

2016 IEEE 28th International Conference on Tools with Artificial Intelligence (ICTAI 2016)

**San Jose, California, USA
6-8 November 2016**

Pages 1-576



**IEEE Catalog Number: CFP16091-POD
ISBN: 978-1-5090-4460-3**

**Copyright © 2016 by the Institute of Electrical and Electronics Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP16091-POD
ISBN (Print-On-Demand):	978-1-5090-4460-3
ISBN (Online):	978-1-5090-4459-7
ISSN:	1082-3409

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

2016 IEEE 28th International Conference on Tools with Artificial Intelligence

ICTAI 2016

Table of Contents

Message from the General Chair.....	xix
Message from the Program Co-Chairs.....	xx
Message from the SAT/CSP Track Chair.....	xxi
Organizing Committees.....	xxii
Keynotes.....	xxv

Session 1.1: Agents and Multi-Agent Systems

New Bio-Inspired Coordination Strategies for Multi-Agent Systems Applied to Foraging Tasks	1
<i>Danielli A. Lima and Gina M.B. Oliveira</i>	
Cooperative Multiagent Patrolling for Detecting Multiple Illegal Actions under Uncertainty	9
<i>Aur�lie Beynier</i>	
Strategy Inference in Multi-Agent Multi-Team Scenarios	17
<i>D. Michael Franklin and Xiaolin Hu</i>	
A Collaborative Multiagent Framework Based on Online Risk-Aware Planning and Decision-Making	25
<i>Iv�n Palomares, Ronan Killough, Kim Bauters, Weiru Liu, and Jun Hong</i>	
Effective Task Allocation by Enhancing Divisional Cooperation in Multi-Agent Continuous Patrolling Tasks	33
<i>Ayumi Sugiyama, Vourchteang Sea, and Toshiharu Sugawara</i>	
WAVE: Wave Agents in a Virtual Environment - A Proof of Concept Applied to Longitudinal Distance Regulation in Platoon Control	41
<i>Baudouin Dafflon, Maxime Gu�riaux, and Franck Gechter</i>	

Session 1.2: Recommender Systems

Joint Geo-Spatial Preference and Pairwise Ranking for Point-of-Interest Recommendation	46
<i>Fajie Yuan, Joemon M. Jose, Guibing Guo, Long Chen, Haitao Yu, and Rami S. Alkhaldeh</i>	
A First Step toward Recommendations Based on the Memory of Users	54
<i>Florian Marchal, Sylvain Castagnos, and Anne Boyer</i>	
Preference-Like Score to Cope with Cold-Start User in Recommender Systems	62
<i>Cricia Z. Felício, Klérisson V.R. Paixão, Celia A.Z. Barcelos, and Philippe Preux</i>	
VP-Rec: A Hybrid Image Recommender Using Visual Perception Network	70
<i>Cricia Z. Felício, Claudianne M.M. De Almeida, Guilherme Alves, Fabíola S.F. Pereira, Klérisson V.R. Paixão, Sandra De Amo, and Celia A.Z. Barcelos</i>	
On Information Fusion in Recommender Systems Based on Dempster-Shafer Theory	78
<i>Van-Doan Nguyen and Van-Nam Huynh</i>	
Noise-Averse Combination Method	86
<i>Van-Doan Nguyen and Van-Nam Huynh</i>	

Session 1.3: AI Planning and Scheduling

Multiple-Origin-Multiple-Destination Path Finding with Minimal Arc Usage: Complexity and Models	91
<i>Roman Barták, Agostino Dovier, and Neng-Fa Zhou</i>	
Formal Performance Guarantees for Behavior-Based Localization Missions	98
<i>D.M. Lyons, R.C. Arkin, S. Jiang, M. O'Brien, F. Tang, and P. Tang</i>	
Optimizing Routing Rules Space through Traffic Engineering Based on Ant Colony Algorithm in Software Defined Network	106
<i>Chuangeng Gao, Hua Wang, Linbo Zhai, Shanwen Yi, and Xibo Yao</i>	
HTN Planning Approach Using Fully Instantiated Problems	113
<i>Abdeldjalil Ramoul, Damien Pellier, Humbert Fiorino, and Sylvie Pesty</i>	
Real-Time Scheduling of Reconfigurable Battery-Powered Multi-Core Platforms	121
<i>Aymen Gammoudi, Adel Benzina, Mohamed Khalgui, and Daniel Chillet</i>	
Expressing User Intent in Planning by Instance Rewriting	130
<i>Amol D. Mali</i>	

Session 1.4: AI Planning Methods

Improving Navigation in Critique Graphs	134
<i>Begum Genc and Barry O'Sullivan</i>	
Representative Itemset Mining	142
<i>Hong Huang and Barry O'Sullivan</i>	
Decentralized and Fair Multilateral Negotiation	149
<i>Ndeye Arame Diago, Samir Aknine, Onn Shehory, Souhila Arib, Romain Cailliere, and Mbaye Sene</i>	
The Temporal Bin Packing Problem: An Application to Workload Management in Data Centres	157
<i>Milan De Cauwer, Deepak Mehta, and Barry O'Sullivan</i>	
Modifying Keyboard Layout to Reduce Finger-Travel Distance	165
<i>Nan Yang and Amol D. Mali</i>	
Multi-Robot Patrolling in Wireless Sensor Networks Using Bounded Cycle Coverage	169
<i>Mihai-Ioan Popescu, Hervé Rivano, and Olivier Simonin</i>	

Session 1.5: AI Learning I

Semi-Supervised Pattern Based Algorithm for Arabic Relation Extraction	177
<i>Injy Sarhan, Yasser El-Sonbaty, and Mohamed Abou El-Nasr</i>	
Deep Learning and Ensemble Methods for Domain Adaptation	184
<i>Debora Nozza, Elisabetta Fersini, and Enza Messina</i>	
On Learning Abstract Argumentation Graphs from Bivalent Statement Labellings	190
<i>Régis Riveret</i>	
Topic Discovery from Heterogeneous Texts	196
<i>Jipeng Qiang, Ping Chen, Wei Ding, Tong Wang, Fei Xie, and Xindong Wu</i>	
Incremental Learning from Scratch Using Analogical Reasoning	204
<i>Vincent Letard, Sophie Rosset, and Gabriel Illouz</i>	
From Set Constraint Models to SAT Instances	212
<i>Frédéric Lardeux and Eric Monfroy</i>	

Session 1.6: SAT/CSP Strategies

An Interval Filtering Operator for Upper and Lower Bounding in Constrained Global Optimization	218
<i>Olivier Sans, Remi Coletta, and Gilles Trombettoni</i>	
Constraint Decomposition Based on Tractable Properties	226
<i>Achref El Mouelhi</i>	

From Set Constraint Models to SAT Instances	231
<i>Frédéric Lardeux and Eric Monfroy</i>	
Solving the Multi-Mode Resource-Constrained Project Scheduling Problem with SMT	239
<i>Miquel Bofill, Jordi Coll, Josep Suy, and Mateu Villaret</i>	
Evolving SMT Strategies	247
<i>Nicolás Gálvez Ramírez, Youssef Hamadi, Eric Monfroy, and Frédéric Saubion</i>	
A SAT-Based Approach for Enumerating Interesting Patterns from Uncertain Data	255
<i>Imen Ouled Dlala, Said Jabbour, Badran Raddaoui, Lakhdar Sais, and Boutheina Ben Yaghlane</i>	

Session 1.7: AI Learning II

Learning User Embedding Representation for Gender Prediction	263
<i>Li Chen, Tiejun Qian, Peisong Zhu, and Zhenni You</i>	
The Bayesian Linear Information Filtering Problem	270
<i>Bangrui Chen and Peter I. Frazier</i>	
No-Fringe U-Tree: An Optimized Algorithm for Reinforcement Learning	278
<i>Feng Liu, Xin Jin, and Yunfeng She</i>	
An Investigation of Transfer Learning and Traditional Machine Learning Algorithms	283
<i>Karl R. Weiss and Taghi M. Khoshgoftaar</i>	
A Virtual Character Learns to Defend Himself in Sword Fighting Based on Q-Network	291
<i>Yumeng Wang, Er Li, Feng Wang, and Bo Xu</i>	
A Novel Transfer Learning Method Based on Common Space Mapping and Weighted Domain Matching	299
<i>Ru-Ze Liang, Wei Xie, Weizhi Li, Hongqi Wang, Jim Jing-Yan Wang, and Lisa Taylor</i>	

Session 1.8: AI Modeling I

A Hybrid Heuristic Value Iteration Algorithm for POMDP	304
<i>Feng Liu, Xia Hua, and Xin Jin</i>	
A Probabilistic Argumentation Engine	311
<i>Nguyen Duy Hung</i>	
Computationally Viable Handling of Beliefs in Arguments for Persuasion	319
<i>Emmanuel Hadoux and Anthony Hunter</i>	
Improving Exact Solution Counting for Decomposition Methods	327
<i>Philippe Jégou, Hanan Kanso, and Cyril Terrioux</i>	

Efficient Distributed Skyline over Imperfect Data Modeled by the Evidence Theory	335
<i>Sayda Elmi, Mohamed Anis Bach Tobji, Allel Hadjali, and Boutheina Ben Yaghlane</i>	
New Bounds for Large Container Relocation Instances Using Grasp	343
<i>Camila Diaz and Maria Cristina Riff</i>	

Session 1.9: Clustering Algorithms

Reframing in Clustering	350
<i>Md Naimul Hoque, Chowdhury Farhan Ahmed, Nicolas Lachiche, Carson K. Leung, and Hao Zhang</i>	
LDS vs FPT Method for Cluster Deletion	355
<i>Amel Mhamdi and Wady Naanaa</i>	
Online Clustering for Topic Detection in Social Data Streams	362
<i>Carmela Comito, Clara Pizzuti, and Nicola Procopio</i>	
Spatio-Temporal Clustering Approach for Detecting Functional Regions in Cities	370
<i>Haytham Assem, Lei Xu, Teodora Sandra Buda, and Declan O'Sullivan</i>	
Clustering-Based Query Routing in Cooperative Semi-Structured Peer to Peer Networks	378
<i>Rami S. Alkhaldeh, Joemon M. Jose, and Deepak P</i>	
Clustering with Quantitative User Preferences on Attributes	383
<i>Adnan El Moussawi, Ahmed Cheriat, Arnaud Giacometti, Nicolas Labroche, and Arnaud Soulet</i>	

Session 2.1: Classification Tools

Enhancing Classification of Ecological Momentary Assessment Data Using Bagging and Boosting	388
<i>Gerasimos Spanakis, Gerhard Weiss, and Anne Roefs</i>	
Combining Visual and Acoustic Features for Bird Species Classification	396
<i>Loris Nanni, Yandre M.G. Costa, Diego R. Lucio, Carlos N. Silla Jr., and Sheryl Brahnam</i>	
A Harmonic Mean Linear Discriminant Analysis for Robust Image Classification	402
<i>Shuai Zheng, Feiping Nie, Chris Ding, and Heng Huang</i>	
Improving Deep Belief Networks via Delta Rule for Sentiment Classification	410
<i>Yong Jin, Harry Zhang, and Donglei Du</i>	

Submersible Motor Pump Fault Diagnosis System: A Comparative Study of Classification Methods	415
<i>Thiago Oliveira-Santos, Thomas W. Rauber, Flavio M. Varejão, Lucas Martinuzzo, Willian Oliveira, Marcos Pellegrini Ribeiro, and Alexandre Rodrigues</i>	

A Shapelet Learning Method for Time Series Classification	423
<i>Yi Yang, Qilin Deng, Furao Shen, Jinxi Zhao, and Chaomin Luo</i>	

Session 2.2: SAT/CSP Methods II

Sets of Contrasting Rules: A Supervised Descriptive Rule Induction Pattern for Identification of Trigger Factors	431
<i>Marharyta Aleksandrova, Armelle Brun, Oleg Chertov, and Anne Boyer</i>	

Non-Portfolio Approaches for Distributed Maximum Satisfiability	436
<i>Miguel Terra-Neves, Inês Lynce, and Vasco Manquinho</i>	

An Algorithm to Compute Minimal Unsatisfiable Subsets for a Decidable Fragment of First-Order Formulas	444
<i>Huiyuan Xie and Jie Luo</i>	

Learning Nobetter Clauses in Max-SAT Branch and Bound Solvers	452
<i>André Abramé and Djamal Habet</i>	

An Approach to Planning Multi-Phase Projects	460
<i>Amol D. Mali</i>	

Parallelizing Partial MUS Enumeration	464
<i>Wenting Zhao and Mark H. Liffiton</i>	

Session 2.3: Neural Network and Learning Methods

Classification of Apple Tree Disorders Using Convolutional Neural Networks	472
<i>Lucas G. Nachtigall, Ricardo M. Araujo, and Gilmar R. Nachtigall</i>	

Visual Orientation Inhomogeneity Based Convolutional Neural Networks	477
<i>Sheng-Hua Zhong, Jiaxin Wu, Yingying Zhu, Peiqi Liu, Jianmin Jiang, and Yan Liu</i>	

Face Hallucination via Convolution Neural Network	485
<i>Hui Nie, Yao Lu, and Javaria Ikram</i>	

Automatic Soccer Video Event Detection Based on a Deep Neural Network Combined CNN and RNN	490
<i>Haohao Jiang, Yao Lu, and Jing Xue</i>	

Mongolian Named Entity Recognition with Bidirectional Recurrent Neural Networks	495
<i>Weihua Wang, Feilong Bao, and Guanglai Gao</i>	

Session 2.4: AI Planning Tools

Probabilistic Planning for Multiple Stocks of Financial Markets	501
<i>Augusto A.B. Branquinho, Carlos R. Lopes, and Augusto C.E. Baffa</i>	
Predicting Gene Functional Interactions with Semantic Word Embedding	509
<i>Arpita Roy and Shimei Pan</i>	
Linear Logic as a Tool for Weak Soundness Verification for Interorganizational Workflow Processes	514
<i>Lígia Maria Soares Passos and Stéphane Julia</i>	
Temporal Planning with Extended Timed Automata	522
<i>Christine Largouët, Omar Krichen, and Yulong Zhao</i>	
SAGL: A New Heuristic for Multi-Robot Routing with Complex Tasks	530
<i>Hong Xu, T.K. Satish Kumar, Dylan Johnke, Nora Ayanian, and Sven Koenig</i>	
Identifying Domain-Independent Normative Indirect Conflicts	536
<i>Jéssica Soares Dos Santos and Viviane Torres Da Silva</i>	

Session 2.5: Evolutionary and Genetic Algorithms

Evolutionary Practice Problems Generation: Design Guidelines	544
<i>Alessio Gaspar, A.T.M. Golam Bari, Amruth N. Kumar, Anthony Bucci, R. Paul Wiegand, and Jennifer L. Albert</i>	
A Novel Density-Based Approach for Instance Selection	549
<i>Joel Luis Carbonera and Mara Abel</i>	
An Evolutionary Approach for Predicting the Opponent's Deadline and Reserve Points in Multi-Issue Negotiation	557
<i>Sadok Maamer, Nahla Ben Amor, and Raouia Ayachi</i>	
A Two-Dimensional Genetic Algorithm for Identifying Overlapping Communities in Dynamic Networks	565
<i>Qi Wang and Junyuan Xie</i>	
A Genetic Algorithm Approach for Clustering Large Data Sets	570
<i>Diego Luchi, Alexandre Rodrigues, Flávio Miguel Varejão, and Willian Santos</i>	
Asynchronous Evolution of Data Mining Workflow Schemes by Strongly Typed Genetic Programming	577
<i>Martin Pilát, Tomáš Křen, and Roman Neruda</i>	

Session 2.6: AI in Social Networks

Node-Grained Incremental Community Detection for Streaming Networks	585
<i>Siwen Yin, Shizhan Chen, Zhiyong Feng, Keman Huang, Dongxiao He, Peng Zhao, and Michael Ying Yang</i>	
Novel Features for Web Spam Detection	593
<i>Santosh Kumar, Xiaoying Gao, and Ian Welch</i>	
Web Page Segmentation and Its Application for Web Information Crawling	598
<i>Hanyang Feng, Wenzhe Zhang, Hesheng Wu, and Chong-Jun Wang</i>	
Link Prediction in Social Networks with Edge Aging	606
<i>Ricky Laishram, Kishan Mehrotra, and Chilukuri K. Mohan</i>	
Finding Rising Stars in Heterogeneous Social Networks	614
<i>Pivithuru Wijegunawardana, Kishan Mehrotra, and Chilukuri Mohan</i>	
Learning to Summarize Web Documents Using Social Information	619
<i>Minh-Tien Nguyen, Duc-Vu Tran, Chien-Xuan Tran, and Minh-Le Nguyen</i>	

Session 2.7: Learning Driven Tools

Satellite Observing Mission Scheduling Method Based on Case-Based Learning and a Genetic Algorithm	627
<i>Chen Wang, Hao Chen, Baorong Zhai, Jun Li, and Luo Chen</i>	
Building Document Treatment Chains Using Reinforcement Learning and Intuitive Feedback	635
<i>Esther Nicart, Bruno Zanuttini, Hugo Gilbert, Bruno Grilhères, and Frédéric Praca</i>	
Collaborative Decision in Multi-Agent Learning of Action Models	640
<i>Christophe Rodrigues, Henry Soldano, Gauvain Bourgne, and Céline Rouveirol</i>	
Inference of High-Order Epistatic Interactions Using Generalized Relevance Learning Vector Quantization with Parametric Adjustment	648
<i>Flavia Roberta Barbosa De Araujo and Katia Silva Guimaraes</i>	
Learning Sequential and Parallel Runtime Distributions for Randomized Algorithms	655
<i>Alejandro Arbelaez, Charlotte Truchet, and Barry O'Sullivan</i>	
An Evaluation of Different Evolutionary Approaches Applied in the Process of Automatic Transcription of Music Scores into Tablatures	663
<i>João Victor Ramos, André Stylianos Ramos, Carlos N. Silla Jr., and Danilo Sipoli Sanches</i>	

Session 2.8: Planning Tools and Applications

A Constructivist Approach for a Self-Adaptive Decision-Making System: Application to Road Traffic Control	670
<i>Maxime Guériaux, Frédéric Armetta, Salima Hassas, Romain Billot, and Nour-Eddin El Faouzi</i>	
Incremental and Adaptive Multi-Robot Mapping for Human Scene Observation	678
<i>Jonathan Cohen, Laetitia Matignon, and Olivier Simonin</i>	
Random Walk in Large Real-World Graphs for Finding Smaller Vertex Cover	686
<i>Zongjie Ma, Yi Fan, Kaile Su, Chengqian Li, and Abdul Sattar</i>	
A Hybrid PSO Algorithm Based Flight Path Optimization for Multiple Agricultural UAVs	691
<i>Xiaohui Li, Yi Zhao, Jie Zhang, and Yuan Dong</i>	
Adversarial Intention Recognition as Inverse Game-Theoretic Planning for Threat Assessment	698
<i>Nicolas Le Guillarme, Abdel-Allah Mouaddib, Sylvain Gatepaille, and Amandine Bellenger</i>	
Fast and Robust Object Tracking with Adaptive Detection	706
<i>Sushil Pratap Bharati, Soumyaroop Nandi, Yuanwei Wu, Yao Sui, and Guanghui Wang</i>	

Session 2.9: AI Modeling and Decision-Making

Winner Determination in Multi-Objective Combinatorial Reverse Auctions	714
<i>Shubhashis Kumar Shil and Samira Sadaoui</i>	
Comparing Two Representations for Evolving Micro in 3D RTS Games	722
<i>Siming Liu and Sushil J. Louis</i>	
A Thermodynamic and Biologically Inspired Kernel Similarity Method	730
<i>Alya Slimene and Ezzedine Zagrouba</i>	
An Automatic and Dynamic Student Modeling Approach for Adaptive and Intelligent Educational Systems Using Ontologies and Bayesian Networks	738
<i>Hiran Nonato M. Ferreira, Taffarel Brant-Ribeiro, Rafael D. Araújo, Fabiano A. Dorça, and Renan G. Cattelan</i>	
A Reactive Agent-Based Decision-Making System for SBCE	746
<i>Baudouin Dafflon, Mohammed Taha Elhariri Essamlali, Aicha Sekhari, and Abdelaziz Bouras</i>	
Deploying Agents for Monitoring and Notification of Wireless Sensor Networks	754
<i>Ala' Khalifeh, Salem Al-Agtash, Rabi Tanash, and Mahmoud AlQudah</i>	

Session 3.1: Stochastic Petri Net Modeling

An Intelligent SPN Dialogue Model for Extracting Non-Measurable Pathological Symptoms	758
<i>Stavros Mallios and Nikolaos Bourbakis</i>	
An SPN Modeling of the H-IRW Getting-Up Task	766
<i>Iosif Papadakis Ktistakis and Nikolaos Bourbakis</i>	
A Human-Like SPN Methodology for Deep Understanding of Technical Documents	772
<i>N. Bourbakis, A. Psarologou, G. Rematska, and A. Esposito</i>	
A Two Formal Languages Based Model for Representing Human Activities	779
<i>A. Angeleas and N. Bourbakis</i>	
Predicting Medical Provider Specialties to Detect Anomalous Insurance Claims	784
<i>Richard A. Bauder, Taghi M. Khoshgoftaar, Aaron Richter, and Matthew Herland</i>	
Effects of Emotional Visual Scenes on the Ability to Decode Emotional Melodies	791
<i>Anna Esposito, Antonietta M. Esposito, Marilena Esposito, Maria Teresa Riviello, Alessandro Vinciarelli, and Nikolaos Bourbakis</i>	

Session 3.2: Reasoning, Question and Answering Systems

A Fault-Response Approach for Battery Pack by Reconfigurable Topology Using Agents	799
<i>Feng Yang, Franck Gechter, Robin Roche, Abderrafaa Koukam, and Fei Gao</i>	
Recommending Personalized Asset Investments through Case-Based Reasoning: The SMARTFASI System	804
<i>Giorgio Leonardi, Luigi Portinale, Paolo Artusio, and Marco Valsania</i>	
Generating Answer Sentences in Question Answering Systems	812
<i>Rivindu Perera and Parma Nand</i>	
SelQA: A New Benchmark for Selection-Based Question Answering	820
<i>Tomasz Jurczyk, Michael Zhai, and Jinho D. Choi</i>	
User-Defined Difficulty Levels for Automated Question Generation	828
<i>Rahul Singhal, Shubham Goyal, and Martin Henz</i>	
Aspect-Based Helpfulness Prediction for Online Product Reviews	836
<i>Yinfei Yang, Cen Chen, and Forrest Sheng Bao</i>	

Session 3.3: Documents Processing

Open Domain Atomic Event Extraction via Double Propagation for Chinese Text	844
<i>Rui Sun, Sheng Guo, and Donghong Ji</i>	
Robust Word-Network Topic Model for Short Texts	852
<i>Fei Wang, Rui Liu, Yuan Zuo, Hui Zhang, He Zhang, and Junjie Wu</i>	
Expanding Science and Technology Thesauri from Bibliographic Datasets Using Word Embedding	857
<i>Takahiro Kawamura, Kouji Kozaki, Tatsuya Kushida, Katsutaro Watanabe, and Katsuji Matsumura</i>	
Biterm Pseudo Document Topic Model for Short Text	865
<i>Lan Jiang, Hengyang Lu, Ming Xu, and Chongjun Wang</i>	
Lexicalizing Linked Data towards a Human Friendly Web of Data	873
<i>Rivindu Perera and Parma Nand</i>	
Semantic Information Retrieval: A Comparative Experimental Study of NLP Tools and Language Resources for Arabic	879
<i>Nadia Soudani, Ibrahim Bounhas, and Yahya Slimani</i>	

Session 3.4: Learning Techniques and Applications

Model and Combinatorial Optimization Methods for Tactical Planning in Closed-Loop Supply Chains	888
<i>Pierre Desport, Frédéric Lardeux, David Lesaint, Anne Liret, Carla Di Cairano-Gilfedder, and Gilbert Owusu</i>	
Learning Markov Blanket Bayesian Network for Big Data in MapReduce	896
<i>Yuxin Che, Shaohui Hong, Defu Zhang, and Liming Zhang</i>	
Learning to Speed Up Evolutionary Content Generation in Physics-Based Puzzle Games	901
<i>Leonardo T. Pereira, Claudio Toledo, Lucas N. Ferreira, and Levi H.S. Lelis</i>	
An Incremental Feature Extraction Framework for Referable Diabetic Retinopathy Detection	908
<i>Jay Nandy, Wynne Hsu, and Mong Li Lee</i>	
Fire Detection on Unconstrained Videos Using Color-Aware Spatial Modeling and Motion Flow	913
<i>Letricia P.S. Avalhais, Jose Rodrigues-Jr., and Agma J.M. Traina</i>	

Session 3.5: Optimization Tools

Maximizing Network Utilization for SDN Based on Particle Swarm Optimization	921
<i>Xibo Yao, Hua Wang, Chuangen Gao, and Shanwen Yi</i>	
A Probabilistic Greedy Search Value Iteration Algorithm for POMDP	926
<i>Feng Liu and Zebang Song</i>	
Complexity Results in Optimistic/Pessimistic Preference Reasoning	930
<i>Christian Bessiere, Remi Coletta, Gaelle Hisler, and Anastasia Paparrizou</i>	
A Comparison between Two Optimisation Alternatives for Mapping in Wireless Network on Chip	938
<i>Maribell Sacanamboy, Luis Quesada, Freddy Bolanos, Alvaro Bernal, and Barry O'Sullivan</i>	
Privacy-Driven Electricity Group Demand Response in Smart Cities Using Particle Swarm Optimization	946
<i>Miltiadis Alamaniotis, Lefteri H. Tsoukalas, and Mark Buckner</i>	

Session 3.6: Data Mining

Improving NetFeatureMap-Based Representation through Frequent Pattern Mining in a Specialized Database	954
<i>Valquíria Aparecida Rosa Duarte and Rita Maria Silva Julia</i>	
Itemset Mining with Penalties	962
<i>Said Jabbour, Souhila Kaci, Lakhdar Sais, and Yakoub Salhi</i>	
DISVMs: Fast SVMs Training on Large-Scale Data Sets	967
<i>Lijuan Cui, Changjian Wang, Ziyang Li, and Yuxing Peng</i>	
Looking Inside Literal Blocks: Towards Mining More Promising Learnt Clauses in SAT Solving	972
<i>Tomohiro Sonobe</i>	
An Efficient Approach for Mining Frequent Patterns over Uncertain Data Streams	980
<i>Md. Badi-Uz-Zaman Shajib, Md. Samiullah, Chowdhury Farhan Ahmed, Carson K. Leung, and Adam G.M. Pazdor</i>	
A Fast Manifold Learning Algorithm for Dimensionality Reduction	985
<i>Yu Liang, Furao Shen, Jinxi Zhao, and Yi Yang</i>	

Session 3.7: Classification Methods II

Handling Concept Drifts Using Dynamic Selection of Classifiers	989
<i>Paulo R. Lisboa De Almeida, Luiz S. Oliveira, Alceu De Souza Britto Jr., and Robert Sabourin</i>	
Topic Model Based Multi-Label Classification	996
<i>Divya Padmanabhan, Satyanath Bhat, Shirish Shevade, and Y. Narahari</i>	
Kernel Two Dimensional Subspace for Image Set Classification	1004
<i>Bernardo B. Gatto, Waldir S.S. Junior, Eulanda M, and Dos Santos</i>	
Combining Statistics-Based and CNN-Based Information for Sentence Classification	1012
<i>Lang Zhining, Gu Xiaozhuo, Zhou Quan, and Xu Taizhong</i>	
Transfer Learning by Linking Similar Feature Clusters for Sentiment Classification	1019
<i>Wenjie Zhang, Hui Zhang, Deqing Wang, Rui Liu, He Zhang, Xianlin Jiang, and Yong Chen</i>	
Cube-CNN-SVM: A Novel Hyperspectral Image Classification Method	1027
<i>Jiabing Leng, Tao Li, Gang Bai, Qiankun Dong, and Han Dong</i>	

Session 3.8: Documents Processing II

NEREA: Named Entity Recognition and Disambiguation Exploiting Local Document Repositories	1035
<i>Ángel L. Garrido, Sergio Ilarri, Susana Sangiao, Adrian Gañán, Alejandro Bean, and Óscar Cardiel</i>	
Applying Semantic Similarity to Phrase Pivot Translation	1043
<i>Hai-Long Trieu and Le-Minh Nguyen</i>	
Time Evolution of Writing Styles in Romanian Language	1048
<i>Daniela Gifu, Mihai Dascalu, Stefan Trausan-Matu, and Laura K. Allen</i>	
A System to Convey the Emotional Content of Text Using a Humanoid Robot	1055
<i>Peter Sylvester and David Claveau</i>	
Analyzing and Preventing Bias in Text-Based Personal Trait Prediction Algorithms	1060
<i>Işil Doğa Yakut Kiliç and Shimei Pan</i>	
Introducing Supplemental Context for Word Sense Disambiguation	1068
<i>Alan E. Black and Rosina O. Weber</i>	

Session 3.9: Ontologies

RakSOR: Ranking of Ontology Reasoners Based on Predicted Performances	1076
<i>Nourhène Alaya, Sadok Ben Yahia, and Myriam Lamolle</i>	
An Ontology-Based Conceptual Framework to Improve Rock Data Quality in Reservoir Models	1084
<i>Luan Fonseca Garcia, Vinícius Medeiros Gracioli, Luiz Fernando De Ros, and Mara Abel</i>	
Textual Ontology and Visual Features Based Search for a Paleontology Digital Library	1089
<i>Yang Tian, Ranjith Sompalli, Guanghui Wang, and Bo Luo</i>	
Rewriting Minimisations for Efficient Ontology-Based Query Answering	1095
<i>Tassos Venetis, Giorgos Stoilos, and Vasilis Vassalos</i>	

Author Index