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CALL FOR PAPERS

Special Issue on Autonomic Agent Systems

Editors: Yingxu Wang and Du Zhang

Recent research reveals that the foundations of agent technologies are rooted in cognitive informatics theories and autonomic computing methodologies. Along with the latest development of cognitive informatics and autonomic computing, self-organizing, self-managing and non-imperative autonomic agent systems are emerging. An autonomic agent system (AAS) is an intelligent software system that takes rational actions in the pursuit of its agenda via goal-, inference-, and event-driven behaviors. Because cognitive informatics investigates the internal information processing mechanisms and processes of the brain and natural intelligence, its research results underpin engineering applications of AAS. As a result, a crosscutting niche area forms to foster the cross fertilization among cognitive informatics, autonomic computing, and software agent technologies.

This special issue on *Autonomic Agent Systems* in *IJCiNi* will focus on the interplay of cognitive informatics and the theories, methodologies, techniques, and applications of AAS. Original contributions are sought for this special issue. Suggested topics include, but are not limited to:

∆ **AAS Theories**
- Agent ontologies
- Cognitive modeling
- Agent perception mechanisms
- Neural informatics for agent systems
- Memory models
- Multi-agent planning
- ambient intelligence and swarm intelligence
- Reinforcement learning
- Self-management and self-organization

∆ **AAS Methodologies**
- Autonomic computing
- Distributed problem solving
- Coordination and cooperation
- Nature-inspired paradigms
- Sensors for agent systems
- Semantic web
- Knowledge networks

∆ **AAS Techniques**
- Agent architectures
- Agent languages
- Agent communication protocols
- Agent development tools and standards
- Agent knowledge representation and reasoning
- Agent knowledge acquisitions
- Secure mobile and multi-agent systems

∆ **AAS Applications**
- Agent-based grid computing
- Agent-based learning and knowledge discovery
- Agent-based distributed data mining
- Agent-based software engineering
- Agents in games and virtual environments
- Artificial life and societies
- Believable, embodied, and physical agents
- Interface agents
- Agent-based business systems

Prospective authors need to follow the *Guidelines for Authors* of *IJCiNi* at http://www.enel.ucalgary.ca/IJCINI/ to prepare their contributions. Submitted papers must not have been previously published and must not be currently under consideration for publication elsewhere, except for those being declared as presented conference papers. All papers will be rigorously reviewed. Complete manuscripts within 20 – 30 double spaced pages in both Word and PDF formats should be submitted to the Editors on or before **Dec. 1, 2007.**

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