi-Cheng Chen, Yu-Lun Ko, Wen-Chih Peng, and Wang-Chien Lee</i>	
Computational Models of Stress in Reading Using Physiological and Physical Sensor Data	111
<i>Nandita Sharma and Tom Gedeon</i>	
Latent Patient Profile Modelling and Applications with Mixed-Variate Restricted Boltzmann Machine	123
<i>Tu Dinh Nguyen, Truyen Tran, Dinh Phung, and Svetha Venkatesh</i>	

MassBayes: A New Generative Classifier with Multi-dimensional Likelihood Estimation	136
<i>Sunil Aryal and Kai Ming Ting</i>	
Fast and Effective Single Pass Bayesian Learning.....	149
<i>Nayyar A. Zaidi and Geoffrey I. Webb</i>	
Sparse Reductions for Fixed-Size Least Squares Support Vector Machines on Large Scale Data	161
<i>Raghvendra Mall and Johan A.K. Suykens</i>	
Discovery of Regional Co-location Patterns with k -Nearest Neighbor Graph	174
<i>Feng Qian, Kevin Chiew, Qinming He, Hao Huang, and Lianhang Ma</i>	
Spectral Decomposition for Optimal Graph Index Prediction	187
<i>Liyan Song, Yun Peng, Byron Choi, Jianliang Xu, and Bingsheng He</i>	
Patterns amongst Competing Task Frequencies: Super-Linearities, and the Almond-DG Model	201
<i>Danai Koutra, Vasileios Koutras, B. Aditya Prakash, and Christos Faloutsos</i>	
Node Classificaiton in Social Network via a Factor Graph Model	213
<i>Huan Xu, Yujin Yang, Liangwei Wang, and Wenhuan Liu</i>	
Fast Graph Stream Classification Using Discriminative Clique Hashing	225
<i>Lianhua Chi, Bin Li, and Xingquan Zhu</i>	
Mining Interesting Itemsets in Graph Datasets.....	237
<i>Boris Cule, Bart Goethals, and Tayena Hendrickx</i>	
Robust Synchronization-Based Graph Clustering	249
<i>Junming Shao, Xiao He, Qinli Yang, Claudia Plant, and Christian Böhm</i>	
Efficient Mining of Combined Subspace and Subgraph Clusters in Graphs with Feature Vectors	261
<i>Stephan Günnemann, Brigitte Boden, Ines Färber, and Thomas Seidl</i>	
Exploiting Temporal Information in a Two-Stage Classification Framework for Content-Based Depression Detection	276
<i>Yu-Chun Shen, Tsung-Ting Kuo, I-Ning Yeh, Tzu-Ting Chen, and Shou-De Lin</i>	
EEG-Based Person Verification Using Multi-Sphere SVDD and UBM ...	289
<i>Phuoc Nguyen, Dat Tran, Trung Le, Xu Huang, and Wanli Ma</i>	

Measuring Reproducibility of High-Throughput Deep-Sequencing Experiments Based on Self-adaptive Mixture Copula	301
<i>Qian Zhang, Junping Zhang, and Chenghai Xue</i>	
Mining Representative Movement Patterns through Compression	314
<i>Phan Nhat Hai, Dino Ienco, Pascal Poncelet, and Maguelonne Teisseire</i>	
NARGES: Prediction Model for Informed Routing in a Communications Network	327
<i>Hooman Homayounfar, Paul J. Kennedy, and Robin Braun</i>	
Mining Usage Traces of Mobile Apps for Dynamic Preference Prediction	339
<i>Zhung-Xun Liao, Wen-Chih Peng, and Philip S. Yu</i>	
Leveraging Hybrid Citation Context for Impact Summarization	354
<i>Po Hu, Yujing Guo, Dong-Hong Ji, and Jiacong He</i>	
Optimal Allocation of High Dimensional Assets through Canonical Vines	366
<i>Wei Wei, Jinyan Li, Longbing Cao, Jingguang Sun, Chunming Liu, and Mu Li</i>	
Inducing Context Gazetteers from Encyclopedic Databases for Named Entity Recognition	378
<i>Han-Cheol Cho, Naoaki Okazaki, and Kentaro Inui</i>	
An Optimization Method for Proportionally Diversifying Search Results	390
<i>Lin Wu, Yang Wang, John Shepherd, and Xiang Zhao</i>	
Joint Naïve Bayes and LDA for Unsupervised Sentiment Analysis	402
<i>Yong Zhang, Dong-Hong Ji, Ying Su, and Hongmiao Wu</i>	
An Unsupervised Learning Model to Perform Side Channel Attack	414
<i>Jung-Wei Chou, Min-Huang Chu, Yi-Lin Tsai, Yun Jin, Chen-Mou Cheng, and Shou-De Lin</i>	
Decisive Supervised Learning	426
<i>Eileen A. Ni, Da Kuang, and Charles X. Ling</i>	
Learning Overlap Optimization for Domain Decomposition Methods	438
<i>Steven Burrows, Jörg Frochte, Michael Völske, Ana Belén Martínez Torres, and Benno Stein</i>	
CLUEKR : CLustering Based Efficient k NN Regression	450
<i>Harshit Dubey and Vikram Pudi</i>	

AREM: A Novel Associative Regression Model Based on EM Algorithm	459
<i>Zhonghua Jiang and George Karypis</i>	
One-Class Transfer Learning with Uncertain Data	471
<i>Bo Liu, Philip S. Yu, Yanshan Xiao, and Zhifeng Hao</i>	
Time Series Forecasting Using Distribution Enhanced Linear Regression	484
<i>Goce Ristanoski, Wei Liu, and James Bailey</i>	
Twin Bridge Transfer Learning for Sparse Collaborative Filtering	496
<i>Jiangfeng Shi, Mingsheng Long, Qiang Liu, Guiguang Ding, and Jianmin Wang</i>	
Dimensionality Reduction with Dimension Selection	508
<i>Yi Guo, Junbin Gao, and Feng Li</i>	
Multi-View Visual Classification via a Mixed-Norm Regularizer	520
<i>Xiaofeng Zhu, Zi Huang, and Xindong Wu</i>	
Mining Specific Features for Acquiring User Information Needs	532
<i>Abdalmohsen Algarni and Yuefeng Li</i>	
Ensemble-Based Wrapper Methods for Feature Selection and Class Imbalance Learning	544
<i>Pengyi Yang, Wei Liu, Bing B. Zhou, Sanjay Chawla, and Albert Y. Zomaya</i>	
Exploring Groups from Heterogeneous Data via Sparse Learning	556
<i>Huawen Liu, Jiuyong Li, Lin Liu, Jixue Liu, Ivan Lee, and Jianmin Zhao</i>	
Multiplex Topic Models	568
<i>Juan Yang, Jia Zeng, and William K. Cheung</i>	
Integrating Clustering and Ranking on Hybrid Heterogeneous Information Network	583
<i>Ran Wang, Chuan Shi, Philip S. Yu, and Bin Wu</i>	
Learning from Multiple Observers with Unknown Expertise	595
<i>Han Xiao, Huang Xiao, and Claudia Eckert</i>	
Author Index	607

Table of Contents – Part II

ProCF: Probabilistic Collaborative Filtering for Reciprocal Recommendation	1
<i>Xiongcai Cai, Michael Bain, Alfred Krzywicki, Wayne Wobcke, Yang Sok Kim, Paul Compton, and Ashesh Mahidadia</i>	
Product and User Dependent Social Network Models for Recommender Systems	13
<i>Min Li, Zhiwei Jiang, Bin Luo, Jiubin Tang, Qing Gu, and Daoxu Chen</i>	
Learning Representative Nodes in Social Networks	25
<i>Ke Sun, Donn Morrison, Eric Bruno, and Stéphane Marchand-Maillet</i>	
Tracing Influential Nodes in a Social Network with Competing Information	37
<i>Bolei Zhang, Zhuzhong Qian, Xiaoliang Wang, and Sanglu Lu</i>	
ViStrucclizer: A Structural Visualizer for Multi-dimensional Social Networks	49
<i>Bing Tian Dai, Agus Trisnajaya Kwee, and Ee-Peng Lim</i>	
Influential Nodes in a One-Wave Diffusion Model for Location-Based Social Networks.....	61
<i>Hao-Hsiang Wu and Mi-Yen Yeh</i>	
Modeling Social Information Learning among Taxi Drivers	73
<i>Siyuan Liu, Ramayya Krishnan, Emma Brunskill, and Lionel M. Ni</i>	
Mining User Interests from Information Sharing Behaviors in Social Media	85
<i>Tingting Wang, Hongyan Liu, Jun He, and Xiaoyong Du</i>	
Anonymization for Multiple Released Social Network Graphs	99
<i>Chih-Jui Lin Wang, En Tzu Wang, and Arbee L.P. Chen</i>	
A New, Fast and Accurate Algorithm for Hierarchical Clustering on Euclidean Distances	111
<i>Elio Masciari, Giuseppe Massimiliano Mazzeo, and Carlo Zaniolo</i>	

Clustering Patient Medical Records via Sparse Subspace Representation	123
<i>Budhaditya Saha, Duc-Son Pham, Dinh Phung, and Svetha Venkatesh</i>	
A Unified Metric for Categorical and Numerical Attributes in Data Clustering	135
<i>Yiu-ming Cheung and Hong Jia</i>	
An Extension of the Infinite Relational Model Incorporating Interaction between Objects	147
<i>Iku Ohama, Hiromi Iida, Takuya Kida, and Hiroki Arimura</i>	
Density-Based Clustering Based on Hierarchical Density Estimates	160
<i>Ricardo J.G.B. Campello, Davoud Moulavi, and Joerg Sander</i>	
Stock Trend Prediction by Classifying Aggregative Web Topic-Opinion	173
<i>Li Xue, Yun Xiong, Yangyong Zhu, Jianfeng Wu, and Zhiyuan Chen</i>	
The Role of Hubs in Cross-Lingual Supervised Document Retrieval	185
<i>Nenad Tomašev, Jan Rupnik, and Dunja Mladenić</i>	
Text Document Topical Recursive Clustering and Automatic Labeling of a Hierarchy of Document Clusters	197
<i>Xiaoxiao Li, Jiyang Chen, and Osmar Zaiane</i>	
Query-Document Relevance Topic Models	209
<i>Meng-Sung Wu, Chia-Ping Chen, and Hsin-Min Wang</i>	
A Two-Stage Approach for Generating Topic Models	221
<i>Yang Gao, Yue Xu, Yuefeng Li, and Bin Liu</i>	
Effective Top-Down Active Learning for Hierarchical Text Classification	233
<i>Xiao Li, Charles X. Ling, and Huaimin Wang</i>	
Forgetting Word Segmentation in Chinese Text Classification with L1-Regularized Logistic Regression	245
<i>Qiang Fu, Xinyu Dai, Shujian Huang, and Jiajun Chen</i>	
CREST: Cluster-based Representation Enrichment for Short Text Classification	256
<i>Zichao Dai, Aixin Sun, and Xu-Ying Liu</i>	
Cross Language Prediction of Vandalism on Wikipedia Using Article Views and Revisions	268
<i>Khoi-Nguyen Tran and Peter Christen</i>	

An Optimized Cost-Sensitive SVM for Imbalanced Data Learning	280
<i>Peng Cao, Dazhe Zhao, and Osmar Zuiane</i>	
A Positive-biased Nearest Neighbour Algorithm for Imbalanced Classification	293
<i>Xiuzhen Zhang and Yuxuan Li</i>	
Class Based Weighted K-Nearest Neighbor over Imbalance Dataset	305
<i>Harshit Dubey and Vikram Pudi</i>	
ProWSyn: Proximity Weighted Synthetic Oversampling Technique for Imbalanced Data Set Learning	317
<i>Sukarna Barua, Md. Monirul Islam, and Kazuyuki Murase</i>	
Differential Privacy Preserving Spectral Graph Analysis	329
<i>Yue Wang, Xintao Wu, and Leting Wu</i>	
Sorted Nearest Neighborhood Clustering for Efficient Private Blocking	341
<i>Dinusha Vatsalan and Peter Christen</i>	
On Linear Refinement of Differential Privacy-Preserving Query Answering	353
<i>Xiaowei Ying, Xintao Wu, and Yue Wang</i>	
A Coupled Clustering Approach for Items Recommendation	365
<i>Yonghong Yu, Can Wang, Yang Gao, Longbing Cao, and Xixi Chen</i>	
Location Recommendation Based on Periodicity of Human Activities and Location Categories	377
<i>Seyyed Mohammadreza Rahimi and Xin Wang</i>	
Top-N Recommendations by Learning User Preference Dynamics	390
<i>Yongli Ren, Tianqing Zhu, Gang Li, and Wanlei Zhou</i>	
Semantic Title Evaluation and Recommendation Based on Topic Models	402
<i>Huidong Jin, Lijiu Zhang, and Lan Du</i>	
Video Quality Prediction over Wireless 4G	414
<i>Chun Pong Lau, Xiangliang Zhang, and Basem Shihada</i>	
A Self-immunizing Manifold Ranking for Image Retrieval	426
<i>Jun Wu, Yidong Li, Songhe Feng, and Hong Shen</i>	
Low-Rank Matrix Recovery with Discriminant Regularization	437
<i>Zhonglong Zheng, Haixin Zhang, Jiong Jia, Jianmin Zhao, Li Guo, Fangmei Fu, and Mudan Yu</i>	

Multi-Manifold Ranking: Using Multiple Features for Better Image Retrieval 449
 Yang Wang, Muhammad Aamir Cheema, Xuemin Lin, and Qing Zhang

One Pass Concept Change Detection for Data Streams 461
 Sripirakas Sakthithasan, Russel Pears, and Yun Sing Koh

Incremental Mining of Significant URLs in Real-Time and Large-Scale Social Streams 473
 Cheng-Ying Liu, Chi-Yao Tseng, and Ming-Syan Chen

A Concept-Drifting Detection Algorithm for Categorical Evolving Data 485
 Fuyuan Cao and Joshua Zherue Huang

Framework for Storing and Processing Relational Entities in Stream Mining 497
 Pawel Matuszyk and Myra Spiliopoulou

Discovering Semantics from Multiple Correlated Time Series Stream.... 509
 Zhi Qiao, Guangyan Huang, Jing He, Peng Zhang, Li Guo, Jie Cao, and Yanchun Zhang

Matrix Factorization With Aggregated Observations..... 521
 Yoshifumi Aimoto and Hisashi Kashima

An Approach to Identifying False Traces in Process Event Logs 533
 Hedong Yang, Lijie Wen, and Jianmin Wang

Split-Merge Augmented Gibbs Sampling for Hierarchical Dirichlet Processes 546
 Santu Rana, Dinh Phung, and Svetha Venkatesh

Adaptive Temporal Entity Resolution on Dynamic Databases..... 558
 Peter Christen and Ross W. Gayler

Fuzzy Multi-Sphere Support Vector Data Description 570
 Trung Le, Dat Tran, and Wanli Ma

Author Index 583