

AAMAS 2010 TORONTO



The 9th International Conference on
Autonomous Agents and Multiagent Systems
May 10-14, 2010
Toronto, Canada

CONFERENCE PROGRAM



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Committees

Organising Committees

General Chairs

Michael Luck
Sandip Sen

Program Chairs

Wiebe van der Hoek
Gal A. Kaminka

Industry and Applications

Track Chairs

Dominic Greenwood
Jeff Kephart

Robotics Track Chairs

Michael Beetz

Virtual Agents Track Chair

Stacy Marsella

Local Arrangements Chair

Yves Lespérance

Finance Chair

Ana Paiva

Publicity Chair

Jordi Sabater-Mir

Publications Chair

Alex Rogers

Tutorials Chair

Kate Larson

Workshops Chair

Kagan Tumer

Exhibits and Demos

Co-Chairs

Catherine Pelachaud
Iyad Rahwan

Scholarships Co-Chairs

Vincent Conitzer
Pinar Yolum

Doctoral Mentoring

Co-Chairs

Gita Sukthankar
John Thangarajah

Sponsorships Co-Chairs

Roger Mailler
Simon Miles
Rafael Bordini
Longbing Cao

Local Arrangements

Committee

Robin Cohen
Maria Karam
Hojjat Ghaderi

Senior Program Committee

SPC Members Robotics Track

Patrick Doherty
Pedro Lima
Daniele Nardi
Kanna Rajan
Manuela Veloso

SPC Members Virtual Agents Track

Elisabeth Andre
Ruth Aylett
Marc Cavazza
Jonathan Gratch
Dirk Heylen
James Lester
Stefan Kopp
Ana Paiva

Catherine Pelachaud
Paolo Petta
Daniel Thalmann
Hannes Vilhjalmsson

SPC Members Main Track

Thomas Ågotnes
Natasha Alechina
Luis Antunes
Ana Bazzan
Olivier Boissier
Craig Boutillier
Sven Brueckner
Cristiano Castelfranchi
Maria Chli
Vincent Conitzer
Mehdi Dastani
Mathijs de Weerd
Marie des Jardins
Virginia Dignum
Juergen Dix
Edith Elkind
Ulle Endriss
Klaus Fischer
Les Gasser
Maria Gini
Marie-Pierre Gleizes
Jomi Hubner
Michael Huhns
Toru Ishida

Nicholas R. Jennings
Catholijn Jonker
Jeffrey Kephart
Franziska Klugl
Victor Lesser
John-Jules Meyer
Pablo Noriega
Timothy Norman
James Odell
Andrea Omicini
Sascha Ossowski
Lin Padgham
Mario Paolucci
Jeremy Pitt
Helmuth Prendinger
Iyad Rahwan
Jeffrey Rosenschein
Tuomas Sandholm
Amal El Fallah Seghrouchni
Yoav Shoham
Carles Sierra
Liz Sonenberg
Von-Woon Soo
Milind Tambe
Karl Tuyls
Birna van Riemsdijk
Wamberto Vasconcelos
Jose Vidal
Danny Weyns
Michael Wooldridge
Pinar Yolum

Doctoral Mentoring Program

Sunday, 9 May — Full day

09:00 – 10:00 / 10:30 – 11:30 / 13:00 — 15:00 / 15:30 — 17:30

Doctoral Mentoring Program

Room: *Conference D and E*

Coffee Breaks: 10:00 – 10:30 / 15:00 – 15:30

Lunch: 11:30 – 13:00

Tutorials

Monday, 10 May — Full day

08:30 — 10:00 / 10:30 — 12:00 / 13:30 — 15:00 / 15:30 —
17:00

AT2 — Decision Making in Multi-agent Systems
Room: *Conference C*

Monday, 10 May — Half day/ morning

08:30 — 10:00 / 10:30 — 12:00

AT8 — Computational Voting Theory
Room: *Peel*

Monday, 10 May — Half day/ afternoon

13:30 — 15:00 / 15:30 — 17:00

AT12 — Organised Adaptation in Multi-Agent Systems
Room: *Peel*

Tuesday, 11 May — Full day

08:30 — 10:00 / 10:30 — 12:00 / 13:30 — 15:00 / 15:30 —
17:00

AT1 — Cooperative Games in Multi-Agent Systems
Room: *Carleton*

AT4 — Reinforcement Learning and Beyond
Room: *Kent*

Tuesday, 11 May — Half day/ morning

08:30 — 10:00 / 10:30 — 12:00

AT5 — Agents and Virtual Characters from 3D Videogames
Room: *Peel*

AT10 — Equilibrium Computation: Theory and Practice
Room: *Conference C*

Tuesday, 11 May — Half day/ afternoon

13:30 — 15:00 / 15:30 — 17:00

AT9 — Designing Computer Agents for Human-Computer Decision-
Making
Room: *Peel*

Coffee Breaks: 10:00 – 10:30 / 15:00 – 15:30
Lunch: 12:00 – 13:30

Workshops

Monday, 10 May — Full day

08:30 — 10:00 / 10:30 — 12:00 / 13:30 — 15:00 / 15:30 — 17:00

Note: Some workshops have non-standard schedules; please check your workshop's webpage.

AW4 — Agents for Games and Simulations (AGS)

Room: *Conference B*

AW5 — Adaptive and Learning Agents (ALA)

Room: *Conference F*

AW7 — Agent-Mediated Electronic Commerce XII (AMEC)

Room: *Conference G*

AW8 — Agent Oriented Software Engineering (AOSE)

Room: *Elgin*

AW10 — Argumentation in Multi-Agent Systems (ARGMAS)

Room: *Conference H*

AW12 — Agent-Based Technologies and Applications for Enterprise Interoperability (ATOP)

Room: *Carleton*

AW17 — Declarative Agent Language and Technologies (DALT)

Room: *Wentworth*

AW19 — Interacting with ECAs as Virtual Characters (ECA)

Room: *Kenora*

AW25 — Optimisation in Multi-Agent Systems (OPTMAS)

Room: *York*

AW26 — Practical Cognitive Agents and Robots (PCAR)

Room: *Huron*

AW29 — Trust in Agent Societies (TRUST)

Room: *Simcoe*

AW30 — Emergent Intelligence and Networked Agents (WEIN)

Room: *Dufferin*

Coffee Breaks: 10:00 – 10:30 / 15:00 – 15:30

Lunch: 12:00 – 13:30

Monday, 10 May — Half day/ morning

08:30 — 10:00 / 10:30 — 12:00

AW14 — Collaborative Human/AI Control for Interactive Experiences (CHACIE)

Room: *Oxford*

Monday, 10 May — Half day/ afternoon

08:30 — 10:00 / 10:30 — 12:00

AW9 — Agents in Real Time and Dynamic Environments (ARDE)

Room: *Oxford*

AW16 — Cooperative Games in Multi-Agent Systems (COOPMAS)

Room: *Kent*

Coffee Breaks: 10:00 – 10:30 / 15:00 – 15:30

Lunch: 12:00 – 13:30

Tuesday, 11 May — Full day

08:30 — 10:00 / 10:30 — 12:00 / 13:30 — 15:00 / 15:30 — 17:00

Note: Some workshops have non-standard schedules; please check your workshop's webpage.

AW1 — Agent Communication (AC)

Room: *Conference B*

AW2 — Agent-Based Complex Automated Negotiations (ACAN)

Room: *Elgin*

AW3 — Agents and Data Mining Interaction (ADMI)

Room: *Dufferin*

AW6 & AW23 — Agents Learning Interactively from Human Teachers (ALIHT) and Multi-Agent Systems for Education and Interactive Entertainment (MASEIE)

Room: *Wentworth*

AW11 — Agent Technology for Energy Systems (ATES)

Room: *Conference F*

AW13 — Agent in Traffic and Transportation (ATT)

Room: *Kenora*

AW15 — Coordination, Organisations, Institutions and Norms in Agents (COIN)

Room: *Conference G*

AW18 — Distributed Constraint Reasoning (DCR)

Room: *Huron*

AW22 — Multi-Agent-Based Simulation (MABS)

Room: *Conference H*

AW24 — Multi-Agent Sequential Decision Making Under Uncertain Domains (MSDM)

Room: *York*

AW27 — Programming in Multi-Agent Systems (PROMAS)

Room: *Simcoe*

AW28 — Service-Oriented Computing: Agents Semantics, and Engineering (SOCASE)

Room: *Oxford*

Coffee Breaks: 10:00 – 10:30 / 15:00 – 15:30

Lunch: 12:00 – 13:30

Tuesday, 11 May — Half day/ afternoon

13:30 — 15:00 / 15:30 — 17:00

AW20 — Infrastructure and Tools for Multi-Agent Systems (ITMAS)

Room: *Conference C*

AW21 — Logical Aspects of Multi-Agents Systems (LAMAS)

Room: *Windsor East*

Coffee Breaks: 10:00 – 10:30 / 15:00 – 15:30

Lunch: 12:00 – 13:30

Technical Sessions Details

Full papers will also be presented as posters and are marked with their poster number in brackets after the title.

Wednesday, 12 May

08:00 – 08:30 : Opening

Room: *Osgoode Ballroom*

08:30 – 10:30 : Session 1 – Virtual Agents I

Room: *Civic Ballroom South* Chair: *Anna Paiva*

Evaluation of Virtual Agents utilizing Theory of Mind in a Real Time Action Game (*B - 61*)

Mark Hoogendoorn, Jeremy Soumokol

Moving Target D* Lite (*B - 62*)

Xiaoxun Sun, William Yeoh, Sven Koenig

High-level Reinforcement Learning in Strategy Games (*B - 63*)

Christopher Amato, Guy Shani

I Mean It! Detecting User Intentions to create Believable Behaviour for Virtual Agents in Games (*B - 64*)

Eurico Doirado, Carlos Martinho

Adaptive Expressiveness – Virtual Conversational Agents That Can Align to Their Interaction Partner) (*B - 65*)

Hendrik Buschmeier, Kirsten Bergmann, Stefan Kopp

A Data-Driven Approach to Model Culture-Specific Communication Management Styles for Virtual Agents (*B - 66*)

Birgit Endrass, Lixing Huang, Elisabeth Andre, Jonathan Gratch

08:30 – 10:30 : Session 2 – Coordination and Cooperation I

Room: *Osgoode Ballroom* Chair: *Longbing Cao*

When Should There be a “Me” in “Team”? Distributed Multi-Agent Optimization Under Uncertainty (*B - 67*)

Matthew Taylor, Manish Jain, Yanqin Jin, Makoto Yokoo, Milind Tambe

To Teach or not to Teach? Decision Making Under Uncertainty in Ad Hoc Teams (*B - 68*)

Peter Stone, Sarit Kraus

A Logic-Based Representation for Coalitional Games with Externalities (*B - 69*)

Thomasz Michalak, Dorota Marciniak, Marcin Szamotulski, Talal Rahwan, Michael Wooldridge, Peter McBurney, Nicholas R. Jennings

Asynchronous Algorithms for Approximate Distributed Constraint Optimization with Quality Bounds (*B - 70*)

Christopher Kiekintveld, Zhengyu Yin, Atul Kumar, Milind Tambe

Improving DPOP with Function Filtering (*B - 71*)

Ismel Brito, Pedro Meseguer

Divide-and-Coordinate: DCOPs by Agreement (*B - 72*)

Meritxell Vinyals, Marc Pujol, Juan Antonio Rodriguez-Aguilar, Jesús Cerquides

08:30 – 10:30 : Session 3 – Game Theory I

Room: *Civic Ballroom North* Chair: *Edith Elkind*

Using Counterfactual Regret Minimization to Create Competitive Multiplayer Poker Agents (*R - 62*)

Nick Abou Risk, Duane Szafron

Multiagent Resource Allocation with Sharable Items: Simple Protocols and Nash Equilibria (*R - 63*)

Stephane Airiau, Ulle Endriss

Coalition Structure Generation in Multi-Agent Systems with Mixed Externalities (*R - 64*)

Bikramjit Banerjee, Landon Kraemer

Computing Equilibria by Incorporating Qualitative Models (*R - 65*)

Sam Ganzfried, Tuomas Sandholm

Internal Implementation (*R - 66*)

Ashton Anderson, Yoav Shoham, Alon Altman

Pure Nash Equilibria: Complete Characterization of Hard and Easy Graphical Games (*R - 67*)

Albert Xin Jiang, MohammadAli Safari

08:30 – 10:30 : Session 4 – Trust

Room: *Sheraton Hall C* Chair: *Sandip Sen*

Combining Statistics and Arguments to Compute Trust (*R - 68*)

Paul-Amaury Matt, Maxime Morge, Francesca Toni

Role Evolution in Open Multi-Agent Systems as an Information Source for Trust (*R - 69*)

Ramón Hermoso, Holger Billhardt, Sascha Ossowski

A Probabilistic Model For Trust and Reputation (*R - 70*)

George Vogiatzis, Ian MacGillivray, Maria Chli

Hybrid Transitive Trust Mechanisms (*R - 71*)

Jie Tang, Sven Seuken, David Parkes

Bootstrapping Trust Evaluations through Stereotypes (*R - 72*)

Chris Burnett, Timothy Norman, Katia Sycara

Changing Neighbours: Improving Tag-Based Cooperation (*R - 73*)

Nathan Griffiths, Michael Luck

08:30 – 10:30 : Session 5 – Agents Reasoning I

Room: *Sheraton Hall B* Chair: *Juergen Dix*

Using Answer Set Programming to model multi-agent scenarios involving agents' knowledge about others' Knowledge (*B - 73*)

Chitta Baral, Gregory Gelfond, Tran Cao Son, Enrico Pontelli

Decision Making with Dynamically Arriving Information (*B - 74*)

Meir Kalech, Avi Pfeffer

Using Geometric Diffusions, for Recognition-Primed Multi-Agent Decision Making (*B - 75*)

Xiaocong Fan, Meng Su

A Logical Framework for Prioritized Goal Change (*B - 76*)

Shakil Khan, Yves Lesperance

Generalized Solution Techniques for Preference-Based Constraint Optimization with CP-Nets (*B - 77*)

James Boerkoel, Ed Durfee, Keith Purrington

A Graph-Theoretic Approach to Protect Static and Moving Targets from Adversaries (*B - 78*)

John Dickerson, Gerardo Simari, V.S. Subrahmanian, Sarit Kraus

08:30 – 10:30 : Session A – Industry Track

Room: *Sheraton Hall A* Chair: *Jeff Kephart*

Multi-Agent Coordination in the Electricity Grid, from Concept towards Market Introduction (*R - 74*)

Koen Kok

An Agent-based Market Platform for Smart Grids (*R - 75*)

Steffen Lamparter, Silvio Becher, Jan-Gregor Fischer

Multiagent based Interpolation System for Traffic Condition by Estimation/Learning (*R - 76*)

Tetsuo Morita, Junji Yano, Kouji Kagawa

Spectrum Management of Cognitive Radio Using Multi-agent Reinforcement Learning (*R - 77*)

Cheng Wu, Kaushik Chowdury, Marco Di Felice, Waleed Meleis

MagneBike - Toward Multi Climbing Robots for Power Plant Inspection (*R - 78*)

Andreas Breitenmoser, Fabien Tâche, Gilles Caprari, Roland Siegwart, Roland Moser

09:30 – 13:30 : Automated Negotiating Agents Competition

Room: *Sheraton Hall E and F*

10:30 – 11:00 : Coffee Break

11:00 – 12:00 : ACM SIGART Award Talk

Room: *Osgoode Ballroom* Chair: *Sarit Kraus*

Why People Still Matter: Modeling Human Behavioral Processes in Agents

Prof. Jonathan Gratch and Prof. Stacy Marsella

University of Southern California Institute for Creative Technologies

12:00 – 13:30 : Lunch

13:30 – 14:30 : KR/AAMAS Invited Talk

Room: *Osgoode Ballroom* Chair: *Chris Welty*

Great Moments in KR: The 1984 Complexity Convergence

Dr. Ron Brachman Prof. Hector Levesque
Yahoo! *University of Toronto*

14:30 – 16:30 : Session 6 – Learning I

Room: *Sheraton Hall B* Chair: *Catholijn Jonker*

Frequency Adjusted Multi-Agent Q-Learning (*B - 79*)
Michael Kaisers, Karl Tuyls

Using Spatial Hints to Improve Policy Reuse in a Reinforcement Learning Agent (*B - 80*)
Bruno da Silva, Alan Mackworth

Learning Context Conditions for BDI Plan Selection (*B - 81*)
Dhirendra Singh, Sebastian Sardina, Lin Padgham, Stephane Airiau

On Learning in Agent-Centered Search (*B - 82*)
Nathan Sturtevant, Vadim Bulitko, Yngvi Bjornsson

Using Training Regimens to Teach Expanding Function Approximators (*B - 83*)
Peng Zang, Arya Irani, Peng Zhou, Andrea Thomaz, Charles Isbell

PAC-MDP Learning with Knowledge-based Admissible Models (*B - 84*)
Marek Grzes, Daniel Kudenko

14:30 – 16:30 : Session 7 – Social Choice

Room: *Civic Ballroom South* Chair: *Carles Sierra*

Complexity of Judgement Aggregation: Safety of the Agenda (*B - 85*)
Ulle Endriss, Umberto Grandi, Daniele Porello

Manipulation of Copeland Elections (*B - 86*)
Piotr Faliszewski, Edith Hemaspaandra, Henning Schnoor

On the Role of Distances in Defining Voting Rules (*B - 87*)
Edith Elkind, Piotr Faliszewski, Arkadii Slinko

Infinite Order Lorenz Dominance for Fair Multi-Agent Optimization (*B - 88*)

Boris Golden, Patrice Perny

Enumeration and Exact Design of Weighted Voting Games (*B - 89*)

Bart de Keijzer, Tomas Klos, Yingqian Zhang

Aggregating Preferences in Multi-Issue Domains by Using Maximum Likelihood Estimators (*B - 90*)

Lirong Xia, Vincent Conitzer, Jérôme Lang

14:30 – 16:30 : Session 8 – Agreement Technologies

Room: *Civic Ballroom North* Chair: *Pablo Noriega*

On the Logic of Argumentation Theory (*B - 91*)

Davide Grossi

Collective Argument Evaluation as Judgement Aggregation (*B - 92*)

Iyad Rahwan, Fernando Tohme

Avoiding the Prisoner's Dilemma in Auction-based Negotiations for Highly Rugged Utility Spaces (*B - 93*)

Ivan Marsa-Maestre, Miguel A. Lopez-Carmona, Juan R. Velasco, Enrique de la Hoz

Opportunistic Belief Reconciliation During Distributed Interactions (*B - 94*)

Paul Martin, Dave Robertson, Michael Rovatsos

Argumentative Alternating Offers (*B - 95*)

Nabila Hadidi, Yannis Dimopoulos, Pavlos Moraitis

Agent Based Information Aggregation Markets (*B - 96*)

Efthimios Bothos, Dimitris Apostolou, Gregoris Mentzas

14:30 – 16:30 : Session 9 – KR/AAMAS Joint Session I

Room: *Sheraton Hall C* Chair: *Birna van Riemsdijk*

Reasoning about Agents and Protocols via Goals and Commitments (*B - 97*)

Amit Chopra, Fabiano Dalpiaz, Paolo Giorgini, John Mylopoulos

A Characterization of Optimality Criteria for Decision Making under Complete Ignorance (KR)

Ramzi Ben Larbi, Sébastien Konieczny, Pierre Marquis

Flexible Task Resourcing for Intelligent Agents (*B - 98*)

Murat Sensoy, Wamberto Vasconcelos, Timothy Norman

Alternating-time Dynamic Logic (*B - 99*)

Nicolas Troquard, Dirk Walther

Resource-bounded Alternating-Time Temporal Logic (*B - 100*)

Natasha Alechina, Brian Logan, Hoang Nga Nguyen, Abdur Rakib

The Interaction of Time and Knowledge in a First-order Logic for Multi-Agent Systems (KR)

Francesco Belardinelli, Alessio Lomuscio

14:30 – 16:30 : Session 10 – KR/AAMAS Joint Session II

Room: *Osgoode Ballroom* Chair: *Miroslaw Truszczyński*

Integrating Action Calculi and AgentSpeak: Closing the Gap (KR)

Michael Thielschier

From preferences logics to preferences languages, and back (KR)

Meghyn Bienvenu, Jérôme Lang, Nic Wilson

Multi-Agent Only-Knowing Revisited (KR)

Vaishak Belle, Gerard Lakemeyer

Agent Programming via Planning Programs (*B - 101*)

Giuseppe De Giacomo, Fabio Patrizi, Sebastian Sardina

Agent Composition Synthesis based on ATL (*B - 102*)

Giuseppe De Giacomo, Paolo Felli

Horn Clause Contraction Functions: Belief Set and Belief Base Approaches (KR)

James Delgrande, Renata Wassermann

14:30 – 16:30 : Session B – Industry Track

Room: *Sheraton Hall A* Chair: *Dominic Greenwood*

Supporting Prenatal Care in the Public Healthcare System in a Newly Industrialised Country (*B - 103*)

Ingrid Nunes, Ricardo Choren, Camila Nunes, Bruno Fábri, Fernando Silva, Gustavo Carvalho, Carlos J.P. de Lucena

Function Allocation for NextGen Airspace via Agents (*B - 104*)

Nathan Schurr, Paul Picciano, Janusz Marecki

Can We Predict Safety Culture? (*B - 105*)

Alexei Sharpanskykh, Sybert Stroeve

Agent-based Coordination of Human-Multirobot Teams in Complex Environments (*B - 106*)

Alan Carlin, Jeanine Ayers, Jeff Rousseau, Nathan Schurr

MAITH: A Meta-software Agent for Issue Tracking Help (*B - 107*)

Touby Drew, Maria Gini

16:30 – 17:00 : Coffee Break

17:00 – 19:00 : ‘RED’ Poster Session

Posters will be presented in Sheraton Hall E and F.

Thursday, 13 May

08:30 – 10:30 : Session 11 – Simulation

Room: *Civic Ballroom North* Chair: *Maria Chli*

AA4MM: Building complex system simulation as a set of interacting models (*B - 108*)

Julien Siebert, Laurent Ciarletta, Vincent Chevrier

Using Graph Analysis to Study Networks of Adaptive Agent (*B - 109*)

Sheiref Abdallah

An Agent-Based Framework to Support Crime Prevention (*B - 110*)

Tibor Bosse, Charlotte Gerritsen

How Important Are Updating Schemes in Multi-Agent Systems? An illustration on a multi-turmite model (*B - 111*)

Nazim Fatès, Vincent Chevrier

An Architecture for Modular Distributed Simulation with Agent-Based Models (*B - 112*)

David Scerri, Sarah Hickmott, Alexis Drogoul, Lin Padgham

Agent Interaction, Multiple Perspectives and Swarming Simulation (*B - 113*)

H. Van Dyke Parunak, Robert Bisson, Sven Brueckner

08:30 – 10:30 : Session 12 – Robotics I

Room: *Sheraton Hall C* Chair: *Karl Tuyls*

Augmenting Appearance-Based Localization and Navigation using Belief Update (*B - 114*)

George Chrysanthakopoulos, Guy Shani

Ants Meeting Algorithms (*B - 115*)

Asaf Shiloni, Alon Levy, Ariel Felner, Meir Kalech

Modeling Collision Avoidance Behaviour for Virtual Humans (*B - 116*)

Nominated for Best Virtual Agents Paper Award

Stephen Guy, Ming Lin, Dinesh Manocha

A Systematic Agent Framework for Situated Autonomous Systems (*B - 117*)

Frederic Py, Kanna Rajan, Conor McGann

On Events in Multi-Robot Patrol in Adversarial Environments (*B - 118*)
Noa Agmon

Aggregation-mediated Collective Perception and Action in a Group of Miniature Robots (*B - 119*)

Nominated for Best Robotics Paper Award

Grégory Mermoud, Loïc Matthey, William Christopher Evans, Alcherio Martinoli

08:30 – 10:30 : Session 13 – Economic Paradigms I

Room: *Civic Ballroom South* Chair: *Vincent Conitzer*

On the Limits of Dictatorial Classification (*B - 120*)
Reshef Meir, Ariel Procaccia, Jeffrey Rosenschein

Honor Among Thieves - Collusion in Multi-Unit Auctions (*B - 121*)
Yoram Bachrach

Decision Rules and Decision Markets (*B - 122*)
Abraham Othman, Tuomas Sandholm

Worst-case efficiency ratio in false-name-proof combinatorial auction mechanisms (*B - 123*)
Atsushi Iwasaki, Vincent Conitzer, Yoshifusa Omori, Yuko Sakurai, Taiki Todo, Mingyu Guo, Makoto Yokoo

Complexity of Social Welfare Optimization in Multiagent Resource Allocation (*B - 124*)
Magnus Roos, Joerg Rothe

Scalable Mechanism Design for the Procurement of Services with Uncertain Durations (*B - 125*)
Enrico Gerding, Sebastien Stein, Kate Larson, Alex Rogers, Nicolas R. Jennings

08:30 – 10:30 : Session 14 – Verification

Room: *Sheraton Hall A* Chair: *Natasha Alechina*

Partial Order Reductions for Model Checking Temporal Epistemic Logic Over Interleaved Multi-Agent Systems (*B - 126*)
Alessio Lomuscio, Wojciech Penczek, Hongyang Qu

Optimal Social Laws (*B - 127*)
Thomas Ågotnes, Michael Wooldridge

Distributed BDD-based BMC for the Verification of Multi-Agent-Systems
(*B - 128*)

Andrew Jones, Alessio Lomuscio

CTL.STIT: Enhancing ATL to Express Important Multi-Agent System
Verification Properties (*B - 129*)

Jan Broersen

Model Checking Detectability of Attacks in Multiagent systems (*B - 130*)

Ioana Boureanu, Mika Cohen, Alessio Lomuscio

Verifying Agents with Memory is Harder than It Seemed (*B - 131*)

Nils Bulling, Wojciech Jamroga

08:30 – 10:30 : Session 15 – Learning II

Room: *Sheraton Hall B* Chair: *Tim Norman*

Optimal Policy Switching Algorithms for Reinforcement Learning (*R - 79*)

Gheorghe Comanici, Doina Precup

Learning Multi-Agent State Space Representations (*R - 80*)

Yann-Michaël De Hauwere, Peter Vrancx, Ann Nowe

Improving the Performance of Complex Agent Plans Through Reinforce-
ment Learning (*R - 81*)

Matteo Leonetti, Luca Iocchi

Evolving Policy Geometry for Scalable Multi-Agent Learning (*R - 82*)

David D'Ambrosio, Joel Lehman, Sebastian Risi, Kenneth Stanley

Self-Organization for Coordinating Decentralised Reinforcement Learn-
ing (*R - 83*)

Chongjie Zhang, Victor Lesser, Sherief Abdallah

Basis Function Construction for Hierarchical Reinforcement Learning (*R - 84*)

Sarah Osentoski, Sridhar Mahadevan

08:30 – 10:30 : Session 16 – Coordination and Cooperation II

Room: *Osgoode Ballroom* Chair: *Wamberto Vasconcelos*

On Agent Types in Coalition Formation Problems (*R - 85*)

Tammar Shrot, Yonatan Aumann, Sarit Kraus

Agreeing on Plans through Iterated Disputes (*R - 86*)
Alexandros Belesiotis, Michael Rovatsos, Iyad Rahwan

Agents Towards Vehicle Routing Problems (*R - 87*)
Jiri Vokrinek, Antonin Komenda, Michal Pechoucek

Cooperative Problem Solving against Adversary: Quantified Distributed Constraint Satisfaction Problem (*R - 88*)
Satomi Baba, Atsushi Iwasaki, Makoto Yokoo, Marius Silaghi, Katsutoshi Hirayama, Toshihiro Matsui

Optimal Temporal Decoupling in Multiagent Systems (*R - 89*)
Léon Planken, Mathijs de Weerdt, Cees Witteveen

Dominating Sets of Agents in Visibility Graphs: Distributed Algorithms for Art Gallery Problems (*R - 90*)
Evan Sultanik, Ali Shokoufandeh, William Regli

10:30 – 11:00 : Coffee Break

11:00 – 12:00 : Best Paper Session A

Room: *Osgoode Ballroom* Chair: *Wiebe van der Hoek*

Combining Manual Feedback with Subsequent MDP Reward Signals for Reinforcement Learning (*R - 91*)

Nominated for Best Student Paper/Best Paper Awards

W. Bradley Knox, Peter Stone

Inter-Robot Transfer Learning for Perceptual Classification (*R - 92*)

Nominated for Best Student Paper/Best Paper/Best Robotics Papers Awards

Zsolt Kira

Exploiting Scale Invariant Dynamics for Efficient Information Propagation in Large Teams (*R - 93*)

Nominated for Best Paper Award

Robin Glinton, Paul Scerri, Katia Sycara

11:00 – 12:00 : Best Paper Session B

Room: *Civic Ballroom South* Chair: *Gal Kaminka*

Linear Options (*R - 94*)

Nominated for Best Student Paper/Best Paper Awards

Jonathan Sorg, Satinder Singh

Agent-based Micro-Storage Management for the Smart Grid (*R - 95*)

Nominated for Best Paper Award

Perukrishnen Vytelingum, Thomas D. Voice, Sarvapali D. Ramchurn, Alex Rogers, Nicholas R. Jennings

Minimal Retentive Sets in Tournaments (*R - 96*)

Nominated for Best Paper Award

Felix Brandt, Markus Brill, Felix Fischer, Paul Harrenstein

12:00 – 13:30 : Lunch

13:30 – 15:30 : Session 17 – Agent Societies

Room: *Civic Ballroom North* Chair: *Jeremty Pitt*

Making Norms Concrete (*R - 97*)

Huib Aldewereld, Sergio Álvarez-Napagao, Frank Dignum, Javier Vázquez-Salceda

A Model of Normative Power (*R - 98*)

Nir Oren, Michael Luck, Simon Miles

Formalizing Organizational Constraints: A Semantic Approach (*R - 99*)

M. Birna van Riemsdijk, Koen Hindriks, Catholijn Jonker, Maarten Sierhuis

Exploiting Domain Knowledge to Improve Norm Synthesis (*R - 100*)

George Christelis, Michael Rovatsos, Ronald Petrick

Assignment Problem in Requirements Driven Agent Collaboration and its Implementation (*R - 101*)

Jian Tang, Zhi Jin

Joint Process Games: from Ratings to Wikis (*R - 102*)

Michael Munie, Yoav Shoham

13:30 – 15:30 : Session 18 – Economic Paradigms II

Room: *Civic Ballroom South* Chair: *Jeff Rosenschein*

A Game-Theoretic Analysis of Market Selection Strategies for Competing Double Auction Marketplaces (*R - 103*)

Bing Shi, Enrico Gerding, Perukrishnen Vytelingum, Nicholas R. Jennings

When Do Markets with Simple Agents Fail? (*R - 104*)

Abraham Othman, Tuomas Sandholm

Finding Approximate Competitive Equilibria: Efficient and Fair Course Allocation (*R - 105*)

Abraham Othman, Eric Budish, Tuomas Sandholm

Strategy-proof Allocation of Multiple Items between Two Agents without Payments or Priors (*R - 106*)

Mingyu Guo, Vincent Conitzer

Preference Elicitation for Risky Prospects (*R - 107*)

Greg Hines, Kate Larson

Trading Agents for the Smart Electricity Grid (*R - 108*)

Perukrishnen Vytelingum, Sarvapali D. Ramchurn, Thomas D. Voice, Alex Rogers, Nick Jennings

13:30 – 15:30 : Session 19 – Robotics II

Room: *Sheraton Hall B* Chair: *Catherine Pelachaud*

Laplacian-Based Consensus on Spatial Computers (*R - 109*)

Nelson Elhage, Jacob Beal

An Effective Personal Mobile Robot Agent through Symbiotic Human-Robot Interaction (*R - 110*)

Stephanie Rosenthal, Joydeep Biswas, Manuela Veloso

Decentralised Hash Tables for Mobile Robot Teams Solving Intra-Logistics Tasks (*R - 111*)

Dali Sun, Alexander Kleiner, Christian Schindelhauer

Learning Multi-Robot Joint Action Plans from Simultaneous Task Execution Demonstrations (*R - 112*)

Murilo Martins, Yiannis Demiris

Establishing Spatially Targeted Communication in a Heterogeneous Robot Swarm (*R - 113*)

Nominated for Best Robotics Paper Award

Nithin Mathews, Anders Christensen, Eliseo Ferrante, Rehan O'Grady, Marco Dorigo

Strategy Generation in Multi-Agent Imperfect-Information Pursuit Scenarios (*R - 114*)

Eric Raboin, Dana Nau, Ugur Kuter, Satyandra K. Gupta, Petr Svec

13:30 – 15:30 : Session 20 – Agent-Based System Development

Room: *Sheraton Hall C* Chair: *Klaus Fisher*

Programming Norm Change (*R - 115*)

Nick Tinnemeier, Mehdi Dastani, John-Jules Meyer

Strategic Executions of Choreographed Timed Normative Multi-Agent Systems (*R - 116*)

Lăcrămioara Aștefănoaei, Frank S. de Boer, Mehdi Dastani

Emotions to Control Agent Deliberation (*R - 117*)

Bas Steunebrink, David Irwin, John-Jules Meyer

Automated Negotiation with Decommitment for Dynamic Resource Allocation in Cloud Computing (*R - 118*)

Bo An, Victor Lesser, David Irwin, Michael Zink

Developing High-level Cognitive Functions for Service Robots (*R - 119*)

Xiaoping Chen, Jianmin Ji, Jiehui Jiang, Guoqiang Jin, Feng Wang, Jiongkun Xie

Reasoning about Strategies of Multi-Agent Programs (*R - 120*)

Mehdi Dastani, Wojciech Jamroga

13:30 – 15:30 : Session 21 – Distributed Problem Solving

Room: *Osgoode Ballroom* Chair: *Victor Lesser*

A Distributed Algorithm for Anytime Coalition Structure Generation (*R - 121*)

Tomasz Michalak, Jacek Sroka, Talal Rahwan, Michael Wooldridge, Peter McBurney, Nicholas R. Jennings

Local Search for Distributed Asymmetric Optimization (*R - 122*)

Alon Grubshtein, Roie Zivan, Tal Grinshpoun, Amnon Meisels

A Quantified Distributed Constraint Optimization Problem (*R* - 123)
Toshihiro Matsui, Marius Silaghi, Katsutoshi Hirayama, Makoto Yokoo, Hiroshi Matsuo, Satomi Baba

Deception in Networks of Mobile Sensing Agents (*R* - 124)
Viliam Lisý, Roie Zivan, Katia Sycara, Michal Pěchouček

Distributed Multiagent Learning with a Broadcast Adaptive Subgradient Method (*R* - 125)
Renato Cavalcante, Alex Rogers, Nicholas R. Jennings, Isao Yamada

Coordination for Uncertain Outcomes using Distributed Neighbour Exchange (*R* - 126)
James Atlas, Keith Decker

13:30 – 15:30 : Session 22 – Agent Reasoning II

Room: *Sheraton Hall A* Chair: *Thomas Ågotnes*

Strategic Planning for Probabilistic Games with Incomplete Information (*R* - 127)
Henning Schnoor

Multi-Target Adaptive A* (*R* - 128)
Kengo Matsuta, Hayato Kobayashi, Ayumi Shinohara

Planning Against Fictitious Players in Repeated Normal Form Games (*R* - 129)
Enrique Munoz de Cote, Nicholas R. Jennings

Generalized Fringe Retrieving A*: Faster Moving Target Search on State Lattices (*R* - 130)
Xiaoxun Sun, Willim Yeoh, Sven Koenig

Success, Strategy and Skill: An Experimental Study (*R* - 131)
Christopher Archibald, Alon Altman, Yoav Shoham

Cultivating Desired Behaviour: Policy Teaching via Environment-Dynamic Tweaks (*R* - 132)
Zinovi Rabinovich, Lachlan Dufton, Kate Larson, Nicholas R. Jennings

15:30 – 16:00 : Coffee Break

16:00 – 18:00 : ‘BLUE’ Poster Session

Posters will be presented in Sheraton Hall E and F.

18:00 – 19:00 : Distinguished Dissertation Award Talk

Room: *Osgoode Ballroom* Chair: *Michael Huhns*

**Algorithms for Abstracting and Solving
Imperfect Information Games**

Dr. Andrew Gilpin

Carnegie Mellon University

Friday, 14 May

08:30 – 9:30 : ICAPS/AAMAS Invited Talk

Room: *Osgoode Ballroom* Chair: *Gal Kaminka*

Robotic Agents for Disaster Response

Prof. Daniele Nardi

Università di Roma “La Sapienza”

09:30 – 10:00 : Coffee Break

09:30 – 13:30 : AAMAS/ICAPS Demo Session

Room: *Sheraton Hall E and F*

10:00 – 12:00 : Session 23 – Game Theory II

Room: *Civic Ballroom North* Chair: *Milind Tambe*

Monotone Cooperative Games and their Threshold Versions (*B - 132*)

Haris Aziz, Felix Brandt, Paul Harrenstein

Heuristic Search for Identical Payoff Bayesian Games (*B - 133*)

Frans Oliehoek, Matthijs Spaan, Jilles Dibangoye, Christopher Amato

Path Disruption Games (*B - 134*)

Yoram Bachrach, Ely Porat

Strategy Exploration in Empirical Games (*B - 135*)

Patrick Jordan, L. Julian Schwartzman, Michael Wellman

Stackelberg vs. Nash in Security Games: Interchangeability, Equivalence, and Uniqueness (*B - 136*)

Zhengyu Yin, Dmytro Korzhyk, Christopher Kiekintveld, Vincent Conitzer, Milind Tambe

Dependence Theory via Game Theory (*B - 137*)

Davide Grossi, Paolo Turrini

10:00 – 12:00 : Session 24 – Coordination and Cooperation III

Room: *Civic Ballroom South* Chair: *Sascha Ossowski*

UAV Swarm Coordination using Cooperative Control for Establishing a Wireless Communications Backbone (*B - 138*)

Achudhan Sivakumar, Colin Tan

A Decentralised Coordination Algorithm for Minimising Conflict and Maximising Coverage in Sensor Networks (*B - 139*)

Ruben Stranders, Alex Rogers, Nick Jennings

Influence of Different Execution Models on Patrolling Ants Behaviours: from Agents to Robots (*B - 140*)

Arnaud Glad, Olivier Simonin, Olivier Buffet, François Charpillet

Coalition Formation with Spatial and Temporal Constraints (*B - 141*)

Sarvapali D. Ramchurn, Maria Polukarov, Alessandro Farinelli, Cuong Truong, Nicholas R. Jennings

Collective Decision-Making in Multi-Agent Systems by Implicit Leadership (*B - 142*)

Chih-Han Yu, Justin Werfel, Radhika Nagpal

Collaborative Foraging using Beacons (*B - 143*)

Brian Hrolenok, Sean Luke, Keith Sullivan, Christopher Yo

10:00 – 12:00 : Session 25 – Agent Reasoning III

Room: *Sheraton Hall A* Chair: *Mehdi Dastani*

Characterising and Matching Iterative and Recursive Agent Interaction Protocols) (*B - 144*)

Tim Miller, Peter McBurney

History-Dependent Graphical Multiagent Models (*B - 145*)

Quang Duong, Michael Wellman, Satinder Singh, Yevgeniy Vorobeychik

Modeling Recursive Reasoning by Humans using Empirically Informed Interactive POMDPs (*B - 146*)

Prashant Doshi, Xia Qu, Adam Goodie, Diana Young

Incremental Plan Aggregation for Generating Policies in MDPs (*B - 147*)

Florent Teichteil-Konigsbuch, Ugur Kuter, Guillaume Infantes

An Integrated Possibilistic Framework for Goal Generation in Cognitive Agents (*B - 148*)

Célia da Costa Pereira, Andrea Tettamanzi

Classification and Strategical Issues of Argumentation Games on Structured Argumentation Frameworks (*B - 149*)

Matthias Thimm, Alejandro J. Garcia

10:00 – 12:00 : Session 26 – Virtual Agents II

Room: *Sheraton Hall B* Chair: *Liz Sonenberg*

Evaluating Models of Speaker Head Nods for Virtual Agents (*R - 133*)

Nominated for Best Virtual Agents Paper Award

Jina Lee, Zhiyang Wang, Stacy Marsella

Parasocial Consensus Sampling: Combining Multiple Perspective to Learn Virtual Human Behavior (*R - 134*)

Nominated for Best Virtual Agents Paper Award

Lixing Huang, Louis-Philippe Morency, Jonathan Gratch

TacTex09: A Champion Bidding Agent for Ad Auctions (*R - 135*)

David Pardoe, Doran Chakraborty, Peter Stone

How Multiple Current Users React to a Quiz Agent Attentive to the Dynamics of Their Game Participation (*R - 136*)

Huang Hung-Hsuan, Takuya Furukawa, Hiroki Ohashi, Aleksandra Cerekovic, Igor Pandzic, Yukiko Nakano, Toyoaki Nishida

Evaluating Directorial Control in a Character-Centric Interactive Narrative Framework (*R - 137*)

Mei Si, Stacy Marsella, David Pynadath

Narrative Generation through Characters' Point of View (*R - 138*)

Julie Porteous, Marc Cavazza, Fred Charles

**10:00 – 12:00 : Session 27 – ICAPS/AAMAS Joint Session I
Multi-Agent Planning and Scheduling**

Room: *Osgoode Ballroom* Chair: *Gal Kaminka*

Point Based Policy Generation for Decentralised POMDPs (*R - 139*)

Feng Wu, Shlomo Zilberstein, Xiaoping Chen

Influence-based Policy Abstraction for Weakly-coupled DEC-POMDPs (ICAPS)

Stefan Witwicki, Edmund Durfee

Point-Based Backup for Decentralised POMDPs: Complexity and New Algorithms (*R - 140*)

Akshat Kumar, Shlomo Zilberstein

A General Fully Distributed Multi-Agent Planning Algorithm (*R - 141*)

Raz Nissim, Ronen Brafman, Carmel Domshlak

Algorithm for Solving the Multiagent Simple Temporal Problem (ICAPS)
James Boerkoel, Edmund Durfee

Distributed Coordination of Mobile Agents Teams: The Advantage of Planning Ahead (*R - 142*)
Laura Barbulescu, Zachary Rubinstein, Stephen Smith, Terry Zimmerman

**10:00 – 12:00 : Session 28 – ICAPS/AAMAS Joint Session II
Planning under Uncertainty**

Room: *Sheraton Hall C* Chair: *Daniele Nardi*

Pattern Database Heuristics for Fully Observable Nondeterministic Planning (ICAPS)
Robert Mattmüller, Manuela Ortlieb, Malte Helmert, Pascal Bercher

Merging Example Plans into Generalized Plans for Non-deterministic Environments (*R - 143*)
Siddarth Srivastava, Neil Immerman, Shlomo Zilberstein

Approximate Dynamic Programming with Affine ADDs (*R - 144*)
Scott Sanner, William Uther, Karina Valdivia Delgado

Planning for Concurrent Action Execution Under Action Duration Uncertainty using Dynamically Generated Bayesian Networks (ICAPS)
Eric Beaudry, Froduald Kabanza, François Michaud

Risk-Sensitive Planning in Partially Observable Environments (*R - 145*)
Janusz Marecki, Pradeep Varakantham

When Policies Can Be Trusted: Analyzing a Criteria to Identify Optimal Policies in MDPs with Unknown Model Parameters (ICAPS)
Emma Brunskill

12:00 – 12:30 : Coffee Break

12:30 – 13:30 : AAMAS Community Meeting

Room: *Osgoode Ballroom*

13:30 – 14:00 : AAMAS 2011 Presentation and Closing

Room: *Osgoode Ballroom*

Extended Abstracts

‘RED’ Session

Wednesday 12 May, 17:00 – 19:00

R-1: Closing the Learning-Planning Loop with Predictive State Representation

Byron Boots, Sajid Siddiqi, Geoffrey Gordon

R-2: An Approach to Integrate Web Services and Argumentation into a BDI System

Federico Schlesinger, Marcelo Errecalde, Guillermo Aguirre

R-3: A Semiotic Perspective for Multiagent Systems Development

Sara Casare, Anarosa Brandão, Jaime Sichman

R-4: Requesting Agent Participation on Electronic Institutions

Hector Ceballos, Pablo Noriega, Franciscu Cantu

R-5: ClassroomWiki: A Wiki for the Classroom with Multiagent Tracking, Modeling, and Group Formation

Noble Khandaker, Leen-Kiat Soh

R-6: Accomodating Driver Preferences in Reservation-Based Urban Traffic Management

Matteo Vasirani, Sascha Ossowski

R-7: Distributed Abductive Reasoning with Constraints

Jiefei Ma, Alessandra Russo, Krysia Broda, Emil Lupu

R-8: A BDI Architecture for Normative Decision Making

Natalia Criado, Estefanía Argente, Vicent Botti

R-9: The Multi Variable Multi Constrained Distributed Constraint Optimization Network

Christopher Portway, Ed Durfee

R-10: Male Optimality and Uniqueness in Stable Marriage Problems with Partial Orders

Mirco Gelain, Maria Silvia Pini, Francesca Rossi, Kristen Brent Venable, Toby Walsh

R-11: Approximate Planning for Decentralised MDPs with Sparse Interactions

Francisco Melo, Manuela Veloso

- R-12:** Searching for a k-Clique in Unknown Graphs
Roni Stern, Meir Kalech, Ariel Fefner
- R-13:** Quasi Deterministic POMDPs and DecPOMDPs
Camille Besse, Brahim Chaib-draa
- R-14:** A Mean-Based Approach for Real-Time Planning
Damien Pellier, Bruno Bouzy, Marc Métivier
- R-15:** From Policies to Influences: A Framework For Nonlocal Abstraction In Transition-dependent Dec-POMDPs Agents
Stefan Witwicki, Ed Durfee
- R-16:** Using Bisimulation for Policy Transfer in MDPs
Pablo Castro, Doina Precup
- R-17:** The Practical Advantage of Surprise-based Agents
Luis Macedo
- R-18:** Improve Bounded Model Checking for a Fair Branching-Time Temporal Epistemic Logic
Xiaowei Huang, Cheng Luo, Ron van der Meyden
- R-19:** Graphically Explaining Norms
Madalina Croitoru, Nir Oren, Simon Miles, Michael Luck
- R-20:** Occlusion-Aware Multi-UAV Surveillance
Eduard Semsch, Michal Jakob, Dusan Pavlicek, Michal Pechoucek
- R-21:** Identifying and Utilizing Subgroup Coordination Patterns in Team Adversarial Games
Kennard Lavers, Gita Sukthankar
- R-22:** Anytime Dynamic Programming for Coalition Structure Generation
Travis Service, Julie Adams
- R-23:** Efficient Multi-Agent Coordination using Resource-Aware Junction Trees
Nicolas Stefanovitch, Alessandro Farinelli, Alex Rogers, Nick Jennings
- R-24:** A Game Theoretic Approach to Decentralised Multi-Project Scheduling
Tony Wauters, Katja Verbeerc, Patrcik de Causmaecker, Greet Vanden Berghe

R-25: Improving the Efficiency of the Distributed Stochastic Algorithm
Melanie Smith, Roger Mailler

R-26: Collaborative Multiagent Gaussian Inference in a Dynamic Environment Using Belief Propagation
Stefano Ermon, Carla Gomes, Bart Selman

R-27: Partitioning the Multiagent Simple Temporal Problem for Concurrency and Privacy
James Boerkoel, Edmund Durfee

R-28: Market-based Risk Allocation for Multi-Agent Systems
Masahiro Ono, Brian Williams

R-29: Asynchronous Partitioning Framework
Vitaliy Freidovich, Amnon Meisels

R-30: Biologically Inspired Coalition Formation of Multi-Agent Systems
Musad Haque, Amir Rahmani, Magnus Egerstedt

R-31: Distributed Clustering for Group Formation and Task Allocation
Daniela Santos, Ana Bazzan

R-32: Convention Emergence Through Spreading Mechanisms
Norman Salazar, Juan Antonio Rodriguez-Aguilar, Josep Ll. Arcos

R-33: Multi-Humoroid: Joking System that Reacts with Humor to Humans' Bad Moods
Pawel Dybala, Michal Ptaszynski, Rafal Rzepka, Kenji Araki

R-34: MARIONET: Motion Acquisition for Robots through Iterative Online Evaluative Training
Adam Setapen, Michael Quinlan, Peter Stone

R-35: Automation of Social Networks with QA Agents
Albert Trias i Mansilla, Josep Lluís de la Rosa, Boris Galitski, Gabor Dobrocsi

R-36: Taking Turns in General Sum Markov Games
Peter Vrancx, Katja Verbeeck, Ann Nowe

R-37: Robot Coordination with Ad-hoc Team Formation
Matt Knudson, Kagan Tumer

R-38: A Formal Approach to MASQ
Razvan Dinu, Tiberiu Stratulat, Jacques Ferber

- R-39:** Using Stereotypes to Understand One's Interactive Partner
Alan Wagner
- R-40:** Logic of Information Flow on Communication Channels
Yanjing Wang, Floor Sietsma, Jan van Eijck
- R-41:** Runtime Monitoring of contract regulated web services
Alessio Lomuscio, Wojciech Penczek, Monika Solanki, Maciej Szreter
- R-42:** Iterative Expanding Search in Multi-Agent Systems
David Sarne, Simon Shamoun, Eli Rata
- R-43:** How to Protect a City: strategic Security Placement in Graph-Based Domains
Jason Tsai, Zhengyu Yin, Jun-young Kwak, David Kempe, Christopher Kiekintveld, Milind Tambe
- R-44:** Sharing a Reward Based on Peer Evaluations
Arthur Carvalho, Kate Larson
- R-45:** Representing Bayesian Games without a Common Prior
Dimitrios Antos, Avi Pfeffer
- R-46:** Game Theoretic Network Centrality: Exact Formulas and Efficient Algorithms
Karthik Aadithya, Balaraman Ravindran
- R-47:** Valuing Search and Communication in Partially-Observable Coordination Problems
Simon Williamson, Archie Chapman, Nicholas R. Jennings
- R-48:** Speeding Up Gradient Based Algorithms for Sequential Games
Andrew Gilpin, Tuomas Sandholm
- R-49:** Cooperative Equilibrium
Joseph Halpern, Nan Rong
- R-50:** Robust Bayesian Methods for Stackelberg Security Games
Christopher Kiekintveld, Janusz Marecki, Milind Tambe
- R-51:** Local Search Techniques for Computing Equilibria in Two-Player General-Sum Strategic-Form Games
Sofia Ceppi, Nicola Gatti, Giorgio Patrini, Marco Rocco
- R-52:** Combinatorial Auctions with Externalities
Piotr Krysta, Tomasz Michalak, Tuomas Sandholm, Michael Wooldridge

- R-53:** A Grey Box Approach to Automated Mechanism Design
Jinzhong Niu, Kai Cai, Simon Parsons
- R-54:** False-Name-Proofness with Bid Withdrawal
Mingyu Guo, Vincent Conitzer
- R-55:** Efficient Mechanisms with Small Subsidies
Ruggiero Cavallo
- R-56:** Incentive Analysis of Approximative Efficient Allocation Algorithms
Yevgeniy Vorobeychik, Yagil Engel
- R-57:** An Investigation of Representations of Combinatorial Auctions
David Locker, Kate Larson
- R-58:** Parameterizing the Winner Determination Problem for Combinatorial Auctions
David Locker, Kate Larson
- R-59:** Flexibly Priced Options: A New Mechanism for Sequential Auction Markets with Complementary Goods
Valentin Robu, Ioannis Vetsikas, Enrico Gerding, Nicholas R. Jennings
- R-60:** Time Constraints in Multi-Unit Combinatorial Auctions
Andreas Witzel, Ulle Endriss
- R-61:** An Algorithmic Game Theory Framework for Bilateral Bargaining with Uncertainty
Sofia Ceppi, Nicola Gatti

'BLUE' Session

Thursday 13 May, 16:00 – 18:00

B-1: Agent Based Analysis of Asset Pricing under Ambiguous Information

Ben-Alexander Cassell, Michael Wellman

B-2: Self Organisation in an Agent Network via Learning

Dayong Fe, Minjie Zhang, Danny Sutanto

B-3: A Coherence-Driven Action Selection in Dynamic Environments

Sindhu Joseph, Carles Sierra, Marco Schorlemmer

B-4: Image Based Exploration for Indoor Environments using Local Features

Aravindhan Krishnan, Madhava Krishna, Supreeth Achar

B-5: Multi-Robot Area Coverage with Limited Visibility

Pooyan Fazli, Alireza Davoodi, Pasquier Philippe, Alan Mackworth

B-6: Multiple UAV Coalition Formation Strategies

Joel George, Jose Pinto, P.B. Sujit, Joao Sousa

B-7: Improving Multi-Robot Teleoperation by Inferring Operator Distraction

Bennie Lewis, Bulent Tastan, Gita Sukthankar

B-8: Coordination Through Institutional Roles in Robot Collectives

José Nunos Pereira, Anders Christensen, Porfírio Silva, Pedro Lima

B-9: Mutual State Capability-Based Role Assignment Model

Somchaya Liemhetcharat, Manuela Veloso

B-10: Coordinated Navigation for Multi-Robot Systems with Additional Constraints

Bernd Brüggermann, Dirk Schulz

B-11: A Reward Function Generation Method Using Genetic Algorithms: A Robot Soccer Case Study

Çetin Meriçli, Tekin Meriçli, H. Levent Akin

B-12: Multi Robotic Exploration with Communication Requirements to a Fixed Base Station

Piyooosh Mukhija, Rahul Sawhney, Madhava Krishna

B-13: Robots Autonomously Self-Assemble into Dedicated Morphologies to Solve Different Tasks

Rehan O'Grady, Anders Christensen, Carlo Pinciroli, Marco Dorigo

B-14: ESP: Pursuit Evasion on Series-Parallel Graphs

Kenny Daniel, Richard Borie, Sven Koenig, Craig Tovey

B-15: On-line robot execution monitoring using probabilistic action duration

Vittorio Ziparo, Luca Iocchi, Matteo Leonetti, Daniele Nardi

B-16: Dynamic Generation and Execution of Human Aware Navigation Plans

Thibault Kruse, Alexandra Kirsch, E. Akin Sisbot, Rachid Alami

B-17: Toward an Interleaved Model of Actions and Worlds in Social Simulation

Jeff Orkin, Deb Roy

B-18: Wishful Thinking in Effective Decision Making

Jonathan Ito, David Pynadath, Liz Sonenberg, Stacy Marsella

B-19: Dynamic Plot Generation by Continual Multiagent Planning

Michael Brenner

B-20: Directing value-driven artificial characters

Rossana Damiano, Vincenzo Lombardo

B-21: Emotional Eye Movement Markup Language for Virtual Agents

Zheng Li, Xia Mao

B-22: Multimodal Interaction with a Virtual Character in Interactive Storytelling

Nikolaus Bee, Johannes Wagner, Elisabeth Andre, Fred Charles, David Pizzi, Marc Cavazza

B-23: Knowledge in Lineland

Olivier Gasquet, François Schwartzentruber

B-24: Deceptive Agents and Languages

Mark Dras, Debbie Richards, Meredith Taylor, Mary Gardiner

B-25: A Simulation Approach to Design Contracts that Govern Emergent Multi-Agent Systems

Maíra Gatti, Simon Miles, Nir Oren, Michael Luck, Carlos Lucena

B-26: Reversal of Influence: Decrease of Innovator's Influence under Information Diversification

Yukihisa Fujita, Yuichi Washida, Fujio Toriumi, Kazuhiro Ueda, Kenichiro Ishii

B-27: An agent-based simulation of lock-in dynamics in a duopoly

Michael Garlick, Maria Chli

B-28: Everything can be Agent!

Yoann Kubera, Philippe Mathieu, Sébastien Picault

B-29: Generation and Analysis of Multiple Futures with Swarming Agents

H. Van Dyke Parunak

B-30: Validation of Agent-based Crowd Egress Simulation

Bikramjit Banerjee, Landon Kraemer

B-31: Agent-Encapsulated Bayesian Networks and the Rumor Problem

Scott Langevin, Marco Valtorta, Mark Bloemke

B-32: Symbolic Model Checking for Agent Interactions

Mohamed El-Menshawy, Wei Wan, Jamal Bentahar, Rachida Dssouli

B-33: An Agent Communication Protocol for Resolving Conflicts

Jamal Bentahar

B-34: Towards Model Checking & Simulation of a Multi-Tier Negotiation Protocol for Service Chains

Paul Karaenke, Stefan Kirn

B-35: Distributed Semantic Search for the Web: A Multiagent Approach

Murat Sensoy

B-36: A Social Network Defence against Whitewashing

Adrian Perreau de Pinninck, Marco Schorlemmer, Carles Sierra, Stephen Cranefield

B-37: Towards a new cognitive modeling approach for multi-agent based Simulation of stock market dynamics

Zahra Kodia, Lamjed Ben Said, Khaled Ghedira

B-38: Argumentation vs. Aggregation of Trust Evidence

Pierpaolo Dondio, Stephen Barrett

B-39: Using Machine Learning to Augment Collaborative Filtering of Community Discussions

Michael Brennan, Stacey Wrazien, Rachel Greenstadt

B-40: Inductively Generated Trust Alignments Based on Shared Interactions

Andrew Koster, Jordi Sabater-Mir, Marco Schorlemmer

B-41: Comprehensive Trust Management

Sandip Sen, Kuheli Chakraborty

B-42: Quality of Trust for Social Trust Path Selection in Complex Social Networks

Guanfeng Liu, Yan Wang, Mehmet Orgun

B-43: A Clustering Approach to Filtering Unfair Testimonies for Reputation Systems

Siyuan Liu, Chunyan Miao, Yin-Leng Theng, Alex Kot

B-44: Optimal Seeding in Knockout Tournaments

Thuc Vu, Yoav Shoham

B-45: Virtual World Grammar

Tomas Trescak, Marc Esteva, Immaculada Rodriguez

B-46: Online Model Learning in Adversarial Markov Decision Processes

Doran Chakraborty, Peter Stone

B-47: Action Discovery for Reinforcement Learning

Bijkranjit Banerjee, Landon Kraemer

B-48: Bayesian Role Discovery for Multi-Agent Reinforcement Learning

Aaron Wilson, Alan Fern, Prasad Tadepalli

B-49: Model-based Direct Policy Search

Jan Hendrik Metzen, Frank Kirchner

B-50: Co-evolution of Agent Strategies in N-player Dilemmas

Raymond Chiong, Michael Kirley

B-51: Analyzing the impact of human bias on human-agent teams in resource allocation domains

Praveen Paruchuri, Pradeep Varakantham, Katia Sycara, Paul Scerri

B-52: Syncretic Argumentation by Lattice Homomorphism and Fusion

Taichi Hasegawa, Hajime Sawamura

B-53: Learning Policies through Argumentation-Derived Evidence

Chukwuemeka Emele, Timothy Norman, Frank Guerin, Simon Parsons

B-54: Flexible agreement mechanism for dynamic meaning negotiation

Paul Doran, Valentina Tamma, Terry Payne, Ignazio Palmisano

B-55: Genetic Aided Multi-Issue Bilateral Bargaining for Complex Utility Functions

Víctor Sánchez-Anguiz, Soledad Valero, Vicente Julian, Vicente Botti, Ana García Fornes

B-56: Effect of Probabilistic Task Allocation Based on Statistical Analysis of Bid Values

Toshiharu Sugawara, Satoshi Kurihara, Toshio Hirotsu, Kensuke Fukuda

B-57: Effective Negotiation with Partial Preference Information

Reyhan Aydogan, Pinar Yokum

B-58: Searching for Pure Strategy Equilibria in Bilateral Bargaining with One-sided Uncertainty

Bo An, Nicola Gatti, Victor Lesser

B-59: On Monotonic Mixed Tactics and Strategies for Bilateral Multi-Issue Negotiations

Jan Richter, Matthias Klusch, Ryszard Kowalczyk

B-60: A Multi-issue Negotiation Framework for Non-monotonic Preference Spaces

Miguel A. Lopez-Carmona, Ivan Mars-Maestre, Juan R. Velasco, Enrique de la Hoz

AAMAS Demonstrations

D-1: A Simulator for Organisation-Centered MAS Adaptation in P2P Sharing Networks (*Jordi Campos, Maite Lopez-Sanchez, Marc Esteva, Javier Morales*)

D-2: Dora the Explorer: A Motivated Robot (*Nick Hawes, Marc Hanheide, Kristoffer Sjöo, Alper Ayedemir, Patric Jensfelt, Moritz Göbelbecker, Michael Brenner, Hendrik Zender, Pierre Lisbon, Ivana Kruijff-Korbayova, Geert-Jan Kruijff, Michael Zillich*)

D-3: dipGame: A Testbed for Multiagent Systems (*Angela Fabregues, David Navarro, Alejandro Serrano, Carles Sierra*)

D-4: Multi-Agent Coordination and Control System for Multi-Vehicle Agricultural Operations (*Osman Ali, Bart Saint Germain, Jan Van Belle, Paul Valckenaers, Hendrik Van Brussel and Johan Van Noten*)

D-5: EMFGormas: A CASE Tool for Developing Service-Oriented Open MAS (*Emilia Garcia, Estefania Argente, Adriana Giret*)

D-6: An Evaluation Tool for Multiagent Development Techniques (*Emilia Garcia, Adriana Giret, Vicente Botti*)

D-7: A Virtual World Builder Toolkit (*Tomas Trescak, Mark Esteva, Inmaculada Rodriguez, Javier Morales*)

D-8: How was Your Day? A Companion ECA (*Marc Cavazza, Raul Santos de la Camara, Markku Turunen*)

D-9: THOMAS: A Service-Oriented Framework For Virtual Organisations (*Elena del Val, Natalia Criado, Carlos Carrascosa, Vicente Julian, Miguel Rebollo, Estefania Argente, Vicente Botti*)

D-10: FLAME: Simulating Large Populations of Agents, on Parallel hardware Architectures (*Mariam Kiran, Paul Richmond, Mike Holcombe, Lee Shawn Chin, David Worth, Chris Greenough*)

D-11: ALIVE: An Agent-Based Framework for Dynamic and Robust Service-Oriented Applications (*Javier Vazquez, Wamberto W. Vasconcelos, Julian Padget, Frank Dignum, Siobhan Clarke, Manel Palau Roig*)

- D-12:** MAS-DisCoSim 4 PDP: A Testbed for Multi-Agent Solutions to PDPs (*Jelle Van Gompel, Bart Tuts, Rutger Claes, Mario Cruz Torres, Tom Holvoet*)
- D-13:** AgentC: Agent-based Testbed, for Adversarial Modeling and Reasoning in the Maritime Domain (*Michal Jakob, Ondřej Vaněk, Štěpán Urban, Petr Benda, Michal Pěchouček*)
- D-14:** Bushfire BLOCKS: A Modular Agent-Based Simulation (*David Scerri, Sarah Hickmott, Fabio Zampetta, Ferdinand Gouw, Isaac Yehuda, Lin Padgham*)
- D-15:** Independent Navigation of Multiple Robots and Virtual Agents (*Jamie Snape, Stephen J. Guy, Jur van den Berg, Sean Curtis, Sachin Patil, Ming C. Lin, Dinesh Manocha*)
- D-16:** The RoboCup Rescue Simulation Platform (*Cameron Skinner, Sarvapali D. Ramchurn*)
- D-17:** Intelligent Agents for the Smart Grid (*Perukrishnen Vytelingum, Thomas D. Voice, Sarvapali D. Ramchurn, Alex Rogers, Nicholas R. Jennings*)
- D-18:** Convoy Protection by Self-Organized Teams of UAVs (*Osher Yadgar*)
- D-19:** Capturing and Generating Social Behavior with The Restaurant Game (*Jeff Orkin and Deb Roy*)
- D-20:** Training a Tetris Agent via Interactive Shaping: A Demonstration of the TAMER Framework (*W. Bradley Knox and Peter Stone*)
- D-21:** Eclipse-based Prometheus Design Tool (*Hongyuan Sun, John Thangarajah and Lin Padgham*)
- D-22:** Decision-Support for Real-Time Multi-Agent Coordination (*Rajiv T. Maheswaran, Craig M. Rogers, Romeo Sanchez and Pedro Szekely*)

ICAPS Demonstrations

ID-1: A Demonstration of Timeline-based Scheduling for the Earth Observing One Mission (*Steve Chien, Daniel Tran, Gregg Rabideau, Steve Schaffer, Daniel Mandl, Stuart Frye*)

ID-2: Automated Program Checking via Action Planning (*Damian Sulewski, Stefan Edelkamp, Cengizhan Yücel*)

ID-3: The Scanalyzer Domain: Greenhouse Logistics as a Planning Problem (*Malte Helmert, Hauke Lasinger*)

ID-4: Shopper: A System for Executing and Simulating Expressive Plans (*John Maraist, Robert Goldman*)

ID-5: Timetabling: RIA in Action (*Florent Devin and Yannick Le Nir*)

ID-6: Visualization Tools for Multi-Objective Algorithms (*Mark E. Giuliano, Mark D. Johnston*)

ID-7: Planning for Data Mining Tool (PDM) (*Javier Ortiz, Ruben Suarez, Tomas de la Rosa, Susana Fernandez, Fernando Fernandez, Daniel Borrajo, David Manzano*)

ID-8: Real-Time Multi-Agent Planning and Scheduling in Dynamic Uncertain Domains (*Rajiv T. Maheswaran, Craig M. Rogers, Romeo Sanchez, Pedro Szekely*)

ID-9: Conformant Planners: Approximation vs. Representation (*Son Thanh To, Dang-Vien Tran, Hoang-Khoi Nguyen, Tran Cao Son, Enrico Pontelli*)

ID-10: A Demonstration of Multi-agent Event Detection, Communications, and Planning and Scheduling to Enable Coordinating Multiple Spacecraft Assets for Joint Science Campaigns (*Tara Estlin, Steve Chien, Rebecca Castano, Daniel Gaines, Charles de Granville, Joshua Doubleday, Robert C. Anderson, Russell Knight, Benjamin Bornstein, Gregg Rabideau, Benyang Tang*)

Wednesday 12 May	
08:00	Opening
08:30 - 10:30	S1: Virtual Agents I (<i>Civic Ballroom South</i>) S2: Coord. and Cooperation I (<i>Osgoode Ballroom</i>) S3: Game Theory I (<i>Civic Ballroom North</i>) S4: Trust (<i>Sheraton Hall C</i>) S5: Agent Reasoning I (<i>Sheraton Hall B</i>) SA: Industry Track (<i>Sheraton Hall A</i>)
09:30 - 13:30	Automated Negotiating Agents Competition (<i>Sheraton Hall E & F</i>)
10:30 - 11:00	<i>Coffee Break</i>
11:00 - 12:00	ACM SIGART Award Talk Why People Still Matter: Modeling Human Behavioral Processes in Agents <i>Prof. Jonathan Gratch and Prof. Stacy Marsella (Osgoode Ballroom)</i>
12:00 - 13:30	<i>Lunch</i>
13:30 - 14:30	KR/AAMAS Invited Talk Great Moments in KR <i>Dr. Ron Brachman and Prof. Hector Levesque (Osgoode Ballroom)</i>
14:30 - 16:30	S6: Learning I (<i>Sheraton Hall B</i>) S7: Social Choice (<i>Civic Ballroom South</i>) S8: Agreement Technologies (<i>Civic Ballroom North</i>) S9: KR/AAMAS Joint Session I (<i>Sheraton Hall C</i>) S10: KR/AAMAS Joint Session II (<i>Osgoode Ballroom</i>) SB: Industry Track (<i>Sheraton Hall A</i>)
16:30 - 17:00	<i>Coffee Break</i>
17:00 - 19:00	‘RED’ Poster Session (<i>Sheraton Hall E & F</i>)

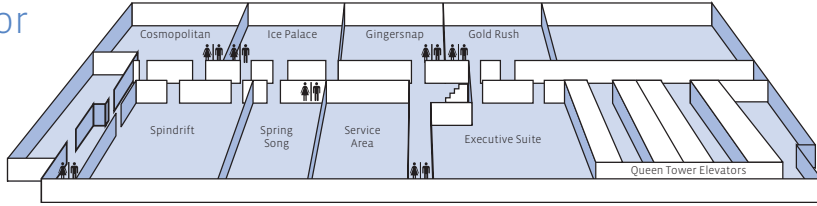
Thursday 13 May

08:30 - 10:30	<p>S11: Simulation (<i>Civic Ballroom North</i>) S12: Robotics I (<i>Sheraton Hall C</i>) S13: Economic Paradigms I (<i>Civic Ballroom South</i>) S14: Verification (<i>Sheraton Hall A</i>) S15: Learning II (<i>Sheraton Hall B</i>) S16: Coord. and Cooperation II (<i>Osgoode Ballroom</i>)</p>
10:30 - 11:00	<i>Coffee Break</i>
11:00 - 12:00	<p>SA: Best Paper Session (<i>Osgoode Ballroom</i>) SB: Best Paper Session (<i>Civic Ballroom South</i>)</p>
12:00 - 13:30	<i>Lunch</i>
13:30 - 15:30	<p>S17: Agent Societies (<i>Civic Ballroom North</i>) S18: Economic Paradigms II (<i>Civic Ballroom South</i>) S19: Robotics II (<i>Sheraton Hall B</i>) S20: Agent Based Development (<i>Sheraton Hall C</i>) S21: Distributed Problem Solving (<i>Osgoode Ballroom</i>) S22: Agent Reasoning II (<i>Sheraton Hall A</i>)</p>
15:30 - 16:00	<i>Coffee Break</i>
16:00 - 18:00	‘BLUE’ Poster Session (<i>Sheraton Hall E & F</i>)
18:00 - 19:00	<p>Distinguished Dissertation Award Talk Algorithms for Abstracting and Solving Imperfect Information Games <i>Dr. Andrew Gilpin</i> (<i>Osgoode Ballroom</i>)</p>

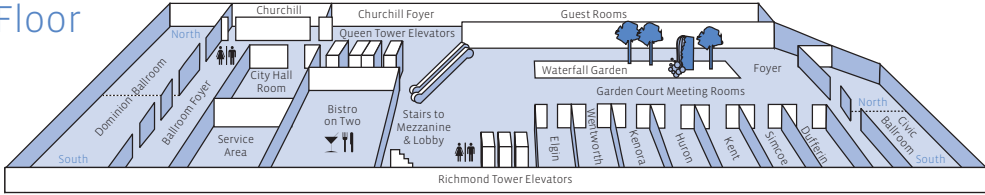
Friday 14 May

08:30 - 09:30	ICAPS/AAMAS Invited Talk Robotic Agent for Disaster Response <i>Prof. Daniele Nardi</i> <i>(Osgoode Ballroom)</i>	
09:30 - 10:00	Coffee Break	Demos
10:00 - 12:00	S23: Game Theory II (<i>Civic Ballroom North</i>) S24: Coordination III (<i>Civic Ballroom South</i>) S25: Agent Reasoning III (<i>Sheraton Hall A</i>) S26: Virtual Agent II (<i>Sheraton Hall B</i>) S27: ICAPS/AAMAS I (<i>Osgoode Ballroom</i>) S28: ICAPS/AAMAS II (<i>Sheraton Hall C</i>)	Demos
12:00 - 12:30	Demos (<i>Sheraton Hall E & F</i>)	
12:30 - 13:30	AAMAS Community Meeting <i>(Osgoode Ballroom)</i>	Demos
13:30 - 14:00	AAMAS 2011 Presentation and Closing <i>(Osgoode Ballroom)</i>	

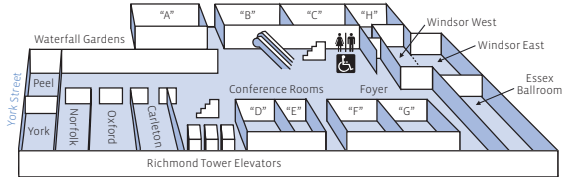
4th Floor



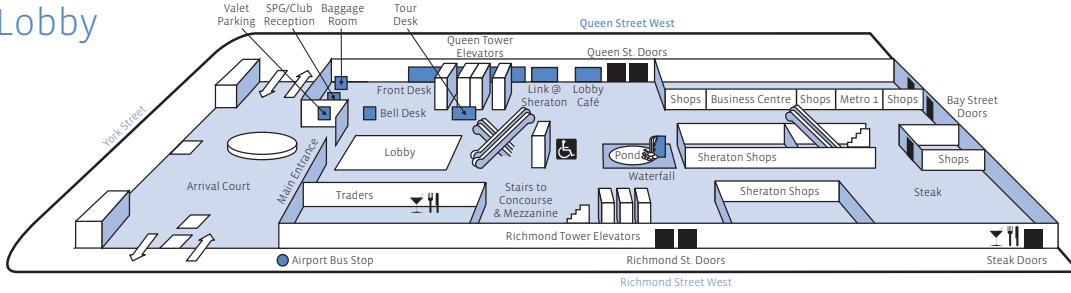
2nd Floor



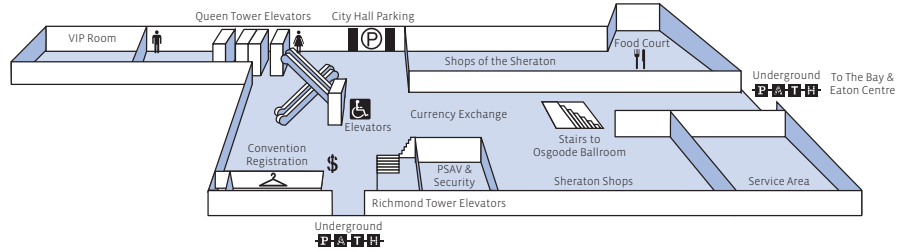
Mezzanine



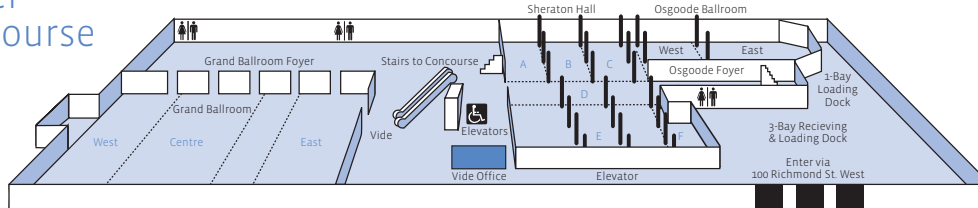
Lobby



Concourse



Lower Concourse



Keynote Speakers

ACM SIGART Autonomous Agent Research Award

Why People Still Matter: Modeling Human Behavioral Processes in Agents

Prof. Jonathan Gratch and Prof. Stacy Marsella

University of Southern California Institute for Creative Technologies

At its heart, research in autonomous agents and multiagent systems is multi-disciplinary. Rooted in artificial intelligence, the AAMAS community draws heavily from research in economics and rational choices, with strong influences from cognitive and social psychology. Our research over the last ten years has struggled with how to coalesce these different research areas and methodological traditions into a single coherent research program. In this talk we argue that these influences can realize a synergy that is not only desirable but essential for advancing the field. We will discuss three interrelated rationales for joining these research traditions. First, there is increasing demand to use computational methods to simulate human emotional and social processes. Second, the rise of human-agent interaction requires methods to better understand and predict human behavior with the aim of making these interactions more effective and “human centric”. Finally, a deeper understanding of how humans solve the challenges of acting and coordinating in complex dynamic environments can lend insight into expanding narrow conceptions of rational decision-making. We will illustrate how computational models of human processes can advance each of these rationales through several research projects in our laboratory.

KR/AAMAS Invited Talk

Great Moments in KR: The 1984 Complexity Convergence

Dr. Ron Brachman and Prof. Hector Levesque

Yahoo! and University of Toronto

The 1970’s were a fertile and exciting time for Artificial Intelligence. This was especially true in the area of Knowledge Representation, where numerous novel languages and systems were created and debated, and a burgeoning set of AI applications were supported by frames,

semantic networks, production rules, and other idiosyncratic KR schemes. But the issues under debate were often vague, and intuition and implementation-based arguments reigned, with little or no formal basis for discussion. Fortunately, in the late '70's and early '80's, out of this energetic but murky environment emerged several important lines of thought that promised to put elements of the field on a firmer foundation. By 1984 these threads had been developed enough that they could be knitted together, and out of this convergence a new kind of formal analysis of KR systems became possible. We look at the birth and evolution of several key ideas and how they came together to allow us to draw some interesting conclusions about the computational complexity of core inferences in a mainstream form of KR. We also make some observations about the aftermath, and how that moment in the history of the field seemed to mark a sea change in approaches to Knowledge Representation.

ICAPS/AAMAS Invited Talk

Robotic Agents for Disaster Response Robotics

Prof. Daniele Nardi

Università di Roma 'La Sapienza'

Disaster Response Robotics is a challenging domain, where the need for intelligent robotic agents (as opposed to just robots) is motivated both from technical considerations and from a practical application perspective. After providing arguments to support the above claim, I will briefly overview the state of the art in the field. Then, I will address some of the research approaches that we have developed at Sapienza Univ. of Rome, also within a collaboration with the Italian Firemen Department. Specifically, I will present some research in Distributed Situation Assessment, Action Planning and Monitoring, Context-based Design of intelligent robotic agents, Multi-robot Teams for disaster response robotics and Performance Evaluation Metrics for intelligent robotic agents. Throughout the discussion of past research, I will try to focus on several open challenges that need to be solved in order to provide effective solutions for Disaster Response Robotics.

IFAAMAS Victor Lesser Distinguished Dissertation Award

Algorithms for Abstracting and Solving Imperfect Information Games

*Dr. Andrew Gilpin
Carnegie Mellon University*

Game theory is the mathematical study of rational behavior in strategic environments. In many settings, most notably two-person zero-sum games, game theory provides particularly strong and appealing solution concepts. Furthermore, these solutions are efficiently computable in the complexity-theory sense. However, in most interesting potential applications in artificial intelligence, the solutions are difficult to compute due primarily to the extremely large state-spaces of the environments.

In this talk, I will discuss several of our algorithms for tackling these computational difficulties. In one stream of research, we introduce automated abstraction algorithms for sequential games of imperfect information. These algorithms take as input a description of a game and produce a description of a strategically similar, but smaller, game as output. We present algorithms that are lossless (i.e., equilibrium-preserving), as well as algorithms that are lossy, but which can yield much smaller games while still retaining the most important features of the original game.

In a second stream of research, we develop specialized optimization algorithms for finding epsilon-equilibria in sequential games of imperfect information. The algorithms are based on recent advances in non-smooth convex optimization and provide significant improvements over previous algorithms for finding epsilon-equilibria.

Combining these two streams, we enable the application of game theory to games much larger than was previously possible. As an illustrative example, we find near-optimal solutions for four-round models of limit and no-limit Texas Hold'em poker.

AAMAS Awards 2010

There are a number of awards associated with the AAMAS conference, some of which are known in advance, and some of which are announced at the conference.

ACM SIGART Autonomous Agent Research Award

The ACM SIGART Autonomous Agents Research Award is an annual award for excellence in research in the area of autonomous agents. The award is intended to recognize researchers in autonomous agents whose current work is an important influence on the field. The award is an official ACM award, funded by an endowment created by ACM SIGART from the proceeds of previous Autonomous Agents conferences. Candidates for the award are nominated through an open nomination process. Previous winners of the SIGART Autonomous Research Award were Manuela Veloso (2009), Yoav Shoham (2008), Sarit Kraus (2007), Michael Wooldridge (2006), Milind Tambe (2005), Makoto Yokoo (2004), Nick Jennings (2003), Katia Sycara (2002), and Tuomas Sandholm (2001).

The 2010 ACM SIGART Autonomous Agents Research Award recipients are **Prof. Jonathan Gratch** and **Prof. Stacy Marsella** from the University of Southern California Institute for Creative Technologies, who share the award for their significant and sustained contributions to autonomous agents and multiagent systems in the area of virtual agents, in particular in emotion modeling and social simulation.

IFAAMAS Victor Lesser Distinguished Dissertation Award

This award was started for dissertations defended in 2006 and is named for Professor Victor Lesser, a long standing member of the AAMAS community who has graduated a large number of outstanding PhD students in the area. To be eligible for the 2008 award, a dissertation had to have been written as part of a PhD defended during the year 2008, and had to be nominated by the supervisor with three supporting references. Selection is based on originality, depth, impact and written quality, supported by quality publications. Previous winners of this award were Ariel Procaccia (2008), Radu Jurca (2007), and Vincent Conitzer (2006).

The 2009 IFAAMAS Victor Lesser Distinguished Dissertation Award recipient is **Dr. Andrew Gilpin** of Carnegie Mellon University (advised by Prof. Tuomas Sandholm) for his dissertation titled “Algorithms for Abstracting and Solving Imperfect Information Game”.

Due to the extremely close competition this year, two additional candidates were selected for runner-up prizes. In particular, these are **Dr. Kurt Dresner** of the University of Texas at Austin (advised by Prof. Peter Stone) for his thesis titled “Autonomous Intersection Management”, and **Dr. Noa Agmon** of Bar Ilan University (advised by Prof. Gal Kaminka and Prof. Sarit Kraus) for her dissertation titled “Multi-Robot Patrolling and Other Multi-Robot Cooperative Tasks: An Algorithmic Approach”.

IFAAMAS Influential Paper Award

The International Foundation for Autonomous Agents and Multi-Agent Systems set up an influential paper award in 2006 to recognize publications that have made seminal contributions to the field. Such papers represent the best and most influential work in the area of autonomous agents and multi-agent systems. These papers might, therefore, have proved a key result, led to the development of a new sub-field, demonstrated a significant new application or system, or simply presented a new way of thinking about a topic that has proved influential. The award is open to any paper that was published at least 10 years before the award is made. The paper can have been published in any journal, conference, or workshop. The award is sponsored by the Agent Theories, Architectures and Languages foundation.

The winners of the 2010 IFAAMAS Influential Paper Award are:

- Makoto Yokoo, Edmund H. Durfee, Toru Ishida, and Kazuhiro Kuwabara (1998) The Distributed Constraint Satisfaction Problem: Formalization and Algorithms. *IEEE Transactions on Knowledge and Data Engineering*, 10:673-685.
- Makoto Yokoo and Katsutoshi Hirayama (1996) Distributed Breakout Algorithm for Solving Distributed Constraint Satisfaction Problems Second. *International Conference on Multiagent Systems (ICMAS-96)*, pp. 401-408.

Pragnesh Jay Modi Best Student Paper Award

This award is made annually at the AAMAS conference to the paper that is judged to be the best paper at the conference whose main author is registered as a student at the time of paper submission. Typically the student is registered for a PhD, although undergraduate and masters student papers may also be considered. The winning paper may have multiple authors, not all required to be students, but to be eligible, the main author of the paper must be a student. The award is sponsored the Autonomous Agents and Multi-Agent Systems journal.

The award is named after Pragnesh Jay Modi (1975-2007), an active and influential member of the AAMAS research community who died tragically young in April 2007. Jay obtained his PhD from the University of Southern California in 2003, and at the time of his death was a junior faculty member at Drexel University, Philadelphia. Jay's PhD thesis has been foundational in the area of distributed constraint optimization (DCOP), and among his many accomplishments were an NSF-CAREER award and IEEE Intelligent Systems magazine's award for *AI's 10 to watch*.

Nominations for the award are made by Program Committee members, Senior Program Committee members, Area Chairs and Program Chairs. The nominees for the AAMAS 2010 Pragnesh Jay Modi Best Student Paper Award are the following:

- Inter-Robot Transfer Learning for Perceptual Classification
Zsolt Kira
- Combining Manual Feedback with Subsequent MDP Reward Signals for Reinforcement Learning
W. Bradley Knox, Peter Stone
- Linear Options
Jonathan Sorg, Satinder Singh

Note that all Pragnesh Jay Modi Best Student Papers Award nominations are also nominated for the iRobot Best Paper Award.

iRobot Best Paper Award

This award is for a selected paper which does not have a student as primary author. Nominations are made by Program Committee

members, Senior Program Committee members, Area Chairs and Program Chairs. The award is sponsored by iRobot.

The nominees for the AAMAS 2010 iRobot Best Paper Award are the following:

- Minimal Retentive Sets in Tournaments
Felix Brandt, Markus Brill, Felix Fischer, Paul Harrenstein
- Agent-based Micro-Storage Management for the Smart Grid
Perukrishnen Vytelingum, Thomas D. Voice, Sarvapali D. Ramchurn, Alex Rogers, Nicholas R. Jennings
- Exploiting Scale Invariant Dynamics for Efficient Information Propagation in Teams
Robin Grinton, Paul Scerri, Katia Sycara

Best Virtual Agents Paper Award

This award is open to all papers submitted to AAMAS 2010 with a clear relevance to virtual agents. It is for the best paper in the area submitted to the conference. The selection committee consists of the Virtual Agents Special Track Chair, and the Program Chairs. This award is for a selected paper which does not have a student as primary author and is submitted to the Virtual Agent track. Nominations are made by Program Committee members, Senior Program Committee members, Area Chairs and Program Chairs.

The nominees for the AAMAS 2010 Best Virtual Agent Paper Award are the following:

- Evaluating Models of Speaker Head Nods for Virtual Agents
Jina Lee, Zhiyang Wang, Stacy Marsella
- Modeling Collision Avoidance Behavior for Virtual Humans
Stephen J. Guy, Ming C. Lin, Dinesh Manocha
- Parasocial Consensus Sampling: Combining Multiple Perspectives to Learn Virtual Human Behavior
Lixing Huang, Louis-Phillippe Morency, Jonathan Gratch

CoTeSys Best Robotics Paper Award

This award is open to all papers submitted to AAMAS 2010 with a clear relevance to robotics. It is for the best paper in the area submitted to the conference. The selection committee consists of the Robotics Special Track Chair, and the Program Chairs. The award is sponsored by CoTeSys, the German Cluster of Excellence.

The nominees for the AAMAS 2010 CoTeSys Best Robotics Paper Award are the following:

- Inter-Robot Transfer Learning for Perceptual Classification
Zolt Kira
- Aggregation-mediated Collective Perception and Action in a Group of Miniature Robots
Grégory Mermoud, Loïc Matthey, William Christopher Evans, Alcherio Martinoli
- Establishing Spatially Targeted Communication in a Heterogeneous Robot Swarm
Nithin Mathews, Anders Christensen, Rehan O'Grady, Marco Dorigo

Best Industry Track Paper Award

This award is for a selected paper from the Industry track. The award selection will be done in consultation by the advisory board and the industry track co-chairs.

Best Demo Award

A best demo award will be chosen, and will include a cash prize of \$1000. The award selection will be done by the exhibits and demos co-chairs in consultation with the Advisory Board.

Best Senior Program Committee Member Award

This award is for a selected member of the Senior Program Committee based on outstanding contribution to the management of the paper selection process, including reviewing, encouraging discussion, obtaining extra reviews if needed, and dealing with any issues arising in the course of paper selection.

The nominees for the AAMAS 2010 Best Senior Program Committee member are **Vincent Contizer**, **Mehdi Dastani** and **Pedro Lima**.

Best Program Committee Member Award

This award is for a selected member of the Program Committee based on outstanding quality of reviews and discussion of papers.

The nominees for the AAMAS 2010 Best Senior Program Committee member are **Amit Chopra**, **Paul Harrenstein** and **Alexandra Kirsch**.

Sponsors

We wish to thank the following for the success of this conference:



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Social Programme

Welcome Reception

11 May, Tuesday, 18:00 - 19:00
Osgoode Ballroom

All registered Conference participants are cordially invited.

Banquet

12 May, Wednesday, 19:30 - 22:30
CN Tower, 301 Front Street West, Toronto

The conference banquet will be held at one of Toronto's most popular attractions, the CN Tower, which is widely known as the world's tallest tower. Participants can enjoy a spectacular view of the city and Lake Ontario, 351 metres above ground, venture on the Glass Floor and go to the Outdoor Observation level. The evening will begin with a reception in the Horizons room at 19:30, during which the conference awards will be presented. This will be followed by the banquet dinner upstairs at the 360 Restaurant at 20:45. Every seat in this revolving restaurant has a spectacular view. See the conference registration page for a detailed menu.

The CN Tower is an easy 15 minutes walk from the conference hotel and can also be reached by taxi.

Limited number of extra tickets are available at the Registration Desk until May 11. Price: \$150.00.

General Information

Venue

AAMAS 2010 will take place at the Sheraton Centre Toronto Hotel, 123 Queen Street West, Toronto, tel. +1-416-361-1000.

Registration and Information Desk

The AAMAS 2010 Registration and Information Desk operates in Vide on the Lower Concourse Level.

Opening hours:

Monday, 10 May: 08.00 - 17.00

Tuesday, 11 May: 08.00 - 17.00

Wednesday, 12 May: 08.00 - 17.00

Thursday, 13 May: 08.00 - 17.00

Friday, 14 May: 08.30 - 12.00

Badges

Please, make sure that you wear your badge at every event you participate in, including the Social Programmes. As different events (tutorials, workshops, doctoral symposium, technical sessions) have different colour badges, please pay attention to use the appropriate badge.

Insurance

The Organizers of the Conference do not provide insurance and do not take responsibility for any loss, accident or illness that might occur during the Conference or in the course of travel to or from the meeting site. It is, therefore, the responsibility of the participants to check their coverage with their insurance provider.

Bank, Currency, Credit Cards

The unit of currency is the Canadian Dollar. International credit cards are accepted at most hotels, restaurants and shops. An ATM is available on the Concourse Level of the Sheraton Centre Hotel. There are other ATMs at both street level and Concourse Level in the Thomson

Building, which is immediately East of the Hotel (and connected to it through the PATH underground walkway at the Concourse Level).

Internet / WiFi

Wireless internet is available to conference participants in all meeting rooms and public areas of the Sheraton Centre Hotel. See the registration desk for network and password information.

Author Instructions

All rooms are equipped with projector and laptop. Presenters are requested to upload their presentations to the room laptop if possible using a USB stick. Laptops are equipped with MS Powerpoint, Adobe Reader, Windows Media Player and Quicktime.

Voltage

The electricity supply in Canada is 110 Volts, AC, 60 Hertz, as in the USA; outlets are also as in the USA, and overseas visitors may need an adaptor to use their personal appliances.

Restaurants Nearby

In the Sheraton Centre Hotel: the Bistro on Two restaurant on the second level is open for breakfast and lunch; Traders pub on the ground level is open from lunch until after midnight; the Lobby Cafe sells coffee, sandwiches, and pastries from early morning until dinner time; there are also Quinn's Steakhouse and Irish Bar and Shopsy's Deli on the Lobby level.

In the Thomson Building, which is immediately East of the Hotel (and connected to it through the PATH underground walkway at the Concourse Level): there is a food court with several fast food outlets on the Concourse Level; there is also Druxy's Deli at street level.

In the department store The Bay, at the corner of Queen St. and Yonge St., there are several restaurants on the Lower Level and 8th floor. The store is connected to the Sheraton by the PATH (walk East through the Thomson Building).

In the Eaton Centre shopping mall (the largest downtown mall), at the

corner of Queen St. and Yonge St., there is a large food court at the South end of the mall downstairs on Level 1. Besides a variety of fast food outlets, there is the Richtree Market restaurant where you can select fresh dishes from a choice of market stalls. The Eaton Centre is connected to The Bay by the PATH.

If you walk West on Queen Street, you will find many inexpensive restaurants. Ho Su Bistro at 254 Queen St. W. is a good spot for affordable Korean and Japanese meals.

Terroni at 57 Adelaide St. E. (www.terroni.ca) has tasty Southern Italian dishes and excellent pizza.

For fine dining, try Nota Bene (notabenerestaurant.com) at 180 Queen St. W. or Canoe (www.oliverbonacini.com) on the 54th floor of the TD Bank Tower at 66 Wellington St. W.

PATH Underground Walkway

PATH is a 27km network of underground walkways and shopping concourses under downtown Toronto. The Sheraton Centre Toronto Hotel connects to PATH at the Concourse Level.

Tourist Information and Tours

Tours of the city and to Niagara Falls can be booked at the Tour and Information Desk in the Lobby of the Sheraton Centre Hotel. Tourism Toronto provides tourist information online at www.seetorontonow.com. The City of Toronto www.toronto.ca website also has information for visitors. Finally, Ontario Tourism provides tourist information for the whole province of Ontario via their website at www.ontariotravel.net and their information centre at 20 Dundas St. W.

Public Transit

Toronto has very extensive public transit system, the Toronto Transit Commission (TTC) (see <http://www3.ttc.ca/>), with subways, buses and streetcars, that make it easy to get around the city. When using the TTC a single fare will take you anywhere in the city on a one way trip. You can freely transfer between subway, streetcar and bus, but make sure you obtain a transfer when and where you pay your fare. On buses and streetcars, exact change is required. Day passes and weekly passes are also available.

Taxis

There are many taxi companies. Fares are standard, metered and non-negotiable. The driver will start the meter when you get on board. It is customary to leave a 10-15% tip when service is good. Here are some numbers to call:

Beck Taxi: 416-751-5555

Royal Taxi: 416-777-9222

Co-op Cabs: 416-504-2667

Diamond Taxicab: 416-366-6868

One number dispatch for Toronto Area Taxi Service: 416-TAXICAB
(416 829-4222)

Emergencies Telephone Number

911 is the emergency services telephone number for fire, ambulance, and police; it can be dialed from any phone without a coin or a card.

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