

# Editor's Message to Special Issue on Theory and Application of Agent Research

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Research and development of the agent technology has been actively conducted in broad fields such as information processing, autonomous and cooperative problem solving, and information retrieval/integration on the web. JAWS (Joint Agent Workshops and Symposium) has provided opportunities for many researchers in this area to make presentation since 2002. This workshop is jointly supported by SIG-ICS, IPSJ; MACC, JSSST; SIG-AI, IE-ICE; and SIG-KBS, JSAL. In JAWS2011, researchers had insightful and attractive discussions and presentations. Based on the success of JAWS2001, Information Processing Society of Japan (IPSJ) cooperated with JAWS called for papers for the special issue of "Theory and Application of Agent Research", the Journal of Information Processing.

For this special issue, the following topics related to Theory and Application of Agent Research were of interest. These include, but are not limited to the following areas:

- Concept, technology, and instance of application of agents: Acquisition, integration, and circulation of information, Mobile communication, Community wear/social wear, Internet application system, Cooperation working support, Network administration and management, Web-based training, Application to a social system/communication, Electronic commerce, Application to software engineering, etc.
- Concept, theory, and technology that support application of agents: Basic theory, Communications protocol between agents, Agent architecture, Agent description language, Agent cooperation technology, Agent processor/framework, etc.

We had 32 submissions and accepted 17 papers. The acceptance rate is 56.6%. The quality of the accepted papers is high because these papers were once discussed in the JAWS2011, rewritten, and then peer-reviewed.

The papers in this special issue can be classified into the following three area: 1) Agent-based simulation and complex system: cascade phenomena, rebound mechanisms in stock markets, disaster rescue agents, road network analysis, and simulator architectures to realize these simulations. 2) Theoretical multi-agent algorithms: distributed lagrange relaxation protocol, asynchronous ant colony optimization, distributed constraint optimization, equilibrium analysis for repeated games, network

formation games, voting, fast combinatorial auction algorithms, etc. 3) Applications: Humanoid robots, preference analysis in EC sites, forksonomy, and social media. These papers from board area about multi-agent systems are accepted for this special issue.

Finally, I would like to express my warm thanks to all of supporters and reviewers for this special issue. In particular, without cooperation by the Editorial Board, prof. Kiyoshi Izumi and prof. Nariaki Nishino, it was impossible to realize this wonderful special issue.

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