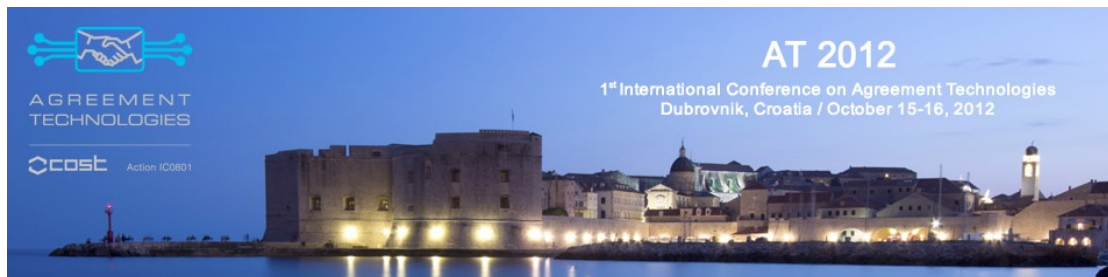


Programme Booklet

1st International Conference on Agreement Technologies AT-2012



Dubrovnik, Croatia

15-16 October 2012

Edited by

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Welcome to AT-2012

It is our pleasure to welcome you to AT 2012: The 1st International Conference on Agreement Technologies 2012, held on October 15-16, 2012, in Dubrovnik, Croatia. Agreement Technologies refer to computer systems in which autonomous software agents negotiate with one another, typically on behalf of humans, in order to come to mutually acceptable agreements. An agent may choose whether to fulfil an agreement or not, and it should fulfil it when there is an obligation to do so derived from the standing agreements. Autonomy, interaction, mobility and openness are key concepts studied within the AT approach. Semantic alignment, negotiation, argumentation, virtual organisations, learning, real time, and several other technologies are part of the sandbox to define, specify and verify such systems.

The first International Conference on Agreement Technologies, AT-2012, is an interdisciplinary forum that brings together researchers and practitioners working on the various topics comprising this emergent and vibrant field. It provides an avenue to discuss and exchange new ideas and techniques for the design, implementation and verification of next generation open distributed systems centred on the notion of agreement among computational agents. The AT 2012 conference focuses on the following topics: Argumentation, negotiation, Trust and reputation, Coordination and distributed decision making, Computational Social Choice, Semantic alignment, Inter-theory Relations, Decision and game theoretic foundations for agreement, Agent Commitments, Semantic Service Co-ordination, Normative Systems, Individual reasoning about norm adoption, Collective deliberation about norm adoption, Autonomic Electronic Institutions, Group planning agreements, Deliberative Agreement: social choice and collective judgment, Evolution of organisational structures, Social intelligence, Logics for Agreements, Real-time agreements, Agreement patterns, Agreement technologies architectures, environments and methodologies, Applications of agreement technologies (e.g. web service composition, contract automation, supply chain automation, sensor networks, etc.)

The conference program contains 27 full papers reporting on original and previously unpublished work, as well as 25 position papers representing either a summary of original work that has already been published in another conference or journal, a summary of original results obtained as a product of STSMs funded by the Agreement Technologies COST Action, or ongoing research that can lead to important contributions to or of Agreement Technologies. The program also includes an invited talk and a panel, sponsored by The European Network for Social Intelligence (SINTELNET).

The conference is supported by COST Action IC0801 on Agreement Technologies, the European Science Foundation (ESF), The European Network for Social Intelligence (SINTELNET), CETINIA, the Ministry of Science, Education and Sports of the Republic of Croatia, the Faculty of Electrical Engineering and Computing of the University of Zagreb, and the Spanish Project on Agreement Technologies.

We wish to extend our warm thanks to the AT-2012 Organizing Committee, the Program Committee members, the reviewers and all authors of submitted papers for making this conference so rewarding.

October 2012

Sascha Ossowski (Conference Chair)
Francesca Toni (Programme Co-Chair)
George Vouros (Programme Co-Chair)

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Programme Chairs

Francesca Toni, Imperial College London, UK

George Vouros, University of Piraeus, Greece

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Keynote Talk

Negotiation and Search

Speaker: Carles Sierra

Most existing negotiation algorithms only work for bilateral negotiations with linear additive utility functions. Most real-world negotiations however are much more complex. I introduce in this talk a new family of negotiation algorithms that is applicable to domains with many agents, an intractably large space of possible agreements, non-linear utility functions and limited time so an exhaustive search for the best solution is not feasible. This family of algorithms is called NB3 and applies Branch & Bound search to find good plans to propose. Search and negotiation happen simultaneously and therefore strongly influence each other. It applies a new time-based negotiation strategy that considers two utility aspiration levels: one for the agent itself and one for its opponents. Also, we assume a negotiation protocol that imposes almost no restrictions and is therefore also applicable to negotiations with humans. To analyze the performance of the algorithm I will present the Negotiating Salesmen Problem (NSP): a new variant of the Travelling Salesman Problem, in which several salesmen need to negotiate with each other in order to minimize the lengths of their trajectories.

Prof. Carles Sierra is Full Professor at the Institute of Research on Artificial Intelligence of the Spanish National Research Council (CSIC) and Adjunct Professor at the University of Technology, Sydney, Australia. Recently, he has been particularly active in the area of multi-agent systems, especially on methodological aspects, negotiation and trust modelling. He has participated in around forty research projects funded by the European Commission and the Spanish Government, and has published around three hundred papers in specialised scientific journals, conferences and workshops. He is member of the program committees of around a dozen of conferences and workshops per year, and is a member of seven journal editorial boards including AIJ, JAIR and JAAMAS. He has been General Chair of the conference Autonomous Agents 2000 in Barcelona, AAMAS 2009 in Budapest, and PC chair of AAMAS 2004. He has been the local chair for IJCAI 2011 in Barcelona.

Panel

Social Intelligence: Principles and Engineering

Moderator: Cristiano Castelfranchi

Panellists: Andrew J I Jones, Pablo Noriega, Enric Plaza

It is clear that “in the design of socio-technical systems, the need for computational tractability makes it probable that there will have to be some degree of simplification of the principal social concepts involved; but it is essential to achieve as clear a picture as possible of just what it is that is being simplified. .. Any computationally motivated simplifications should be carried out against the background of, and should be properly informed by, precise models of the social concepts themselves”. Have been and are computer scientists sufficiently informed by conceptual models of social phenomena that they are engineering? Is just this the right path: from theory construction, to formalization, implementation, and application? Or is there a feedback from computational modelling to the theoretical analysis. Didn't AI change some crucial theory like the classical notions of “intelligence” and of “rationality” in philosophy, psychology, and economics? Will this feedback on conceptual theories operate again for social and institutional notions (like organization, trust, norms, roles, power, ...) ? Apart from a unidirectional or bidirectional model of engineering social notions (from theory to artificial systems or also from computer modelling back to theories), shouldn't we be happy with a “good-enough” but general “framework” for meta-modelling whatever socio-technical systems, artificial institutions, normative and organizational environment? Aren't “satisfying” criteria good-enough?

Conference Programme

Monday, October 15th, 2012

Opening & Invited Talk: “Negotiation and Search” 09:00 – 10:30

Coffee Break 10:30 – 11:00

Session 1a: Multi-Agent Systems..... 11:00 – 12:30

Chair: Marco Colombetti

Conference Hall

- Developing Regulated Open Multi-agent Systems
Emilia Garcia, Adriana Giret and Vicent Botti
- Dynamic Discovery and Maintenance of Role-based Performance Standards
Ramon Hermoso and Henrique Lopes Cardoso
- Towards Building Agreement Spaces using Consensus Networks
Miguel Rebollo, Alberto Palomares and Carlos Carrascosa
- Representing and Evaluating Electronic Contracts with Normative MDPs
Moser Silva Fagundes, Sascha Ossowski, Michael Luck and Simon Miles
- Towards a framework for the analysis of regulative norm performance in complex networks
Luis Oliva, Sergio Alvarez-Napagao and Javier Vázquez-Salceda
- Adapting Agent Organisations with Agreement Technologies
J. Santiago Pérez-Sotelo, Carlos E. Cuesta and Sascha Ossowski

Session 1b: Argumentation and Negotiation 11:00 – 12:30

Chair: Adam Wyner

Room 2

- General Directionality and the Local Behavior of Argumentation Semantics
Cristian Gratie, Adina Magda Florea and John-Jules Meyer
- Security agility solution independent of the underlying protocol architecture
Valter Vasic and Miljenko Mikuc
- Towards a probabilistic Dung-style argumentation system
Tjitze Rienstra
- Overview of HANA: a Human-Aware Negotiation Architecture
Angela Fabregues and Carles Sierra
- ConArg: Argumentation with Constraints
Stefano Bistarelli and Francesco Santini
- Using Saaty's method in contract negotiations
Marcin Paprzycki, Katarzyna Wasielewska and Maria Ganzha

Lunch 12:30 – 13:30

Session 2a: Foundations of Agreement Technologies 13:30 – 14:30

Chair: Estefanía Argente

Conference Hall

- Competitive Voters vs. Collaborative Bidders: Agreements in Dynamic Task Assignment
Marin Lujak and Marija Slavkovic
- Experiences, a forgotten component of epistemic states
Leila Amgoud, Mark D'Inverno, Nardine Osman, Henri Prade and Carles Sierra
- Changing Agreements: Abstract Reasoning Framework and Algorithms for Intention Reconsideration based on Assumptions and Reasons
Diana Marosin, Henderik A. Proper and Leendert van der Torre
- Getting Experts' Agreement in Strategic Planning
José Miguel Castillo

Session 2b: Applications 13:30 – 14:50

Chair: Paul Davidsson

Room 2

- The Role of Argumentation on the Future Internet: Reaching agreements on Clouds
Stella Heras, Fernando de La Prieta, Sara Rodriguez, Javier Bajo, Vicente Botti and Vicente Julian
- An Argument-based Approach to Mining Opinions from Twitter
Kathrin Grosse, Carlos Iván Chesñevar and Ana Gabriela Maguitman
- Distributed Thermal Storage Using Multi-Agent Systems
Christian Johansson, Fredrik Wernstedt and Paul Davidsson
- Short Simulation-Based Assessment of Human-Agent Interactions in a Fire Fighting Scenario
Sascha Hornauer, Jürgen Sauer, Andreas Lüdtke and Florian Frische

Coffee Break 14:30 – 15:00

Poster Session 15:00 – 17:00

Open to all AT-2012 delegates

Corridor

MC meeting 16:00 – 18:30

Open to MC members and substitutes

Room 2

Conference Dinner 20:00

Tuesday, October 16th, 2012

Session 3a: Semantics 09:15 – 10:45

Chair: Laszlo Varga

Conference Hall

- Distributed Semantic Coordination Via belief Propagation
George Vouros
- Using OWL Artificial Institutions for dynamically creating Open Spaces of Interaction
Nicoletta Fornara and Charalampos Tampitsikas.
- Integrating Semantic Web Technologies and Multi-Agent Systems: A Semantic Description of Multi-Agent Organizations
Alexandra - Mădălina Zarafin, Antoine Zimmermann and Olivier Boissier
- Reengineering the Core Grid Ontology
Paweł Szmeja and Antoine Zimmermann
- The E-SHIQ Contextual Logic Framework
Giorgos Santipantakis and George Vouros

Session 3b: Trust & Reputation 09:15 – 10:45

Chair: Eugénio Oliveira

Room 2

- Multi-tier agent architecture representing open service ecosystems for inter-enterprise collaboration management
Lea Kutvonen
- A Reinforcement Learning Based Strategy for the Double-Game Prisoner's Dilemma
Yang Gao
- Trust in relevance
Fabio Paglieri and Cristiano Castelfranchi
- Social Networks and Collective Intelligence - A Return to the Agora (with the Polidoxa Shift)
Luca Biselli, Nicola Dragoni, Emanuela Goldoni, Pier Paolo Greco, Antonio Marraffa, Manuel, Mazzara and Georgios Papageorgiou.
- Agent-oriented Engineering of Trust Management Systems
Eva Zupančič, Denis Trcek and Kuldar Taveter.
- A Structured Environment to Facilitate Agreements
Eugénio Oliveira

Coffee break 10:45 – 11:15

SINTELNET Panel 11:15 – 12:30

Chair: Cristiano Castelfranchi

Conference Hall

Lunch 12:30 – 13:30

Session 4a: Multi-Agent Systems..... 13:30 – 15:00

Chair: Nicoletta Fornara

Conference Hall

- A Collaborative Model for Participatory Load Management in the Smart Grid
Matteo Vasirani and Sascha Ossowski
- Towards runtime support for norm change from a monitoring perspective
Ignasi Gómez-Sebastià, Sergio Alvarez-Napagao, Javier Vazquez and Luis Oliva
- OntoPlay - a flexible user-interface for agent-semantic systems
Michał Drozdowicz, Maria Ganzha, Marcin Paprzycki, Paweł Szmeja and Katarzyna Wasielewska
- Using CEP-based Blackboards for Coordinating Mobile RFID Agents
Johannes Westhuis, Ralf Bruns and Juergen Dunkel
- Dependence Networks for Agreement Technologies
Guido Boella, Patrice Caire, Leon Van Der Torre and Serena Villata
- The CrocodileAgent 2012: Reaching Agreements in Multi-Agent Simulation of Smart Grid Wholesale Market
Ivo Buljevic, Ivana Pranjic, Marija Mijic, Jurica Babic, Ana Petric and Vedran Podobnik

Session 4b: Argumentation and Negotiation 13:30 – 15:00

Chair: Leila Amgoud

Room 2

- Arguing from a Point of View
Adam Wyner and Jodi Schneider
- WeCurate: Designing for synchronized browsing and social negotiation
Leila Amgoud, Roberto Confalonieri, Dave de Jonge, Mark D'Inverno, Katina Hazelden, Nardine Osman, Henri Prade, Carles Sierra, and Matthew Yee-King
- Constraint definition rule to achieve high rate of success in negotiations
Raiye Alemayehu and Takayuki Ito
- Towards Community Browsing for Shared Experiences: The WeBrowse System
Matthew Yee-King, Roberto Confalonieri, Dave De Jonge, Nardine Osman, Katina Hazelden, Leila Amgoud, Henri Prade, Carles Sierra and Mark D'Inverno.
- The CrocodileAgent 2012: Negotiating Agreements in Smart Grid Tariff Market
Sinisa Matetic, Jurica Babic, Marin Matijas, Ana Petric and Vedran Podobnik

Coffee Break 15:00 – 15:30

Session 5a: Applications 15:30 – 17:00
Chair: Marcin Paprzycki Conference Hall

- Detection of Collusive Behavior in Energy Markets
Radu-Casian Mihailescu, Matteo Vasirani and Sascha Ossowski
- Large scale agreements via microdebates
Simone Gabbriellini and Paolo Torroni
- u-Help: supporting helpful communities with information technology
Andrew Koster, Jordi Madrenas-Ciurana, Nardine Osman, Marc Schorlemmer, Jordi Sabater Mir, Carles Sierra, Dave de Jonge, Angela Fabregues, Josep Puyol-Gruart and Pere Garcia-Calvés
- Desiderata for Agent-Based Power Regulation Protocols in Smart Grids
Radu-Casian Mihailescu, Sascha Ossowski and Matteo Vasirani
- Argumentation Tool that Enables Agents to Argue
Jaume Jordán, Stella Heras and Vicente Julian
- An Infrastructure for Open Interaction Systems
Daniel Okouya, Marco Colombetti and Nicoletta Fornara

Session 5b: Argumentation and Negotiation 15:30 – 16:30
Chair: J.J Ch. Meyer Room 2

- Backward Planning in the Logics of Communication and Change.
Pere Pardo and Mehrnoosh Sadrzadeh
- The Topology of Common Belief
David Pearce and Levan Uridia
- Research Opportunities for Argumentation in Social Networks.
Stella Heras, Katie Atkinson, Floriana Grasso, Peter Mcburney, Vicente Botti and Vicente Julian
- Environment and Agreement Technologies
Estefanía Argente, Olivier Boissier, Carlos Carrascosa, Nicoletta Fornara, Peter McBurney, Pablo Noriega, Alessandro Ricci, Jordi Sabater, Michael Ignaz Schumacher, Charalampos Tampitsikas, Kuldar Taveter, Giuseppe Vizzari and George Vouros

Coffee break 16:30 – 17:15

AT Community Session & closing..... 17:15 – 18:00
Chair: Sascha Ossowski Conference Hall

Social Programme

Sunday, October 14th, 2012

Guided Old Town Tour 18:00

All AT delegates are invited to attend a guided walking tour of Dubrovnik's Old Town. The tour will last approximately 2 hours. The meeting point is in front of the CAAS building at 18:00.

Welcome Reception 20:00

After the city tour, a Welcome Reception will be held at **Restaurant Klarisa** in the historic heart of Dubrovnik, near the entrance to the Old Town.



Monday, October 15th, 2012

Conference Dinner 20:00

The Conference Dinner will take place at **Restaurant Dubravka** located on the square Brsalje at the entrance to the Old Town of Dubrovnik. The restaurant is surrounded by three of the most beautiful town fortifications - Lovrijenac, Bokar and Minčeta and the view that stretches from the restaurant terrace over the high seas is simply breathtaking.



Conference Venue

Centre for Advanced Academic Studies (CAAS)



Address:

Centre for Advanced Academic Studies
Don Frana Bulica 4
20000 Dubrovnik
Croatia
Website: <http://www.caas.unizg.hr>

Conference rooms:

Conference hall (ground floor)
Lecture room no. 2 (first floor)

CAAS building - Ground floor



CAAS building - First floor

