

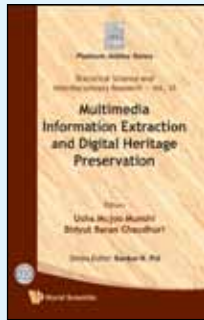
New and Important Titles In Data Mining 2011/12

Statistical Science and Interdisciplinary Research - Vol. 10 MULTIMEDIA INFORMATION EXTRACTION AND DIGITAL HERITAGE PRESERVATION

edited by **Usha Mujoo Munshi** (*Indian Institute of Public Administration, India*) & **Bidyut Baran Chaudhuri** (*Indian Statistical Institute, India*)

Multimedia Information Extraction and Digital Heritage Preservation is an edited volume of contributions by various distinguished researchers on issues in digital libraries, particularly in connection with heritage documents. This excellent collection of 21 papers covers various aspects of the problem. It contains work ranging from multimedia digital library development, image retrieval from traditional metadata-based to content-based indexing and retrieval, making it a blend of traditional and contemporary issues in the digital preservation and information extraction of heritage documents.

Readership: Researchers, postgraduates, policy makers, archivist, curators engaged in museums, archives, long term preservation digitization and access to digital resources.



400pp **Mar 2011**
978-981-4307-25-3 **US\$133** **£92**
978-981-4307-26-0(ebook) **US\$173**

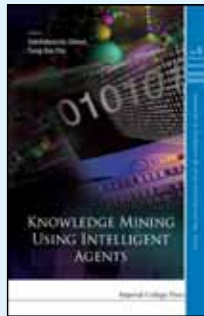
Advances in Computer Science and Engineering:
Texts - Vol. 6

KNOWLEDGE MINING USING INTELLIGENT AGENTS

edited by **Satchidananda Dehuri** (*Fakir Mohan University, India*) & **Sung-Bae Cho** (*Yonsei University, Korea*)

By studying the behavior of swarm intelligence, this book aims to integrate the computational intelligence paradigm and intelligent distributed agents architecture to optimize various engineering problems and efficiently represent knowledge from the large gamut of data.

Readership: Researchers and professionals in the knowledge discovery industry.



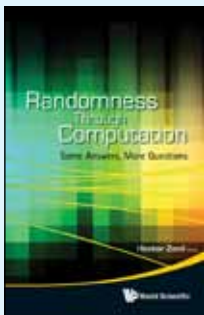
324pp **Dec 2010**
978-1-84816-386-7 **US\$89** **£55**

RANDOMNESS THROUGH COMPUTATION: Some Answers, More Questions

edited by **Hector Zenil** (*Wolfram Research Inc., USA*)

This review volume consists of a set of chapters written by leading scholars, most of them founders of their fields. It explores the connections of Randomness to other areas of scientific knowledge, especially its fruitful relationship to Computability and Complexity Theory, and also to areas such as Probability, Statistics, Information Theory, Biology, Physics, Quantum Mechanics, Learning Theory and Artificial Intelligence. The contributors cover these topics without neglecting important philosophical dimensions, sometimes going beyond the purely technical to formulate age old questions relating to matters such as determinism and free will.

Readership: Students and researchers in the broader fields of computer science, mathematics and physics; the general public interested in science and its philosophy.



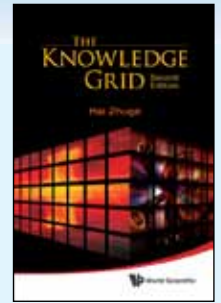
450pp **Feb 2011**
978-981-4327-74-9 **US\$90** **£56**
978-981-4327-75-6(ebook) **US\$117**

THE KNOWLEDGE GRID (2nd Edition)

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

The second edition of *The Knowledge Grid* 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.

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



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

:: Handbook

ADVANCED TOPICS IN BIOMETRICS

edited by **Haizhou Li** (*Institute for Infocomm Research, Singapore*), **Liyuan Li** (*Institute for Infocomm Research, Singapore*), & **Kar-Ann Toh** (*Yonsei University, Korea*)

In this book, the editors provide both a concise and accessible introduction to the field as well as a detailed coverage on the unique research problems with their solutions in a wide spectrum of biometrics research ranging from voice, face, fingerprint, iris, handwriting, human behavior to multimodal biometrics. The contributions also present the pioneering efforts and state-of-the-art results, with special focus on practical issues concerning system development. This book is a valuable reference for established researchers and it also gives an excellent introduction for beginners to understand the challenges.

Readership: Information scientists and engineers specializing in this field.

600pp **Nov 2011**
978-981-4287-84-5 **US\$144** **£100**
978-981-4287-85-2(ebook) **US\$187**

:: Bestseller

Intelligent Information Systems - Vol. 3 REASONING ABOUT FUZZY TEMPORAL AND SPATIAL INFORMATION FROM THE WEB

by **Steven Schockaert** (*Ghent University, Belgium*), **Martine De Cock** (*Ghent University, Belgium*), & **Etienne Kerre** (*Ghent University, Belgium*)

This book comprehensively studies fuzzy temporal and spatial information, starting from the basics on fuzzy set theory and temporal/spatial reasoning, the development of a new model to represent fuzzy temporal/spatial information, the study of efficient and complete reasoning algorithms, and their application in an information retrieval context. This useful volume presents the first approach that goes beyond merely representing information, by thoroughly addressing a variety of reasoning tasks. It also focuses on applications in the domain of information retrieval, and demonstrating the practical importance of the proposed framework.

Readership: Researchers, professionals and graduate students in fuzzy logic, artificial intelligence, and databases.



608pp **Oct 2010**
978-981-4307-89-5 **US\$150** **£93**
978-981-4307-90-1(ebook) **US\$195**

Science, Engineering, and Biology Informatics - Vol. 6

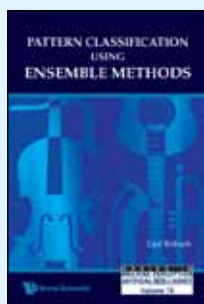
DATABASE TECHNOLOGY FOR LIFE SCIENCES AND MEDICINEedited by **Claudia Plant** (*Technische Universität München, Germany*) & **Christian Böhm** (*Ludwig-Maximilians Universität München, Germany*)

This book presents innovative approaches from database researchers supporting the challenging process of knowledge discovery in biomedicine. Ranging from how to effectively store and organize biomedical data via data quality and case studies to sophisticated data mining methods, this book provides the state-of-the-art of database technology for life sciences and medicine.

Readership: Professionals, researchers and academics in databases, artificial intelligence, bioinformatics and pattern recognition.

388pp **Aug 2010**
978-981-4307-70-3 **US\$108** **£67**
978-981-4307-71-0(ebook) **US\$140**

Series in Machine Perception and Artificial Intelligence - Vol. 75

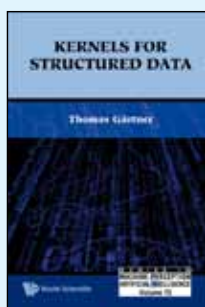
PATTERN CLASSIFICATION USING ENSEMBLE METHODSby **Lior Rokach** (*Ben-Gurion University of the Negev, Israel*)

The book describes in detail the classical methods, as well as the extensions and novel approaches developed recently. Along with algorithmic descriptions of each method, it also explains the circumstances in which this method is applicable and the consequences and the trade-offs incurred by using the method.

Readership: Researchers, advanced undergraduate and graduate students in machine learning and pattern recognition.

244pp **Nov 2009**
978-981-4271-06-6 **US\$85** **£58**
978-981-4271-07-3(ebook) **US\$111**

Series in Machine Perception and Artificial Intelligence - Vol. 72

KERNELS FOR STRUCTURED DATAby **Thomas Gärtner** (*Fraunhofer Institute Intelligent Analysis and Information Systems IAIS, Germany*)

This book provides a unique treatment of an important area of machine learning and answers the question of how kernel methods can be applied to structured data. Kernel methods are a class of state-of-the-art learning algorithms that exhibit excellent learning results in several application domains. Originally, kernel methods were developed with data in mind that can easily be embedded in a Euclidean vector space. Much real-world data does not have this property but is inherently structured. An example of such data, often consulted in the book, is the (2D) graph structure of molecules formed by their atoms and bonds.

Readership: Researchers, academics, graduate and advanced undergraduates in machine learning and artificial intelligence.

216pp **Aug 2008**
978-981-281-455-5 **US\$82** **£57**
978-981-281-456-2(ebook) **US\$107**

World Scientific Series in Information Studies - Vol. 3

EMERGENT INFORMATION: An Outline Unified Theory of Information Frameworkby **Wolfgang Hofkirchner** (*Vienna University of Technology, Austria*)

This book advocates the application of complex systems theory and its philosophical underpinnings. Information needs to be interpreted in terms of self-organisation to do justice to the richness of its manifestations. The way the book does so will provide the reader with a deep insight into a basic feature of our world.

Readership: Advanced undergraduates and graduates in computer science, bioinformatics, systems biology, cognitive science, communication studies, information science. Experts in the same fields as well as non-experts interested in the information concept.

200pp **Jun 2011**
978-981-4313-48-3 **US\$85** **£58**
978-981-4313-49-0(ebook) **US\$111**

:: Bestseller

Series in Machine Perception and Artificial Intelligence - Vol. 70

PERSONALIZATION TECHNIQUES AND RECOMMENDER SYSTEMSedited by **Gulden Uchyigit** (*Imperial College, UK*) & **Matthew Y Ma** (*Scientific Works, USA*)

The book is the first of its kind, representing research efforts in the diversity of personalization and recommendation techniques. These include user modeling, content, collaborative, hybrid and knowledge-based recommender systems. It presents theoretic research in the context of various applications from mobile information access, marketing and sales and web services, to library and personalized TV recommendation systems.

Readership: Researchers and graduate students in machine learning and databases/information science.

336pp **Apr 2008**
978-981-279-701-8 **US\$108** **£75**
978-981-279-702-5(ebook) **US\$140**

:: Highly Recommended**HANDBOOK OF METADATA, SEMANTICS AND ONTOLOGIES**edited by **Miguel-Angel Sicilia** (*University of Alcalá, Spain*)

There is a wide diversity in the languages and idioms used for providing meta-descriptions, from simple structured text in metadata schemas to formal annotations using ontologies, and the technologies for storing, sharing and exploiting meta-descriptions are also diverse and evolve rapidly. In addition, there is a proliferation of schemas and standards related to metadata, resulting in a complex and moving technological landscape — hence, the need for specialized knowledge and skills in this area. The *Handbook of Metadata, Semantics and Ontologies* is intended as an authoritative reference serving as a roadmap for the variety of metadata schemas and ontologies available in a number of key domain areas, including culture, biology, education, healthcare, engineering and library science.

Readership: Graduates and senior undergraduates in computing or information science; researchers in metadata, semantics and ontologies; practitioners in planning or managing information systems.

800pp **Nov 2011**
978-981-283-629-8 **US\$155** **£102**
978-981-283-630-4(ebook) **US\$252**

Atlantis Computational Intelligence Systems - Vol. 1
LINGUISTIC VALUES BASED INTELLIGENT INFORMATION PROCESSING: Theory, Methods, and Applications

by **Pei Zheng** (*Xihua University, Chengdu, China*), **Ruan Da** (*Belgian Nuclear Research Centre (SCK•CEN), Mol, Belgium & Ghent University, Gent, Belgium*), **Liu Jun** (*University of Ulster, Belfast, Northern Ireland, UK*), & **Xu Yang** (*Southwest Jiaotong University, Chengdu, China*)

This book focuses on systematic and intelligent information processing theories and methods based on linguistic values.

Readership: The book is suitable for both students and researchers in computer science.

296pp
 978-90-78677-11-6 Jan 2010
 US\$123 £81

:: Handbook

HANDBOOK OF SECURITY AND NETWORKS

edited by **Yang Xiao** (*The University of Alabama, USA*), **Frank H Li** (*The University of South Carolina Upstate, USA*), & **Hui Chen** (*Virginia State University, USA*)

This valuable handbook is a comprehensive compilation of state-of-art advances on security in computer networks. More than 40 internationally recognized authorities in the field of security and networks contribute articles in their areas of expertise. These international researchers and practitioners are from highly-respected universities, renowned research institutions and IT companies from all over the world. Each self-contained chapter covers one essential research topic on security in computer networks. Through the efforts of all the authors, all chapters are written in a uniformed style; each containing which contains a comprehensive overview, the latest pioneering work and future research direction of a research topic.

Readership: Graduate students, professionals and researchers in the areas of security in computer networks.

1000pp
 978-981-4273-03-9 Mar 2011
 978-981-4273-04-6(ebook) US\$158 £104
 US\$257

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. SpecDB is demonstrated via two automated intelligent tools. The first automatically generates database constraints from a rule-base in SpecDB. The second is a reverse engineering tool that logs the actual execution of the program from the code.

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

212pp
 978-981-283-728-8 Jan 2010
 US\$85 £58

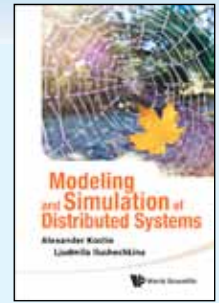
MODELING AND SIMULATION OF DISTRIBUTED SYSTEMS (With CD-ROM)

by **Alexander Kostin** (*Eastern Mediterranean University, Northern Cyprus*) & **Ljudmila Ilushechkina** (*Moscow Institute of Electronic Technology-Technical University, Russia*)

CD-ROM with a simulation system and numerous solved models is attached to the book. The book can be useful to academics who give related graduate courses or deliver research-oriented modules for graduate students. Further, the book can be helpful to system architects and developers who apply modeling and simulation techniques as a step in the design and implementation of their systems. Containing a large number of models, with commented source texts and simulation results on the attached CD-ROM, it can also serve as valuable reference book for researchers who want to develop their own models in terms of Petri nets.

Readership: Advanced undergraduate and graduate students, academics and researchers in computer engineering; designers of distributed systems; developers of simulation models of complex information systems.

440pp
 978-981-4291-67-5 Jun 2010
 US\$85 £56



:: Editor's Pick

Series in Machine Perception and Artificial Intelligence - Vol. 71

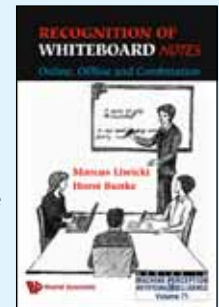
RECOGNITION OF WHITEBOARD NOTES Online, Offline and Combination

by **Marcus Liwicki** (*DFKI GmbH, Germany*) & **Horst Bunke** (*University of Bern, Switzerland*)

This book addresses the task of processing online handwritten notes acquired from an electronic whiteboard, which is a new modality in handwriting recognition research. The main motivation of this book is smart meeting rooms, aim to automate standard tasks usually performed by humans in a meeting.

Readership: Researchers in academia and industry and graduate students working in document analysis, handwriting recognition, pattern recognition, and artificial intelligence.

228pp
 978-981-281-453-1 Sep 2008
 978-981-281-454-8(ebook) US\$107 £74
 US\$139



:: Bestseller

Statistical Science and Interdisciplinary Research - Vol. 3

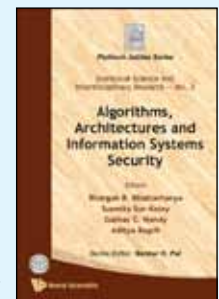
ALGORITHMS, ARCHITECTURES AND INFORMATION SYSTEMS SECURITY

edited by **Bhargab B Bhattacharya** (*Indian Statistical Institute, India*), **Susmita Sur-Kolay** (*Indian Statistical Institute, India*), **Subhas C Nandy** (*Indian Statistical Institute, India*), & **Aditya Bagchi** (*Indian Statistical Institute, India*)

This volume contains articles written by leading researchers in the fields of algorithms, architectures, and information systems security.

Readership: Researchers, professionals and advanced graduates in theoretical computer science, electrical & electronics engineering, and combinatorics & graph theory.

384pp
 978-981-283-623-6 Nov 2008
 978-981-283-624-3(ebook) US\$133 £92
 US\$173



Atlantis Ambient and Pervasive Intelligence - Vol. 4 ACTIVITY RECOGNITION IN PERSVASIVE INTELLIGENT ENVIRONMENT

by **Liming Chen** (*University of Ulster, UK*), **Chris D Nugent** (*University of Ulster, UK*), **Jit Biswas** (*Institute of Infocomm Research (I²R), Singapore*), & **Jesse Hoey** (*University of Dundee, Denmark*)



Specifically, the book addresses four different aspects of activity recognition, namely activity modelling, representation and reasoning; activity recognition methods and algorithms; novel architectures, technologies and tools for activity recognition; and representative applications of activity recognition in intelligent environments.

Readership: Researchers, technology and application developers in related communities and application domains.

280pp
978-90-78677-35-2 Feb 2011
US\$115 £76

QUANTUM CRYPTOGRAPHY

by **Gerald Gilbert** (*MITRE Quantum Information Science Group, USA*), **Yaakov S Weinstein** (*MITRE Quantum Information Science Group, USA*), & **Michael Hamrick** (*MITRE Integrated Communications Networks & Sensors Department, USA*)

This book provides a detailed account of the theory and practice of quantum cryptography. Suitable as the basis for a course in the subject at the graduate level, it crosses the disciplines of physics, mathematics, computer science and engineering. The theoretical and experimental aspects of the subject are derived from first principles, and attention is devoted to the practical development of realistic quantum communications systems. The book also includes a comprehensive analysis of practical quantum cryptography systems implemented in actual physical environments via either free-space or fiber-optic cable quantum channels.

Readership: Researchers, scientists, graduate students, advanced undergraduate students, and communications engineers in the field of quantum physics.

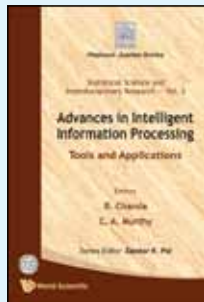
250pp
978-981-283-934-3 Apr 2011
US\$88 £61
978-981-283-936-7(ebook) US\$114

Statistical Science and Interdisciplinary Research - Vol. 2

ADVANCES IN INTELLIGENT INFORMATION PROCESSING: Tools and Applications

edited by **B Chanda** (*Indian Statistical Institute, India*) & **C A Murthy** (*Indian Statistical Institute, India*)

The book deals with several key aspects of developing technologies in information processing systems. It explains various problems related to advanced image processing systems and describes some of the latest state-of-the-art techniques in solving them. Particularly, the recent advances in image and video processing are covered thoroughly with real-life applications. Some of the latest topics like rough fuzzy hybridization and knowledge reuse in computational intelligence are included adequately.



Readership: Researchers, academics and graduate students in pattern recognition, image processing, soft computing and computer vision.

316pp
978-981-281-898-0 May 2008
US\$117 £81
978-981-281-899-7(ebook) US\$152

:: Handbook

HANDBOOK OF ELECTRONIC SECURITY AND DIGITAL FORENSICS

by **Hamid Jahankhani** (*University of East London, UK*), **David Lilburn Watson** (*Watson Business Solutions Ltd., UK*), **Gianluigi Me** (*Università degli Studi di Roma "Tor Vergata", Italy*), & **Frank Leonhardt** (*Independent Consultant and Commentator*)



This book is a compilation of the collaboration between the researchers and practitioners in the security field; and provides a comprehensive literature on current and future e-security needs across applications, implementation, testing or investigative techniques, judicial processes and criminal intelligence. The intended audience includes members in academia, the public and private sectors, students and those who are interested in and will benefit from this handbook.

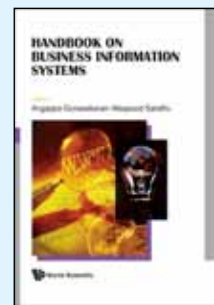
Readership: Final year undergraduate students, graduates, computer scientist and professionals who are involved in information security and digital forensics investigation practise, research and development.

708pp
978-981-283-703-5 Mar 2010
US\$223 £154
978-981-283-704-2(ebook) US\$290

:: Handbook

HANDBOOK ON BUSINESS INFORMATION SYSTEMS

edited by **Angappa Gunasekaran** (*University of Massachusetts, USA*) & **Maqsood Sandhu** (*United Arab Emirates University, UAE*)



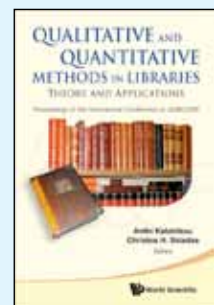
This handbook covers the vast field of business information systems, focusing particularly on developing information systems to capture and integrate information technology together with the people and their businesses.

Readership: Academia and practitioners in business information systems and management.

960pp
978-981-283-605-2 Apr 2010
US\$198 £131
978-981-283-606-9(ebook) US\$257

QUALITATIVE AND QUANTITATIVE METHODS IN LIBRARIES: Theory and Applications (Proceedings of the International Conference on QQML2009)

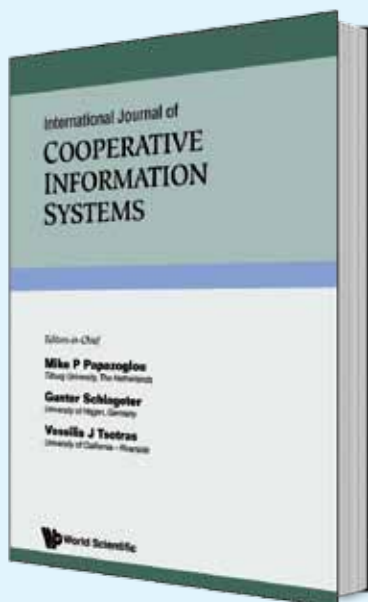
Chania, Crete, Greece, 26 – 29 May 2009
edited by **Anthi Katsirikou** (*University of Piraeus Library, Greece*) & **Christos H Skiadas** (*Technical University of Crete, Greece*)



This volume is a valuable resource of research papers and applications presented at the Qualitative and Quantitative Methods in Libraries International Conference QQML2009, on the methodological tools used in library and information science. It provides the reader with a better understanding and holistic view on the subject and contains a plethora of invaluable methodologies and applications to a variety of information and library science.

Readership: Suitable to students as a textbook, as well as to scientists and professionals in library and information science.

520pp
978-981-4299-69-5 Jan 2010
US\$167 £115
978-981-4299-70-1(ebook) US\$217



International Journal of Cooperative Information Systems (IJCIS)

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

About IJCIS: Aims & Scope

The paradigm for the next generation of information systems (ISs) will involve large numbers of ISs distributed over large, complex computer/communication networks. Such ISs will manage or have access to large amounts of information and computing services and will interoperate as required. These support individual or collaborative human work. Communication among component systems will be done using protocols that range from conventional ones to those based on distributed AI. We call such next generation ISs Cooperative Information Systems (CIS).



International Journal of Information Technology & Decision Making (IJITDM)

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

About IJITDM: Aims & Scope

International Journal of Information Technology and Decision Making (IJITDM) provides a global forum for exchanging research findings and case studies which bridge the latest information technology and various decision-making techniques. It promotes how information technology improves decision techniques as well as how the development of decision-making tools affects the information technology era. The journal is peer-reviewed and publishes both high-quality academic (theoretical or empirical) and practical papers in the broad ranges of information technology related topics including, but not limited to the following:

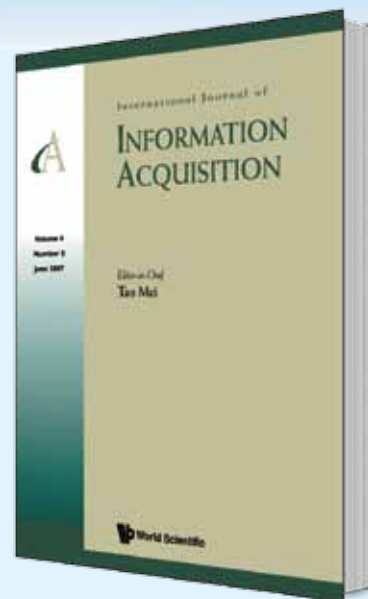
Abstracting/Indexing

Science Citation Index Expanded (also known as SciSearch®)

ISI Alerting Services

CompuMath Citation Index

Cabell



International Journal of Information Acquisition (IJIA)

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

About IJIA: Aims & Scope

The International Journal of Information Acquisition is a high quality journal that aims to promote interaction and the exchange of original investigations and inventions, research findings and results, academic philosophies and opinions in information acquisition science and technology. The journal seeks to advance the fundamental theories, key technologies, and the critical applications in information acquisition science and technology.

The articles are not limited to the following:

- the mechanism and physical insights of sensing
- sensing materials
- sensors and sensing devices
- multi-source information fusion and integration
- detection and measurement apparatus
- machine sensing and algorithms
- micro- and nano-scale sensor and sensing devices
- sensor information acquisition
- presentation and substitution
- psychophysics and applications in sensor design
- neurophysics and applications in information processing
- and other related topics

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