

EDITORIAL PREFACE

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IJSSCI Vol. 4, No. 4 is a regular issue on cognitive computing, software science, and computational intelligence. This issue includes five research papers on: 1) *A General Knowledge Representation Model for the Acquisition of Skills and Concepts*; 2) *ISW: Interest-based Small World Network of P2P*; 3) *A FIG-based Method for Prediction of Alumina Concentration*; 4) *A Performance Prediction Method with an Equation-Based Behavioral Model for a Single-Bit Single-Loop Sigma-Delta Modulator*; and 5) *Formal Rules for Fuzzy Causal Analyses and Fuzzy Inferences*.

It is noteworthy that CI and CC have been established as an exciting research field over the last decade, which has already created and attracted millions of entries over the Internet and related research communities. The Editor-in-Chief would like to take this opportunity to report that the *International Institute of Cognitive Informatics and Cognitive Computing (ICIC)* is formally established (<http://www.ucalgary.ca/icic/>), which is hosted at University of Calgary, Canada with Prof. Yingxu Wang as the founding president. Key member organizations include Brown University, University of California (Berkeley), University of Calgary, Fudan University, Kyoto University, MIT, University of Rome, Stanford University, University of

Toronto, Tsinghua University, and University of Vienna. The 11th *IEEE International Conference on Cognitive Informatics and Cognitive Computing (ICCI*CC'12)* has been successfully organized in Kyoto, Japan during August 22-24, 2012. The 12th *IEEE International Conference on Cognitive Informatics and Cognitive Computing (ICCI*CC'13)* will be held in New York City, USA during July 16-18, 2013. The theme of ICII*CC'13 will be on "*Cognitive Computers and Knowledge Processors*". The ICII*CC series is fully sponsored by the IEEE Computer Society, IEEE Computational Intelligence Society, and ICIC.

IJSSCI has been indexed in DBLP and Google Scholar on research papers published in the emerging fields of software science, theoretical software engineering, computational intelligence, and cognitive computing. A number of special issues in IJSSCI will be organized on *cognitive computing, computational intelligence, software science, and theoretical foundations of software engineering*. Submissions to these special issues in particular, and/or to the regular issues of IJSSCI in general, are warm welcome.

The Editor-in-Chief expects that readers of *The International Journal of Software Science and Computational Intelligence (IJSSCI)* will

benefit from the papers presented in this issue in order to aware the recent advances in this field. I would like to thank the authors, members of the board of editors, and invited reviewers for their great contributions to this issue. I would like to acknowledge the publisher of IJSSCI, IGI Global, USA, and to thank *Mehdi Khosrow-*

Pour (President of IGI), *Jan Travers* (Director of Intellectual Property & Contracts), and *Jamie Bufton* (Managing Editor).

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Editor-in-Chief
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*Yingxu Wang is professor of denotational mathematics, cognitive informatics, software science, and brain science. He is President of International Institute of Cognitive Informatics and Cognitive Computing (ICIC), Director of Laboratory for Cognitive Informatics and Cognitive Computing, and Director of Laboratory for Denotational Mathematics and Software Science at the University of Calgary. He is a founding Fellow of ICIC, a Fellow of WIF (UK), a P.Eng of Canada, a Senior Member of IEEE and ACM. He received a PhD in Software Engineering from the Nottingham Trent University, UK, and a BSc in Electrical Engineering from Shanghai Tiedao University. He has industrial experience since 1972 and has been a full professor since 1994. He was a visiting professor on sabbatical leave in the Computing Laboratory at Oxford University in 1995, Dept. of Computer Science at Stanford University in 2008, the Berkeley Initiative in Soft Computing (BISC) Lab at University of California, Berkeley in 2008, and CSAIL at MIT (2012), respectively. He is the founder and steering committee chair of the annual IEEE International Conference on Cognitive Informatics and Cognitive Computing (ICCI*CC). He is Editor-in-Chief of Journal of Advanced Mathematics and Applications (JAMA), and Associate Editor of IEEE Trans. on System, Man, and Cybernetics – Systems. Dr. Wang is the initiator of a few cutting-edge research fields or subject areas such as Denotational Mathematics (i.e., concept algebra, inference algebra, semantic algebra, process algebra, system algebra, granular algebra, and visual semantic algebra); Cognitive Informatics (theoretical framework of cognitive informatics, neuroinformatics, neurocomputing, the logical model of the brain (LMB), the layered reference model of the brain (LRMB), the cognitive model of brain informatics (CMBI), the mathematical model of consciousness, and the cognitive learning engine); Abstract Intelligence (aI, mathematical models of intelligence, theoretical foundations of brain science); Cognitive Computing (such as cognitive computers, cognitive robots, cognitive agents, and cognitive Internet); Software Science (on unified mathematical models and laws of software, cognitive complexity of software, and automatic code generators, the coordinative work organization theory, and built-in tests (BITs)); basic studies in Cognitive Linguistics (such as the cognitive linguistic framework, formal semantics of linguistics, mathematical model of abstract languages, deductive grammar of English, and the cognitive complexity of text comprehension). He has published over 140 peer reviewed journal papers, 230+ peer reviewed conference papers, and 25 books in denotational mathematics, cognitive informatics, cognitive computing, software science, and computational intelligence. He is the recipient of dozens international awards on academic leadership, outstanding contributions, research achievement, best papers, and teaching in the last three decades.*