

Call for Papers

Intelligent Agent Systems: Theory, Design and Implementation

Special Session in conjunction with
The 18th International FLAIRS Conference
May 16-18, 2005 ~ Clearwater Beach, Florida, <http://ranger.uta.edu/flairs05>
Track URL: <http://www.cs.siu.edu/~rahimi/flairs05/>

Important Dates	
Paper submissions:	October 22, 2004
Acceptance notification:	January 7, 2005
Camera-ready final papers:	February 4, 2005

Intelligent agent technology is emerging as one of the most rapidly advancing areas in information technology. There is a fast pace in the conceptualization and development of agent-based applications in a variety of fields such as electronic commerce, supply chain management, resource allocation, project management, intelligent manufacturing, industrial control, information retrieval and filtering, computational science, collaborative work, decision support, and computer games. While research on various aspects of intelligent agent technology and its application is progressing at a very fast pace, this is only the beginning. There are still many issues that have to be explored in terms of agent design, implementation, and deployment. The purpose of this track is to provide a forum for academics and practitioners to identify and explore the issues, opportunities, and solutions related to intelligent agent theory, design and implementation.

Track welcomes submissions of original high-quality papers. The technical issues to be addressed include, but not limited to:

- Applications:
 - Data and knowledge intensive domains (e.g., large databases, Internet, digital libraries, financial engineering, business information systems, CSCW)
 - Interaction with software/interface agents (e.g., E-commerce, personal assistant, information filter, tutor)
 - Computational intelligence (e.g., pattern analysis and recognition, imaging, optimization, resource allocation, constraint satisfaction, planning)
 - Physically embodied systems (e.g., autonomous robots)
 - Very-large, complex, integrated intelligent systems
- Computational Architecture and Infrastructure:
 - Computational architectures, virtual machines, tools and standards
 - Ontology models, multimodal systems and interfaces
 - Agent-level and multiagent-level infrastructure
 - Communication languages and protocols
 - Heterogeneity and interoperability
 - Scalability
- Learning and Adaptation:
 - Uncertainty management in multiagent systems
 - Integrated exploration and exploitation
 - Neural networks, Artificial life, Evolutionary computation
 - Behavioral selection, behavioral self-organization, emergent behavior
 - Coordinating perception, thought, and action
 - Evolution and learning in dynamic environments
 - Adaptation and self-adaptation
 - Human-agent interaction
- Data and Knowledge Engineering/Communication:
 - Distributed knowledge systems
 - Adaptation and evolution of knowledge networks
 - Data mining, information filtering
 - Heterogeneous data integration and management
 - Knowledge discovery, Knowledge sharing, Knowledge aggregation
 - Reasoning and planning

- Distributed Intelligence:
 - Dynamics of groups and populations
 - Coevolution
 - Collective group behavior
 - Coordination and cooperation
 - Social integration
 - Market-based computing
- Abstract Models for Agent Systems:
 - Coordination models (channel-based, tuple-based)
 - Distributed objects, active objects, actors
 - Locality-centric models (mobile ambients,...)
 - Process algebras (pi-calculus, join calculus, fusion calculus)
 - High-level programming models
 - Specification languages and model checking
 - Formal reasoning, techniques for correctness, automatic support
 - Modeling and simulation by discrete events systems

Track Organizers:

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Submission and Publication:

Interested authors should format their papers according to AAAI formatting guidelines (<http://www.aaai.org/Publications/Author/authorinstructions.pdf>). All submissions will be done electronically via FLAIRS web submission system, which will be available through the paper submission web site (<http://earth.cs.ccsu.edu/~flairs/submission.html>). Papers will be refereed and all accepted papers will appear in the conference proceedings which will be published by AAAI Press. Selected authors will be invited to submit extended versions of their papers to a special issue of the International Journal on Artificial Intelligence Tools (IJAIT) to be published in 2006.

Each paper must be submitted only once either to the general session or to one special track only. Additional information about paper formatting including templates and common problems and suggestions is provided in the FLAIRS author help page (<http://earth.cs.ccsu.edu/~flairs/authorhelp.html>).

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