

The International Journal of Cognitive Informatics and Natural Intelligence (IJCiNi)

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CALL FOR PAPERS

Special Issue on Future Generation Computers and Computing Methodologies Editors: Yingxu Wang and Witold Kinsner

Conventional computers are aimed at stored-program-controlled *data* processing based on mathematical logic and Boolean algebra. The future-generation computers are aimed at cognitive and perceptive concept/knowledge processing based on contemporary *denotational mathematics*. The latest advantages in many information/knowledge-based disciplines have led to the establishment of *Cognitive Informatics* (CI) and *Neural Informatics* (NeI). CI is a transdisciplinary enquiry of cognitive and information sciences that investigates into the internal information processing mechanisms and processes of the brain and natural intelligence. NeI is a new interdisciplinary enquiry of the biological and physiological representation of information and knowledge in the brain at the neuron level and their abstract mathematical models. The theories of CI and NeI are intended not only to explain the nature and mechanisms of computing, but also shed light on developing future-generation computers that think and feel.

This special issue on *Future Generation Computers and Computing Methodologies* in *IJCiNi* will focus on novel computing theories and architectures, new computational mathematics, new computational methodologies, and new computing models. Original papers are solicited for this special issue. Suggested topics include, but are not limited to:

- Novel computing theories
 - Concept-based computing
 - Cognitive computing
 - Autonomic computing
 - Granular computing
 - Fuzzy computing
 - Neural computing
 - Soft computing
 - Quantum computing
- New computational mathematics
 - Concept algebra
 - Formal inferences
 - System algebra
 - Fuzzy/rough sets
 - Complex relations
 - Granules
 - Distributed objects
- New computing methodologies
 - Cognitive-informatics-based methods
 - Neural-informatics-based methods
 - Search-based methods
 - Learn-based methods
 - Internal knowledge representation
 - Intelligent inference engines
 - Hybrid intelligence
- New computing models
 - Cognitive properties of information and knowledge
 - Cognitive computers
 - Non-von Neumann architectures
 - Concept networks
 - Large-scale neural networks
 - Neural computers
 - Autonomic agent systems
 - Computational intelligence

Prospective authors may check the *Guidelines for Authors* of *IJCiNi* at <http://www.enel.ucalgary.ca/IJCINI/>. Submitted papers must not have been previously published or be currently under consideration for publication elsewhere, except those being declared as presented conference papers. All papers will be rigorously refereed. Complete manuscripts in both Word and PDF formats should be submitted to the Editors before **March 1, 2007**.

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