Call For Papers

To be held in conjunction with the 13th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2014)

http://www.tuat.ac.jp/~katfuji/ACAN2014/

Important dates

– January 22, 2014 - Submission deadline
– February 19, 2014 - Acceptance notification
– March 6, 2014 - Camera-ready deadline
– May 5-6, 2014 - ACAN2014

Scope and Background

Complex Automated Negotiations have been widely studied and are one of the emerging areas of research in the field of Autonomous Agents and Multi-Agent Systems. The complexity in an automated negotiation depends on several factors: the number of negotiated issues, dependencies between these issues, representation of the utility, negotiation protocol, negotiation form (bilateral or multi-party), time constraints, and so on. Complex automated negotiation scenarios are concerned with negotiation encounters where we may have for instance, a large number of agents, a large number of issues with strong interdependencies, real time constraints, etc. Many real world negotiation scenarios present one or more of the mentioned elements. Software agents can support the automation of complex negotiations, by negotiating on the behalf of their owners and providing adequate strategies to their owners to achieve realistic, win-win agreements. In order to provide solutions in such complex automated negotiation scenarios, research has focused on incorporating different technologies including search, CSP, graphical utility models, Bayesian nets, auctions, utility graphs, optimization and predicting and learning methods. The applications of complex automated negotiations could include e-commerce tools, decision-making support tools, negotiation support tools, collaboration tools, as well as knowledge discovery and agent learning tools.

ACAN2014 will discuss, among others, the following aspects and topics of such complex automated negotiations within the field of Autonomous Agents and Multi-Agent Systems, including but not limited to:

- Complex Automated Negotiation Frameworks and Mechanisms
- Bilateral and Multilateral Negotiation,
    - High dimension Multi-Issue Negotiation, Large Scale Negotiation, Concurrent Negotiation, Multiple Negotiation, Sequential Negotiation, Negotiation under Asymmetric Information, and so on.
- Prediction of Opponent's Behaviours and Strategies in Negotiation
- Simulation Models and Platforms for Complex Negotiations
- Coordination Mechanisms for Complex Negotiations
- Matchmaking and Brokering Mechanisms
- 2-Sided Matching
- Utility and preference representations in negotiation
- Computational Complexity of Multi-Issue Negotiations
- Efficient Negotiation with Human Opponents. Cognitive Aspects of Human Negotiations.
- One-Many and Many-Many Negotiation Protocols. Leveled Commitment Mechanisms.
- Emerging Applications for Electronic Negotiations (Crowdsourcing, Social Networks etc.)
- Relation between electronic negotiation and other resource allocation protocols (auctions, contract net protocols etc.)
- Applications for Automated Negotiations (e.g. cloud computing, smart grid, electronic commerce etc).

A considerable number of researchers in various sub-communities of autonomous agents and multi-agent systems are actively working on these and related issues. They are, for instance, being studied in agent negotiation, multi-issue negotiations, auctions, mechanism design, electronic commerce, voting, secure protocols, matchmaking & brokering, argumentation, co-operation mechanisms and distributed optimization. The goal of this workshop is to bring together researchers from these communities to learn about each other's approaches to the complex negotiation problem, encourage the exchange of ideas between the different areas, and potentially foster long-term research collaborations to accelerate progress towards scaling up to larger and more realistic applications.

Tutorial Session

The tutorial aims to give a broad overview of state of the art in agent-mediated negotiation. The tutorial will focus on the game-theoretic foundations of electronic negotiations. First, we review the main concepts from both cooperative and competitive bargaining theory, such as Pareto optimality, the Pareto-efficient frontier as well as utilitarian, Nash and Kalai-Smorodinsky (egalitarian) solution concepts. We discuss and compare games with complete and with incomplete information and exemplify these concepts through some well-known sequential bargaining games, such as the ultimatum game.

A particular emphasis will be placed on multi-issue (or multi-attribute) negotiation - a research area that has received significant attention in recent years from the multi-agent community and which is one of the core topics of research of the ACAN workshop. We discuss some of the challenges that arise in modeling negotiations over multiple issues, especially when no information (or only incomplete information) is available about the preferences of the negotiation partner(s), as well as some of the heuristics employed in AI and machine learning research to solve this problem. The second part of the tutorial focuses on multi-issue negotiations which may have realistic limitations like time-constraints, computational tractability, private information issues, online negotiations, etc. The tutorial will conclude with a brief discussion of the lessons learnt so far from running the international Automated Negotiating Agents Competition (ANAC). This will be a new feature compared to previous editions, and it will provide participants with information and insight needed to design a successful strategy in ANAC.

Automated Negotiating Agents Competition Special Session (Tentative)

From 2010, ACAN is tightly cooperating with ANAC (Automated Negotiating Agents Competition). Based on the great success of previous ANAC, the ANAC2014 will be held at AAMAS2014. This year, we, ACAN, will have the ANAC special session, in which the finalists of ANAC will describe their negotiating agents. See the ANAC site for more details: http://mmi.tudelft.nl/negotiation/index.php/Automated_Negotiating_Agents_Competition_(ANAC)

Submission

http://www.easychair.org/conferences/?conf=acan2014

Submissions should conform to the ACM SIG style (see http://www.acm.org/sigs/publications/proceedingstemplates for more details) and should not be more than 8 pages long (excluding appendices). The workshop welcomes submissions of original works relevant to the topics described above. This year, the workshop will accept submissions of both full papers (maximum 8 pages) and short papers (maximum 4 pages).

Organization

Organizers
– Dr. Katsuhide Fujita (Tokyo University of Agriculture and Technology, Japan)
– Prof. Dr. Takayuki Ito (Nagoya Institute of Technology, Japan)
– Dr. Valentin Robu (University of Southampton, UK)
– Prof. Dr. Dr. Minjie Zhang (University of Wollongong, Australia)

ACAN Steering Committee
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– Dr. Quan Bai (Auckland University of Technology, New Zealand)
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