

Mathematics in Computer Science (MCS)

Editors-in-Chief: Prof. Dongming Wang and Zhiming Zheng, <http://www.cc4cm.org/mcs>

CALL FOR PAPERS

Special Issue on Denotational Mathematics for Software and Intelligent Sciences

Guest Editors: Prof. Yingxu Wang, Univ. of Calgary, Canada
Prof. Yiyu Yao, Univ. of Regina, Canada

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Many branches of mathematics have been created in sciences and engineering in order to meet their abstract, rigorous, and expressive needs. These phenomena may be conceived as that new problems require new forms of mathematics. *Software science*, *cognitive informatics*, and *intelligence science* are transdisciplinary enquiries related to modern information and knowledge processing in the brain and mind, which may not be described by conventional analytic mathematics. Therefore, new forms of mathematics are sought, collectively known as *denotational mathematics*, to deal with the unique mathematical entities and abstract objects emerged in the above fields, such as information, concepts, knowledge, processes, behaviors, systems, fuzzy/rough sets, complex relations, granules, and distributed objects.

This special issue on *Denotational Mathematics for Software and Intelligent Sciences* in *MCS* focuses on novel mathematical forms and structures, new mathematical entities, applications of descriptive mathematics, and comparative studies on descriptive and analytic mathematics. Original papers are solicited for this special issue. Suggested topics include, but are not limited to:

- Novel mathematical forms and structures
 - Process algebra
 - Concept algebra
 - System algebra
 - Rough set theory
 - Category theory
 - Descriptive vs. analytic mathematics
- New mathematical entities
 - Information
 - Concepts
 - Knowledge
 - Processes
 - Behaviors
 - Systems
 - Fuzzy/rough sets
 - Complex relations
 - Granules
 - Distributed objects
- New expressive needs in mathematics
 - System architectures
 - System behaviors
 - Series of actions
 - Series of decisions
 - Knowledge representation
 - Pattern description
- Application areas of descriptive mathematics
 - Cognitive informatics (CI)
 - Computing
 - Software engineering
 - Knowledge engineering
 - Information engineering
 - Autonomic computing
 - Autonomic agent systems
 - Computational intelligence
 - Machine learning
 - Neural informatics

Prospective authors may check the *Guidelines for Authors* of *MCS* at <http://www.cc4cm.org/mcs>. 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 PDF format should be submitted to the Guest Editor before **December 1, 2007**.

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