ANTS 2012

Eight International Conference on
Swarm Intelligence

September 12–14, 2012. Brussels, Belgium

Scope of the Conference

Swarm intelligence is a relatively new discipline that deals with the study of self-organizing processes both in nature and in artificial systems. Researchers in ethology and animal behavior have proposed many models to explain interesting aspects of social insect behavior such as self-organization and shape-formation. Recently, algorithms and methods inspired by these models have been proposed to solve difficult problems in many domains.

An example of a particularly successful research direction in swarm intelligence is **ant colony optimization**, the main focus of which is on discrete optimization problems. Ant colony optimization has been applied successfully to a large number of difficult discrete optimization problems including the traveling salesman problem, the quadratic assignment problem, scheduling, vehicle routing, etc., as well as to routing in telecommunication networks. Another interesting approach is that of **particle swarm optimization**, that focuses on continuous optimization problems. Here too, a number of successful applications can be found in the recent literature. **Swarm robotics** is another relevant field. Here, the focus is on applying swarm intelligence techniques to the control of large groups of cooperating autonomous robots.

ANTS 2012 will give researchers in swarm intelligence the opportunity to meet, to present their latest research, and to discuss current developments and applications. The three-day conference will be held in Brussels, Belgium, on September 12–14, 2012.

Relevant Research Areas

ANTS 2012 solicits contributions dealing with any aspect of swarm intelligence. Typical, but not exclusive, topics of interest are:

- Behavioral models of social insects or other animal societies that can stimulate new algorithmic approaches.

- Empirical and theoretical research in swarm intelligence.

- Application of swarm intelligence methods, such as ant colony optimization or particle swarm optimization, to real-world problems.

- Theoretical and experimental research in swarm robotics systems.

Publication Details

Conference proceedings will be published by Springer in the LNCS series, as those of the last five editions of the ANTS Conference. The journal *Swarm Intelligence* will publish a special issue dedicated to ANTS 2012 that will contain extended versions of the best research works presented at the conference. Further details will soon be published on the web site.

Conference Location

Salle Duprèel, Building S, Campus du Solbosch, Universitè Libre de Bruxelles, Av. Jeanne 44, 1050 Brussels, Belgium.

Best Paper Award

A best paper award will be presented at the con- ference. Continuing the tradition of the ANTS Conference Series, the prize winner will receive a sculpture of an ant expressly created for the ANTS Conference by the Italian sculptor Matteo Pugliese.

Invited talks

- Prof. Dirk Helbing (ETH Zurich, Switzerland) on *"Towards Simulating the Foundations of Society"*

- Prof. Nigel R. Franks (University of Bristol, UK) on *"Ants, Bees and Brains"*

- Prof. Vijay Kumar (University of Pennsylvania, USA) on *"Architectures, abstractions, and algorithms for large teams of robots"*

Further Information

Up-to-date information will be published at `http://iridia.ulb.ac.be/ants2012/`. For information about local arrangements, registration forms, etc., please refer to the above-mentioned web site or contact the local organizers at the address below.

Conference Address

IRIDIA CP 194/6	Tel +32-2-6502729
Universitè Libre de Bruxelles	Fax +32-2-6502715
Av. F. D. Roosevelt 50	http://iridia.ulb.ac.be/ants2012
1050 Bruxelles, Belgium	email: ants@iridia.ulb.ac.be

Important Dates

Submission deadline	March 2, 2012
Notification of acceptance	May 3, 2012
Camera ready copy	May 17, 2012
Conference	September 12–14, 2012

ANTS 2012 Organizing Committee

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