CALL FOR PAPERS

3rd Workshop on Bio-Inspired and Self-* Algorithms for Distributed Systems (BADS 2011)

June 14, 2011

to take place during

8th International Conference on Autonomic Computing (ICAC 2011)
Karlsruhe, Germany, June 14-18, 2011

Computer systems are characterized by an ever growing complexity and a pronounced distributed nature. Centralized or hierarchical architectures are becoming impractical because they have poor scalability and fault-tolerance characteristics. Decentralized architectures and algorithms, for example P2P and Grid systems, are increasingly popular, but they need new types of algorithms to be efficiently managed.

Bio-inspired algorithms and techniques feature fault-tolerant and self-adaptive behaviours that help to boost the autonomic nature of distributed systems, and are proving effective for the solution of hard parallel and distributed problems. These techniques are sometimes "evolutionary", as they can exploit genetic rules for the selection and recombination of candidate solutions. In other cases, solutions rely on the operations of agents, whose behaviour is inspired by biological systems, including ant colonies, bird flocks, honey bees, bacteria, and many more. In such systems, "swarm intelligence" emerges from the interaction of a large number of very simple agents.

Bio-inspired algorithms and systems are routinely applied to hard and large problems in a variety of areas. Some examples are optimization problems solved with genetic algorithms, routing strategies inspired by honey bee behaviour, resource discovery and data mining computations in Grid, Cloud and P2P frameworks, achieved by ant-inspired algorithms, and so on.

This full day workshop aims to gather scientists, engineers, and practitioners to share and exchange their experiences, discuss challenges, and report state-of-the-art and in-progress research on bio-inspired algorithms and systems.

Areas of interest

Topics of interest include (but are not limited to):
* Bio-inspired and self-* algorithms for parallel and distributed computing
* Bio-inspired and self-* algorithms for P2P, Grid and Cloud systems
* Bio-inspired and self-* techniques for the construction and management of distributed systems
* Bio-inspired and self-* algorithms for data distribution, discovery, service composition, etc.
* Parallel and distributed techniques of Swarm Intelligence: ant colonies, bird flocks, etc.
* Parallel and distributed evolutionary algorithms
* High performance tools for bio-inspired and self-* algorithms and systems
* Application of bio-inspired and self-* algorithms to routing, resource discovery, scheduling in parallel and distributed systems
* Bio-inspired and self-* algorithms for data mining, bioinformatics, etc.
* Bio-inspired and self-* algorithms for social networks
* Bio-inspired and self-* algorithms for energy saving in distributed networks

Publication

The workshop proceedings will be published by ACM.

Journal

Selected papers will be invited to the Natural Computing Journal, Springer (indexed by ISI).
After the past two editions, revised and extended versions of selected papers were included in special issues of Future Generation Computer Systems, Elsevier (vol. 26/6), and New Generation Computing, Springer (to appear in 2011).

Important Dates

February 21, 2011:	Submission of Papers (no extension will be given)
March, 2011:	Notification of Acceptance/ Rejection
April, 2011:	Submission of Camera-Ready Copies
June 14, 2011:	Workshop Takes Place

Organizing Committee

Sanaz Mostaghim, Karlsruhe Institute of Technology, Germany (Local Chair)
Gianluigi Folino, ICAR-CNR, Italy
Carlo Mastroianni, ICAR-CNR, Italy,
Junichi Suzuki, University of Massachusetts, Boston, USA

International Program Committee

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Antonio Nebro Urbaneja, Universidad de Málaga, Spain
Muaz Niazi, Comsats Institute of IT, Islamabad, Pakistan
Gauthier Picard, École Nationale Supérieure des Mines de Saint-Étienne, France
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Rizos Sakellariou, University of Manchester, UK
Ian Taylor, Cardiff University, UK
Paolo Trunfio, Università della Calabria, Italy
Giuseppe Valetto, Drexel University, Philadelphia, PA, USA
Hiroshi Wada, NICTA and University of New South Wales, Australia
Naoki Wakamiya, Osaka Univeristy, Japan
Franco Zambonelli, Università di Modena e Reggio Emilia, Italy

Web Site and contact e-mail

http://bads.icar.cnr.it
email: bads@icar.cnr.it

Submission Guidelines

The call is open to all members of the Autonomic Computing and Distributed Systems communities. Original papers, no longer than 8 two-column pages, are invited. Papers must be submitted through Easychair, at http://www.easychair.org/conferences/?conf=bads2011. Use the ACM format available at http://www.acm.org/sigs/pubs/proceed/template.html and submit your paper in PDF. Papers will be peer-reviewed and judged on merits including correctness, originality, technical strength, presentation, and relevance to the workshop themes. At least one author of each accepted submission must attend the workshop.