

BioAdcom 2010

1st International Workshop on Bio-inspired Approaches to Advanced Computing and Communications (BioAdcom2010)

<http://www.bionetics.org/ws/BioAdcom.shtml>

Co-located with

5th International ICST Conference on Bio-Inspired Models of Network, Information, and Computing Systems (BIONETICS 2010)

Boston, Massachusetts, December 1-3, 2010

Call for papers

The rapid developments in networking and resource integration domains have resulted in the emergence of distributed computing models such as Web Services, P2P, Grid and Cloud computing for solving very complex problems. However, biology has developed effective solutions to hard engineering challenges through millions of years of evolution. Several algorithms and techniques widely used in Computer Science have been adapted from, or inspired by, known biological phenomena. Computer scientists applying biomimetics can learn by observing nature and adopting biological approaches in the aforementioned distributed computing models.

The focus of BioAdcom2010 is on identifying the role that bio-inspired computing can play in the progress of computing and communications systems, in highlighting productive areas of research and in pinpointing precise application areas. Manuscripts unfolding mathematical models, algorithms, protocols, tools, evaluation methods, and experimental studies of advanced computing and communications techniques that are inspired by and derived from biological systems are solicited for this workshop. Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. All papers will be reviewed by at least three reviewers internationally.

All accepted papers will be published by **Springer**.

The specific topic areas of interest include, but are not limited to, the following:

- Biological fault tolerance, self-healing systems
- Bio-inspired mathematical methods
- Machine learning
- Computational intelligence
- Graph problems

- Collaborative self-organizing systems
- Knowledge Management
- Databases with
- Data mining
- Dependable, reliable computing
- Autonomic computing and networks
- Adaptive network design
- Control engineering
- Computer architecture
- Bio-inspired kinematics
- Self-organizing systems
- Cellular automata
- Computational optimization, operations research
- Distributed data analysis and modeling
- DNA computation
- Hybrid methods
- Information retrieval
- Natural language processing
- Knowledge discovery
- Process engineering
- Metaheuristics
- Evolution and self-healing of network architectures and protocols
- High performance computing for bio-inspired algorithms and systems
- Immune and self-healing network defense and information security
- Information theory for biological systems
- Image processing
- Bio-inspired routing and P2P algorithms
- Evolutionary algorithms, genetic algorithms and programming
- Artificial neural networks
- Simulation of bio-inspired systems
- Network and communication algorithms and protocols
- Parallel and distributed techniques for bio-inspired algorithms
- Parallel and distributed techniques of swarm intelligence
- Quantum algorithms, quantum inspired approaches
- Routing, resource discovery, and scheduling in distributed systems
- Security, trust management
- Self-healing networks
- Bio-inspired communications protocols
- Sensor networks
- Self-organizing satellite networks
- Web Services
- Risk analysis
- Application case studies including computer immunology, space systems, finance, navigation, fluid mechanics, telecommunications

Submission Instructions

Paper Formatting: Papers must be formatted with the Springer LNICST format (**Page limits: Up to 12 pages**). Please obtain LNICST-specific formatting instructions as well as paper templates from Springer's LNICST FTP directory - <ftp://ftp.springer.de/pub/tex/latex/lmicst/> . Only **PDF files** will be accepted and reviewed.

Paper Uploading: All papers will be handled electronically. Papers must be uploaded to the CMT: Microsoft Academic Conference Management Service at Track - <https://cmt.research.microsoft.com/BIOADCOM2010/> . If you don't have a CMT account yet, the above link allows you to create it.

Important Dates

Workshop paper due: August 05, 2010

Paper notification: September 12, 2010

Camera ready paper due: October 10, 2010

Workshop date: December 1-3, 2010

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