Tenth International Conference on Autonomous Agents and Multiagent Systems 2011

(AAMAS 2011)

Taipei, Taiwan
2-6 May 2011

Volume 1 of 2

ISBN: 978-1-61839-101-8

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2011) by the International Foundation for Autonomous Agents and Multiagent Systems
All rights reserved.

Printed by Curran Associates, Inc. (2011)

For permission requests, please contact IFAAMAS
at the address below.

info@ifaamas.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

SESSION BP1 – BEST PAPERS SESSION I

Agent-Based Control for Decentralised Demand Side Management in the Smart Grid 1
Sarvapali D. Ramchurn, Perukrishnen Vytelingum, Alex Rogers, Nicholas R. Jennings

Deploying Power Grid-Integrated Electric Vehicles as a Multi-Agent System 9
Sachin Kamboj, Willett Kempton, Keith S. Decker

Multi-Agent Monte Carlo Go 17
Leandro Soriano Marcolino, Hitoshi Matsubara

Towards a Unifying Characterization for Quantifying Weak Coupling in Dec-POMDPs 25
Stefan J. Witwicki, Edmund H. Durfee

GUARDS - Game Theoretic Security Allocation on a National Scale 33
James Pita, Milind Tambe, Christopher Kiekintveld, Shane Cullen, Erin Steigerwald

SESSION BP2 – BEST PAPERS SESSION II

On the Outcomes of Multiparty Persuasion 41
Elise Bonzon, Nicolas Maudet

Arbitrators in Overlapping Coalition Formation Games 49
Yair Zick, Edith Elkind

Learning the Demand Curve in Posted-Price Digital Goods Auctions 57
Meenal Chhabra, Sanmay Das

Ties Matter: Complexity of Voting Manipulation Revisited 65
Svetlana Obraztsova, Edith Elkind, Noam Hazon

Designing Incentives for Boolean Games 73
Ulle Endriss, Sarit Kraus, Jérôme Lang, Michael Wooldridge

SESSION A1 - ROBOTICS

Who Goes There? Selecting a Robot to Reach a Goal Using Social Regret 81
Meytal Traub, Gal A. Kaminka, Noa Agmon

Exploration Strategies Based on Multi-Criteria Decision Making for Search and Rescue Autonomous Robots 89
Nicola Basilico, Francesco Amigoni

Simulation-based Temporal Projection of Everyday Robot Object Manipulation 97
Lars Kunze, Mihai Emanuel Dolha, Emitza Guzman, Michael Beetz

Online Anomaly Detection in Unmanned Vehicles 105
Eliahu Khalastchi, Gal A. Kaminka, Meir Kalech, Raz Lin

Tree Adaptive A* 113
Carlos Hernández, Xiaoxun Sun, Sven Koenig, Pedro Meseguer

SESSION B1 – DISTRIBUTED PROBLEM SOLVING I

Quality Guarantees for Region Optimal DCOP Algorithms 121
Meritxell Vinyals, Eric Shieh, Jesus Cerquides, Juan Antonio Rodriguez-Aguilar, Zhengyu Yin, Milind Tambe, Emma Bowring

Distributed Algorithms for Solving the Multiagent Temporal Decoupling Problem 129
James C. Boerkoel Jr., Edmund H. Durfee

Decomposing Constraint Systems: Equivalences and Computational Properties 137
Wiebe Van der hoek, Cees Witteveen, Michael Wooldridge

Decentralized Monitoring of Distributed Anytime Algorithms 145
Alan Carlin, Shlomo Zilberstein

Consensus Acceleration in Multiagent Systems with the Chebyshev Semi-Iterative Method 153
Renato L. G. Cavalcante, Alex Rogers, Nicholas R. Jennings

SESSION C1 – GAME THEORY I

Information Elicitation for Decision Making 161
Yiling Chen, Ian A. Kash

Stable Partitions in Additively Separable Hedonic Games 169
Haris Aziz, Felix Brandt, Hans Georg Seedig

Complexity of Coalition Structure Generation 177
Haris Aziz, Bart De keijzer

Equilibrium Approximation in Simulation-Based Extensive-Form Games 185
Nicola Gatti, Marcello Restelli

Maximum Causal Entropy Correlated Equilibria for Markov Games 193
Brian D. Ziebart, J. Andrew Bagnell, Anind K. Dey

SESSION D1 – MULTIAGENT LEARNING

Learning Action Models for Multi-Agent Planning 201
Hankz Hankui Zhuo, Hector Muñoz-Avila, Qiang Yang
Theoretical Considerations of Potential-Based Reward Shaping for Multi-Agent Systems 209
Sam Devlin, Daniel Kudenko
Evolving Subjective Utilities: Prisoner's Dilemma Game Examples 217
Koichi Moriyama, Satoshi Kurihara, Masayuki Numao
Cooperation through Reciprocity in Multiagent Systems: An Evolutionary Analysis 225
Christian Hütter, Klemens Böhm
Distributed Cooperation in Wireless Sensor Networks 233
Mihail Mihaylov, Yann-Aël Le borgne, Karl Tuyls, Ann Nowé

SESSION A2 – LOGIC-BASED APPROACHES I

A Framework for Coalitional Normative Systems 241
Jun Wu, Chongjun Wang, Junyuan Xie
Practical Argumentation Semantics for Socially Efficient Defeasible Consequence 249
Hiroyuki Kido, Katsumi Nitta
Taming the Complexity of Linear Time BDI Logics 257
Nils Bulling, Koen V. Hindriks

SESSION B2 – AGENT-BASED SYSTEM DEVELOPMENT I

Scenarios for System Requirements Traceability and Testing 265
John Thangarajah, Gaya Jayatilleke, Lin Padgham
Kokomo: An Empirically Evaluated Methodology for Affective Applications 273
Derek J. Sollenberger, Munindar P. Singh
Programming Mental State Abduction 281
Michal Sindlar, Mehdi Dastani, John-Jules Ch. Meyer

SESSION C2 – SOCIAL CHOICE THEORY

Possible And Necessary Winners In Voting Trees: Majority Graphs Vs. Profiles 289
Maria Silvia Pini, Francesca Rossi, Kristen Brent Venable, Toby Walsh
Tight Bounds for Strategyproof Classification 297
Reshef Meir, Shaull Almagor, Assaf Michaely, Jeffrey S. Rosenschein
A Double Oracle Algorithm for Zero-Sum Security Games on Graphs 305
Manish Jain, Dmytro Korzhyk, Ondrej Vanek, Vincent Conitzer, Michal Pechoucek, Milind Tambe

SESSION D2 – PREFERENCES AND STRATEGIES

Modeling Social Preferences in Multi-player Games 313
Brandon Wilson, Inon Zuckerman, Dana Nau
A Study of Computational and Human Strategies in Revelation Games 321
Noam Peled, Ya'Akov (Kobi) Gal, Sarit Kraus
Efficient Heuristic Approach to Dominance Testing in CP-nets 329
Minyi Li, Quoc Bao Vo, Ryszard Kowalczyk

SESSION A3 – DISTRIBUTED PROBLEM SOLVING II

Resource-Aware Junction Trees for Efficient Multi-Agent Coordination 337
N. Stefanovitch, A. Farinelli, Alex Rogers, Nicholas R. Jennings
Bounded Decentralised Coordination over Multiple Objectives 345
Francesco M. Delle fave, Ruben Stranders, Alex Rogers, Nicholas R. Jennings
Communication-Constrained DCOPs: Message Approximation in GDL with Function Filtering 353
Marc Pujol-Gonzalez, Jesus Cerquides, Pedro Meseguer, Juan Antonio Rodriguez-Aguilar

SESSION B3 – AGENT-BASED SYSTEM DEVELOPMENT II

AgentScope: Multi-Agent Systems Development in Focus 361
Elth Ogston, Frances Brazier
Agent Programming with Priorities and Deadlines 369
Konstantin Vikhorev, Natasha Alechina, Brian Logan

Rich Goal Types in Agent Programming 377
Mehdi Dastani, M. Birna Van riemsdijk, Michael Winikoff

SESSION C3 – BOUNDED RATIONALITY

Expert-Mediated Search 385
Meenal Chhabra, Sanmay Das, David Sarne
Using Aspiration Adaptation Theory to Improve Learning 393
Avi Rosenfeld, Sarit Kraus
Less Is More: Restructuring Decisions to Improve Agent Search 401
David Sarne, Avshalom Elmalech, Barbara J. Grosz, Moti Geva

SESSION D3 – VIRTUAL AGENTS I

Culture-related Differences in Aspects of Behavior for Virtual Characters Across Germany and Japan 409
Birgit Endrass, Elisabeth André, Afia Akhter Lipi, Matthias Rehm, Yukiko Nakano
Controlling Narrative Time in Interactive Storytelling 417
Julie Porteous, Jonathan Teutenberg, Fred Charles, Marc Cavazza
ESCAPES - Evacuation Simulation with Children, Authorities, Parents, Emotions, and Social comparison 425
Jason Tsai, Natalie Fridman, Emma Bowring, Matthew Brown, Shira Epstein, Gal A. Kaminka, Stacy Marsella, Andrew Ogden, Inbal Rika, Ankur Sheel, Matthew E. Taylor, Xuezhi Wang, Avishay Zilka, Milind Tambe

SESSION A4 – AGENT COMMUNICATION

Commitments with Regulations: Reasoning about Safety and Control in Regula 433
Elisa Marengo, Matteo Baldoni, Cristina Baroglio, Amit K. Chopra, Viviana Patti, Munindar P. Singh
Specifying and Applying Commitment-Based Business Patterns 441
Amit K. Chopra, Munindar P. Singh
On the Verification of Social Commitments and Time 449
Mohamed El-Menshawy, Jamal Bentahar, Hongyang Qu, Rachida Dssouli
Information-Driven Interaction-Oriented Programming: BSPL, the Blindingly Simple Protocol Language 457
Munindar P. Singh
On Topic Selection Strategies in Multi-Agent Naming Game 465
Wojciech Lorkiewicz, Ryszard Kowalczyk, Radoslaw Katarzyniak, Quoc Bao Vo

SESSION B4 – GAME THEORY AND LEARNING

Reaching Correlated Equilibria Through Multi-agent Learning 473
Ludek Cigler, Boi Faltings
Sequential Targeted Optimality as a New Criterion for Teaching and Following in Repeated Games 481
Max Knobbout, Gerard A. W. Vreeswijk
On the Quality and Complexity of Pareto Equilibria in the Job Scheduling Game 489
Leah Epstein, Elena Kleiman
Game Theory-Based Opponent Modeling in Large Imperfect-Information Games 497
Sam Ganzfried, Tuomas Sandholm
False-name Bidding in First-price Combinatorial Auctions with Incomplete Information 505
Atsushi Iwasaki, Atsushi Katsuragi, Makoto Yokoo

SESSION C4 - TEAMWORK

Metastrategies in the Colored Trails Game 513
Steven De jong, Daniel Hennes, Karl Tuyls, Ya'Akov (Kobi) Gal
Computing Stable Outcomes in Hedonic Games with Voting-Based Deviations 521
Martin Gairing, Rahul Savani
Empirical Evaluation of Ad Hoc Teamwork in the Pursuit Domain 529
Samuel Barrett, Peter Stone, Sarit Kraus
Decision Theoretic Behavior Composition 537
Nitin Yadav, Sebastian Sardina
Solving Election Manipulation Using Integer Partitioning Problems 545
Andrew Lin

SESSION A5 – LEARNING AGENTS

Using Iterated Reasoning to Predict Opponent Strategies 553
Michael Wunder, John Robert Yaros, Michael Littman, Michael Kaisers
Cognitive Policy Learner: Biasing Winning or Losing Strategies 561
Dominik Dahlem, Jim Dowling, William Harrison
Agent-Mediated Multi-Step Optimization for Resource Allocation in Distributed Sensor Networks 569
Bo An, Victor Lesser, David Westbrook, Michael Zink
Integrating Reinforcement Learning with Human Demonstrations of Varying Ability 577
Matthew E. Taylor, Halit Bener Suay, Sonia Chernova

SESSION B5 – AUCTION AND INCENTIVE DESIGN

Incentive Design for Adaptive Agents 585
Yiling Chen, Jerry Kung, David C. Parkes, Ariel D. Procaccia, Haoqi Zhang
A Truth Serum for Sharing Rewards 593
Arthur Carvalho, Kate Larson
Majority-Rule-Based Preference Aggregation on Multi-Attribute Domains with CP-Nets 601
Minyi Li, Quoc Bao Vo, Ryszard Kowalczyk
False-name-proof Mechanism Design without Money 609
Taiki Todo, Atsushi Iwasaki, Makoto Yokoo
Capability-Aligned Matching: Improving Quality of Games with a Purpose 617
Che-Liang Chiou, Jane Yung-Jen Hsu

SESSION C5 – SIMULATION AND EMERGENCE

Emerging Cooperation on Complex Networks 625
Norman Salazar, Juan Antonio Rodriguez-Aguilar, Josep Lluís Arcos, Ana Peleteiro, Juan C. Burguillo-Rial
An Investigation of the Vulnerabilities of Scale Invariant Dynamics in Large Teams 633
Robin Glinton, Paul Scerri, Katia Sycara
The Evolution of Cooperation in Self-Interested Agent Societies: A Critical Study 641
Lisa-Maria Hofmann, Nilanjan Chakraborty, Katia Sycara
A Model of Norm Emergence and Innovation in Language Change 649
Samarth Swarup, Andrea Apolloni, Zsuzsanna Fagyal

VOLUME 2

Dynamic Level of Detail for Large Scale Agent-Based Urban Simulations 657
Laurent Navarro, Fabien Flacher, Vincent Corruble

SESSION D5 – LOGIC-BASED APPROACHES II

Reasoning About Local Properties in Modal Logic 665
Hans Van ditmarsch, Wiebe Van der hoek, Barteld Kooi
Knowledge and Control 673
Wiebe Van der hoek, Nicolas Troquard, Michael Wooldridge
Strategic Games and Truly Playable Effectivity Functions 681
Valentin Goranko, Wojciech Jamroga, Paolo Turrini
Scientia Potentia Est 689
Thomas Agotnes, Wiebe Van der hoek, Michael Wooldridge
Tractable Model Checking for Fragments of Higher-Order Coalition Logic 697
Patrick Doherty, Barbara Dunin-Keplicz, Andrzej Szalas

SESSION A6 – ROBOTICS AND LEARNING

Active Markov Information-Theoretic Path Planning for Robotic Environmental Sensing 705
Kian Hsiang Low, John M. Dolan, Pradeep Khosla
Horde: A Scalable Real-time Architecture for Learning Knowledge from Unsupervised Sensorimotor Interaction 713
Richard S. Sutton, Joseph Modayil, Michael Delp, Thomas Degris, Patrick M. Pilarski, Adam White, Doina Precup
On Optimizing Interdependent Skills: A Case Study in Simulated 3D Humanoid Robot Soccer 721
Daniel Urieli, Patrick Macalpine, Shivaram Kalyanakrishnan, Yinon Bentor, Peter Stone
Metric Learning for Reinforcement Learning Agents 729
Matthew E. Taylor, Brian Kulis, Fei Sha

SESSION B6 – ENERGY APPLICATIONS

Cooperatives of Distributed Energy Resources for Efficient Virtual Power Plants 737
Georgios Chalkiadakis, Valentin Robu, Ramachandra Kota, Alex Rogers, Nicholas R. Jennings
How Agents Can Help Curbing Fuel Combustion – a Performance Study of Intersection Control for Fuel-Operated Vehicles 745
Natalja Pulter, Heiko Schepperle, Klemens Böhm
Decentralized Coordination Of Plug-in Hybrid Vehicles For Imbalance Reduction In A Smart Grid 753
Stijn Vandael, Klaas De craemer, Nelis Boucké, Tom Holvoet, Geert Deconinck
Online Mechanism Design for Electric Vehicle Charging 761
Enrico H. Gerding, Valentin Robu, Sebastian Stein, David C. Parkes, Alex Rogers, Nicholas R. Jennings

SESSION C6 – VOTING PROTOCOLS

Homogeneity and Monotonicity of Distance-Rationalizable Voting Rules 769
Edith Elkind, Piotr Faliszewski, Arkadii Slinko
Possible Winners When New Alternatives Join: New Results Coming Up! 777
Lirong Xia, Jérôme Lang, Jérôme Monnot
The Complexity of Voter Partition in Bucklin and Fallback Voting: Solving Three Open Problems 785
Gábor Erdélyi, Lena Piras, Jörg Rothe
An Algorithm for the Coalitional Manipulation Problem under Maximin 793
Michael Zuckerman, Omer Lev, Jeffrey S. Rosenschein
Computational Complexity of Two Variants of the Possible Winner Problem 801
Dorothea Baumeister, Magnus Roos, Jörg Rothe

SESSION D6 – TRUST AND ORGANISATIONAL STRUCTURE

Trust as Dependence: A Logical Approach 809
Munindar P. Singh
Multi-Layer Cognitive Filtering by Behavioral Modeling 817
Zeinab Noorian, Stephen Marsh, Michael Fleming
Argumentation-Based Reasoning in Agents with Varying Degrees of Trust 825
Simon Parsons, Yuqing Tang, Elizabeth Sklar, Peter McBurney, Kai Cai
A Particle Filter for Bid Estimation in Ad Auctions with Periodic Ranking Observations 833
David Pardoe, Peter Stone
Conviviality Measures 841
Patrice Caire, Baptiste Alcalde, Leendert Van der torre, Chattrakul Sombattheera

SESSION A7 – ARGUMENTATION AND NEGOTIATION

Choosing Persuasive Arguments for Action 849
Elizabeth Black, Katie Atkinson
Argumentation Strategies for Plan Resourcing 857
Chukwuemeka D. Emele, Timothy J. Norman, Simon Parsons
Multi-Criteria Argument Selection In Persuasion Dialogues 865
Tom L. Van der weide, Frank Dignum, John-Jules Ch. Meyer, H. Prakken, Gerard A. W. Vreeswijk
Analyzing Intra-Team Strategies for Agent-Based Negotiation Teams 873
Víctor Sánchez-Anguix, Vicente Julián, Vicente Botti, Ana García-Fornes
The Effect of Expression of Anger and Happiness in Computer Agents on Negotiations with Humans 881
Celso M. De melo, Peter Carnevale, Jonathan Gratch

SESSION B7 - PLANNING

Toward Error-Bounded Algorithms for Infinite-Horizon DEC-POMDPs 889
Jilles S. Dibangoye, Abdel-Illah Mouaddib, Brahim Chaib-Draa
Distributed Model Shaping for Scaling to Decentralized POMDPs with Hundreds of Agents 897
Prasanna Velagapudi, Pradeep Varakantham, Katia Sycara, Paul Scerri
Efficient Planning in R-max 905
Marek Grzes, Jesse Hoey
Multiagent Argumentation for Cooperative Planning in DeLP-POP 913
Pere Pardo, Sergio Pajares, Eva Onaindia, Pilar Dellunde, Lluís Godo

SESSION C7 – GAME THEORY II

Computing a Self-Confirming Equilibrium in Two-Player Extensive-Form Games 921
Nicola Gatti, Fabio Panozzo, Sofia Ceppi
Computing Time-Dependent Policies for Patrolling Games with Mobile Targets 929
Branislav Bošanský, Viliam Lisý, Michal Jakob, Michal Pechoucek
Quality-bounded Solutions for Finite Bayesian Stackelberg Games: Scaling up 937
Manish Jain, Christopher Kiekintveld, Milind Tambe

Approximation Methods for Infinite Bayesian Stackelberg Games: Modeling Distributional Payoff Uncertainty 945
Christopher Kiekintveld, Janusz Marecki, Milind Tambe
Solving Stackelberg Games with Uncertain Observability 953
Dmytro Korzhyk, Vincent Conitzer, Ronald Parr

SESSION D7 – VIRTUAL AGENTS II

A Style Controller for Generating Virtual Human Behaviors 961
Chung-Cheng Chiu, Stacy Marsella
The Face of Emotions: A Logical Formalization of Expressive Speech Acts 969
Nadine Guiraud, Dominique Longin, Emiliano Lorini, Sylvie Pesty, Jérémy Rivière
I've Been Here Before! Location and Appraisal in Memory Retrieval 977
Paulo F. Gomes, Carlos Martinho, Ana Paiva
From Body Space to Interaction Space - Modeling Spatial Cooperation for Virtual Humans 985
Nhung Nguyen, Ipke Wachsmuth
Effect of Time Delays on Agents' Interaction Dynamics 993
Ken Prepin, Catherine Pelachaud

SESSION R – RED SESSION

A Computational Model of Achievement Motivation for Artificial Agents 1001
Kathryn E. Merrick
Incremental DCOP Search Algorithms for Solving Dynamic DCOPs 1003
William Yeoh, Pradeep Varakantham, Xiaoxun Sun, Sven Koenig
MetaTrust: Discriminant Analysis of Local Information for Global Trust Assessment 1005
Liu Xin, Gilles Tredan, Anwitaman Datta
Efficient Penalty Scoring Functions for Group Decision-making with TCP-nets 1007
Minyi Li, Quoc Bao Vo, Ryszard Kowalczyk
A Curious Agent for Network Anomaly Detection 1009
Kamran Shafi, Kathryn E. Merrick
Agents, Pheromones, and Mean-Field Models 1011
H. Van dyke parunak
Basis Function Discovery using Spectral Clustering and Bisimulation Metrics 1013
Gheorghe Comanici, Doina Precup
Incentive Compatible Influence Maximization in Social Networks and Application to Viral Marketing 1015
Mayur Mohite, Y. Narahari
On Optimal Agendas for Package Deal Negotiation 1017
Shaheen Fatima, Michael Wooldridge, Nicholas R. Jennings
An Abstract Framework for Reasoning About Trust 1019
Elisabetta Erriquez, Wiebe Van der hoek, Michael Wooldridge
Message-Passing Algorithms for Large Structured Decentralized POMDPs 1021
Akshat Kumar, Shlomo Zilberstein
Jogger: Models for Context-Sensitive Reminding 1023
Ece Kamar, Eric Horvitz
Spatio-Temporal A* Algorithms for Offline Multiple Mobile Robot Path Planning 1025
Wenjie Wang, Wooi Boon Goh
Influence of Head Orientation in Perception of Personality Traits in Virtual Agents 1027
Diana Arellano, Nikolaus Bee, Kathrin Janowski, Elisabeth André, Javier Varona, Francisco J. Perales
Conflict Resolution with Argumentation Dialogues 1029
Xiuyi Fan, Francesca Toni
Reasoning Patterns in Bayesian Games 1031
Dimitrios Antos, Avi Pfeffer
Using Coalitions of Wind Generators and Electric Vehicles for Effective Energy Market Participation 1033
Matteo Vasirani, Ramachandra Kota, Renato L. G. Cavalcante, Sascha Ossowski, Nicholas R. Jennings
Negotiation Over Decommitment Penalty 1035
Bo An, Victor Lesser
Ship Patrol: Multiagent Patrol under Complex Environmental Conditions 1037
Noa Agmon, Daniel Urieli, Peter Stone
Empirical and Theoretical Support for Lenient Learning 1039
Daan Bloembergen, Michael Kaisers, Karl Tuyls
A Formal Framework for Reasoning about Goal Interactions 1041
Michael Winikoff
On-line Reasoning for Institutionally-Situated BDI agents 1043
Tina Balke, Marina De vos, Julian Padget, Dimitris Traskas
Strategy Purification 1045
Sam Ganzfried, Tuomas Sandholm, Kevin Waugh
Agent-Based Container Terminal Optimisation 1047
Stephen Cranefield, Roger Jarquin, Guannan Li, Brent Martin, Rainer Unland, Hanno-Felix Wagner, Michael Winikoff, Thomas Young

Solving Delayed Coordination Problems in MAS 1049
Yann-Michaël De hauwere, Peter Vrancx, Ann Nowé
Human-like Memory Retrieval Mechanisms for Social Companions 1051
Mei Yii Lim, Ruth Aylett, Patricia A. Vargas, Wan Ching Ho, João Dias
Forgetting Through Generalisation - A Companion with Selective Memory 1053
Mei Yii Lim, Ruth Aylett, Patricia A. Vargas, Sibylle Enz, Wan Ching Ho
Representation of Coalitional Games with Algebraic Decision Diagrams 1055
Karthik . V. Aadithya, Tomasz P. Michalak, Nicholas R. Jennings
Game Theoretical Adaptation Model for Intrusion Detection System 1057
Martin Rehak, Michal Pechoucek, Martin Grill, Jan Stiborek, Karel Bartos
Solving Strategic Bargaining with Arbitrary One-Sided Uncertainty 1059
Sofia Ceppi, Nicola Gatti, Claudio Iuliano
Manipulation in Group Argument Evaluation 1061
Martin Caminada, Gabriella Pigozzi, Mikolaj Podlaszewski
Abstraction for Model Checking Modular Interpreted Systems over ATL 1063
Michael Köster, Peter Lohmann
VIXEE an Innovative Communication Infrastructure for Virtual Institutions 1065
Tomas Trescak, Marc Esteva, Inmaculada Rodriguez
Smart Walkers! Enhancing the Mobility of the Elderly 1067
Mathieu Sinn, Pascal Poupart
Modeling Empathy for a Virtual Human: How, When and to What Extent? 1069
Hana Boukricha, Ipke Wachsmuth
Multi-Agent Abductive Reasoning with Confidentiality 1071
Jiefei Ma, Alessandra Russo, Krysia Broda, Emil Lupu
Reasoning About Preferences in BDI Agent Systems 1073
Simeon Visser, John Thangarajah, James Harland

SESSION B – BLUE SESSION

Probabilistic Hierarchical Planning over MDPs 1075
Yuqing Tang, Felipe Meneguzzi, Katia Sycara, Simon Parsons
Can Trust Increase the Efficiency of Cake Cutting Algorithms? 1077
Roie Zivan
Decentralized Decision Support for an Agent Population in Dynamic and Uncertain Domains 1079
Pradeep Varakantham, Shih-Fen Cheng, Nguyen Thi duong
Adaptive Decision Support for Structured Organizations: A Case for OrgPOMDPs 1081
Pradeep Varakantham, Nathan Schurr, Alan Carlin, Christopher Amato
iCLUB: An Integrated Clustering-Based Approach to Improve the Robustness of Reputation Systems 1083
Siyuan Liu, Jie Zhang, Chunyan Miao, Yin-Leng Theng, Alex C. Kot
Effective Variants of Max-Sum Algorithm to Radar Coordination and Scheduling 1085
Yoonheui Kim, Michael Krainin, Victor Lesser
Improved Computational Models of Human Behavior in Security Games 1087
Rong Yang, Christopher Kiekintveld, Fernando Ordonez, Milind Tambe, Richard John
Agent-Based Resource Allocation in Dynamically Formed CubeSat Constellations 1089
Chris Holmesparker, Adrian Agogino
A Simple Curious Agent to Help People be Curious 1091
Han Yu, Zhiqi Shen, Chunyan Miao, Ah-Hwee Tan
Social Instruments for Convention Emergence 1093
Daniel Villatoro, Jordi Sabater-Mir, Sandip Sen
Learning By Demonstration in Repeated Stochastic Games 1095
Jacob W. Crandall, Malek H. Altakrori, Yomna M. Hassan
Maximizing Revenue in Symmetric Resource Allocation Systems When User Utilities Exhibit Diminishing Returns 1097
Roie Zivan, Miroslav Dudík, Praveen Paruchuri, Katia Sycara
Collaborative Diagnosis of Exceptions to Contracts 1099
Özgür Kafali, Francesca Toni, Paolo Torroni
Genetic Algorithm Aided Optimization of Hierarchical Multiagent System Organization 1101
Ling Yu, Zhiqi Shen, Chunyan Miao, Victor Lesser
Complexity of Multiagent BDI Logics with Restricted Modal Context 1103
Marcin Dziubinski
Extension of MC-net-based Coalition Structure Generation: Handling Negative Rules and Externalities 1105
Ryo Ichimura, Takato Hasegawa, Suguru Ueda, Atsushi Iwasaki, Makoto Yokoo
Diagnosing Commitments: Delegation Revisited 1107
Özgür Kafali, Paolo Torroni
ADAPT: Abstraction Hierarchies to Succinctly Model Teamwork 1109
Meirav Hadad, Avi Rosenfeld
Rip-off: Playing the Cooperative Negotiation Game 1111
Yoram Bachrach, Pushmeet Kohli, Thore Graepel
Interfacing a Cognitive Agent Platform with a Virtual World: a Case Study using Second Life 1113
Surangika Ranathunga, Stephen Cranefield, Martin Purvis

Message-Generated Kripke Semantics 1115
Jan Van eijck, Floor Sietsma
Substantiating Quality Goals with Field Data for Socially-Oriented Requirements Engineering 1117
Sonja Pedell, Tim Miller, Leon Sterling, Frank Vetere, Steve Howard, Jeni Paay
Normative Programs and Normative Mechanism Design 1119
Nils Bulling, Mehdi Dastani
Privacy-Intimacy Tradeoff in Self-disclosure 1121
Jose M. Such, Agustin Espinosa, Ana García-Fornes, Carles Sierra
Reasoning About Norm Compliance 1123
Natalia Criado, Estefania Argente, Vicente Botti, Pablo Noriega
Emergence of Norms for Social Efficiency in Partially Iterative Non-Coordinated Games 1125
Toshiharu Sugawara
On the Construction of Joint Plans through Argumentation Schemes 1127
Oscar Sapena, Alejandro Torreño, Eva Onaindia
Team Coverage Games 1129
Yoram Bachrach, Pushmeet Kohli, Vladimir Kolmogorov
Agent-based Inter-Company Transport Optimization 1131
Klaus Dorer, Ingo Schindler, Dominic Greenwood
Belief/Goal Sharing BDI Modules 1133
Michal Cap, Mehdi Dastani, Maaike Harbers
Neural Symbolic Architecture for Normative Agents 1135
Guido Boella, Silvano Colombo tosatto, Artur D'Avila garcez, Valerio Genovese, Dino Ienco, Leendert Van der torre
No Smoking Here: Compliance Differences Between Legal and Social Norms 1137
Francien Dechesne, Virginia Dignum
Agents That Speak: Modelling Communicative Plans and Information Sources in a Logic of Announcements 1139
Philippe Balbiani, Nadine Guiraud, Andreas Herzig, Emiliano Lorini
Procedural Fairness in Stable Marriage Problems 1141
Mirco Gelain, Maria Silvia Pini, Francesca Rossi, Kristen Brent Venable, Toby Walsh
Tag-Based Cooperation in N-Player Dilemmas 1143
Enda Howley, Jim Duggan
Heuristic Multiagent Planning with Self-Interested Agents 1145
Matt Crosby, Michael Rovatsos
Mining Qualitative Context Models from Multiagent Interactions 1147
Emilio Serrano, Michael Rovatsos, Juan Botia
Partially Observable Stochastic Game-based Multi-Agent Prediction Markets 1149
Janyl Jumadinova, Prithviraj Dasgupta

SESSION G – GREEN SESSION

A Cost-Based Transition Approach for Multiagent Systems Reorganization 1151
Juan M. Alberola, Vicente Julián, Ana García-Fornes
Towards an Agent-Based Proxemic Model for Pedestrian and Group Dynamics: Motivations and First Experiments 1153
Sara Manzoni, Giuseppe Vizzari, Kazumichi Ohtsuka, Kenichiro Shimura
Batch Reservations in Autonomous Intersection Management 1155
Neda Shahidi, Tsz-Chiu Au, Peter Stone
Multi-Agent, Reward Shaping for RoboCup KeepAway 1157
Sam Devlin, Marek Grzes, Daniel Kudenko
Approximating Behavioral Equivalence of Models Using Top-K Policy Paths 1159
Yifeng Zeng, Yingke Chen, Prashant Doshi
Reflection about Capabilities for Role Enactment 1161
M. Birna Van riemsdijk, Virginia Dignum, Catholijn M. Jonker, Huib Aldewereld
Prognostic Normative Reasoning in Coalition Planning 1163
Jean Oh, Felipe Meneguzzi, Katia Sycara, Timothy J. Norman
Virtual Agent Perception in Large Scale Multi-Agent Based Simulation Systems 1165
Dane Kuiper, Rym Z. Wenkstern
A Formal Analysis of the Outcomes of Argumentation-based Negotiations 1167
Leila Amgoud, Srdjan Vesic
Modeling the Emergence of Norms 1169
Logan Brooks, Wayne Iba, Sandip Sen
Introducing Homophily to Improve Semantic Service Search in a Self-adaptive System 1171
E. Del val, M. Rebollo, Vicente Botti
Adaptive Regulation of Open MAS: an Incentive Mechanism based on Modifications of the Environment 1173
Roberto Centeno, Holger Billhardt
Allocating Spatially Distributed Tasks in Large, Dynamic Robot Teams 1175
Steven Okamoto, Nathan Brooks, Sean Owens, Katia Sycara, Paul Scerri
Bounded Optimal Team Coordination with Temporal Constraints and Delay Penalties 1177
G. Ayorkor Korsah, Anthony Stentz, M. Bernardine Dias
A Perception Framework for Intelligent Characters in Serious Games 1179
Joost Van oijen, Frank Dignum

SR-APL: A Model for a Programming Language for Rational BDI Agents with Prioritized Goals 1181
Shakil M. Khan, Yves Lespérance
Designing Petri Net Supervisors for Multi-Agent Systems from LTL Specifications 1183
Bruno Lacerda, Pedro U. Lima
Friend or Foe? Detecting an Opponent's Attitude in Normal Form Games 1185
Steven Damer, Maria Gini
The BDI Driver in a Service City 1187
Marco Lützenberger, Nils Masuch, Benjamin Hirsch, Sebastian Ahrndt, Axel Hebler, Sahin Albayrak
Identifying and Exploiting Weak-Information Inducing Actions in Solving POMDPs 1189
Ekhlas Sonu, Prashant Doshi
Teamwork in Distributed POMDPs: Execution-time Coordination Under Model Uncertainty 1191
Jun-Young Kwak, Rong Yang, Zhengyu Yin, Matthew E. Taylor, Milind Tambe
Escaping Local Optima in POMDP Planning as Inference 1193
Pascal Poupart, Tobias Lang, Marc Toussaint
Toward Human Interaction with Bio-Inspired Teams 1195
Michael A. Goodrich, P. B. Sujit, Jacob W. Crandall
Escaping Heuristic Depressions in Real-Time Heuristic Search 1197
Carlos Hernández, Jorge A. Baier
Pseudo-tree-based Algorithm for Approximate Distributed Constraint Optimization with Quality Bounds 1199
Tenda Okimoto, Yongjoon Joe, Atsushi Iwasaki, Makoto Yokoo
Concise Characteristic Function Representations in Coalitional Games Based on Agent Types 1201
Suguru Ueda, Makoto Kitaki, Atsushi Iwasaki, Makoto Yokoo
Iterative Game-theoretic Route Selection for Hostile Area Transit and Patrolling 1203
Ondrej Vanek, Michal Jakob, Viliam Lisý, Branislav Bošanský, Michal Pechoucek
Abduction Guided Query Relaxation 1205
Samy Sá, João Alcântara
A Message Passing Approach To Multiagent Gaussian Inference for Dynamic Processes ..... N/A
Stefano Ermon, Carla Gomes, Bart Selman
Multiagent Environment Design in Human Computation 1207
Chien-Ju Ho, Yen-Ling Kuo, Jane Yung-Jen Hsu
Social Distance Games 1209
Simina Brânzei, Kate Larson
Agent Sensing with Stateful Resources 1211
Adam Eck, Leen-Kiat Soh
Modeling Bounded Rationality of Agents During Interactions 1213
Qing Guo, Piotr Gmytrasiewicz
Comparing Action-Query Strategies in Semi-Autonomous Agents 1215
Robert Cohn, Edmund H. Durfee, Satinder Singh
A Multimodal End-of-Turn Prediction Model: Learning from Parasocial Consensus Sampling 1217
Lixing Huang, Louis-Philippe Morency, Jonathan Gratch
Scalable Adaptive Serious Games using Agent Organizations 1219
Joost Westra, Frank Dignum, Virginia Dignum
Integrating power and reserve trade in electricity networks 1221
Nicolas Höning, Han Noot, Han La poutré

DEMOS

BDI Agent model Based Evacuation Simulation 1223
Masaru Okaya, Tomoichi Takahashi
An Interactive Tool for Creating Multi-Agent Systems and Interactive Agent-based Games 1225
Henrik Hautop Lund, Luigi Pagliarini
Towards Robot Incremental Learning Constraints from Comparative Demonstration 1227
Rong Zhang, Shangfei Wang, Xiaoping Chen, Dong Yin, Shijia Chen, Min Cheng, Yanpeng Lv, Jianmin Ji, Dejian Wang, Peijia Shen
Teleworkbench: Validating Robot Programs from Simulation to Prototyping with Minirobots 1229
A. Tanoto, F. Werner, U. Rückert, H. Li
A MAS Decision Support Tool for Water-Right Markets 1231
Adriana Giret, Antonio Garrido, Juan A. Gimeno, Vicente Botti, Pablo Noriega
An Implementation of Basic Argumentation Components 1233
Mikolaj Podlaszewski, Martin Caminada, Gabriella Pigozzi
AgentC: Agent-based System for Securing Maritime Transit 1235
Michal Jakob, Ondrej Vanek, Branislav Bošanský, Ondrej Hrstka, Michal Pechoucek
Bee-Inspired Foraging In An Embodied Swarm 1237
Sjriek Alers, Daan Bloembergen, Daniel Hennes, Steven De jong, Michael Kaisers, Nyree Lemmens, Karl Tuyls, Gerhard Weiss
The Social Ultimatum Game and Adaptive Agents 1239
Yu-Han Chang, Rajiv Maheswaran
DipTools: Experimental Data Visualization Tool for the DipGame Testbed 1241
Angela Fabregues, David López-Paz, Carles Sierra
TALOS: A Tool for Designing Security Applications with Mobile Patrolling Robots 1243
Nicola Basilico, Nicola Gatti, Pietro Testa

Vision-Based Obstacle Run for Teams of Humanoid Robots 1245
Jacky Baltes, Chi Tai Cheng, Jonathan Bagot, John Anderson
Evolutionary Design of Agent-based Simulation Experiments 1247
James Decraene, Yew Ti Lee, Fanchao Zeng, Mahinthan Chandramohan, Yong Yong Cheng, Malcolm Yoke Hean Low
Interactive Storytelling with Temporal Planning 1249
Julie Porteous, Jonathan Teutenberg, Fred Charles, Marc Cavazza
Agent-based Network Security Simulation 1251
Dennis Grunewald, Marco Lützenberger, Joël Chinnow, Rainer Bye, Karsten Bsufka, Sahin Albayrak
Experimental Evaluation of Teamwork in Many-Robot Systems 1253
Andrea D'Agostini, Daniele Calisi, Alberto Leo, Francesco Fedi, Luca Iocchi, Daniele Nardi

DOCTORAL CONSORTIUM ABSTRACTS

Reasoning About Norms Within Uncertain Environments 1255
Natalia Criado
Privacy and Self-disclosure in Multiagent Systems 1257
Jose M. Such
Policies for Role Based Agents in Environments with Changing Ontologies 1259
Fatih Tekbacak, Tugkan Tuglular, Oguz Dikenelli
Human Factors in Computer Decision-Making (PhD Thesis Extended Abstract) 1261
Dimitrios Antos
Security in the Context of Multi-Agent Systems 1263
Gideon D. Bibu
Agent Dialogues and Argumentation 1265
Xiuyi Fan
Massively Multi-Agent Pathfinding made Tractable, Efficient, and with Completeness Guarantees 1267
Ko-Hsin Cindy Wang
Securing Networks Using Game Theory: Algorithms and Applications 1269
Manish Jain
Decentralized Semantic Service Discovery based on Homophily for Self-Adaptive Service-Oriented MAS 1271
E. Del val
A Cost-Oriented Reorganization Reasoning for Multiagent Systems Organization Transitions 1273
Juan M. Alberola
Graphical Multiagent Models 1275
Quang Duong
Extended Abstract of Elisabetta Erriquez Thesis 1277
Elisabetta Erriquez
Improving Game-tree Search by Incorporating Error Propagation and Social Orientations 1279
Brandon Wilson
Negotiation Teams in Multiagent Systems 1281
Víctor Sánchez-Anguix
Real-World Security Games: Toward Addressing Human Decision-Making Uncertainty 1283
James Pita
A Multi-Agent System for Predicting Future Event Outcomes 1285
Janyl Jumadinova
A Study of Computational and Human Strategies in Revelation Games 1287
Peled Noam
Thesis Research Abstract: Modeling Crowd Behavior Based on Social Comparison Theory 1289
Natalie Fridman
Cooperation between Self-Interested Agents in Normal Form Games 1291
Steven Damer
Group Decision Making in Multiagent Systems with Abduction 1293
Samy Sá
Security Games with Mobile Patrollers 1295
Ondrej Vanek
Self-Organization in Decentralized Agent Societies through Social Norms 1297
Daniel Villatoro
A Trust Model for Supply Chain Management 1299
Yasaman Haghpanah

Author Index