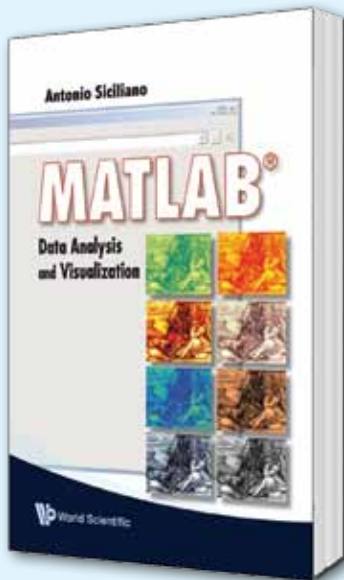


New & Bestselling Software Engineering and Programming 2012

:: Highly Recommended



MATLAB: Data Analysis and Visualization

by **Antonio Siciliano** (*University of Bari, Italy*)

The book begins by looking at the main tools, in particular the Desktop, the Command and History Window, the Editor and the Help Browser. The selected number of functions, graphics objects, related properties and operators, considered fundamental in MATLAB, is a unique and remarkable feature of this book. These basic elements are minutely treated both formally and through examples.

Readership: Undergraduate and graduate students, engineers and researchers in all science and technology fields.

296pp	Oct 2008
978-981-283-554-3	US\$65 £36
978-981-283-751-6(pbk)	US\$45 £25
978-981-283-555-0(ebook)	US\$85

:: Highly Recommended



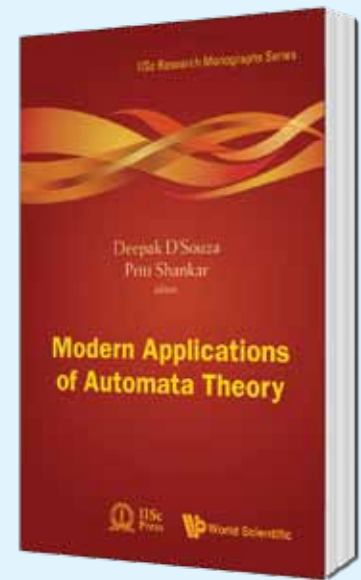
SOFTWARE MAINTENANCE: Concepts and Practice (Second Edition)

by **Penny Grubb** (*University of Hull, UK*) & **Armstrong A Takang** (*Software Systems Consultant, USA*)

Software systems now invade every area of daily living. Yet, we still struggle to build systems we can really rely on. If we want to work with software systems at any level, we need to get to grips with the way software evolves. This book will equip the reader with a sound understanding of maintenance and how it affects all levels of the software evolution process.

Readership: Researchers, graduate students and undergraduates in software engineering, programming, information engineering, health informatics and medical informatics; practitioners and industrialists in software development and maintenance.

372pp	Jul 2003
978-981-238-425-6	US\$153 £101
978-981-238-426-3(pbk)	US\$73 £48
978-981-256-442-9(ebook)	US\$199



IISc Research Monographs Series - Vol. 2

MODERN APPLICATIONS OF AUTOMATA THEORY

edited by **Deepak D'Souza** (*Indian Institute of Science, India*) & **Priti Shankar** (*Indian Institute of Science, India*)

This book is intended to fill that gap and can be used as an intermediate-level textbook. It begins with a detailed treatment of foundational material not normally covered in a beginner's course in automata theory, and then rapidly moves on to applications. The book is largely devoted to verification and model checking, and contains material that is at the cutting edge of verification technology. It will be an invaluable reference for software practitioners working in this area.

Readership: Computer scientists interested in the practical applications of automata theory; practitioners interested in modern verification techniques.

656pp	Oct 2011
978-981-4271-04-2	US\$88 £61
978-981-4271-05-9(ebook)	US\$114

HIGHLIGHTS

Lecture Notes Series on Computing - Vol. 7

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by **M H Alsuwaiyel** (*King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia*)

Pg 2

AN INTRODUCTION TO GENETIC ALGORITHMS FOR SCIENTISTS AND ENGINEERS

by **David A Coley** (*University of Exeter*)

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Computer and Network Security - Vol. 4

FIREWALL DESIGN AND ANALYSIS

by **Alex X Liu** (*Michigan State University, USA*)

Pg 5

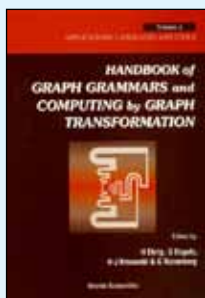
New & Bestselling Software Engineering and Programming 2012

HANDBOOK OF GRAPH GRAMMARS AND COMPUTING BY GRAPH TRANSFORMATION

Volume 2: Applications, Languages and Tools

edited by **H Ehrig** (Technical University of Berlin, Germany), **G Engels** (University of Paderborn, Germany), **H-J Kreowski** (University of Bremen, Germany), & **G Rozenberg** (Leiden University, The Netherlands)

Volume 2 of the indispensable *Handbook of Graph Grammars and Computing by Graph Transformations* considers applications to functional languages, visual and object-oriented languages, software engineering, mechanical engineering, chemical process engineering, and images. It also presents implemented specification languages and tools, and structuring and modularization concepts for specification languages.



Readership: Students and researchers interested in modern developments in computer science, and in particular in the use of modern formal methods in applied computer science.

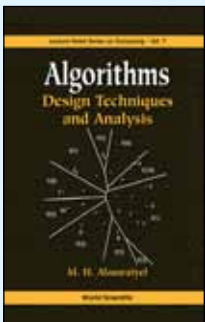
720pp **Oct 1999**
978-981-02-4020-2 **US\$220** **£145**
978-981-281-514-9(ebook) **US\$286**

Lecture Notes Series on Computing - Vol. 7

ALGORITHMS: Design Techniques and Analysis

by **M H Alsuwaiyel** (King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia)

This book advocates the study of algorithm design techniques by presenting most of the useful algorithm design techniques and illustrating them through numerous examples.



Readership: Senior undergraduates, graduate students and professionals in software development.

544pp **Aug 1999**
978-981-02-3740-0 **US\$139** **£92**
978-981-238-639-7(ebook) **US\$181**

AN INTRODUCTION TO GENETIC ALGORITHMS FOR SCIENTISTS AND ENGINEERS

by **David A Coley** (University of Exeter)

The approach taken is largely practical, with algorithms being presented in full and working code (in BASIC, FORTRAN, PASCAL AND C) included on a floppy disk to help the reader get up and running as quickly as possible. Student exercises are included at the end of several of the chapters, many of which are computer-based and designed to encourage exploration of the method.



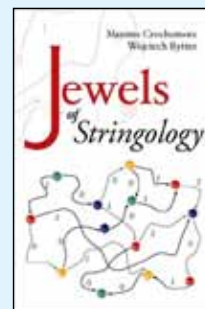
Readership: Computer scientists and engineers.

244pp **Jan 1999**
978-981-02-3602-1 **US\$46** **£31**
978-981-238-635-9(ebook) **US\$60**

JEWELS OF STRINGOLOGY: Text Algorithms

by **Maxime Crochemore** (King's College London, UK) & **Wojciech Rytter** (Warsaw University, Poland)

This book deals with the most basic algorithms in the area. Most of them can be viewed as algorithmic "jewels" and deserve reader-friendly presentation. One of the main aims of the book is to present several of the most celebrated algorithms in a simple way by omitting obscuring details and separating algorithmic structure from combinatorial theoretical background.



Readership: Undergraduates, graduate students and researchers in algorithmics.

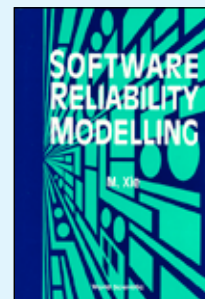
320pp **Sep 2002**
978-981-02-4782-9 **US\$96** **£63**
978-981-02-4897-0(pbk) **US\$49** **£32**
978-981-277-822-2(ebook) **US\$125**

Series on Quality, Reliability and Engineering Statistics - Vol. 1

SOFTWARE RELIABILITY MODELLING

by **Min Xie** (Linköping University, Sweden)

The aim of this book is to provide an overview of this area and provide software reliability researchers and analysts with a systematic study of the existing results. This book can also be used as a reference book for other software engineers and reliability theoreticians interested in this area.



Readership: Software engineers and reliability analysts.

228pp **Oct 1991**
978-981-02-0640-6 **US\$72** **£48**
978-981-4343-09-1(ebook) **US\$94**

Lecture Notes Series on Computing - Vol. 12

PLANAR GRAPH DRAWING

by **Takao Nishizeki** (Tohoku University, Japan) & **Md Saidur Rahman** (Bangladesh University of Engineering and Technology, Bangladesh)

The book presents the important fundamental theorems and algorithms on planar graph drawing with easy-to-understand and constructive proofs. Extensively illustrated and with exercises included at the end of each chapter, it is suitable for use in advanced undergraduate and graduate level courses on algorithms, graph theory, graph drawing, information visualization and computational geometry.



Readership: Upper-level undergraduates, graduate students, researchers, academics, lecturers, and professionals in theoretical computer science, combinatorics & graph theory and computer engineering.

312pp **Sep 2004**
978-981-256-033-9 **US\$112** **£74**
978-981-256-223-4(ebook) **US\$146**



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Series in Computer Vision - Vol. 1
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edited by **C H Chen** (*University of
 Massachusetts Dartmouth, USA*)

This book gives a comprehensive overview of the most advanced theories, methodologies and applications in computer vision. Particularly, it gives an extensive coverage of 3D and robotic vision problems.

Readership: Researchers, professionals and academics in pattern recognition and image analysis, robotics & automation, software engineering, numerical and computational mathematics, and computer engineering.

520pp **Sep 2011**
978-981-4340-99-1 **US\$148** **£96**
978-981-4343-00-8(ebook) **US\$192**



**PROPERTY-PRESERVING PETRI NET PROCESS ALGEBRA IN
 SOFTWARE ENGINEERING**

by **Hejiao Huang** (*Harbin Institute of Technology Shenzhen Graduate School, China*) & **Li Jiao** (*Chinese Academy of Sciences, China*)

This book presents a component-based methodology for the creation and verification of design specifications. The methodology is formally presented as an algebra called *Property-Preserving Petri Net Process Algebra* (PPPA). Briefly, PPPA includes five classes of operators. The authors show that every operator of PPPA can preserve a large number of basic system properties.

Readership: Graduate students and researchers in software engineering and theoretical computer science.

350pp **Nov 2011**
978-981-4324-28-1 **US\$90** **£56**
978-981-4324-29-8(ebook) **US\$117**

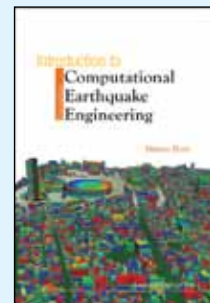
**INTRODUCTION TO COMPUTATIONAL EARTHQUAKE
 ENGINEERING (2nd Edition)**

by **Muneo Hori** (*University of Tokyo, Japan*)

Introduction to Computational Earthquake Engineering covers solid continuum mechanics, finite element method and stochastic modeling comprehensively, with the second and third chapters explaining the numerical simulation of strong ground motion and faulting, respectively. Stochastic modeling is used for uncertain underground structures, and advanced analytical methods for linear and non-linear stochastic models are presented.

Readership: Academic and industry: engineers, students; advanced undergraduates in the field of earthquake engineering.

350pp **Aug 2010**
978-1-84816-397-3 **US\$111** **£76**
978-1-84816-398-0(pbk) **US\$73** **£51**
978-1-84816-399-7(ebook) **US\$144**



Series on Software Engineering and Knowledge Engineering - Vol. 20

**ADAPTIVE CONTROL APPROACH
 FOR SOFTWARE QUALITY
 IMPROVEMENT**

edited by **W Eric Wong** (*University of Texas at Dallas, USA*) & **Bojan Cukic** (*West Virginia University, USA*)

This book focuses on the topic of improving software quality using adaptive control approaches. As software systems grow in complexity, some of the central challenges include their ability to self-manage and adapt at run time, responding to changing user needs and environments, faults, and vulnerabilities. Control theory approaches presented in the book provide some of the answers to these challenges.

Readership: Students, researchers and practitioners in software engineering, as well as applied optimization and control theory.

308pp **Jun 2011**
978-981-4340-91-5 **US\$99** **£61**
978-981-4340-92-2(ebook) **US\$129**



Series in Electrical and Computer Engineering - Vol. 3

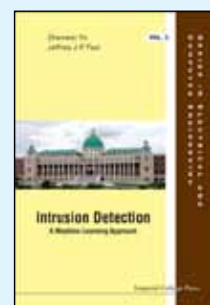
**INTRUSION DETECTION: A Machine
 Learning Approach**

by **Zhenwei Yu** (*University of Illinois, Chicago, USA*) & **Jeffrey J P Tsai** (*Asia University, Taiwan & University of Illinois, Chicago, USA*)

This important book introduces the concept of intrusion detection, discusses various approaches for intrusion detection systems (IDS), and presents the architecture and implementation of IDS. It emphasizes on the prediction and learning algorithms for intrusion detection and highlights techniques for intrusion detection of wired computer networks and wireless sensor networks. The performance comparison of various IDS via simulation will also be included.

Readership: Academicians, researchers and graduate students in software engineering/programming; computer engineering, knowledge and system engineering.

184pp **Jan 2011**
978-1-84816-447-5 **US\$75** **£47**
978-1-84816-448-2(ebook) **US\$98**



World Scientific Series in Information Studies - Vol. 2

**INFORMATION AND COMPUTATION: Essays
 on Scientific and Philosophical Understanding of
 Foundations of Information and Computation**

edited by **Gordana Dodig-Crnkovic** (*Mälardalen University, Sweden*) & **Mark Burgin** (*University of California, Los Angeles, USA*)

This book provides a cutting-edge view of world's leading authorities in fields where information and computation play a central role. It sketches the contours of the future landscape for the development of our understanding of information and computation, their mutual relationship and the role in cognition, informatics, biology, artificial intelligence, and information technology.

Readership: Students and professionals in information and computation.

520pp **May 2011**
978-981-4295-47-5 **US\$157** **£97**
978-981-4295-48-2(ebook) **US\$204**



Bestselling Backlist

Computer and Network Security - Vol. 4
FIREWALL DESIGN AND ANALYSIS
 by **Alex X Liu** (*Michigan State University, USA*)

This unique book represents the first rigorous and comprehensive study of firewall policy design and analysis. Firewalls are the most critical and widely deployed intrusion prevention systems. Designing new firewall policies and analyzing existing firewall policies have been difficult and error-prone. This book presents scientifically sound and practically useful methods for designing and analyzing firewall policies.



Readership: Computer scientists, network and firewall administrators, undergraduate and graduate students in computer science, non-experts interested in network security.

124pp **Dec 2010**
978-981-4261-65-4 **US\$58** **£38**
978-981-4261-66-1(ebook) **US\$75**

International Series on Advances in Solid State Electronics and Technology
COMPACT HIERARCHICAL BIPOLAR TRANSISTOR MODELING WITH HICUM

by **Michael Schröter** (*University of Technology Dresden, Germany & University of California San Diego, CA, USA*) & **Anjan Chakravorty** (*Indian Institute of Technology Madras, India*)

The book begins with an overview on the different device designs of modern bipolar transistors, along with their relevant operating conditions; while the subsequent chapter on transistor theory is subdivided into a review of mostly classical theories, brought into context with modern technology, and a chapter on advanced theory that is required for understanding modern device designs. This book aims to provide a solid basis for the understanding of modern compact models.



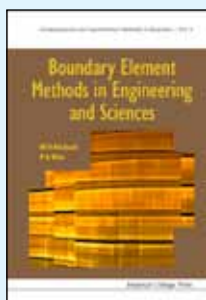
Readership: R&D professionals and modeling/SPIICE engineers in the semiconductor industry; graduate, research students and faculties at universities.

752pp **Nov 2010**
978-981-4273-21-3 **US\$150** **£93**
978-981-4273-22-0(ebook) **US\$195**

Computational and Experimental Methods in Structures - Vol. 4
BOUNDARY ELEMENT METHODS IN ENGINEERING AND SCIENCES

by **M H Aliabadi** (*Imperial College, UK*) & **P H Wen** (*Queen Mary University of London, UK*)

This book is designed to provide readers with a comprehensive and up-to-date account of the method and its application to problems in engineering and science. Each chapter provides a brief description of historical development, followed by basic theory, derivation and examples.



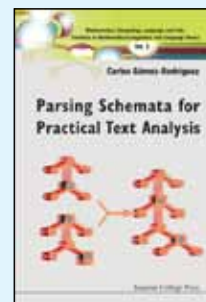
Readership: Graduate students, academics and researchers in engineering mechanics, materials engineering, mechanical engineering, and software engineering/programming.

412pp **Nov 2010**
978-1-84816-579-3 **US\$124** **£86**
978-1-84816-580-9(ebook) **US\$161**

Mathematics, Computing, Language, and Life: Frontiers in Mathematical Linguistics and Language Theory - Vol. 1

PARSING SCHEMATA FOR PRACTICAL TEXT ANALYSIS
 by **Carlos Gómez-Rodríguez** (*University of Corunna, Spain*)

The book presents a wide range of recent research results about parsing schemata, introducing formal frameworks and theoretical results while keeping a constant focus on applicability to practical parsing problems. The first part includes a general introduction to the parsing schemata formalism that contains the basic notions needed to understand the rest of the parts.



Readership: Researchers, academics, professionals, postgraduate and advanced undergraduate students in computational linguistics, theoretical computer science and artificial intelligence.

292pp **Jun 2010**
978-1-84816-560-1 **US\$89** **£61**
978-1-84816-561-8(ebook) **US\$116**

Series in Machine Perception and Artificial Intelligence - Vol. 76

AUTOMATED DATABASE APPLICATIONS TESTING: Specification Representation for Automated Reasoning
 by **Rana Farid Mikhail** (*University of South Florida, USA*), **Donald Berndt** (*University of South Florida, USA*), & **Abraham Kandel** (*University of South Florida, USA*)



This book introduces SpecDB, an intelligent database created to represent and host software specifications in a machine-readable format, based on the principles of artificial intelligence and unit testing database operations.

Readership: Researchers and graduate students in database, software testing or software design courses.

212pp **Jan 2010**
978-981-283-728-8 **US\$96** **£63**
978-981-283-729-5(ebook) **US\$125**

INTRODUCTION TO DIGITAL SIGNAL PROCESSING: Computer Musically Speaking

by **Tae Hong Park** (*Tulane University, USA*)

"Overall, Mr Park's introduction to the fundamentals of signal processing with emphasis on audio, written with a subtle, wry humor and an awareness of musical aesthetics, is an engaging and practical textbook for students and a practical reference for veterans as well."

Computer Music Journal



Readership: Undergraduate and graduate students, researchers and academics in digital audio and multimedia as well as music.

452pp **Nov 2009**
978-981-279-027-9 **US\$108** **£72**
978-981-279-028-6(ebook) **US\$140**

REAL TIME PROGRAMMING: LANGUAGES, SPECIFICATION AND VERIFICATION

by **R K Shyamasundar** (*Tata Institute of Fundamental Research, Mumbai*) & **S Ramesh** (*Indian Institute of Technology, Bombay*)

The primary aim of this monograph is to present the current research efforts that have gone into/or going on in the systematic design of real-time programs. Such an effort would help researchers and users in the area to get a clear picture of the issues of specification, verification and design of real-time reactive programs. It will clearly enable us to identify languages that can be used for different kinds of applications.

Readership: Graduate students and researchers in computer programming.

264pp	Nov 2009	
978-981-02-2566-7	US\$115	£76
978-981-281-402-9(ebook)	US\$150	



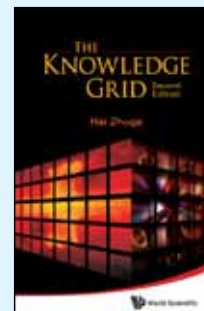
THE KNOWLEDGE GRID (2nd Edition)

by **Hai Zhuge** (*Chinese Academy of Sciences, China*)

Its second edition fulfils the ideal of the Knowledge Grid by increasing many up-to-date new contents, including: (1) The systematic method of semantic link network that supports uncertainty management, discovery of semantic links and semantic communities, and autonomous semantic data model; (2) Semantic peer-to-peer infrastructures for efficient knowledge sharing; and, (3) A new centrality measure of network and its application in e-science. This new edition will undoubtedly provide refreshing materials for researchers, academics, practitioners and students.

Readership: Researchers, academics, lecturers, graduate students and upper level undergraduates in networking, and databases.

360pp	Dec 2011	
978-981-4291-77-4	US\$96	£66
978-981-4291-78-1(ebook)	US\$125	



Advances in Computer Science and Engineering: Texts - Vol. 3

FUNDAMENTAL CONCEPTS IN COMPUTER SCIENCE

edited by **Erol Gelenbe** (*Imperial College London, UK*) & **Jean-Pierre Kahane** (*Université de Paris Sud – Orsay, France*)

The scope of the book is broad in that it covers all aspects of computer science, going from the theory of computation, the theory of programming, and the theory of computer system performance, all the way

to computer hardware and to major numerical applications of computers.

Readership: Graduate students, academics, and professionals in the field of computer science.

172pp	Feb 2009	
978-1-84816-290-7	US\$99	£66
978-1-84816-291-4(ebook)	US\$129	

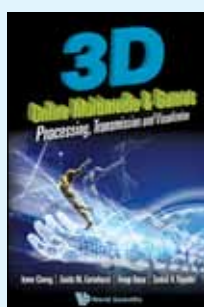
3D ONLINE MULTIMEDIA AND GAMES: Processing, Transmission and Visualization

by **Irene Cheng** (*University of Alberta, Canada & University of Pennsylvania, USA*), **Guido M Cortelazzo** (*University of Padova, Italy*), **Anup Basu** (*University of Alberta, Canada*), & **Satish K Tripathi** (*SUNY Buffalo, USA*)

The topics discussed in this book broadly cover four categories: networking issues in online multimedia; joint texture-mesh simplification and view independent transmission; view dependent transmission and server-side rendering; content and background creation; and creating simple online games.

Readership: University faculty and libraries; developers in online industry; online game developers; graduate courses in multimedia networks and 3D online multimedia; senior undergraduate courses in multimedia networks.

372pp	Dec 2008	
978-981-270-587-7	US\$132	£87
978-981-281-125-7(ebook)	US\$172	



BUILDING SECURE AND HIGH-PERFORMANCE SOFTWARE SYSTEMS

by **Issa Traore** (*University of Victoria, Canada*) & **Ahmed Awad E Ahmed** (*University of Victoria, Canada*)

The first part focuses on performance requirements analysis for distributed software systems. Techniques for analyzing and testing software performance requirements are introduced. The second part proposes a model-driven perspective on secure software engineering.

Readership: Researchers, academics, postgraduate students in software engineering and networking.

200pp	Mar 2012	
978-981-283-599-4	US\$81	£56
978-981-283-600-7(ebook)	US\$105	

HANDBOOK OF SOFTWARE ENGINEERING AND KNOWLEDGE ENGINEERING: In 2 Volumes

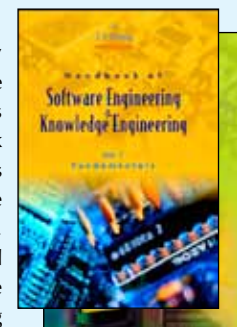
Volume I: Fundamentals, Volume II: Emerging Technologies

edited by **S K Chang** (*University of Pittsburgh, USA & Knowledge Systems Institute, USA*)

This is the first handbook to cover comprehensively both software engineering and knowledge engineering. Over 60 international experts have contributed to the book. The handbook consists of two volumes. Volume One covers the basic principles and applications of software engineering and knowledge engineering. Volume Two will cover the basic principles and applications of visual and multimedia software engineering, knowledge engineering, data mining for software knowledge, and emerging topics in software engineering and knowledge engineering.

Readership: Graduate students, researchers, programmers, managers and academics in software engineering and knowledge engineering.

Vol. I – 940pp	May 2002	
978-981-02-4973-1	US\$252	£166
Vol. II - 808pp		
978-981-02-4974-8	US\$217	£143





International Journal of Software Engineering and Knowledge Engineering (IJSEKE)

<http://www.worldscinet.com/ijseke/>

The journal publishes papers in the areas of software engineering methods and practices, object-oriented systems, rapid prototyping, software reuse, cleanroom software engineering, stepwise refinement/enhancement, formal methods of specification, ambiguity in software development, impact of CASE on software development life cycle, knowledge engineering methods and practices, logic programming, expert systems, knowledge-based systems, distributed knowledge-based systems, deductive database systems, knowledge representations, knowledge-based systems in language translation & processing, software and knowledge-ware maintenance, reverse engineering in software design, and applications in various domains of interest.

Abstracting/Indexing: SciSearch®, ISI Alerting Services, CompuMath Citation Index®, CMCI®, INSPEC, DBLP Bibliography Server, io-port.net, Compendex, Computer Abstracts, Scopus

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International Journal of Semantic Computing (IJSC)

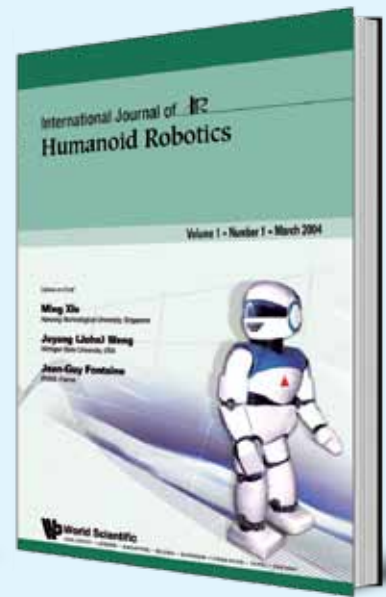
<http://www.worldscinet.com/ijsc>

About IJSC: Aims & Scope

International Journal of Semantic Computing (IJSC) addresses the computing technologies (e.g., artificial intelligence, natural language, software engineering, data and knowledge engineering, computer systems, signal processing, etc.), and their interactions, that may be used to extract or process computational content and descriptions. While some areas of Semantic Computing have appeared as isolated pieces in journals dedicated to individual disciplines, IJSC is a journal that glues these pieces together into an integrated theme with synergetic interactions.

Abstracting/Indexing: io-port.net, INSPEC

Online Gateways: CrossRef, SwetsWise, EBSCOhost Electronic Journals Service, CNPIEC, OCLC FirstSearch, Google Scholar, J-Gate, CEPIEC



International Journal of Humanoid Robotics (IJHR)

<http://www.worldscinet.com/ijhr>

About IJHR: Aims & Scope

The International Journal of Humanoid Robotics (IJHR) covers all subjects on the mind and body of humanoid robots. It is dedicated to advancing new theories, new techniques, and new implementations contributing to the successful achievement of future robots which not only imitate human beings, but also serve human beings. While IJHR encourages the contribution of original papers which are solidly grounded on proven theories or experimental procedures, the journal also encourages the contribution of innovative papers which venture into the new, frontier areas in robotics.

Abstracting/Indexing: Compendex, io-port.net, Science Citation Index Expanded (also known as SciSearch®), Current Contents®/Engineering, Computing, and Technology, ISI Alerting Services, INSPEC, Scopus

Online Gateways: CrossRef, SwetsWise, EBSCOhost Electronic Journals Service, CNPIEC, EBSCO Publishing, OCLC FirstSearch, WorldSciNet - Mirror Set Site in China, Google Scholar, J-Gate, CEPIEC

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