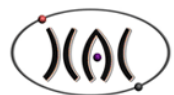


CALL FOR PAPERS



2nd Workshop on Bio-Inspired Algorithms for Distributed Systems (BADS 2010)

(with a special session on the “Self-* and Adaptive Mechanisms” topic of the ERCIM CoreGRID Working Group)

June 7-11, 2010

to take place during

7th IEEE International Conference on Autonomic Computing (ICAC 2010)
Washington, DC, USA, June 7-11, 2010



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 algorithms for parallel and distributed computing
- * Bio-inspired algorithms for P2P, Grid and Cloud systems
- * Bio-inspired techniques for the construction and management of distributed systems
- * Parallel and distributed techniques of Swarm Intelligence: ant colonies, bird flocks, etc.
- * Parallel and distributed evolutionary algorithms
- * High performance tools for bio-inspired algorithms and systems
- * Application of bio-inspired algorithms to routing, resource discovery, scheduling in parallel and distributed systems
- * Bio-inspired algorithms for data mining, bioinformatics, etc.

ERCIM session

The workshop will include a session dedicated to the “Self-* and Adaptive Mechanisms” topic of the ERCIM CoreGRID Working Group. This ERCIM research topic is dedicated to adaptive computing principles of large-scale distributed computing platforms and Grid systems. Topics of interest include:

- * Adaptive service discovery and composition
- * Elastic management of the Grid infrastructure (virtualization)
- * Adaptive data management and distribution (P2P)
- * Adaptive execution methods (i.e. workflow management)
- * Desktop Grid availability and prediction algorithms

Papers submitted to this session will be reviewed in a separate process. Depending on the overall number of accepted papers, the ERCIM session may be scheduled in a day aside, during ICAC.

Organizing Committee

Gianluigi Folino, ICAR-CNR, Italy
Paraskevi Fragopoulou, FORTH-ICS, Greece
Carlo Mastroianni, ICAR-CNR, Italy
Junichi Suzuki, University of Massachusetts, Boston, USA

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Ian Taylor, Cardiff University, UK
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Naoki Wakamiya, Osaka University, Japan
Franco Zambonelli, Università di Modena e Reggio Emilia, Italy

Web Site and contact e-mail

<http://bads.icar.cnr.it>

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Submission Guidelines

The call is open to all members of the Autonomic Computing and Distributed Systems communities and to the members of the ERCIM Research Topic on Self-* and Adaptive mechanisms. Original papers, no longer than 8 two-column pages, are invited. Papers must be submitted through the Web site <http://conf.icar.cnr.it>. Use the ACM format available at <http://www.acm.org/sigs/pubs/proceed/template.html> and submit your paper in PDF format. 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.

Publication

The workshop proceedings will be published by ACM.

Journal

Selected papers will be invited to the Journal of Network and Computer Applications, Elsevier.

Important Dates

February 7, 2010: Submission of Papers
March 10, 2010: Notification of Acceptance/ Rejection
April, 2010: Submission of Camera-Ready Copies
June 07-11, 2010: Workshop Takes Place