

Call for Papers

Special Session on Agent based Memetic Algorithms (AMAs)

Memetic Algorithms (MAs) are one of the recently growing research areas in Evolutionary Algorithms (EAs). Memetic algorithms are a general name for a broad class of population-based heuristics that is capable of local refinements. Recent studies have revealed that MAs are successful on a wide variety of real world problems. Particularly, they converge to high quality solutions more efficiently compared to their conventional systematic counterparts.

A multi-agent system (MAS) is composed of multiple interacting agents, possibly equipped with intelligent capabilities. By agents here, we typically mean software agents. Recently, multi-agent systems are increasingly used for solving problems which are difficult or impossible for an individual agent. They are also used as a programming and software development paradigm. In a problem solving multi-agent system, agents usually have some of the basic properties and characteristics of usual MASs, such as autonomy, local view, social ability (communications), learning and adaptive ability.

A population in MAs can simply be thought as a collection of agents. In addition, since MAs are hybrid techniques, as they incorporate both population-based and local search metaheuristics possibly combined with tree-search techniques, MASs are indeed a powerful framework for modelling, designing and implementing them. By integrating the agent concept in MAs, we can enhance the performance of MAs as evident in the literature. The agents can bring many interesting features in MAs which are beyond the scope of traditional evolutionary process and learning. We must mention here that 'Evolutionary intelligent agents' is a regular topic in IEEE-CEC list.

The aim of this special session is to reflect the most recent advances in the field, and increase the awareness of the computing community at large on this effective technology. In particular, we endeavor to demonstrate the current state-of-the-art in the theory and practice of Agent based MAs. Topics of interest include (but are not limited to):

- Novel frameworks of Agent based MAs (AMAs),
- Analytical and/or theoretical studies that enhance our understanding of AMAs,
- Design of multi-agent architecture within AMAs,
- Design of agent communication and learning strategy,
- Analysing the affect of agent type, architecture, cooperation, communication and learning on the overall performance of AMAs
- Convergence and complexity analysis of AMAs,
- AMAs for global, constrained, dynamic and large scale optimization,
- Multi-objective AMAs,
- Multi-method local search in AMAs,
- Hybrid search strategies in AMAs, and
- Real-world applications of AMAs.

Paper Submission

Papers submitted for this session will be peer-reviewed with the same criteria used for other contributed papers. The paper format of the conference is available on the website: <http://www.cec2009.org>. After the final decision is made, authors will receive a notification letter accompanied with the reports of the reviewers. All accepted papers will be published along with all accepted papers at CEC2009 and at least one of the authors must register and attend to present his/her paper at CEC'2009.

All papers will be submitted via the CEC submission system. Please follow the instructions carefully to upload your papers. If you experience any difficulty, please feel free to contact us directly.

Post-conference Publication

Following CEC the organisers of the special session intend to publish a special issue of a Springer Journal on Memetic Computing. Authors of accepted papers in this special session might be invited to extend their work for the journal publication.

Organizers

- **Dr. Ruhul Sarker**, UNSW@ADFA, Canberra, Australia
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- **A/Prof. Michela Milano**, DEIS - Università di Bologna, Italy
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Important Dates

- Paper Submission: November 1st, 2008
- Notification of acceptance/rejection: January 16th, 2009
- Camera-ready submission: February 16th, 2009