

IJCAI-07 Papers and Posters

Research Excellence Award Paper

Cooperating Reasoning Processes: More than Just the Sum of Their Parts / 2
Alan Bundy

Computers and Thought Award Paper

Learning and Multiagent Reasoning for Autonomous Agents / 13
Peter Stone

Constraint Satisfaction

The Logic behind Weighted CSP / 32
Carlos Ansótegui, María Luisa Bonet, Jordi Levy, Felip Manyà

QCSP Made Practical by Virtue of Restricted Quantification / 38
Marco Benedetti, Arnaud Lallouet, Jérémie Vautard

Learning Implied Global Constraints / 44
Christian Bessière, Remi Coletta, Thierry Petit

Query-Driven Constraint Acquisition / 50
Christian Bessière, Remi Coletta, Barry O'Sullivan, Mathias Paulin

A General Framework for Scheduling in a Stochastic Environment / 56
Julien Bidot, Thierry Vidal, Philippe Laborie, John Christopher Beck

New Constraint Programming Approaches for the Computation of Leximin-Optimal Solutions in Constraint Networks / 62
Sylvain Bouveret, Michel Lemaître

Optimal Soft Arc Consistency / 68
Martin C. Cooper, Simon de Givry, Thomas Schiex

Quantified Constraint Satisfaction Problems: From Relaxations to Explanations / 74
Alex Ferguson, Barry O'Sullivan

The Design of ESSENCE: A Constraint Language for Specifying Combinatorial Problems / 80
Alan M. Frisch, Matthew Grum, Chris Jefferson, Bernadette Martínez Hernández, Ian Miguel

Conditional Constraint Satisfaction: Logical Foundations and Complexity / 88
Georg Gottlob, Gianluigi Greco, Toni Mancini

Generalized Interval Projection: A New Technique for Consistent Domain Extension / 94
Carlos Grandón, Gilles Chabert, Bertrand Neveu

Techniques for Efficient Interactive Configuration of Distribution Networks / 100
Tarik Hadzic, Andrzej Wasowski, Henrik R. Andersen

- Distance Constraints in Constraint Satisfaction / 106
Emmanuel Hebrard, Barry O'Sullivan, Toby Walsh
- Dynamic Heuristics for Backtrack Search on Tree-Decomposition of CSPs / 112
Philippe Jégou, Samba Ndojoh Ndiaye, Cyril Terrioux
- Symmetric Component Caching / 118
Matthew Kitching, Fahiem Bacchus
- A Study of Residual Supports in Arc Consistency / 125
Christophe Lecoutre, Fred Hemery
- Nogood Recording from Restarts / 131
Christophe Lecoutre, Lakhdar Sais, Sébastien Tabary, Vincent Vidal
- Arc Consistency during Search / 137
Chavalit Likitvivanavong, Yuanlin Zhang, Scott Shannon, James Bowen, Eugene C. Freuder
- Probabilistic Consistency Boosts MAC and SAC / 143
Deepak Mehta, M. R. C. van Dongen
- Constraint and Variable Ordering Heuristics for Compiling Configuration Problems / 149
Nina Narodytska, Toby Walsh
- A Theoretical Framework for Learning Bayesian Networks with Parameter Inequality Constraints / 155
Radu Stefan Niculescu, Tom M. Mitchell, R. Bharat Rao
- Grounding for Model Expansion in k -Guarded Formulas with Inductive Definitions / 161
Murray Patterson, Yongmei Liu, Eugenia Ternovska, Arvind Gupta
- PC-DPOP: A New Partial Centralization Algorithm for Distributed Optimization / 167
Adrian Petcu, Boi Faltings, Roger Mailler
- A Dynamic Approach for MPE and Weighted MAX-SAT / 173
Tian Sang, Paul Beame, Henry Kautz
- Backtracking Procedures for Hypertree, HyperSpread and Connected Hypertree Decomposition of CSPs / 180
Sathiamoorthy Subbarayan, Henrik Reif Andersen
- A Call Admission Control Scheme Using NeuroEvolution Algorithm in Cellular Networks / 186
Xu Yang, John Bigham
- Fast Algorithm for Connected Row Convex Constraints / 192
Yuanlin Zhang
- Conflict Directed Backjumping for Max-CSPs / 198
Roie Zivan, Amnon Meisels

Knowledge Representation and Reasoning

- The Mathematical Morpho-Logical View on Reasoning about Space / 205
Marco Aiello, Brammert Ottens
- An Information-Theoretic Analysis of Memory Bounds in a Distributed Resource Allocation Mechanism / 212
Ricardo M. Araujo, Luis C. Lamb
- A Description Logic of Change / 218
Alessandro Artale, Carsten Lutz, David Toman
- From Generic Knowledge to Specific Reasoning for Medical Image Interpretation Using Graph Based Representations / 224
Jamal Atif, Céline Hudelot, Geoffroy Fouquier, Isabelle Bloch, Elsa Angelini
- Completing Description Logic Knowledge Bases Using Formal Concept Analysis / 230
Franz Baader, Bernhard Ganter, Baris Sertkaya, Ulrike Sattler

- Non-Monotonic Temporal Logics for Goal Specification / 236
Chitta Baral, Jicheng Zhao
- Using the Probabilistic Logic Programming Language P-log for Causal and Counterfactual Reasoning and Non-Naive Conditioning / 243
Chitta Baral, Matt Hunsaker
- Context-Driven Predictions / 250
Marc G. Bellemare, Doina Precup
- Entailment Semantics for Rules with Priorities / 256
David Billington
- Higher-Order Potentialities and Their Reducers: A Philosophical Foundation Unifying Dynamic Modeling Methods / 262
Tibor Bosse, Jan Treur
- Contextual Default Reasoning / 268
Gerhard Brewka, Floris Roelofsen, Luciano Serafini
- EQL-Lite: Effective First-Order Query Processing in Description Logics / 274
Diego Calvanese, Giuseppe De Giacomo, Domenico Lembo, Maurizio Lenzerini, Riccardo Rosati
- A Lattice-Based Approach to Computing Warranted Beliefs in Skeptical Argumentation Frameworks / 280
Carlos Iván Chesñevar, Guillermo Ricardo Simari
- A Framework for Decentralized Qualitative Model-Based Diagnosis / 286
Luca Console, Claudia Picardi, Daniele Theseider Duprè
- Exploiting Independence in a Decentralised and Incremental Approach of Diagnosis / 292
Marie-Odile Cordier, Alban Gastien
- A Logical Framework for Modularity of Ontologies / 298
Bernardo Cuenca Grau, Ian Horrocks, Yevgeny Kazakov, Ulrike Sattler
- Embedding Non-Ground Logic Programs into Autoepistemic Logic for Knowledge-Base Combination / 304
Jos de Bruijn, Thomas Eiter, Axel Polleres, Hans Tompits
- Modeling When Connections Are the Problem / 310
Johan de Kleer
- Tractable Temporal Reasoning / 318
Clare Dixon, Michael Fisher, Boris Konev
- Chronicle Recognition Improvement Using Temporal Focusing and Hierarchization / 324
Christophe Dousson, Pierre Le Maigat
- Complexity Results for Checking Equivalence of Stratified Logic Programs / 330
Thomas Eiter, Michael Fink, Hans Tompits, Stefan Woltran
- On Reversing Actions: Algorithms and Complexity / 336
Thomas Eiter, Esra Erdem, Wolfgang Faber
- Fault-Model-Based Test Generation for Embedded Software / 342
Michael Esser, Peter Struss
- Semantic Precision and Recall for Ontology Alignment Evaluation / 348
Jérôme Euzenat
- Operator Component Matrix Model for IMP Program Diagnosis / 354
Zhao-Fu Fan, Yunfei Jiang
- On Valued Negation Normal Form Formulas / 360
Hélène Fargier, Pierre Marquis
- A Logic Program Characterization of Causal Theories / 366
Paolo Ferraris

- A New Perspective on Stable Models / 372
Paolo Ferraris, Joohyung Lee, Vladimir Lifschitz
- Conflict-Based Diagnosis: Adding Uncertainty to Model-Based Diagnosis / 380
Ildikó Flesch, Peter Lucas, Theo van der Weide
- Conflict-Driven Answer Set Solving / 386
Martin Gebser, Benjamin Kaufmann, André Neumann, Torsten Schaub
- Ranking Alternatives on the Basis of Generic Constraints and Examples — A Possibilistic Approach / 393
Romain Gérard, Souhila Kaci, Henri Prade
- Conjunctive Query Answering for the Description Logic *SHIQ* / 399
Birte Glimm, Ian Horrocks, Carsten Lutz, Uli Sattler
- A Dual-Pathway Neural Network Model of Control Relinquishment in Motor Skill Learning / 405
Ashish Gupta, David C. Noelle
- Some Effects of a Reduced Relational Vocabulary on the Whodunit Problem / 411
Daniel T. Halstead, Kenneth D. Forbus
- Counting Complexity of Propositional Abduction / 417
Miki Hermann, Reinhard Pichler
- Extracting Chatbot Knowledge from Online Discussion Forums / 423
Jizhou Huang, Ming Zhou, Dan Yang
- Improving Author Coreference by Resource-Bounded Information Gathering from the Web / 429
Pallika Kanani, Andrew McCallum, Chris Pal
- Combining Topological and Directional Information for Spatial Reasoning / 435
Sanjiang Li
- From Answer Set Logic Programming to Circumscription via Logic of GK / 441
Fangzhen Lin, Yi Zhou
- Incremental Learning of Perceptual Categories for Open-Domain Sketch Recognition / 447
Andrew Lovett, Morteza Dehghani, Kenneth Forbus
- Conservative Extensions in Expressive Description Logics / 453
Carsten Lutz, Dirk Walther, Frank Wolter
- Towards a Computational Model of Melody Identification in Polyphonic Music / 459
Søren Tjagvad Madsen, Gerhard Widmer
- Modelling Well-Structured Argumentation Lines / 465
Diego C. Martínez, Alejandro J. García, Guillermo R. Simari
- Abstract Interpretation of Programs for Model-Based Debugging / 471
Wolfgang Mayer, Markus Stumptner
- A Faithful Integration of Description Logics with Logic Programming / 477
Boris Motik, Riccardo Rosati
- Evaluating a Decision-Theoretic Approach to Tailored Example Selection / 483
Kasia Muldner, Cristina Conati
- Expectation Failure as a Basis for Agent-Based Model Diagnosis and
Mixed Initiative Model Adaptation during Anomalous Plan Execution / 489
Alice Mulvehill, Brett Benyo, Michael Cox, Renu Bostwick
- Consistency Checking of Basic Cardinal Constraints over Connected Regions / 495
Isabel Navarrete, Antonio Morales, Guido Sciacicco
- Probabilistic Go Theories / 501
Austin Parker, Fusun Yaman, Dana Nau, V. S. Subrahmanian

- Surprise as Shortcut for Anticipation: Clustering Mental States in Reasoning / 507
Michele Piunti, Cristiano Castelfranchi, Rino Falcone
- Automated Benchmark Model Generators for Model-Based Diagnostic Inference / 513
Gregory Provan, Jun Wang
- Automated Heart Wall Motion Abnormality Detection from Ultrasound Images Using Bayesian Networks / 519
Maleeha Qazi, Glenn Fung, Sriram Krishnan, Romer Rosales, Harald Steck, R. Bharat Rao, Don Poldermans, Dhanalakshmi Chandrasekaran
- Qualitative Spatial and Temporal Reasoning: Efficient Algorithms for Everyone / 526
Jochen Renz
- Diagnosability Testing with Satisfiability Algorithms / 532
Jussi Rintanen, Alban Grastien
- Diagnosers and Diagnosability of Succinct Transition Systems / 538
Jussi Rintanen
- Is the Turing Test Good Enough? The Fallacy of Resource-Unbounded Intelligence / 545
Virginia Savova, Leonid Peshkin
- OSS: A Semantic Similarity Function Based on Hierarchical Ontologies / 551
Vincent Schickel-Zuber, Boi Faltings
- Description Logics with Approximate Definitions — Precise Modeling of Vague Concepts / 557
Stefan Schlobach, Michel Klein, Linda Peelen
- A Size-Based Qualitative Approach to the Representation of Spatial Granularity / 563
Hedda R. Schmidtke, Woontack Woo
- Qualitative Temporal Reasoning about Vague Events / 569
Steven Schockaert, Martine De Cock, Etienne E. Kerre
- Scalable Diagnosability Checking of Event-Driven Systems / 575
Anika Schumann, Yannick Pencolé
- Hierarchical Diagnosis of Multiple Faults / 581
Sajjad Siddiqi, Jinbo Huang
- Detection of Cognitive States from fMRI Data Using Machine Learning Techniques / 587
Vishwajeet Singh, Krishna P. Miyapuram, Raju S. Bapi
- Model-Based Optimization of Testing through Reduction of Stimuli / 593
Peter Struss
- A General Framework for Reasoning about Inconsistency / 599
V. S. Subrahmanian, Leila Amgoud
- Appearance Based Recognition Methodology for Recognising Fingerspelling Alphabets / 605
M. G. Suraj, D. S. Guru
- Resource Constraints on Computation and Communication in the Brain / 611
Sashank Varma
- An Experience on Reputation Models Interoperability Based on a Functional Ontology / 617
Laurent Vercoeur, Sara J. Casare, Jaime S. Sichman, Anarosa A. F. Brandão
- A Labeling Approach to the Computation of Credulous Acceptance in Argumentation / 623
Bart Verheij
- A Convengent Solution to Tensor Subspace Learning / 629
Huan Wang, Shuicheng Yan, Thomas Huang, Xiaou Tang
- All Common Subsequences / 635
Hui Wang

Representations for Action Selection Learning from Real-Time Observation of Task Experts / 641

Mark A. Wood, Joanna J. Bryson

Epistemic Reasoning in Logic Programs / 647

Yan Zhang

Learning

Keep the Decision Tree and Estimate the Class Probabilities Using Its Decision Boundary / 654

Isabelle Alvarez, Stephan Bernard, Guillaume Deffuant

Updates for Nonlinear Discriminants / 660

Edin Andelic, Martin Schafföner, Marcel Katz, Sven E. Krüger, Andreas Wendemuth

A Fully Connectionist Model Generator for Covered First-Order Logic Programs / 666

Sebastian Bader, Pascal Hitzler, Steffen Hölldobler, Andreas Witzel

General Game Learning Using Knowledge Transfer / 672

Bikramjit Banerjee, Peter Stone

Learning by Analogy: A Classification Rule for Binary and Nominal Data / 678

Sabri Bayoudh, Laurent Miclet, Arnaud Delhay

Interactive Clustering of Text Collections According to a User-Specified Criterion / 684

Ron Bekkerman, Hema Raghavan, James Allan, Koji Eguchi

Heuristic Selection of Actions in Multiagent Reinforcement Learning / 690

Reinaldo A. C. Bianchi, Carlos H. C. Ribeiro, Anna H. R. Costa

Unsupervised Discretization Using Kernel Density Estimation / 696

Marenglen Biba, Floriana Esposito, Stefano Ferilli, Nicola Di Mauro, Teresa Maria Altomare Basile

Case-Based Multilabel Ranking / 702

Klaus Brinker, Eyke Hüllermeier

Locality Sensitive Discriminant Analysis / 708

Deng Cai, Xiaofei He, Kun Zhou, Jiawei Han, Hujun Bao

Exploiting Known Taxonomies in Learning Overlapping Concepts / 714

Lijuan Cai, Thomas Hofmann

Learning and Transferring Action Schemas / 720

Paul R. Cohen, Yu-Han Chang, Clayton T. Morrison

Online Learning and Exploiting Relational Models in Reinforcement Learning / 726

Tom Croonenborghs, Jan Ramon, Hendrik Blockeel, Maurice Bruynooghe

Permanents, Transportation Polytopes and Positive Definite Kernels on Histograms / 732

Marco Cuturi

Utile Distinctions for Relational Reinforcement Learning / 738

William Dabney, Amy McGovern

Boosting Kernel Discriminant Analysis and Its Application on Tissue Classification of Gene Expression Data / 744

Guang Dai, Dit-Yan Yeung

Case Base Mining for Adaptation Knowledge Acquisition / 750

Mathieu d'Aquin, Fadi Badra, Sandrine Lafrogne, Jean Lieber, Amedeo Napoli, Laszlo Szathmary

Learning Classifiers When the Training Data Is Not IID / 756

Murat Dundar, Balaji Krishnapuram, Jinbo Bi, R. Bharat Rao

Kernel Carpentry for Online Regression Using Randomly Varying Coefficient Model / 762

Narayanan U. Edakunni, Stefan Schaal, Sethu Vijayakumar

- Occam's Razor Just Got Sharper / 768
Saher Esmeir, Shaul Markovitch
- Sequence Labelling in Structured Domains with Hierarchical Recurrent Neural Networks / 774
Santiago Fernández, Alex Graves, Jürgen Schmidhuber
- Predicting and Preventing Coordination Problems in Cooperative Q-learning Systems / 780
Nancy Fulda, Dan Ventura
- Feature Selection and Kernel Design via Linear Programming / 786
Glenn Fung, Romer Rosales, R. Bharat Rao
- Learning Restart Strategies / 792
Matteo Gagliolo, Jürgen Schmidhuber
- Incremental Construction of Structured Hidden Markov Models / 798
Ugo Galassi, Attilio Giordana, Lorenza Saitta
- On Mining Closed Sets in Multi-Relational Data / 804
Gemma C. Garriga, Roni Khardon, Luc De Raedt
- Improving Embeddings by Flexible Exploitation of Side Information / 810
Ali Ghodsi, Dana Wilkinson, Finnegan Southey
- State Similarity Based Approach for Improving Performance in RL / 817
Sertan Girgin, Faruk Polat, Reda Alhajj
- Optimistic Active-Learning Using Mutual Information / 823
Yuhong Guo, Russ Greiner
- Continuous Time Associative Bandit Problems / 830
András György, Levente Kocsis, Ivetta Szabó, Csaba Szepesvári
- Maximum Margin Coresets for Active and Noise Tolerant Learning / 836
Sariel Har-Peled, Dan Roth, Dav Zimak
- Real Boosting *a la Carte* with an Application to Boosting Oblique Decision Tree / 842
Claudia Henry, Richard Nock, Frank Nielsen
- Self-Adjusting Ring Modules (SARMs) for Flexible Gait Pattern Generation / 848
Manfred Hild, Frank Pasemann
- Analogical Learning in a Turn-Based Strategy Game / 853
Thomas R. Hinrichs, Kenneth D. Forbus
- Constructing New and Better Evaluation Measures for Machine Learning / 859
Jin Huang, Charles X. Ling
- Improving Anytime Point-Based Value Iteration Using Principled Point Selections / 865
Michael R. James, Michael E. Samples, Dmitri A. Dolgov
- A Three-Stage Neural Model for Attribute Based Classification and Indexing of Fly Ashes / 871
M. A. Jayaram, M. C. Nataraja, C. N. Ravikumar
- Selective Supervision: Guiding Supervised Learning with Decision-Theoretic Active Learning / 877
Ashish Kapoor, Eric Horvitz, Sumit Basu
- Exploiting Sensorimotor Coordination for Learning to Recognize Objects / 883
Yohannes Kassahun, Mark Edgington, Jose de Gea, Frank Kirchner
- Avoidance of Model Re-Induction in SVM-Based Feature Selection for Text Categorization / 889
Aleksander Kolcz, Abdur Chowdhury
- Building Portable Options: Skill Transfer in Reinforcement Learning / 895
George Konidaris, Andrew Barto

- Marginalized Multi-Instance Kernels / 901
James T. Kwok, Pak-Ming Cheung
- r-grams: Relational Grams / 907
Niels Landwehr, Luc De Raedt
- Generalized Additive Bayesian Network Classifiers / 913
Jianguo Li, Changshui Zhang, Tao Wang, Yimin Zhang
- Generalizing the Bias Term of Support Vector Machines / 919
Wenye Li, Kwong-Sak Leung, Kin-Hong Lee
- Robust Object Tracking with a Case-Base Updating Strategy / 925
Wenhui Liao, Yan Tong, Zhiwei Zhu, Qiang Ji
- Explanation-Based Feature Construction / 931
Shiau Hong Lim, Li-Lun Wang, Gerald Dejong
- Protein Quaternary Fold Recognition Using Conditional Graphical Models / 937
Yan Liu, Jaime Carbonell, Vanathi Gopalakrishnan, Peter Weigele
- Automatic Gait Optimization with Gaussian Process Regression / 944
Daniel Lizotte, Tao Wang, Michael Bowling, Dale Schuurmans
- Recursive Random Fields / 950
Daniel Lowd, Pedro Domingos
- Prediction of Probability of Survival in Critically Ill Patients Optimizing the Area under the ROC Curve / 956
Oscar Luaces, José R. Quevedo, Francisco Taboada, Guillermo M. Albaiceta, Antonio Bahamonde
- The Ins and Outs of Critiquing / 962
David McSherry, David W. Aha
- Learning from Partial Observations / 968
Loizos Michael
- Relevance Estimation and Value Calibration of Evolutionary Algorithm Parameters / 975
Volker Nannen, A. E. Eiben
- Local Search for Balanced Submodular Clusterings / 981
Mukund Narasimhan, Jeff Bilmes
- Kernel Matrix Evaluation / 987
Canh Hao Nguyen, Tu Bao Ho
- Neighborhood MinMax Projections / 993
Feiping Nie, Shiming Xiang, Changshui Zhang
- Case-Based Learning from Proactive Communication / 999
Santi Ontañón, Enric Plaza
- Learning to Count by Think Aloud Imitation / 1005
Laurent Orseau
- A Tighter Error Bound for Decision Tree Learning Using PAC Learnability / 1011
Chaithanya Pichuka, Raju S. Bapi, Chakravarthy Bhagvati, Arun K. Pujari, Bulusu L. Deekshatulu
- Kernel Conjugate Gradient for Fast Kernel Machines / 1017
Nathan D. Ratliff, J. Andrew Bagnell
- Deictic Option Schemas / 1023
Balaraman Ravindran, Andrew G. Barto, Vimal Mathew
- Acquiring a Robust Case Base for the Robot Soccer Domain / 1029
Raquel Ros, Josep Lluís Arcos

- QuantMiner: A Genetic Algorithm for Mining Quantitative Association Rules / 1035
Ansaf Salleb-Aouissi, Christel Vrain, Cyril Nortet
- Transfer Learning in Real-Time Strategy Games Using Hybrid CBR/RL / 1041
Manu Sharma, Michael Holmes, Juan Santamaria, Arya Irani, Charles Isbell, Ashwin Ram
- Parametric Kernels for Sequence Data Analysis / 1047
Young-In Shin, Donald Fussell
- Reinforcement Learning of Local Shape in the Game of Go / 1053
David Silver, Richard Sutton, Martin Müller
- Semi-Supervised Gaussian Process Classifiers / 1059
Vikas Sindhwani, Wei Chu, S. Sathiya Keerthi
- An Experts Algorithm for Transfer Learning / 1065
Erik Talvitie, Satinder Singh
- Direct Code Access in Self-Organizing Neural Networks for Reinforcement Learning / 1071
Ah-Hwee Tan
- Grounding Abstractions in Predictive State Representations / 1077
Brian Tanner, Vadim Bulitka, Anna Koop, Cosmin Paduraru
- Metric Properties of Structured Data Visualizations through Generative Probabilistic Modeling / 1083
Peter Tino, Nikolaos Gianniotis
- Ensembles of Partially Trained SVMs with Multiplicative Updates / 1089
Ivor W. Tsang, James T. Kwok
- First Order Decision Diagrams for Relational MDPs / 1095
Chenggang Wang, Saket Joshi, Roni Khordon
- Self-Adaptive Neural Networks Based on a Poisson Approach for Knowledge Discovery / 1101
Haiying Wang, Huiru Zheng, Francisco Azuaje
- Dynamics of Temporal Difference Learning / 1107
Andreas Wendemuth
- Machine Learning for On-Line Hardware Reconfiguration / 1113
Jonathan Wildstrom, Peter Stone, Emmett Witchel, Mike Dahlin
- A Primitive Based Generative Model to Infer Timing Information in Unpartitioned Handwriting Data / 1119
Ben H. Williams, Marc Toussaint, Amos J. Storkey
- A Subspace Kernel for Nonlinear Feature Extraction / 1125
Mingrui Wu, Jason Farquhar
- Understanding Drawings by Compositional Analogy / 1131
Patrick W. Yaner, Ashok K. Goel
- A Scalable Kernel-Based Algorithm for Semi-Supervised Metric Learning / 1138
Dit-Yan Yeung, Hong Chang, Guang Dai
- Managing Domain Knowledge and Multiple Models with Boosting / 1144
Peng Zang, Charles Isbell
- Concept Sampling: Towards Systematic Selection in Large-Scale Mixed Concepts in Machine Learning / 1150
Yi Zhang, Xiaoming Jin
- Searching for Interacting Features / 1156
Zheng Zhao, Huan Liu
- Learning User Clicks in Web Search / 1162
Ding Zhou, Levent Boilelli, Jia Li, C. Lee Giles, Hongyuan Zha

An Empirical Study of the Noise Impact on Cost-Sensitive Learning / 1168

Xingquan Zhu, Xindong Wu, Taghi M. Khoshgoftaar, Yong Shi

Multiagent Systems

On the Logic of Normative Systems / 1175

Thomas Ågotnes, Wiebe van der Hoek, Juan A. Rodríguez-Aguilar, Carles Sierra, Michael Wooldridge

Quantified Coalition Logic / 1181

Thomas Ågotnes, Wiebe van der Hoek, Michael Wooldridge

An Axiomatic Approach to Personalized Ranking Systems / 1187

Alon Altman, Moshe Tennenholtz

Market Based Resource Allocation with Incomplete Information / 1193

Bo An, Chunyan Miao, Zhiqi Shen

A Game-Theoretic Analysis of Strictly Competitive Multiagent Scenarios / 1199

Felix Brandt, Felix Fischer, Paul Harrenstein, Yoav Shoham

Spiteful Bidding in Sealed-Bid Auctions / 1207

Felix Brandt, Tuomas Sandholm, Yoav Shoham

Multi-Dimensional Bid Improvement Algorithm for Simultaneous Auctions / 1215

Teddy Candale, Sandip Sen

Bidding Languages and Winner Determination for Mixed Multi-Unit Combinatorial Auctions / 1221

Jesús Cerquides, Ulle Endriss, Andrea Giovannucci, Juan A. Rodríguez-Aguilar

Coalitional Bargaining with Agent Type Uncertainty / 1227

Georgios Chalkiadakis, Craig Boutilier

Iterated Weaker-than-Weak Dominance / 1233

Shih-Fen Cheng, Michael P. Wellman

Reaching Envy-Free States in Distributed Negotiation Settings / 1239

Yann Chevaleyre, Ulle Endriss, Sylvia Estvie, Nicolas Maudet

Privacy and Artificial Agents, or, Is Google Reading My Email? / 1245

Samir Chopra, Laurence White

Incremental Mechanism Design / 1251

Vincent Conitzer, Tuomas Sandholm

Learning Policies for Embodied Virtual Agents through Demonstration / 1257

Jonathan Dinerstein, Parris K. Egbert, Dan Ventura

Sharing the Road: Autonomous Vehicles Meet Human Drivers / 1263

Kurt Dresner, Peter Stone

Communicating Effectively in Resource-Constrained Multi-Agent Systems / 1269

Partha S. Dutta, Claudia V. Goldman, Nicholas R. Jennings

Holonic Multiagent Multilevel Simulation: Application to Real-Time Pedestrian Simulation in Urban Environment / 1275

Nicolas Gaud, Franck Gechter, Stéphane Galland, Abderrafida Koukam

Coordination to Avoid Starvation of Bottleneck Agents in a Large Network System / 1281

Rajesh Gautam, Kazuo Miyashita

Sellers Competing for Buyers in Online Markets: Reserve Prices, Shill Bids, and Auction Fees / 1287

Enrico H. Gerding, Alex Rogers, Rajdeep K. Dash, Nicholas R. Jennings

Complexity of Pure Equilibria in Bayesian Games / 1294

Georg Gottlob, Gianluigi Greco, Toni Mancini

- Characterizing Solution Concepts in Games Using Knowledge-Based Programs / 1300
Joseph Y. Halpern, Yoram Moses
- Hybrid Elections Broaden Complexity-Theoretic Resistance to Control / 1308
Edith Hemaspaandra, Lane A. Hemaspaandra, Jörg Rothe
- Truthful Risk-Managed Combinatorial Auctions / 1315
Alan Holland, Barry O'Sullivan
- Adaptation of Organizational Models for Multi-Agent Systems Based on Max Flow Networks / 1321
Mark Hoogendoorn
- Collaborative Inductive Logic Programming for Path Planning / 1327
Jian Huang, Adrian R. Pearce
- Mechanism Design with Partial Revelation / 1333
Nathanaël Hyafil, Craig Boutilier
- Augmented Experiment: Participatory Design with Multiagent Simulation / 1341
Toru Ishida, Yuu Nakajima, Yohei Murakami, Hideyuki Nakanishi
- Multi-Issue Negotiation Protocol for Agents: Exploring Nonlinear Utility Spaces / 1347
Takayuki Ito, Hiromitsu Hattori, Mark Klein
- A Model for Collective Strategy Diffusion in Agent Social Law Evolution / 1353
Yichuan Jiang, Toru Ishida
- Sequential Bundle-Bid Single-Sale Auction Algorithms for Decentralized Control / 1359
Sven Koenig, Craig Tovey, Xiaoming Zheng, Ilgaz Sungur
- Vote and Aggregation in Combinatorial Domains with Structured Preferences / 1366
Jérôme Lang
- Winner Determination in Sequential Majority Voting / 1372
Jérôme Lang, Maria Silvia Pini, Francesca Rossi, K. Brent Venable, Toby Walsh
- RoxyBot-06: An (SAA)² TAC Travel Agent / 1378
Seong Jae Lee, Amy Greenwald, Victor Naroditskiy
- Automatic Verification of Knowledge and Time with NuSMV / 1384
Alessio Lomuscio, Charles Pecheur, Franco Raimondi
- An Energy-Efficient, Multi-Agent Sensor Network for Detecting Diffuse Events / 1390
Rónán Mac Ruairí, Mark T. Keane
- A Multi-Agent Medical System for Indian Rural Infant and Child Care / 1396
Vijay Kumar Mago, M. Syamala Devi
- Infeasibility Certificates and the Complexity of the Core in Coalitional Games / 1402
Enrico Malizia, Luigi Palopoli, Francesco Scarcello
- Providing a Recommended Trading Agent to a Population: A Novel Approach / 1408
Efrit Manisterski, Ron Katz, Sarit Kraus
- Enhancing MAS Cooperative Search Through Coalition Partitioning / 1415
Efrit Manisterski, David Sarne, Sarit Kraus
- Multipotential Games / 1422
Dov Monderer
- Multi-Agent System that Attains Longevity via Death / 1428
Megan Olsen, Hava Siegelmann
- Argumentation Based Contract Monitoring in Uncertain Domains / 1434
Nir Oren, Timothy J. Norman, Alun Preece

- Dynamic Verification of Trust in Distributed Open Systems / 1440
Nardine Osman, David Robertson
- Quality Guarantees on k -Optimal Solutions for Distributed Constraint Optimization Problems / 1446
Jonathan P. Pearce, Milind Tambe
- MB-DPOP: A New Memory-Bounded Algorithm for Distributed Optimization / 1452
Adrian Petcu, Boi Faltings
- DiPRA: Distributed Practical Reasoning Architecture / 1458
Giovanni Pezzulo, Gianguglielmo Calvi, Cristiano Castelfranchi
- Incompleteness and Incomparability in Preference Aggregation / 1464
Maria Silvia Pini, Francesca Rossi, K. Brent Venable, Toby Walsh
- Gossip-Based Aggregation of Trust in Decentralized Reputation Systems / 1470
Ariel D. Procaccia, Yoram Bachrach, Jeffrey S. Rosenschein
- Multi-Winner Elections: Complexity of Manipulation, Control and Winner-Determination / 1476
Ariel D. Procaccia, Jeffrey S. Rosenschein, Aviv Zohar
- Opponent Modeling in Scrabble / 1482
Mark Richards, Eyal Amir
- Routing Mediators / 1488
Ola Rozenfeld, Moshe Tennenholtz
- An Efficient Protocol for Negotiation over Multiple Indivisible Resources / 1494
Sabyasachi Saha, Sandip Sen
- Automated Design of Multistage Mechanisms / 1500
Tuomas Sandholm, Vincent Conitzer, Craig Boutilier
- Emergence of Norms through Social Learning / 1507
Sandip Sen, Stéphane Airiau
- Information-Based Agency / 1513
Carles Sierra, John Debenham
- Formalizing Communication Protocols for Multiagent Systems / 1519
Munindar P. Singh
- Control of Agent Swarms Using Generalized Centroidal Cyclic Pursuit Laws / 1525
Arpita Sinha, Debasish Ghose
- On Modeling Multiagent Task Scheduling as a Distributed Constraint Optimization Problem / 1531
Evan A. Sultanik, Pragnesh Jay Modi, William C. Regli
- Emotions as Durative Dynamic State for Action Selection / 1537
Emmanuel Tanguy, Philip Willis, Joanna J. Bryson
- Generating Bayes-Nash Equilibria to Design Autonomous Trading Agents / 1543
Ioannis A. Vetsikas, Nicholas R. Jennings, Bart Selman
- Formal Trust Model for Multiagent Systems / 1551
Yonghong Wang, Munindar P. Singh
- Towards Runtime Behavior Adaptation for Embodied Characters / 1557
Peng Zang, Manish Mehta, Michael Mateas, Ashwin Ram
- Using Focal Point Learning to Improve Tactic Coordination in Human-Machine Interactions / 1563
Inon Zuckerman, Sarit Kraus, Jeffrey S. Rosenschein

Natural Language Processing

Phonetic Models for Generating Spelling Variants / 1570

Rahul Bhagat, Eduard Hovy

Sequence Prediction Exploiting Similarity Information / 1576

István Bíró, Zoltán Szamonek, Csaba Szepesvári

Supervised Latent Semantic Indexing Using Adaptive Sprinkling / 1582

Sutanu Chakraborti, Rahman Mukras, Robert Lothian, Nirmalie Wiratunga, Stuart Watt, David Harper

A Ranking Approach to Pronoun Resolution / 1588

Pascal Denis, Jason Baldridge

Word Sense Disambiguation through Sememe Labeling / 1594

Xiangyu Duan, Jun Zhao, Bo Xu

Case-Based Techniques Used for Dialogue Understanding and Planning in a Human-Robot Dialogue System / 1600

Karolina Eliasson

Computing Semantic Relatedness Using Wikipedia-Based Explicit Semantic Analysis / 1606

Evgeniy Gabrilovich, Shaul Markovitch

On Natural Language Processing and Plan Recognition / 1612

Christopher W. Geib, Mark Steedman

Using Ontologies and the Web to Learn Lexical Semantics / 1618

Aarti Gupta, Tim Oates

Unsupervised Anomaly Detection / 1624

David Guthrie, Louise Guthrie, Ben Allison, Yorick Wilks

Named Entity Translation with Web Mining and Transliteration / 1629

Long Jiang, Ming Zhou, Lee-Feng Chien, Cheng Niu

Optimizing Classifier Performance in Word Sense Disambiguation by Redefining Word Sense Classes / 1635

Upali S. Kohomban, Wee Sun Lee

Learning from the Report-Writing Behavior of Individuals / 1641

Mohit Kumar, Nikesh Garera, Alexander I. Rudnicky

SegGen: A Genetic Algorithm for Linear Text Segmentation / 1647

Sylvain Lamprier, Tassadit Amghar, Bernard Levrat, Frederic Saubion

Cluster-Based Selection of Statistical Answering Strategies / 1653

Lucian Vlad Lita, Jaime Carbonell

Automatically Selecting Answer Templates to Respond to Customer Emails / 1659

Rahul Malik, L. Venkata Subramaniam, Saroj Kaushik

A Predictive Approach to Help-Desk Response Generation / 1665

Yuval Marom, Ingrid Zukerman

Efficient HPSG Parsing with Supertagging and CFG-Filtering / 1671

Takuya Matsuzaki, Yusuke Miyao, Jun'ichi Tsujii

A Flexible Unsupervised PP-Attachment Method Using Semantic Information / 1677

Srinivas Medimi, Pushpak Bhattacharyya

Graph Connectivity Measures for Unsupervised Word Sense Disambiguation / 1683

Roberto Navigli, Mirella Lapata

Shallow Semantics for Coreference Resolution / 1689

Vincent Ng

- Subtree Mining for Question Classification Problem / 1695
Minh Le Nguyen, Thanh Tri Nguyen, Akira Shimazu
- Natural Language Query Recommendation in Conversation Systems / 1701
Shimei Pan, James Shaw
- A Dual-Layer CRFs Based Joint Decoding Method for Cascaded Segmentation and Labeling Tasks / 1707
Yanxin Shi, Mengqiu Wang
- Database-Text Alignment via Structured Multilabel Classification / 1713
Benjamin Snyder, Regina Barzilay
- Dances with Words / 1719
Carlo Strapparava, Alessandro Valitutti, Oliviero Stock
- Word Sense Disambiguation with Spreading Activation Networks Generated from Thesauri / 1725
George Tsatsaronis, Michalis Vazirgiannis, Ion Androutsopoulos
- Morphological Annotation of a Large Spontaneous Speech Corpus in Japanese / 1731
Kiyotaka Uchimoto, Hitoshi Isahara
- Speaker-Invariant Features for Automatic Speech Recognition / 1738
Srinivasan Umesh, D. Rama Sanand, G. Praveen
- Correlation Clustering for Crosslingual Link Detection / 1744
Jurgen Van Gael, Xiaojin Zhu
- A Hybrid Ontology Directed Feedback Selection Algorithm for Supporting Creative Problem Solving Dialogues / 1750
Hao-Chuan Wang, Rohit Kumar, Carolyn Penstein Rosé, Tsai-Yen Li, Chun-Yen Chang
- Simple Training of Dependency Parsers via Structured Boosting / 1756
Qin Iris Wang, Dekang Lin, Dale Schuurmans
- One Class per Named Entity: Exploiting Unlabeled Text for Named Entity Recognition / 1763
Yingchuan Wong, Hwee Tou Ng
- A Privacy-Sensitive Approach to Modeling Multi-Person Conversations / 1769
Danny Wyatt, Tanzeem Choudhury, Jeff Bilmes, Henry Kautz
- Multi-Document Summarization by Maximizing Informative Content-Words / 1776
Wen-tau Yih, Joshua Goodman, Lucy Vanderwende, Hisami Suzuki
- Ambiguous Part-of-Speech Tagging for Improving Accuracy and Domain Portability of Syntactic Parsers / 1783
Kazuhiro Yoshida, Yoshimasa Tsuruoka, Yusuke Miyao, Jun'ichi Tsujii
- Automatic Acquisition of Context-Specific Lexical Paraphrases / 1789
Shiqi Zhao, Ting Liu, Xincheng Yuan, Sheng Li, Yu Zhang
- Learning Question Paraphrases for QA from Encarta Logs / 1795
Shiqi Zhao, Ming Zhou, Ting Liu

Planning and Scheduling

- Detecting Stochastically Scheduled Activities in Video / 1802
Massimiliano Albanese, Vincenzo Moscato, Antonio Picariello, V. S. Subrahmanian, Octavian Udrea
- A Heuristic Search Approach to Planning with Temporally Extended Preferences / 1808
Jorge A. Baier, Fahiem Bacchus, Sheila A. McIlraith
- Waiting and Relocation Strategies in Online Stochastic Vehicle Routing / 1816
Russell Bent, Pascal Van Hentenryck
- Coalitions in Action Logic / 1822
Stefano Borgo

- Fast Planning with Iterative Macros / 1828
Adi Botea, Martin Müller, Jonathan Schaeffer
- Planning for Gene Regulatory Network Intervention / 1834
Daniel Bryce, Seungchan Kim
- Long-Distance Mutual Exclusion for Propositional Planning / 1840
Yixin Chen, Zhao Xing, Weixiong Zhang
- Towards an Integration of Golog and Planning / 1846
Jens Claßen, Patrick Eyerich, Gerhard Lakemeyer, Bernhard Nebel
- When Is Temporal Planning Really Temporal? / 1852
William Cushing, Subbarao Kambhampati, Mausam, Daniel S. Weld
- Topological Value Iteration Algorithm for Markov Decision Processes / 1860
Peng Dai, Judy Goldsmith
- Automatic Synthesis of New Behaviors from a Library of Available Behaviors / 1866
Giuseppe De Giacomo, Sebastian Sardina
- Planning with Goal Utility Dependencies / 1872
Minh B. Do, J. Benton, Menkes van den Briel, Subbarao Kambhampati
- A Decision-Theoretic Model of Assistance / 1879
Alan Fern, Sriraam Natarajan, Kshitij Judah, Prasad Tadepalli
- Transferring Learned Control-Knowledge between Planners / 1885
Susana Fernández, Ricardo Aler, Daniel Borrajo
- Decidable Reasoning in a Modified Situation Calculus / 1891
Yilan Gu, Mikhail Soutchanski
- Reducing Accidental Complexity in Planning Problems / 1898
Patrik Haslum
- Planning via Petri Net Unfolding / 1904
Sarah Hickmott, Jussi Rintanen, Sylvie Thiébaux, Lang White
- Detecting Changes in Unlabeled Data Streams Using Martingale / 1912
Shen-Shyang Ho, Harry Wechsler
- SAT Encodings of State-Space Reachability Problems in Numeric Domains / 1918
Jörg Hoffmann, Carla Gomes, Bart Selman, Henry Kautz
- Constraint Partitioning for Solving Planning Problems with Trajectory Constraints and Goal Preferences / 1924
Chih-Wei Hsu, Benjamin W. Wah, Ruoyun Huang, Yixin Chen
- Observation Reduction for Strong Plans / 1930
Wei Huang, Zhonghua Wen, Yunfei Jiang, Lihua Wu
- The Role of Macros in Tractable Planning over Causal Graphs / 1936
Anders Jonsson
- Factored Planning Using Decomposition Trees / 1942
Elena Kelareva, Olivier Buffet, Jinbo Huang, Sylvie Thiébaux
- Property Persistence in the Situation Calculus / 1948
Ryan F. Kelly, Adrian R. Pearce
- Fast (Incremental) Algorithms for Useful Classes of Simple Temporal Problems with Preferences / 1954
T. K. Satish Kumar
- Handling Alternative Activities in Resource-Constrained Project Scheduling Problems / 1960
Jürgen Kuster, Dietmar Jannach, Gerhard Friedrich

- Planning for Temporally Extended Goals as Propositional Satisfiability / 1966
Robert Mattmüller, Jussi Rintanen
- A Hybridized Planner for Stochastic Domains / 1972
Mausam, Piergiorgio Bertoli, Daniel S. Weld
- Performance Analysis of Online Anticipatory Algorithms for Large Multistage Stochastic Integer Programs / 1979
Luc Mercier, Pascal Van Hentenryck
- Generalizing Temporal Controllability / 1985
Michael D. Moffitt, Martha E. Pollack
- An Extension to Conformant Planning Using Logic Programming / 1991
A. Ricardo Morales, Phan Huy Tu, Tran Cao Son
- Average-Reward Decentralized Markov Decision Processes / 1997
Marek Petrik, Shlomo Zilberstein
- Graph Decomposition for Efficient Multi-Robot Path Planning / 2003
Malcolm Ryan
- Memory-Bounded Dynamic Programming for DEC-POMDPs / 2009
Sven Seuken, Shlomo Zilberstein
- Domain Independent Approaches for Finding Diverse Plans / 2016
Biplav Srivastava, Tuan A. Nguyen, Alfonso Gerevini, Subbarao Kambhampati, Minh Binh Do, Ivan Serina
- Planning under Risk and Knightian Uncertainty / 2023
Felipe W. Trevisan, Fábio G. Cozman, Leliane N. de Barros
- Progression of Situation Calculus Action Theories with Incomplete Information / 2029
Stavros Vassos, Hector Levesque
- Relational Knowledge with Predictive State Representations / 2035
David Wingate, Vishal Soni, Britton Wolfe, Satinder Singh
- Discriminative Learning of Beam-Search Heuristics for Planning / 2041
Yuehua Xu, Alan Fern, Sungwook Yoon
- Using Learned Policies in Heuristic-Search Planning / 2047
SungWook Yoon, Alan Fern, Robert Givan

Robotics

- Effective Control Knowledge Transfer through Learning Skill and Representation Hierarchies / 2054
Mehran Asadi, Manfred Huber
- Image Modeling Using Tree Structured Conditional Random Fields / 2060
Pranjal Awasthi, Aakanksha Gagrani, Balaraman Ravindran
- Visually Tracking Football Games Based on TV Broadcasts / 2066
Michael Beetz, Suat Gedikli, Jan Bandouch, Bernhard Kirchlechner, Nico von Hoyningen-Huene, Alexander Perzlyo
- Mediating between Qualitative and Quantitative Representations for Task-Orientated Human-Robot Interaction / 2072
Michael Brenner, Nick Hawes, John Kelleher, Jeremy Wyatt
- Fast Image Alignment Using Anytime Algorithms / 2078
Rupert Brooks, Tal Arbel, Doina Precup
- Learning to Walk through Imitation / 2084
Rawichote Chalodhorn, David B. Grimes, Keith Grochow, Rajesh P.N. Rao
- Dealing with Perception Errors in Multi-Robot System Coordination / 2091
Alessandro Farinelli, Daniele Nardi, Paul Scerri, Alberto Ingenito

- Team Programming in Golog under Partial Observability / 2097
Alessandro Farinelli, Alberto Finzi, Thomas Lukasiewicz
- A New Approach for Stereo Matching in Autonomous Mobile Robot Applications / 2103
Pasquale Foggia, Jean-Michel Jolion, Alessandro Limongiello, Mario Vento
- Voronoi Random Fields: Extracting the Topological Structure of Indoor Environments via Place Labeling / 2109
Stephen Friedman, Hanna Pasula, Dieter Fox
- Peripheral-Foveal Vision for Real-Time Object Recognition and Tracking in Video / 2115
Stephen Gould, Joakim Arfvidsson, Adrian Kaehler, Benjamin Sapp, Marius Messner, Gary Bradski, Paul Baumstarck, Sukwon Chung, Andrew Y. Ng
- Structure Inference for Bayesian Multisensory Perception and Tracking / 2122
Timothy M. Hospedales, Joel J. Cartwright, Sethu Vijayakumar
- Fast Incremental Square Root Information Smoothing / 2129
Michael Kaess, Ananth Ranganathan, Frank Dellaert
- Optimal Multi-Sensor Based Multi Target Detection by Moving Sensors to the Maximal Clique in a Covering Graph / 2135
Ganesh P. Kumar, K. Madhava Krishna
- Bayesian Tensor Inference for Sketch-Based Facial Photo Hallucination / 2141
Wei Liu, Xiaou Tang, Jianzhuang Liu
- Topological Mapping through Distributed, Passive Sensors / 2147
Dimitri Marinakis, Gregory Dudek
- A Distributed Architecture for Symbolic Data Fusion / 2153
Fulvio Mastrogiovanni, Antonio Sgorbissa, Renato Zaccaria
- Inferring Long-Term User Properties Based on Users' Location History / 2159
Yutaka Matsuo, Naoki Okazaki, Kiyoshi Izumi, Yoshiyuki Nakamura, Takuichi Nishimura, Kôiti Hasida, Hideyuki Nakashima
- Co-Localization from Labeled and Unlabeled Data Using Graph Laplacian / 2166
Jeffrey Junfeng Pan, Qiang Yang
- Feature Based Occupancy Grid Maps for Sonar Based Safe-Mapping / 2172
Amit Kumar Pandey, K. Madhava Krishna, Mainak Nath
- Probabilistic Mobile Manipulation in Dynamic Environments, with Application to Opening Doors / 2178
Anna Petrovskaya, Andrew Y. Ng
- Efficient Failure Detection on Mobile Robots Using Particle Filters with Gaussian Process Proposals / 2185
Christian Plagemann, Dieter Fox, Wolfram Burgard
- Loopy SAM / 2191
Ananth Ranganathan, Michael Kaess, Frank Dellaert
- Depth Estimation Using Monocular and Stereo Cues / 2197
Ashutosh Saxena, Jamie Schulte, Andrew Y. Ng
- Efficient Planning of Informative Paths for Multiple Robots / 2204
Amarjeet Singh, Andreas Krause, Carlos Guestrin, William Kaiser, Maxim Batalin
- Color Learning on a Mobile Robot: Towards Full Autonomy under Changing Illumination / 2212
Mohan Sridharan, Peter Stone
- Online Speed Adaptation Using Supervised Learning for High-Speed, Off-Road Autonomous Driving / 2218
David Stavens, Gabriel Hoffmann, Sebastian Thrun
- Instance-Based AMN Classification for Improved Object Recognition in 2D and 3D Laser Range Data / 2225
Rudolph Triebel, Richard Schmidt, Óscar Martínez Mozos, Wolfram Burgard
- MESH-Based Active Monte Carlo Recognition (MESH-AMCR) / 2231
Felix von Hundelshausen, H.J. Wünsche, Marco Block, Raul Kompass, Raúl Rojas

Common Sense Based Joint Training of Human Activity Recognizers / 2237

Shiaokai Wang, William Pentney, Ana-Maria Popescu, Tanzeem Choudhury, Matthai Philipose

Using a Mobile Robot for Cognitive Mapping / 2243

Chee K. Wong, Jochen Schmidt, Wai K. Yeap

Search

AWA* - A Window Constrained Anytime Heuristic Search Algorithm / 2250

Sandip Aine, Partha P. Chakrabarti, Rajeev Kumar

GUNSAT: A Greedy Local Search Algorithm for Unsatisfiability / 2256

Gilles Audemard, Laurent Simon

Symmetry Breaking in Quantified Boolean Formulae / 2262

Gilles Audemard, Saïd Jabbour, Lakhdar Saïs

Computational Aspects of Analyzing Social Network Dynamics / 2268

Chris Barrett, Harry B. Hunt III, Madhav V. Marathe, S. S. Ravi, Daniel J. Rosenkrantz, Richard E. Stearns, Mayur Thakur

A Machine Learning Approach for Statistical Software Testing / 2274

Nicolas Baskiotis, Michèle Sebag, Marie-Claude Gaudel, Sandrine-Dominique Gouraud

Web Page Clustering Using Heuristic Search in the Web Graph / 2280

Ron Bekkerman, Shlomo Zilberstein, James Allan

Information-Theoretic Approaches to Branching in Search / 2286

Andrew Gilpin, Tuomas Sandholm

From Sampling to Model Counting / 2293

Carla P. Gomes, Joerg Hoffmann, Ashish Sabharwal, Bart Selman

Boosting a Complete Technique to Find MSS and MUS Thanks to a Local Search Oracle / 2300

Éric Grégoire, Bertrand Mazure, Cédric Piette

Characterizing the NP-PSPACE Gap in the Satisfiability Problem for Modal Logic / 2306

Joseph Y. Halpern, Leandro Chaves Rêgo

Improving LRTA*(k) / 2312

Carlos Hernández, Pedro Meseguer

The Effect of Restarts on the Efficiency of Clause Learning / 2318

Jinbo Huang

Recent Progress in Heuristic Search: A Case Study of the Four-Peg Towers of Hanoi Problem / 2324

Richard E. Korf, Ariel Felner

Adaptive Genetic Algorithm with Mutation and Crossover Matrices / 2330

Nga Lam Law, Kwok Yip Szeto

Exploiting Inference Rules to Compute Lower Bounds for MAX-SAT Solving / 2334

Han Lin, Kaile Su

A Multiobjective Frontier Search Algorithm / 2340

Lawrence Mandow, José Luis Pérez de la Cruz

A Comparison of Time-Space Schemes for Graphical Models / 2346

Robert Mateescu, Rina Dechter

State Space Search for Risk-Averse Agents / 2353

Patrice Perny, Olivier Spanjaard, Louis-Xavier Storme

Building Structure into Local Search for SAT / 2359

Duc Nghia Pham, John Thornton, Abdul Sattar

- Near-Optimal Anytime Coalition Structure Generation / 2365
Talal Rahwan, Sarvapali D. Ramchurn, Viet Dung Dang, Nicholas R. Jennings
- Real-Time Heuristic Search with a Priority Queue / 2372
D. Chris Rayner, Katherine Davison, Vadim Bulitko, Kenneth Anderson, Jieshan Lu
- Best-First Utility-Guided Search / 2378
Wheeler Ruml, Minh B. Do
- Dynamic Weighting A* Search-Based MAP Algorithm for Bayesian Networks / 2385
Xiaoxun Sun, Marek J. Druzdzel, Changhe Yuan
- The Fringe-Saving A* Search Algorithm - A Feasibility Study / 2391
Xiaoxun Sun, Sven Koenig
- Using Graph Algebra to Optimize Neighborhood for Isometric Mapping / 2398
Guihua Wen, Lijun Jiang, Nigel R. Shadbolt
- Lambda Depth-First Proof Number Search and Its Application to Go / 2404
Kazuki Yoshizoe, Akihiro Kishimoto, Martin Müller
- Edge Partitioning in External-Memory Graph Search / 2410
Rong Zhou, Eric A. Hansen

Uncertainty

- Solving POMDPs Using Quadratically Constrained Linear Programs / 2418
Christopher Amato, Daniel S. Bernstein, Shlomo Zilberstein
- On the Compilation of Stratified Belief Bases under Linear and Possibilistic Logic Policies / 2425
Salem Benferhat, Safa Yahi, Habiba Drias
- Efficient and Robust Independence-Based Markov Network Structure Discovery / 2431
Facundo Bromberg, Dimitris Margaritis
- Using Linear Programming for Bayesian Exploration in Markov Decision Processes / 2437
Pablo Samuel Castro, Doina Precup
- Compiling Bayesian Networks Using Variable Elimination / 2443
Mark Chavira, Adnan Darwiche
- Representing Kriegspiel States with Metapositions / 2450
Paolo Ciancarini, Gian Piero Favini
- A Conceptual Graph Approach for the Generation of Referring Expressions / 2456
Madalina Croitoru, Kees van Deemter
- Belief Change Based on Global Minimisation / 2462
James P. Delgrande, Jérôme Lang, Torsten Schaub
- ProbLog: A Probabilistic Prolog and Its Application in Link Discovery / 2468
Luc De Raedt, Angelika Kimmig, Hannu Toivonen
- The Value of Observation for Monitoring Dynamic Systems / 2474
Eyal Even-Dar, Sham M. Kakade, Yishay Mansour
- WiFi-SLAM Using Gaussian Process Latent Variable Models / 2480
Brian Ferris, Dieter Fox, Neil Lawrence
- Revisiting Output Coding for Sequential Supervised Learning / 2486
Guohua Hao, Alan Fern
- Graph-Based Semi-Supervised Learning as a Generative Model / 2492
Jingrui He, Jaime Carbonell, Yan Liu

- An Action Description Language for Iterated Belief Change / 2498
Aaron Hunter, James P. Delgrande
- Using a Hierarchical Bayesian Model to Handle High Cardinality Attributes with Relevant Interactions in a Classification Problem / 2504
Jorge Jambeiro Filho, Jacques Wainer
- A Factor Graph Model for Software Bug Finding / 2510
Ted Kremenek, Andrew Y. Ng, Dawson Engler
- Belief Update Revisited / 2517
Jérôme Lang
- Dynamically Weighted Hidden Markov Model for Spam Deobfuscation / 2523
Seunghak Lee, Iryoung Jeong, Seungjin Choi
- Training Conditional Random Fields Using Virtual Evidence Boosting / 2530
Lin Liao, Tanzeem Choudhury, Dieter Fox, Henry Kautz
- A Fast Analytical Algorithm for Solving Markov Decision Processes with Real-Valued Resources / 2536
Janusz Marecki, Sven Koenig, Milind Tambe
- Hierarchical Heuristic Forward Search in Stochastic Domains / 2542
Nicolas Meuleau, Ronen I. Brafman
- Compiling Bayesian Networks by Symbolic Probability Calculation Based on Zero-Suppressed BDDs / 2550
Shin-ichi Minato, Ken Satoh, Taisuke Sato
- Efficiently Exploiting Symmetries in Real Time Dynamic Programming / 2556
Shravan Matthur Narayanamurthy, Balaraman Ravindran
- Hierarchical Multi-Channel Hidden Semi Markov Models / 2562
Pradeep Natarajan, Ramakant Nevatia
- Iterated Belief Contraction from First Principles / 2568
Abhaya C. Nayak, Randy Goebel, Mehmet A. Orgun
- An Analysis of Laplacian Methods for Value Function Approximation in MDPs / 2574
Marek Petrik
- Global/Local Dynamic Models / 2580
Avi Pfeffer, Subrata Das, David Lawless, Brenda Ng
- Bayesian Inverse Reinforcement Learning / 2586
Deepak Ramachandran, Eyal Amir
- AEMS: An Anytime Online Search Algorithm for Approximate Policy Refinement in Large POMDPs / 2592
Stéphane Ross, Brahim Chaib-draa
- Efficient Bayesian Task-Level Transfer Learning / 2599
Daniel M. Roy, Leslie P. Kaelbling
- Inside-Outside Probability Computation for Belief Propagation / 2605
Taisuke Sato
- Logical Circuit Filtering / 2611
Dafna Shahaf, Eyal Amir
- Forward Search Value Iteration for POMDPs / 2619
Guy Shani, Ronen I. Brafman, Solomon E. Shimony
- Dynamic Interactions between Goals and Beliefs / 2625
Steven Shapiro, Gerhard Brewka
- Inferring Complex Agent Motions from Partial Trajectory Observations / 2631
Finnegan Southey, Wesley Loh, Dana Wilkinson

Towards Efficient Computation of Error Bounded Solutions in POMDPs:
Expected Value Approximation and Dynamic Disjunctive Beliefs / 2638
Pradeep Varakantham, Rajiv T. Maheswaran, Tapana Gupta, Milind Tambe

Web / Data Mining

Distributed Data Mining: Why Do More than Aggregating Models / 2645
Mohamed Aoun-Allah, Guy Mineau

Stable Biclustering of Gene Expression Data with Nonnegative Matrix Factorizations / 2651
Liviu Badea, Doina Tilvea

Determining Expert Profiles (With an Application to Expert Finding) / 2657
Krisztian Balog, Maarten de Rijke

Learning “Forgiving” Hash Functions: Algorithms and Large Scale Tests / 2663
Shumeet Baluja, Michele Covell

Open Information Extraction from the Web / 2670
Michele Banko, Michael J. Cafarella, Stephen Soderland, Matt Broadhead, Oren Etzioni

Trust Based Recommender System for Semantic Web / 2677
Punam Bedi, Harmeet Kaur, Sudeep Marwaha

Identifying Expressions of Opinion in Context / 2683
Eric Breck, Yejin Choi, Claire Cardie

Detect and Track Latent Factors with Online Nonnegative Matrix Factorization / 2689
Bin Cao, Dou Shen, Jian-Tao Sun, Xuanhui Wang, Qiang Yang, Zheng Chen

Learning Semantic Descriptions of Web Information Sources / 2695
Mark James Carman, Craig A. Knoblock

An Improved Probabilistic Ant Based Clustering for Distributed Databases / 2701
Ramachandran Chandrasekar, Thanukrishnan Srinivasan

Directed Graph Embedding / 2707
Mo Chen, Qiong Yang, Xiaou Tang

Constructing Career Histories: A Case Study in Disentangling the Threads / 2713
Paul R. Cohen

Change of Representation for Statistical Relational Learning / 2719
Jesse Davis, Irene Ong, Jan Struyf, Elizabeth Burnside, David Page, Vitor Santos Costa

Pseudo-Aligned Multilingual Corpora / 2727
Fernando Diaz, Donald Metzler

Locating Complex Named Entities in Web Text / 2733
Doug Downey, Matthew Broadhead, Oren Etzioni

Models of Searching and Browsing: Languages, Studies, and Application / 2740
Doug Downey, Susan Dumais, Eric Horvitz

An Adaptive Context-Based Algorithm for Term Weighting: Application to Single-Word Question Answering / 2748
Marco Ernanides, Giovanni Angelini, Marco Gori, Leonardo Rigutini, Franco Scarselli

Semi-Supervised Learning for Multi-Component Data Classification / 2754
Akinori Fujino, Naonori Ueda, Kazumi Saito

Opinion Sentence Search Engine on Open-Domain Blog / 2760
Osamu Furuse, Nobuaki Hiroshima, Setsuo Yamada, Ryoji Kataoka

- ItemRank: A Random-Walk Based Scoring Algorithm for Recommender Engines / 2766
Marco Gori, Augusto Pucci
- An Analysis of the Use of Tags in a Blog Recommender System / 2772
Conor Hayes, Paolo Avesani, Sriharsha Veeramachaneni
- Efficient Calculation of Personalized Document Rankings / 2778
Claudia Hess, Klaus Stein
- Computation of Initial Modes for K-modes Clustering Algorithm Using Evidence Accumulation / 2784
Shehroz S. Khan, Shri Kant
- Logistic Regression Models for a Fast CBIR Method Based on Feature Selection / 2790
Riadh Ksantini, Djemel Ziu, Bernard Colin, Francois Dubeau
- Collapsed Variational Dirichlet Process Mixture Models / 2796
Kenichi Kurihara, Max Welling, Yee Whye Teh
- Learning to Identify Unexpected Instances in the Test Set / 2802
Xiao-Li Li, Bing Liu, See-Kiong Ng
- Feature Mining and Neuro-Fuzzy Inference System for Steganalysis of
LSB Matching Steganography in Grayscale Images / 2808
Qingzhong Liu, Andrew H. Sung
- Improving Activity Discovery with Automatic Neighborhood Estimation / 2814
David Minnen, Thad Starner, Irfan Essa, Charles Isbell
- Extracting Keyphrases to Represent Relations in Social Networks from Web / 2820
Junichiro Mori, Mitsuru Ishizuka, Yutaka Matsuo
- Extracting and Visualizing Trust Relationships from Online Auction Feedback Comments / 2826
John O'Donovan, Barry Smyth, Vesile Evrim, Dennis McLeod
- What You Seek Is What You Get: Extraction of Class Attributes from Query Logs / 2832
Marius Pasca, Benjamin Van Durme
- Semi-Supervised Learning of Attribute-Value Pairs from Product Descriptions / 2838
Katharina Probst, Rayid Ghani, Marko Krema, Andrew Fano, Yan Liu
- A Fusion of Stacking with Dynamic Integration / 2844
Niall Rooney, David Patterson
- Robust Human-Computer Interaction System Guiding a User by Providing Feedback / 2850
Michael S. Ryoo, Jake K. Aggarwal
- Combining Learning and Word Sense Disambiguation for Intelligent User Profiling / 2856
Giovanni Semeraro, Marco Degemmis, Pasquale Lops, Pierpaolo Basile
- Document Summarization Using Conditional Random Fields / 2862
Dou Shen, Jian-Tao Sun, Hua Li, Qiang Yang, Zheng Chen
- Real-Time Detection of Task Switches of Desktop Users / 2868
Jianqiang Shen, Lida Li, Thomas G. Dietterich
- Estimating the Rate of Web Page Updates / 2874
Sanasam Ranbir Singh
- On the Automatic Scoring of Handwritten Essays / 2880
Sargur Srihari, Rohini Srihari, Pavithra Babu, Harish Srinivasan
- Layout Analysis of Tree-Structured Scene Frames in Comic Images / 2885
Takamasa Tanaka, Kenji Shoji, Fubito Toyama, Juichi Miyamichi
- Face Recognition via the Overlapping Energy Histogram / 2891
Ronny Tjahyadi, Wanquan Liu, Senjian An, Svetha Venkatesh

Semantic Indexing of a Competence Map to Support Scientific Collaboration in a Research Community / 2897

Paola Velardi, Roberto Navigli, Michaël Petit

Manifold-Ranking Based Topic-Focused Multi-Document Summarization / 2903

Xiaojun Wan, Jianwu Yang, Jianguo Xiao

Dynamic Mixture Models for Multiple Time Series / 2909

Xing Wei, Jimeng Sun, Xuerui Wang

Automatic Decision of Piano Fingering Based on Hidden Markov Models / 2915

Yuichiro Yonebayashi, Hirokazu Kameoka, Shigeki Sagayama

Semantic Smoothing of Document Models for Agglomerative Clustering / 2922

Xiaohua Zhou, Xiaodan Zhang, Xiaohua Hu

Exploiting Image Contents in Web Search / 2928

Zhi-Hua Zhou, Hong-Bin Dai

Mining Complex Patterns across Sequences with Gap Requirements / 2934

Xingquan Zhu, Xindong Wu