

BIONETICS 2007

www.bionetics.org

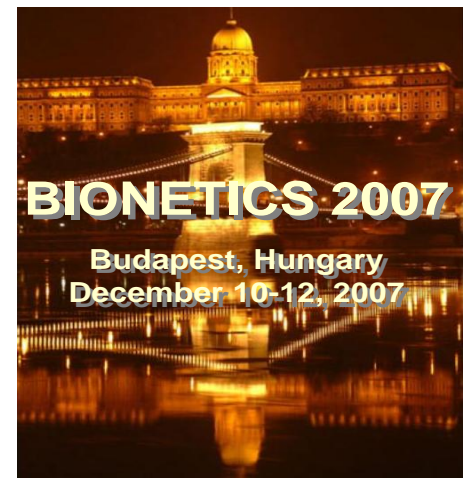
Budapest, Hungary, December 10-12, 2007

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2nd International Conference on

Bio-Inspired Models of Network, Information, and Computing Systems

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CALL FOR PAPERS

Technology is taking us to a world where myriads of heavily networked devices interact with the physical world in multiple ways, and at multiple scales, from the global Internet down to micro and nano devices. Many of these devices are highly mobile and autonomous, and must adapt to the surrounding environment in a totally unsupervised way. A fundamental research challenge is the design of robust decentralized computing systems that are capable of operating under changing environments and noisy input, and yet exhibit the desired behavior and response time, under constraints such as energy consumption, size, and processing power. These systems should be able to adapt and learn how to react to unforeseen scenarios as well as to display properties comparable to social entities. The turn to nature has brought us many unforeseen great concepts. Biological systems are able to handle many of these challenges with an elegance and efficiency still far beyond current human artifacts. Based on this observation, bio-inspired approaches have been proposed in the past years as a strategy to handle the complexity of such systems. The goal is to obtain methods on how to engineer technical systems, which have similar high stability and efficiency often found in biological entities.

In order to stimulate the collaboration among researchers from different areas as well as between academia and industry, BIONETICS also includes a Bioinformatics track and an Industry track as well as a number of workshops.

The BIONETICS conference aims at bringing together researchers and scientists from several disciplines in computer science and engineering where bio-inspired methods are investigated. We are soliciting high-quality original papers focusing on (but not limited to) the following topics:

Bio-inspired mathematical models, methods and tools:

- Mathematical models of biological processes
- Qualitative assessment of evolutionary algorithms
- Multiscale dynamics of emergent properties
- Artificial immune and self-healing systems
- Cellular signaling pathways

Bio-inspired technical systems:

- Engineering methods and tools for bio-inspired systems
- Bio-inspired service evolution and optimization
- Pandemic service deployment strategies

Bio-inspired information and communication systems (ICT):

- Network algorithms and protocols
- Autonomic communication systems
- Evolution of network architectures and protocols
- Adaptive and self-healing network architectures
- Self-organizing network paradigms
- In-network processing and autonomic networking
- Adaptive sensor and actor networks
- Topology control and network organization
- Localization and synchronization
- Mobility models
- Multi-agent systems and robotics
- Novel applications and services
- Self-learning defense strategies
- Adaptive and evolving protection mechanisms
- Network and information security
- Experimental studies
- Nano-scale and molecular communication

Important Dates

Full paper: August 15, 2007

Notification: Sept. 27, 2007

Final version: October 16, 2007

Submission Instructions:

Authors are invited to submit full papers of up to 8 pages, or short papers of up to 3 pages, in ACM conference proceedings format through COCUS (<http://cocus.create-net.it>). The proceedings will be an ICST publication and the papers will be listed on the ACM DL and indexed by EI.