

2013 IEEE 25th International Conference on Tools with Artificial Intelligence

(ICTAI 2013)

**Herndon, Virginia, USA
4-6 November 2013**

Pages 1-539



IEEE Catalog Number: CFP13091-POD
ISBN: 978-1-4799-2973-3

2013 IEEE 25th International Conference on Tools with Artificial Intelligence

ICTAI 2013

Table of Contents

ICTAI 2013 General Chair's Message.....	xvii
ICTAI 2013 Program Chair's Message.....	xviii
ICTAI 2013 Conference Committees.....	xix
ICTAI 2013 Reviewers.....	xxi
Special Track on SAT and CSP Technologies	
Foreword.....	xxv
Special Track on SAT and CSP Technologies	
Organizers.....	xxvi
Special Track on SAT and CSP Technologies	
Additional Reviewers	xxvii

AI Foundations

An Automatic Algorithm Selection Approach for Planning	1
<i>Mauro Vallati, Lukáš Chrpa, and Diane Kitchin</i>	
Modulo Based CNF Encoding of Cardinality Constraints and Its Application to MaxSAT Solvers	9
<i>Toru Ogawa, Yangyang Liu, Ryuzo Hasegawa, Miyuki Koshimura, and Hiroshi Fujita</i>	
Learnability of Specific Structural Patterns of Planning Problems	18
<i>Lukáš Chrpa, Mauro Vallati, and Hugh Osborne</i>	
HNNP - A Hybrid Neural Network Plait for Improving Image Classification with Additional Side Information	24
<i>Ruth Janning, Carlotta Schatten, and Lars Schmidt-Thieme</i>	
On Finding Approximate Solutions of Qualitative Constraint Networks	30
<i>Jason Jingshi Li and Sanjiang Li</i>	

Three-Valued Possibilistic Networks: Semantics & Inference	38
<i>Salem Benferhat, Jérôme Delobelle, and Karim Tabia</i>	
On the Propagation Strength of SAT Encodings for Qualitative Temporal Reasoning	46
<i>Matthias Westphal, Julien Hué, and Stefan Wöelfl</i>	
Part-Whole Relations as Products of Metric Spaces	55
<i>Sandro Rama Fiorini and Mara Abel</i>	
ICAMF: Improved Context-Aware Matrix Factorization for Collaborative Filtering	63
<i>Jiyun Li, Pengcheng Feng, and Juntao Lv</i>	
Optimized Deep Learning Architectures with Fast Matrix Operation Kernels on Parallel Platform	71
<i>Ying Zhang and Saizheng Zhang</i>	
Error Allowing Minimax: Getting over Indifference	79
<i>Florian Wisser</i>	
Fast Strong Planning for FOND Problems with Multi-root Directed Acyclic Graphs	87
<i>Jicheng Fu, Andres Calderon Jaramillo, Vincent Ng, Farokh B. Bastani, and I-Ling Yen</i>	
A Parallel Bottom-Up Resolution Algorithm Using Cilk	95
<i>Reza Basseda and Rezaul Alam Chowdhury</i>	

AI in Domain-Specific Applications

Characterization of Extended and Simplified Intelligent Water Drop (SIWD) Approaches and Their Comparison to the Intelligent Water Drop (IWD) Approach	101
<i>Jeremy Straub and Eunjin Kim</i>	
A Spin-Glass Model Based Local Community Detection Method in Social Networks	108
<i>Lei Pan, Chongjun Wang, and Junyuan Xie</i>	
Study and Development of Support Tool with Blinks for Physically Handicapped Children	116
<i>Ippei Torii, Kaoruko Ohtani, Takahito Niwa, and Naohiro Ishii</i>	
Detecting Impolite Crawler by Using Time Series Analysis	123
<i>Zhiqian Chen and Wenya Feng</i>	
Migration Cost-Sensitive Load Balancing for Social Networked Multiagent Systems with Communities	127
<i>Wanyuan Wang and Yichuan Jiang</i>	

Which Users Reply to and Interact with Twitter Social Bots?	135
<i>Randall Wald, Taghi M. Khoshgoftaar, Amri Napolitano, and Chris Sumner</i>	
A Computer-Aided Spectroscopic System for Early Diagnosis of Melanoma	145
<i>Lin Li, Qizhi Zhang, Yihua Ding, Huabei Jiang, Bruce T. Thiers, and James Z. Wang</i>	
Learning Occupancy in Single Person Offices with Mixtures of Multi-lag	
Markov Chains	151
<i>Carlo Manna, Damien Fay, Kenneth N. Brown, and Nic Wilson</i>	
An Intelligent System for Prediction of School Dropout Risk Group in Higher	
Education Classroom Based on Artificial Neural Networks	159
<i>Valquíria Ribeiro De Carvalho Martinho, Clodoaldo Nunes, and Carlos Roberto Minussi</i>	
Dynamic Constraint Reasoning in Smart Environments	167
<i>Viktoriya Degeler and Alexander Lazovik</i>	
Symbolic Anomaly Detection and Assessment Using Growing Neural Gas	175
<i>Matthew Paisner, Michael T. Cox, and Don Perlis</i>	
Improving the Statistical Arbitrage Strategy in Intraday Trading by Combining	
Extreme Learning Machine and Support Vector Regression with Linear	
Regression Models	182
<i>Jarley Palmeira Nóbrega and Adriano Lorena Inácio De Oliveira</i>	
Visual Interpretation of Events in Petroleum Geology	189
<i>Joel Luis Carbonera, Mara Abel, Claiton M. Scherer, and Ariane K. Bernardes</i>	
Predicting the Next Scenic Spot a User Will Browse on a Tourism Website	
Based on Markov Prediction Model	195
<i>Yifan Shi, Yimin Wen, Zhigang Fan, and Yuqing Miao</i>	

AI in Computer Systems

Particle Swarm Optimization Approach with Parameter-Wise Hill-Climbing	
Heuristic for Task Allocation of Workflow Applications on the Cloud	201
<i>Simone A. Ludwig</i>	
Expert System Simulation of Hardware	207
<i>Lawrence Leinweber, Bhanu Singh, and Christos Papachristou</i>	
A Planning Tool Supporting the Deployment of Cloud Applications	213
<i>Tudor A. Lascu, Jacopo Mauro, and Gianluigi Zavattaro</i>	
An Empirical Study of Robustness of Network Centrality Scores in Various	
Networks and Conditions	221
<i>Matthew Herland, Pablo Pastran, and Xingquan Zhu</i>	
On the Influence of the Number of Objectives in Evolutionary Autonomous	
Software Agent Testing	229
<i>Sabrine Kalboussi, Slim Bechikh, Marouane Kessentini, and Lamjed Ben Said</i>	

A Shape Recognition Method Based on Graph- and Line-Contexts	235
<i>Hui Wei and Jinwen Xiao</i>	
Finding Distinctive Shape Features for Automatic Hematoma Classification in Head CT Images from Traumatic Brain Injuries	242
<i>Tianxia Gong, Nengli Lim, Li Cheng, Hwee Kuan Lee, Bolan Su, Chew Lim Tan, Shimiao Li, C.C. Tchoyoson Lim, Boon Chuan Pang, and Cheng Kiang Lee</i>	
A Line-Context Based Object Recognition Method	250
<i>Hui Wei and Lei Wu</i>	
Contextual Image Segmentation Based on the Potts Model	256
<i>Nara M. Portela, George D.C. Cavalcanti, and Tsang Ing Ren</i>	
Visual Scenes Categorization Using a Flexible Hierarchical Mixture Model Supporting Users Ontology	262
<i>Taoufik Bdiri, Nizar Bouguila, and Djemel Ziou</i>	
A Generic Framework for Behavior Recognition of Complex Activities in Robotics	268
<i>Kai Haeussermann, Oliver Zweigle, and Paul Levi</i>	
A Framework for Bean-Shape Contour Extraction	276
<i>Qi Li</i>	
Using MaxSAT to Correct Errors in AES Key Schedule Images	284
<i>Xiaojuan Liao, Hui Zhang, Miyuki Koshimura, Hiroshi Fujita, and Ryuzo Hasegawa</i>	
A GA-Based Solution for the Combination Optimization in the Contour Formation	292
<i>Wei Hui, Liu Hang, and Tang Fuyu</i>	
Machine Learning for Android Malware Detection Using Permission and API Calls	300
<i>Naser Peiravian and Xingquan Zhu</i>	
Controller Synthesis for Safety Critical Planning	306
<i>Andrea Orlandini, Marco Suriano, Amedeo Cesta, and Alberto Finzi</i>	
Rectangular Shape Detection with an Application to License Plate Detection	314
<i>Qi Li and Yongyi Gong</i>	
Fully-Automated Instance Decomposition and Subplan Synthesis for Parallel Execution	322
<i>Amol D. Mali and Ravi Puthiyattil</i>	
Explanations and Relaxations for Policy Conflicts in Physical Access Control	330
<i>Fatih Turkmen, Simon Foley, Barry O'Sullivan, William Fitzgerald, Tarik Hadzic, Stylianos Basagiannis, and Menouer Boubekeur</i>	

NEFCIS: Neuro-fuzzy Concept Based Inference System for Specification Mining	337
<i>Arunprasath Shankar, Bhanu Pratap Singh, Francis Wolff, and Christos Papachristou</i>	

A Dynamic Multiobjective Evolutionary Algorithm for Multicast Routing Problem	344
<i>Marcos L.P. Bueno and Gina M.B. Oliveira</i>	

Machine Learning and Data Mining

A Rule-Based Hybrid Method for Anomaly Detection in Online-Social-Network Graphs	351
<i>Reza Hassanzadeh and Ruchi Nayak</i>	
Imbalanced Hypergraph Partitioning and Improvements for Consensus Clustering	358
<i>John Robert Yaros and Tomasz Imielinski</i>	
Aspect-Based Twitter Sentiment Classification	366
<i>Hsiang Hui Lek and Danny C.C. Poo</i>	
Stability of Filter- and Wrapper-Based Feature Subset Selection	374
<i>Randall Wald, Taghi M. Khoshgoftaar, and Amri Napolitano</i>	
A Review of Ensemble Classification for DNA Microarrays Data	381
<i>Taghi M. Khoshgoftaar, David J. Dittman, Randall Wald, and Wael Awada</i>	
Classifying Documents within Multiple Hierarchical Datasets Using Multi-task Learning	390
<i>Azad Naik, Anveshi Charuvaka, and Huzeifa Rangwala</i>	
Evolutionary Distance Metric Learning Approach to Semi-supervised Clustering with Neighbor Relations	398
<i>Ken-Ichi Fukui, Satoshi Ono, Taishi Megano, and Masayuki Numao</i>	
Factorized Decision Trees for Active Learning in Recommender Systems	404
<i>Rasoul Karimi, Martin Wistuba, Alexandros Nanopoulos, and Lars Schmidt-Thieme</i>	
An Intelligent Anomaly Detection and Reasoning Scheme for VM Live Migration via Cloud Data Mining	412
<i>Qiannan Zhang, Yafei Wu, Tian Huang, and Yongxin Zhu</i>	
Clustering and Selection Using Grouping Genetic Algorithms for Blockmodeling to Construct Neural Network Ensembles	420
<i>Evandro José Da Rocha E Silva, Teresa Bernarda Ludermir, and Leandro Maciel Almeida</i>	
How the Choice of Wrapper Learner and Performance Metric Affects Subset Evaluation	426
<i>Randall Wald, Taghi M. Khoshgoftaar, and Amri Napolitano</i>	

Hybrid Feature Selection and Weighting Method Based on Binary Particle Swarm Optimization	433
<i>Diogo S. Severo, Everson Veríssimo, George D.C. Cavalcanti, and Tsang Ing Ren</i>	
Should the Same Learners Be Used Both within Wrapper Feature Selection and for Building Classification Models?	439
<i>Randall Wald, Taghi M. Khoshgoftaar, and Amri Napolitano</i>	
Flexible Pattern Matching with Gap-Length and One-Off Conditions	446
<i>Dan Guo, Taining Xiang, Xuegang Hu, and Xindong Wu</i>	
Maximizing Classification Performance for Patient Response Datasets	454
<i>David J. Dittman, Taghi M. Khoshgoftaar, Randall Wald, and Amri Napolitano</i>	
A Novel Combination of Reasoners for Ontology Classification	463
<i>Changlong Wang and Zhiyong Feng</i>	
A Genetic Algorithm for Optimizing the Label Ordering in Multi-label Classifier Chains	469
<i>Eduardo Corrêa Goncalves, Alexandre Plastino, and Alex A. Freitas</i>	
Developments in Partitioning XML Documents by Content and Structure Based on Combining Multiple Clusterings	477
<i>Gianni Costa and Riccardo Ortale</i>	
Symmetry-Based Pruning in Itemset Mining	483
<i>Said Jabbour, Mehdi Khiari, Lakhdar Sais, Yakoub Salhi, and Karim Tabia</i>	
Accelerating One-Pass Clustering by Cluster Selection Racing	491
<i>Nicolas Labroche, Marcin Detyniecki, and Thomas Baerecke</i>	
Pairwise Optimization of Bayesian Classifiers for Multi-class Cost-Sensitive Learning	499
<i>Clément Charnay, Nicolas Lachiche, and Agnès Braud</i>	
A Parallel Algorithm for Bayesian Network Parameter Learning Based on Factor Graph	506
<i>Yue Zhao, Jungang Xu, and Yunjun Gao</i>	
Sampled Bayesian Network Classifiers for Class-Imbalance and Cost-Sensitive Learning	512
<i>Liangxiao Jiang, Chaoqun Li, Zhihua Cai, and Harry Zhang</i>	
Events Extraction and Aggregation for Open Source Intelligence: From Text to Knowledge	518
<i>Laurie Serrano, Maroua Bouzid, Thierry Charnois, Stephan Brunessaux, and Bruno Grilheres</i>	
An Algorithm for Mining Top K Influential Community Based Evolutionary Outliers in Temporal Dataset	524
<i>Yun Hu, Junyuan Xie, Chongjun Wang, and Zuojian Zhou</i>	

Active Preference Learning for Ranking Patterns	532
<i>Vladimir Dzyuba, Matthijs Van Leeuwen, Siegfried Nijssen, and Luc De Raedt</i>	
From Robots to Reinforcement Learning	540
<i>Tongchun Du, Michael T. Cox, Don Perlis, Jared Shamwell, and Tim Oates</i>	
Optimizing Dynamic Ensemble Selection Procedure by Evolutionary Extreme Learning Machines and a Noise Reduction Filter	546
<i>Tiago Pessoa Ferreira De Lima and Teresa Bernarda Ludermir</i>	
Learning Markov Networks with Context-Specific Independences	553
<i>Alejandro Edera, Federico Schlüter, and Facundo Bromberg</i>	
A Temporal Difference GNG-Based Approach for the State Space	
Quantization in Reinforcement Learning Environments	561
<i>Davi Carnauba De Lima Vieira, Paulo Jorge Leitao Adeodato, and Paulo Mauricio Goncalves Junior</i>	
Enhancing Classification Accuracy with the Help of Feature Maximization Metric	569
<i>Jean-Charles Lamirel</i>	
Attribute Weighted Value Difference Metric	575
<i>Chaoqun Li, Liangxiao Jiang, Hongwei Li, and Shasha Wang</i>	
Design Pattern Recognition by Using Adaptive Neuro Fuzzy Inference System	581
<i>Sultan Alhusain, Simon Coupland, Robert John, and Maria Kavanagh</i>	

Semantic Web, Reasoning and Learning Agents, and Cognitive Modeling

From Preferences over Arguments to Preferences over Attacks in Abstract Argumentation: A Comparative Study	588
<i>Claudette Cayrol and Marie-Christine Lagasquie-Schiex</i>	
Implementing Tabled Hypothetical Datalog	596
<i>Fernando Sáenz-Pérez</i>	
Encoding Local Correspondence in Topic Models	602
<i>Rochd El Mehdi, Quafafou Mohamed, and Aznag Mustapha</i>	
Goal-Driven Changes in Argumentation: A Theoretical Framework and a Tool	610
<i>Pierre Bisquert, Claudette Cayrol, Florence Dupin De Saint-Cyr, and Marie-Christine Lagasquie</i>	
An Axiomatic Approach for Persuasion Dialogs	618
<i>Leila Amgoud and Florence Dupin De Saint-Cyr</i>	
Adaptive and Personalised Robots - Learning from Users' Feedback	626
<i>Abir Beatrice Karami, Karim Sehaba, and Benoît Encelle</i>	
A Probabilistic Query Suggestion Approach without Using Query Logs	633
<i>Meher T. Shaikh, Maria S. Pera, and Yiu-Kai Ng</i>	

Network Layer-Oriented Task Allocation for Multiagent Systems in Undependable Multiplex Networks	640
<i>Yichuan Jiang, Yifeng Zhou, and Yunpeng Li</i>	
Recognizing User Preferences Based on Layered Activity Recognition and First-Order Logic	648
<i>Michael Glodek, Thomas Geier, Susanne Biundo, Friedhelm Schwenker, and Günther Palm</i>	
Enhancing Dynamic Recommender Selection Using Multiple Rules for Trust and Reputation Models in MANETs	654
<i>Antesar M. Shabut, Keshav Dahal, and Irfan Awan</i>	
On the Relationship between PQCL Preference Formalism and Value-Based AF	661
<i>Sedki Karima</i>	
Qualitative Analysis of Interorganizational WorkFlow Nets Using Linear Logic: Soundness Verification	667
<i>Lígia Maria Soares Passos and Stéphane Julia</i>	
On Delete Relaxation in Partial-Order Causal-Link Planning	674
<i>Pascal Bercher, Thomas Geier, Felix Richter, and Susanne Biundo</i>	
Modified Conversational Agent Architecture	682
<i>Tomáš Nestorovic and Václav Matoušek</i>	
Knowledge Extraction from Web Services Repositories	690
<i>Vasileios Kiouftis, Evangelos Theodoridis, and Athanasios Tsakalidis</i>	
Assessing Procedural Knowledge in Free-Text Answers through a Hybrid Semantic Web Approach	698
<i>Eric Snow, Chadia Moghrabi, and Philippe Fournier-Viger</i>	
A Natural Language Processing and Semantic-Based System for Contract Analysis	707
<i>Dan Yang, Christina Leber, Luis Tari, Aravind Chandramouli, Andrew Crapo, Richard Messmer, and Steven Gustafson</i>	
Abstract Debates	713
<i>Cosmina Croitoru</i>	
Generating Memoryless Policies Faster Using Automatic Temporal Abstractions for Reinforcement Learning with Hidden State	719
<i>Erkin Çilden and Faruk Polat</i>	
Semi-automatic Dictionary Curation for Domain-Specific Ontologies	727
<i>Ashish Kulkarni, Chetana Gavankar, Ganesh Ramakrishnan, and Sriram Raghavan</i>	
TM-Gen: A Topic Map Generator from Text Documents	735
<i>Angel Luis Garrido, María G. Buey, Sandra Escudero, Sergio Ibarri, Eduardo Mena, and Sara B. Silveira</i>	

Information Extraction from the Web: An Ontology-Based Method Using Inductive Logic Programming	741
<i>Rinaldo Lima, Bernard Espinasse, Hilário Oliveira, Laura Pentagrossa, and Fred Freitas</i>	
Knowledge-Guided Methodology for Specification Analysis	749
<i>Bhanu Singh, Arunprasath Shankar, Yuriy Shiyanskii, Francis Wolff, Christos Papachristou, Daniel Weyer, Steve Clay, and Jim Morrison</i>	
From Natural Language Requirements to Formal Specification Using an Ontology	755
<i>Driss Sadoun, Catherine Dubois, Yacine Ghamri-Doudane, and Brigitte Grau</i>	
Ontology Learning from Incomplete Semantic Web Data by BelNet	761
<i>Man Zhu, Zhiqiang Gao, Jeff Z. Pan, Yuting Zhao, Ying Xu, and Zhibin Quan</i>	
ESmodels: An Inference Engine of Epistemic Specifications	769
<i>Zhizheng Zhang, Kaikai Zhao, and Rongcun Cui</i>	

AI and Decision Systems and Recommendations

A Reusable Methodology for the Instantiation of Social Recommender Systems	775
<i>Lara Quijano-Sánchez, Juan A. Recio-García, and Belén Díaz-Agudo</i>	
Improving Music Recommendation in Session-Based Collaborative Filtering by Using Temporal Context	783
<i>Ricardo Dias and Manuel J. Fonseca</i>	
Markov Decision Process for Traffic Control at an Isolated Intersection	789
<i>Biao Yin, Mahjoub Dridi, and Abdellah El Moudni</i>	
Tikhonov or Lasso Regularization: Which Is Better and When	795
<i>Fei Wang, Sanjay Chawla, and Wei Liu</i>	
Learning Useful Macro-actions for Planning with N-Grams	803
<i>Adrien Dulac, Damien Pellier, Humbert Fiorino, and David Janiszek</i>	
On the Development of Voter Transition Models for Social Choice Markov Decision Processes	811
<i>David Garcia and Anton Riedl</i>	
Kaczmarz Algorithm with Soft Constraints for User Interface Layout	818
<i>Noreen Jamil, Deanna Needell, Johannes Muller, Christof Lutteroth, and Gerald Weber</i>	
Optimization of Traffic Lights Timing Based on Multiple Neural Networks	825
<i>Michel B.W. De Oliveira and Areolino De Almeida Neto</i>	

Using Evolution Strategies to Reduce Emergency Services Arrival Time in Case of Accident	833
<i>Javier Barrachina, Piedad Garrido, Manuel Fogue, Francisco J. Martinez, Juan-Carlos Cano, Carlos T. Calafate, and Pietro Manzoni</i>	
Motion-Driven Action-Based Planning	841
<i>Brandon Ellnerger and Amol D. Mali</i>	
CPP-SNS: A Solution to Influence Maximization Problem under Cost Control	849
<i>Qianyi Zhan, Hongchao Yang, Chongjun Wang, and Junyuan Xie</i>	
A Versatile Graph-Based Approach to Package Recommendation	857
<i>Roberto Interdonato, Salvatore Romeo, Andrea Tagarelli, and George Karypis</i>	
Relaxing the Relaxed Exist-Step Parallel Planning Semantics	865
<i>Tomáš Balýo</i>	

25th Anniversary Invited Papers

Perpetual Learning through Overcoming Inconsistencies	872
<i>Du Zhang</i>	
Change Your Belief about Belief Change	880
<i>Éric Grégoire</i>	
Comparison of Two Frameworks for Measuring the Stability of Gene-Selection Techniques on Noisy Class-Imbalanced Data	881
<i>Randall Wald, Taghi M. Khoshgoftaar, and And Ahmad Abu Shanab</i>	
Modeling Natural Language Sentences into SPN Graphs	889
<i>M. Mills, A. Psarologou, and N. Bourbakis</i>	

Special Track on SAT/CSP

Session 1.A: Invited Keynote 1

Capturing Structure in Hard Combinatorial Problems	897
<i>Stefan Szeider</i>	

Session 4.A: Invited Keynote 2

Constraint Programming in Compiler Optimization: Lessons Learned	899
<i>Peter Van Beek</i>	

Session 1.B: Constraint Reasoning I

Adaptive Constructive Interval Disjunction	900
<i>Bertrand Neveu and Gilles Trombettoni</i>	

Conflict Analysis and Branching Heuristics in the Search for Graph Automorphisms	907
<i>Paolo Codenotti, Hadi Katebi, Karem A. Sakallah, and Igor L. Markov</i>	

Session 2: MUS, Cores, and Max-SAT

Solving WCSP by Extraction of Minimal Unsatisfiable Cores	915
<i>Christophe Lecoutre, Nicolas Paris, Olivier Roussel, and Sébastien Tabary</i>	
Questioning the Importance of WCORE-Like Minimization Steps in MUC-Finding Algorithms	923
<i>Éric Grégoire, Jean-Marie Lagniez, and Bertrand Mazure</i>	
Model-Guided Approaches for MaxSAT Solving	931
<i>Antonio Morgado, Federico Heras, and Joao Marques-Silva</i>	
Combining MaxSAT Reasoning and Incremental Upper Bound for the Maximum Clique Problem	939
<i>Chu-Min Li, Zhiwen Fang, and Ke Xu</i>	

Session 3: Complexity Games and Constraint Games

A Hybrid Tractable Class for Non-binary CSPs	947
<i>Achref El Mouelhi, Philippe Jégou, and Cyril Terrioux</i>	
Solving E-Squareo through SAT-Coding	955
<i>Éric Grégoire, Atef Hasni, Bertrand Mazure, and Cédric Piette</i>	
Constraint Games: Framework and Local Search Solver	963
<i>Thi-Van-Anh Nguyen, Arnaud Lallouet, and Lucas Bordeaux</i>	

Session 4.B: Constraint Reasoning II

Variable Objective Large Neighborhood Search: A Practical Approach to Solve Over-Constrained Problems	971
<i>Pierre Schaus</i>	
A General Privacy Loss Aggregation Framework for Distributed Constraint Reasoning	979
<i>Jimmy H.M. Lee, Terrence W.K. Mak, and Yuxiang Shi</i>	

Session 5: Heuristics

On-the-Fly Lazy Clause Simplification Based on Binary Resolvents	987
<i>Hidetomo Nabeshima, Koji Iwanuma, and Katsumi Inoue</i>	
Declarative Heuristics in Constraint Satisfaction	996
<i>Erich Christian Teppan and Gerhard Friedrich</i>	
More Smear-Based Variable Selection Heuristics for NCSPs	1004
<i>Ignacio Araya, Victor Reyes, and Cristián Orellana</i>	

Lazy Branching for Constraint Satisfaction	1012
<i>Deepak Mehta, Barry O'Sullivan, Lars Kotthoff, and Yuri Malitsky</i>	

Session 6: Encoding and Translation Issues - Meta-models

Compiling Pseudo-Boolean Constraints to SAT with Order Encoding	1020
<i>Naoyuki Tamura, Mutsunori Banbara, and Takehide Soh</i>	
Application of Hierarchical Hybrid Encodings to Efficient Translation of CSPs to SAT	1028
<i>Van-Hau Nguyen, Miroslav N. Velev, and Pedro Barahona</i>	
Bounded Strings for Constraint Programming	1036
<i>Joseph D. Scott, Pierre Flener, and Justin Pearson</i>	
A CSP Approach for Metamodel Instantiation	1044
<i>Adel Ferdjoukh, Anne-Elisabeth Baert, Annie Chateau, Rémi Coletta, and Clémentine Nebut</i>	

Session 7: Constraint Reasoning III

A Constraint Programming Approach to the Additional Relay Placement Problem in Wireless Sensor Networks	1052
<i>Luis Quesada, Kenneth N. Brown, Barry O'Sullivan, Lanny Sitanayah, and Cormac J. Sreenan</i>	
A Filtering Algorithm for Constrained Clustering with Within-Cluster Sum of Dissimilarities Criterion	1060
<i>Thi-Bich-Hanh Dao, Khanh-Chuong Duong, and Christel Vrain</i>	
Model Expansion in the Presence of Function Symbols Using Constraint Programming	1068
<i>Broes De Cat, Bart Bogaerts, Jo Devriendt, and Marc Denecker</i>	
Generation of Implied Constraints for Automaton-Induced Decompositions	1076
<i>Maria Andreina Francisco Rodriguez, Pierre Flener, and Justin Pearson</i>	

Author Index