EvoCOMNET:

6th European Workshop on Nature-inspired Techniques for Telecommunications Networks and other Parallel and Distributed Systems

Tübingen, Germany, April 15-17, 2009

2009 EVO*
www.evostar.org
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Scope and Objectives of the Workshop

Many biological systems and processes are characterized by a parallel and distributed architecture in which a large number of autonomous and minimalist units synergistically generate global-level behaviors through local interactions, communications, and the adoption of relatively simple stochastic action policies. The resulting global-level behaviors usually show a number of properties essential for success in natural environments such as: adaptivity to environmental variations, robustness to internal changes and failures, and effectiveness and scalability of performance.

Because of all these architectural and performance properties, the observation and reverse-engineering of successful processes in organic, inorganic, and animal systems in nature, has drawn in recent years the attention of many researchers and engineers working in the fields of parallel and distributed systems, and, more in particular, in telecommunications networks. In these domains, nature has provided basic inspiration for the definition of a number of novel algorithms and computational frameworks able to deal effectively with the challenges of current networked systems, which show a growing structural and computational complexity and are made of a large number of highly dynamic and heterogeneous components.

The aim of the workshop is to provide a forum to present cutting edge research on nature-inspired approaches to problems arising in the design, control, protection, and management of network systems, and to outline new trends in parallel nature-inspired computation for the solution of complex problems.

Areas of Interests and Contributions

EvoCOMNET 2009 solicits contributions dealing with the application of ideas from natural processes and systems to the definition, analysis, and development of novel parallel and distributed algorithms, and to the solution of problems of practical and theoretical interest in all domains related to network systems. The scope of the workshop emphasizes the contribution of nature-inspired approaches to the following domains:

- ✓ Network analysis and design
- ✓ Routing protocols
- ✓ Transport protocols
- ✓ Network protection systems
- ✓ Load balancing
- ✓ Quality-of-service provisioning
- ✓ Mobile ad hoc networks
- ✓ Sensor networks
- ✓ Network robotics and sensor-actor networks
- ✓ Distributed search and computation in P2P networks
- ✓ Distributed inference and cooperative communications
- ✓ Parallel and distributed optimization algorithms
- ✓ Grid computing
- ✓ Distributed data mining
- ✓ Tuning and application of hybrid approaches

Particularly welcome are papers reporting:

- Applications of nature-inspired techniques to novel problems in the domain of telecommunications networks and parallel and distributed systems
- Detailed comparative studies of nature-inspired solutions versus more classical/established techniques

- Definition of innovative techniques and/or computational frameworks based on biological systems or processes that have not been considered so far in the literature of nature-inspired systems
- Analytical studies of the behavior of the proposed systems
- Performance evaluation and visualization of parallel and distributed systems inspired by nature
- Real-world implementations
- Studies based on real-world data sets
- Live demonstrations of algorithm behavior

Publication Details

- **Conference proceedings**: accepted papers will be published in a volume of the Springer Lecture Notes in Computer Science (LNCS) together with papers from other workshops of the Evo* conference.
- **Journal special issue:** the authors of the best selected papers from the EvoCOMNET workshop will be invited to submit an extended version of their work to a special issue of the International Journal of Adaptive Communication Systems (IJAACS).

Best Paper Award

A Best Paper Award will be given to the author(s) of the paper presented at the workshop that will receive the best evaluation marks from the reviewers and the Session Chairs.

Paper Submission

The (extended) deadline for paper submission is **November 12, 2008**. Please refer to the www.evostar.org website for the submission procedure. The maximum length for a paper is *10 pages* in LNCS format. Papers will be reviewed by at least three reviewers according to a double blind peer process.

Program Chairs

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