

## CALL FOR PAPERS

### Special Issue on Cognitive Informatics

Guest Editors: Prof. Yingxu Wang, Prof. Du Zhang, and Prof. Shusaku Tsumoto

<http://www.iospress.nl/>, <http://alfa.mimuw.edu.pl/FI>, <http://www.enel.ucalgary.ca/JCINI/Call%20for%20Papers/CFP.htm>

**Cognitive Informatics (CI)** is a cutting-edge and multidisciplinary research area that tackles the fundamental problems shared by modern informatics, computation, software engineering, AI, cybernetics, cognitive science, neuropsychology, medical science, systems science, philosophy, linguistics, economics, management science, and life sciences. CI is the transdisciplinary study into the internal information processing mechanisms and processes of the **Natural Intelligence (NI)** – human brains and minds – and their engineering applications in computing and the software industry.

The development and the cross fertilization between the aforementioned science and engineering disciplines have led to a whole range of extremely interesting new research topics in CI. The special issue on *Cognitive Informatics* in *Fundamenta Informaticae* (FI) encourages submissions on topics that transcend disciplinary boundaries of computing, cognitive science, and mathematics, which investigate the cognitive mechanisms and processes of human information processing, and their applications in computing and software engineering. This special issue has its focuses on latest development in cognitive informatics, neuralinformatics, autonomic computing, and computational intelligence. Original papers are solicited. Suggested topics include, but are not limited to:

- | Natural Intelligence (NI)   | Autonomic Computing (AC)  | Neuroinformatics (NeI)  |
|---|---|---|
| <ul style="list-style-type: none"><li>• Informatics models of the brain</li><li>• Cognitive processes of the brain</li><li>• Internal infor. processing mechanisms</li><li>• Theories of natural intelligence</li><li>• Intelligent foundations of computing</li><li>• Descriptive mathematics for NI</li><li>• Abstraction and means</li><li>• Ergonomics</li><li>• Informatics laws of software</li><li>• Knowledge representation</li><li>• Models of knowledge and skills</li><li>• Language acquisition</li><li>• Cognitive complexity of software</li><li>• Distributed intelligence</li><li>• Computational intelligence</li><li>• Emotions/motivations/attitudes</li><li>• Perception and consciousness</li><li>• Hybrid (AI/NI) intelligence</li></ul> | <ul style="list-style-type: none"><li>• Imperative vs. autonomous computing</li><li>• Reasoning and inferences</li><li>• Cognitive informatics foundations of AC</li><li>• Memory models</li><li>• Informatics foundations of s/w eng.</li><li>• Fuzzy logic</li><li>• Knowledge engineering</li><li>• Pattern recognition</li><li>• Agent technologies</li><li>• Machine intelligence</li><li>• Software agent systems</li><li>• Decision theories</li><li>• Autonomic problem solving</li><li>• Machine learning</li><li>• Intelligent Internet</li><li>• Web contents cognition</li><li>• Autonomic software systems</li><li>• Quantum computing</li></ul> | <ul style="list-style-type: none"><li>• Neuroscience foundations of information processing</li><li>• Cognitive models of the brain</li><li>• Functional modes of the brain</li><li>• Neural models of memory</li><li>• Neural networks</li><li>• Neural computation</li><li>• Cognitive linguistics</li><li>• Neuropsychology</li><li>• Bioinformatics</li><li>• Biosignal processing</li><li>• Cognitive signal processing</li><li>• Gene analysis</li><li>• Gene expression</li><li>• Neural signal interpretation</li><li>• Visual information representation</li><li>• Visual information interpretation</li><li>• Sensational cognitive processes</li><li>• Human factors in systems</li></ul> |

Prospective authors may check the *Guidelines for Authors of FI* at <http://www.iospress.nl/> or <http://alfa.mimuw.edu.pl/>. Submitted papers must not have been previously published or be currently under consideration for publication elsewhere. Conference papers should be significantly extended and revised. All papers will be rigorously refereed. Complete manuscripts in PDF format should be submitted to the Guest Editors before **Feb. 1, 2008**.

#### Guest Editors

Prof. Yingxu Wang  
Univ. of Calgary, Canada  
Tel: +1 403 220 6141  
Fax: +1 403 282 6855

Prof. Du Zhang  
California State Univ., Sacramento, USA  
Tel: +1 916 278 7628  
Fax: +1 916 278-6774

Prof. Shusaku Tsumoto  
Shimane Univ., Japan  
Tel: +81 853 20 2171  
Fax: +81 853 20 2170

**Important Dates** Manuscript Submission – Feb. 1, 2008

2008

Final Paper Due – August 1, 2008

Review Notification – June 1,

Expected Publication – Winter

[yingxu@ucalgary.ca](mailto:yingxu@ucalgary.ca)

[zhangd@ecs.csus.edu](mailto:zhangd@ecs.csus.edu)

[tsumoto@computer.org](mailto:tsumoto@computer.org)