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International Workshop on Natural Computing and Applications - NCA 2007

-- Theme: Hybrid Natural Computing --

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to be held in the framework of

SYNASC 2007

**9th Symposium of Symbolic and Numeric Algorithms for Scientific Computing
Timisoara, Romania, September 26-29, 2007
synasc07@info.uvt.ro**

Workshop description:

Natural Computing is a field of research that is concerned with the use of nature-inspired paradigms for solving computational problems. The world of natural computation is diverse and fascinating. It tries to combine the computing carried in computer science with the computing observed in nature. Hybridization between different natural computing techniques or between natural computing techniques and methods from information processing, optimization and artificial intelligence usually leads to robust and efficient solutions for real-world problems. Hybridization of natural computing algorithms is getting popular due to their capabilities in handling several real world problems involving complexity, noisy environment, imprecision, uncertainty and vagueness. A fundamental stimulus to the investigations of hybrid approach is the awareness that combined approaches will be necessary to solve some of the real world problems.

NCA 2007 will focus on the latest state-of-the-art methodologies in 'Hybrid Natural Computing'. We invite authors to submit their original and unpublished work that communicates current research in all area of natural computing with a particular focus on hybrid techniques. The contributions can address both theoretical and methodological aspects, as well as various applications in science, engineering, business, commerce etc.

Topics:

Suggested topics for papers include, but are not limited to, the following:

- evolutionary computing,
- neural computing, Bayesian networks, learning algorithms,
- membrane computing,
- DNA computing,
- molecular computing,
- information processing in cells and tissues,
- quantum computing,
- immunocomputing,
- swarm intelligence, particle swarm optimization, ant colony optimization,
- bacterial foraging
- computation with words,
- granular computation,
- artificial life,

- hybridization of evolutionary, neural, molecular and quantum computing,
- hybrid optimization algorithms involving natural computing techniques and other global and local optimization methods,
- integration of natural computing techniques in intelligent systems,
- implementation issues of natural computing techniques,
- natural computing approaches for multi-objective optimization,
- natural computing approaches in knowledge discovery, natural language processing, image processing, planning and scheduling, information security, human-computer interaction, Web Intelligence, Web-based support systems,
- natural computing applications in science, business, finance, engineering, medicine, bioinformatics and other fields.

Submission of papers:

Papers of up to 8 pages edited using the IEEE conference style must be submitted electronically to nca07@info.uvt.ro. Submitted papers have to be original and should contain new and interesting results.

All papers will be peer reviewed by at least THREE independent referees of the program committee of NCA'07 and accepted on the basis of their scientific merit and relevance to the Workshop topics. Papers accepted and presented at the workshop will be published in the SYNASC'07 post-proceedings edited by IEEE Computer Society.

Additional publication opportunities:

Several Special issues focused on some topics will be formulated soon after the conference. These special issues will be published by learning International journals in the field.

Workshop deadlines:

Submission of papers: June 15, 2007
Notification of acceptance: August 1, 2007
Final paper: September 1, 2007
Registration: September 1, 2007

Workshop chairs:

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Program Committee:

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Local organizer:

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