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Handbook on Computational Intelligence
In 2 Volumes
edited by Plamen Parvanov Angelov (Lancaster University, UK)
This book will be a one-stop-shop for beginners as well as an inspirational source for more advanced and a useful resource for lecturers and learners alike to look at these complex problems from a non-traditional computational intelligence paradigms. Unlike other titles which are more specialized and detailed, this book provides a step by step approach supported with case studies that covering many classic, as well as recent achievements and future promising developments to solve some of these very complex human problems.

Readership: Beginners and experts in computational intelligence.

1000pp Jan 2016
978-981-4675-00-0(Set) US$395 £261
978-981-4675-01-7(Set)(ebook) US$314 £339

Impossible Minds
My Neurons, My Consciousness
Revised Edition
by Igor Aleksander (Imperial College London, UK)
The topic of the conscious neural brain in IM is treated from first principles, without assuming prior knowledge of neural systems whether artificial or real. This pedagogic approach is rare in competing volumes. While the topic is partly philosophical, the book makes no assumptions of prior knowledge of philosophy and contains easy excursions into the important ideas of philosophy that may be missing in the education of a computer scientist. Competing books often exclude those not versed in philosophy.

Readership: General. For members of the public with an interest in understanding human intelligence and artificial intelligence; and cross disciplinary learning across computing theory, philosophy and neuroscience (undergraduate through to research level).

452pp Feb 2015
978-1-78326-568-8 US$98 £65
978-1-78326-569-5(pb) US$45 £30
978-1-78326-570-1(ebook) US$127 £85

Computational Intelligence Applications in Smart Grids
Enabling Methodologies for Proactive and Self-Organizing Power Systems
edited by Ahmed F Zobaa (Brunel University, UK), Alfredo Vaccaro (University of Sannio, Italy)
This book considers the emerging technologies and methodologies of the application of computational intelligence to smart grids. It integrates scientific contributions developed by highly qualified international experts very active in the fields of power systems management and computational intelligence. It discusses various case studies aimed at assessing the benefits deriving from the application of the proposed methodologies on real power systems.

Readership: Graduate students and researchers interested in smart grids and advanced power networks.

364pp Feb 2015
978-1-78326-587-9 US$98 £65
978-1-78326-589-3(ebook) US$127 £85

Modeling and Analysis of Dependable Systems
A Probabilistic Graphical Model Perspective
by Luigi Portinale (University of Piemonte Orientale, Italy), Daniele Codetta Raiteri (University of Piemonte Orientale, Italy)
The monograph addresses the state-of-the-art dependability (reliability, availability, risk and safety, security) of systems, using the Artificial Intelligence framework of Probabilistic Graphical Models (PGM). After a survey about the main concepts and methodologies adopted in dependability analysis, the book discusses the main features of PGM formalisms (like Bayesian and Decision Networks) and the advantages, both in terms of modeling and analysis, with respect to classical formalisms and model languages.

Readership: Graduate students, researchers and professionals in the field of artificial intelligence.

Causality, Correlation and Artificial Intelligence for Rational Decision Making
by Tshilidzi Marwala (University of Johannesburg, South Africa)
The book proposes fresh definition of causality and proposes two new theories i.e. flexibly bounded rationality and marginalization of irrationality theory for decision making. It also applies these techniques to a diverse areas in engineering, political science and biomedical engineering.

Readership: Graduate students, researchers and professionals in the field of artificial intelligence.

GMDH-Methodology and Implementation in C
(With CD-ROM)
Edited by: C H Chen (University of Massachusetts Dartmouth, USA)
This book makes error-free codes available to end-users so that these codes can be used to understand the implementation of GMDH, and then create opportunities to further develop the variants of GMDH algorithms. C-language has been chosen because it is a basic language commonly taught in the first year in computer programming courses in most universities and colleges, and the compiled versions could be used for more meaningful practical applications where security is necessary.

Readership: Researchers, professionals, and senior undergraduate students in artificial intelligence, neural networks, decision sciences, and innovation technology.
TOP ARTICLES

THIRTY YEARS OF GRAPH MATCHING IN PATTERN RECOGNITION
D. CONTE, P. FOGGIA, C. SANSONE, M. VENTO

RADIAL BASIS PROBABILISTIC NEURAL NETWORKS: MODEL AND APPLICATION
DE-SHUANG HUANG

CLASSIFICATION OF IMBALANCED DATA: A REVIEW
YANMIN SUN, ANDREW K. C. WONG, MOHAMED S. KAMEL
Vol. 23, No. 04, pp. 687-719 (2009)

A SURVEY OF CLUSTERING ENSEMBLE ALGORITHMS
SANDRO VEGA-PONS, JOSÉ RUIZ-SHULCLOPER
Vol. 25, No. 03, pp. 337-372 (2011)

ANALYSIS OF SOUND PATTERNS THROUGH WAVELET TRANSFORMS
R. KRONLAND-MARTINET, J. MORLET, A. GROSSMANN
Vol. 01, No. 02, pp. 273-302 (1987)

ANIMAL: VALIDATION AND APPLICATIONS OF NONLINEAR REGISTRATION-BASED SEGMENTATION
D. L. Collins, A. C. Evans
Vol. 11, No. 08, pp. 1271-1294 (1997)

PARTICLE SWARM OPTIMIZATION METHOD FOR IMAGE CLUSTERING
M. OMRAH, A. P. ENGELBRECHT, A. SALMAN

FAST FUZZY MULTICATEGORY SVM BASED ON SUPPORT VECTOR DOMAIN DESCRIPTION
XI-ZHAO WANG, SHU-XIA LU, JUN-HAI ZHAI

PLANT LEAF IDENTIFICATION BASED ON VOLUMETRIC FRactal DIMENSION
ANDRÉ RICARDO BACKES, DALCIMAR CASANOVA, ODEMIR MARTINEZ BRUNO
Vol. 23, No. 06, pp. 1145-1160 (2009)

AN INTRODUCTION TO HIDDEN MARKOV MODELS AND BAYESIAN NETWORKS
ZOUBIN GHAHRAMANI
Vol. 15, No. 01, pp. 9-42 (2001)
The Computer After Me
Awareness and Self-Awareness in Autonomic Systems
edited by Jeremy Pitt (Imperial College London, UK)

The wide-ranging scope of the text covers three different angles of the concept of ‘the computer after me’: (1) the next generation of computationally powerful aware systems; (2) systems in which the computer is aware of qualitatively impact human concerns such as law, health and rules; and (3) computers and robots which are aware of themselves.

Readership: Students and Professionals in the fields of computer science and artificial intelligence; Members of the general public with an interest in machine awareness and AI.

332pp Oct 2014
978-1-78326-417-9 US$110 £73
978-1-78326-418-6(ebook) US$143 £95

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. A systematic software engineering process is presented, which starts in the early stages of the software development process and spans the entire software lifecycle.

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

200pp Feb 2017
978-981-283-599-4 US$88 £58

The Kish Cypher
Introduction, History, the Big Picture, Details, and Design
by Laszlo B Kish (Texas A&M University, USA)

This unique volume offers a thorough account of the cypher and its unconditionally secure communication, the text explains the cypher's foundation in classical physics and its superiority to its quantum-based competitors. It seeks to debunk the common misconception of “Kirchhoff's law” using simple and clear-cut treatments to explain the cypher's working principal — an understanding that has eluded (even) some experts on software-based security or quantum security — and how it can provide the same (or higher) level of security as quantum communicators at a thousandth of the cost.

Readership: Scientists, engineers, members of the general public interested in how things work and all who are interested in today's history of secure communication, science and technology.

250pp Jan 2016
978-981-4449-45-8 US$78 £51
978-981-4449-46-5(ebook) US$101 £67

Integer Algorithms in Cryptology and Information Assurance
by Boris S Verkhovsky (New Jersey Institute of Technology, USA)

Addresses innovative cryptographic algorithms, computationally efficient algorithms for information assurance, new methods to solve the classical problem of integer factorization, which plays a key role in cryptanalysis, numerous illustrative examples and tables that facilitate understanding of the proposed algorithms. The style of the book, which concentrates on constructive description of what and how to implement the proposed cryptographic algorithms rather than on formal proofs of why these algorithms work.

Readership: Researchers and developers working on telecommunication security and/or reliability, in industries such as business and banking, national security agencies, militaries, interplanetary space exploration, and telemedicine. Faculty and students in advanced courses in cryptography.

460pp Nov 2014
978-981-4623-74-2 US$142 £94
978-981-4623-75-9(ebook) US$185 £122

Handbook of Pattern Recognition and Computer Vision
5th Edition

The book will have three parts: (1) Pattern recognition methods and applications; (2) Computer vision and image processing; and (3) Systems, architecture and technology. This book is intended to capture the major developments in pattern recognition and computer vision though it is impossible to cover all topics.

Readership: Graduate students, academics, practitioners, researchers, computer scientists, electrical and medical engineers.

560pp Mar 2016
978-981-4656-52-8 US$188 £124
978-981-4656-53-5(ebook) US$244 £161

Hands-On Computer Vision
by Marc Pomplun (University of Massachusetts Boston, USA)

This book provides its readers the fundamental concepts in computer vision and how to design and implement vision algorithms for given problems. No prior knowledge of computer vision is required, but readers are expected to have experience in computer programming. Commented sample code in the C language and a variety of programming exercises in this book will assist the readers in developing an in-depth understanding of computer vision algorithms and their implementations.

Readership: Undergraduates, graduates, and professionals studying/dealing with machine perception/computer vision, pattern recognition/image analysis, software engineering/programming, neural networks, robotics & automated systems.

650pp Jan 2016
978-981-4571-96-8 US$129 £85
978-981-4571-97-5(pb) US$78 £51
About IJAIT: Aims & Scope


Abstracting/Indexing: CompuMath Citation Index | Compendex | Current Contents® Engineering, Computing, and Technology | DBLP Computer Science Bibliography | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | ISI Alerting Services | OCLC WorldCat® | Proquest Summon | Science Citation Index Expanded (also known as SciSearch®) | Scopus

International Journal on Artificial Intelligence Tools (IJAIT)
http://www.worldscientific.com/ijait

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About IJIG: Aims & Scope

International Journal of Image and Graphics (IJIG) will emphasize on efficient and effective image and graphics technologies and systems. This journal covers the following research and application issues:

- **Image Processing** (Image acquisition & storage • Image pre-processing • Image coding and transmission • Image indexing & retrieval)
- **Image Analysis and Understanding** (Image segmentation & measurement • Texture & motion analysis • Image matching and scene interpretation • 3-D modeling)
- **Pattern Recognition Application** (Statistical, structural & neural approaches • Character, speech, image & video applications • Biometrics technologies & system)
- **Computer Vision** (Active, real-time & stereo computer vision • VLSI image model, algorithm & architecture • Multi-modal image systems)
- **Graphics Modeling, Rendering and Animation** (Graphics algorithms • Modeling methods • Rendering algorithms • Animation)
- **Visualization** (Virtual Reality & Virtual Environment • Augmented Reality • Media immersion)
- **Multimedia Systems and Techniques** (Multimedia algorithms • Multimedia communication and CSCW • Multimedia database • Multimedia systems)
- **Graphics User Interface** (User interface management system • Multi-agent/Artificial life • Intelligent agent • Multi-modal user interface)
- **Image and Graphics Applications** (Medical & bio-medical • Telecommunication & remote sensing • Document & industrial • Security (internet, digital watermarking?))

Abstracting/Indexing: Compendex | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | Journal Citation Reports/Science Edition | OCLC WorldCat® | Proquest Summon | Science Citation Index Expanded (also known as SciSearch®) | Scopus | Zentralblatt MATH

International Journal of Image and Graphics (IJIG)
http://www.worldscientific.com/ijig

Editor-in-Chief
David Zhang (Hong Kong Polytechnic University, HK)

About IJCM: Aims & Scope

The purpose of this journal is to provide a unique forum for the fast publication and rapid dissemination of original research results and innovative ideas on the state-of-the-art on computational methods. The methods should be innovative and of high scholarly, academic and practical value.

The journal is devoted to all aspects of modern computational methods and the articles can involve theory, algorithm, programming, coding, numerical simulation and/or novel application of computational techniques to problems in engineering, science, and other disciplines related to computations. The journal places a great emphasis on creativity, novelty and innovation of computational methods. It aims to become the major platform that archives the history of the technical development of new generations of computational methods.

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International Journal of Computational Methods (IJCM)
http://www.worldscientific.com/ijcm

Chief Editor
G R Liu (University of Cincinnati, USA)

About IJCM: Aims & Scope

The purpose of this journal is to provide a unique forum for the fast publication and rapid dissemination of original research results and innovative ideas on the state-of-the-art on computational methods. The methods should be innovative and of high scholarly, academic and practical value.

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(Ranking in the category Computer Science, Artificial Intelligence is 2 of 123)

Editor-In-Chief
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The Ohio State University
adeli.1@osu.edu

Hojjat Adeli Award for Outstanding Contributions in Neural Systems

To honor the extraordinary leadership and impactful and inventive research contributions of the Editor-in-Chief of IJNS, World Scientific established the Hojjat Adeli Award for Outstanding Contributions in Neural Systems in 2011 with a cash prize of $500 to be given annually to the author(s) of the best paper published in the previous volume year. The recipient of the award is selected by the Editor-in-Chief in consultation with members of the Editorial Advisory Board and is announced in the August issue of the journal.

Hojjat Adeli is Professor of Biomedical Engineering, Biomedical Informatics, Neuroscience, Electrical and Computer Engineering, and Civil, Environmental, and Geodetic Engineering at The Ohio State University. He has authored over 500 scientific publications including 15 books since he received his Ph.D. from Stanford University in 1976 at the age of 26. He has presented Keynote/Plenary Lectures at 96 research conferences held in 43 different countries. He is the recipient of numerous awards and honors including, the University Distinguished Scholar Award given by The Ohio State University in 1998 “in recognition of extraordinary accomplishment in research and scholarship”. He is the quadruple-winner of the OSU College of Engineering Lumley Outstanding Research Award. In 2007 he received the Peter L. and Clara M. Scott Award for Excellence in Engineering and Charles E. MacQuigg Outstanding Teaching Award from The Ohio State University. He is a Distinguished Member of ASCE, and a Fellow of AAAS, IEEE, and the American Neurological Association.

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International Journal of Medical robotics research (JMRR)
http://www.worldscientific.com/jmrr

About JMRR: Aims & Scope
Medical robotics has been progressively revolutionizing treatment for at least the past two decades. The Journal of Medical Robotics Research (JMRR) invites fundamental contributions to all areas of medical robotics including clinical evaluation studies. The journal is primarily aimed towards bringing the scientific and technological developments as well as clinical evaluation studies in the area of medical robotics to a wider robotics and clinical audience.

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• Nano-scale and micro-scale Interventions
• Telesurgery
• Haptics for Medical Robotics
• Smart instrumented tools for surgery
• Surgical Navigation
• Surgical Workflow
• Wearable Rehabilitation Systems

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• Haptics for Medical Robotics
• Smart instrumented tools for surgery
• Surgical Navigation
• Surgical Workflow
• Wearable Rehabilitation Systems

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International Journal of Medical robotics research (JMRR)
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**Cloud to Edgeware**

*Wireless Grid Applications, Architecture and Security for the “Internet of Things”*

by Lee W. McKnight (Syracuse University, USA), Tyson T. Brooks (Syracuse University, USA & US Department of Defense, USA)

This comprehensive book presents a new approach to dynamic distributed virtual systems. Wireless grids edgeware promises new cloud to edge secure architectures with mobile security for the ‘Internet of Things’ (IoT). The scope covers frameworks and models for wireless grids edgeware, as well as open specifications and new applications called gridlets and wiglets.

 Readership: Researchers, academics, professionals and graduate students in information science, digital security, parallel computing, networking and knowledge information management.

| 350pp Mar 2016 | 978-981-4630-80-1 US$125 £83 |
| 978-981-4630-81-8(ebook) | US$163 £108 |

**GMDH-Methodology and Implementation in MATLAB**

edited by Godfrey Onwubolu (Sheridan Institute of Technology & Advanced Learning, Canada)

This is the first book to explore GMDH using MATLAB (matrix laboratory) language. Readers will learn how to implement GMDH in MATLAB as a method of dealing with big data analytics. Error-free source codes in MATLAB have been included on the accompanying CD-ROM to assist users in their understanding in GMDH and to make it easy for users to further develop variations of GMDH algorithms.

 Readership: Professionals and students interested in data mining and analytics.

| 400pp Mar 2016 | 978-1-78326-612-8 US$129 £85 |
| 978-1-78326-613-5(ebook) | US$49 £32 |

**Intelligent Big Multimedia Databases**

by Andreas Wichert (Universidade Técnica de Lisboa, Portugal)

The book presents essential and relevant techniques and algorithms to develop and implement large multimedia database systems.

 Readership: Professionals, academics, researchers and graduate students in databases, artificial intelligence, pattern recognition and neural networks.

| 324pp May 2015 | 978-981-4696-64-7 US$115 £76 |

**Exploring Big Historical Data**

*The Historian’s Macroscope*

by Shawn Graham (Carleton University, Canada), Ian Milligan (University of Waterloo, Canada) & Scott Weingart (Indiana University, USA)

Combines clear explanation of theory and background with detailed practical instruction, approaching Big Data and the digital humanities from a historical perspective. Each section builds upon the previous, allowing readers to build their skills, knowledge, and to reflect critically on what these skills are doing to the writing of history. Readers will develop an ability to collect and interrogate big data in its many forms.

 Readership: Researchers, graduate and undergraduate students in the field of Digital Humanities, and people looking to digitize historical archives.

| 400pp Sep 2015 | 978-1-78326-608-1 US$129 £85 |
| 978-1-78326-637-1(pbk) | US$49 £32 |

**International Journal of Information Technology & Decision Making (IJITDM)**

http://www.worldscientific.com/ijitdm/

Editor-in-Chief
Yong Shi (University of Nebraska at Omaha, USA)

Managing Editor
Gang Kou (University of Electronic Science and Technology of China)

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.

Abstracting/Indexing: Cabell | CompuMath Citation Index | DBLP Computer Science Bibliography | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC ISI Alerting Services OCLC WorldCat® Proquest Summon RePEc Science Citation Index Expanded (also known as SciSearch®) | Scopus
International Journal of Cooperative Information Systems (IJCIS)
http://www.worldscientific.com/ijcis

Editors-in-Chief
Heiko Ludwig (IBM Almaden Research Center, USA), Gunter Schlagerer (University of Hagen, Germany) & Vassilis J Tsotras (University of California — Riverside, USA)

About IJCIS: Aims & Scope
The International Journal of Cooperative Information Systems (IJCIS) addresses the intricacies of cooperative work in the framework of distributed interoperable information systems. It provides a forum for the presentation and dissemination of research covering all aspects of CIS design, requirements, functionality, implementation, deployment, and evolution. IJCIS will publish papers describing original ideas and new results, on topics that include, but are not limited to:


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Journal of Computational Acoustics (JCA)
http://www.worldscinet.com/jca/

About JCA: Aims & Scope
The aim of this journal is to provide an international forum for the dissemination of the state-of-the-art information in the field of Computational Acoustics.

Topics covered by this journal include research and tutorial contributions in OCEAN ACOUSTICS (a subject of active research in relation with sonar detection and the design of noiseless ships), SEISMO-ACOUSTICS (of concern to earthquake science and engineering, and also to those doing underground prospection like searching for petroleum), AEROACOUSTICS (which includes the analysis of noise created by aircraft), COMPUTATIONAL METHODS, and SUPERCOMPUTING. In addition to the traditional issues and problems in computational methods, the journal also considers theoretical research on acoustic papers which lead to large-scale scientific computations.

Abstracting/Indexing: CNKI | CompuMath Citation Index® | CSA Aquatic Sciences and Fisheries Abstracts (ASFA) | CSA Meteorological & Geostrophysical Abstracts | CSA Oceanic Abstracts | CSA Selected Water Resources Abstracts | Current Contents®/Engineering, Computing, and Technology | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | ISI Alerting Services | Mathematical Reviews | OCLC WorldCat® | Proquest Summon | Science Citation Index® | Science Citation Index Expanded (also known as SciSearch®) | Scopus | Zentralblatt MATH

International Journal of Information Acquisition (IJIA)
http://www.worldscientific.com/ijia/

Editor-in-Chief
Dr Tao Mei (Chinese Academy of Sciences, China)

About IJIA: Aims & Scope
The International Journal of Information Acquisition is a high quality journal publishes high quality, peer-reviewed papers on a wide range of information acquisition theories. The articles are not limited to the following:

The journal papers will be partitioned into the following categories: Theory, Sensitive Materials and Devices, Sensors, Machine Sensing and Algorithms, Applications and Reviews.

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Advances in Adaptive Data Analysis (AADA)
http://www.worldscientific.com/aada

Co-Editors-in-Chief
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About AADA: Aims & Scope
AADA is an interdisciplinary journal dedicated to report original research results on data analysis methodology developments and their applications, with a special emphasis on the adaptive approaches. The mission of the journal is to elevate data analysis above the routine data processing and make it a tool for scientific research and engineering applications. Reporting new advances in data analysis methods in general and adaptive approach in particular. Reporting new applications of adaptive data analysis methods for scientific and engineering problems.

Abstracting/Indexing: CNKI | Compendex | DBLP Bibliography Server | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | Mathematical Reviews | OCLC WorldCat® | Proquest Summon | Scopus
The Arithmetic of Z-Numbers
Theory and Applications
by Rafik A Aliev (Azerbaijan State Oil Academy, Azerbaijan), Oleg H Huseynov (Azerbaijan State Oil Academy, Azerbaijan), Rashad R Aliev (Eastern Mediterranean University, Turkey) & Akif A Alizadeh (Azerbaijan University, Azerbaijan)

This book is the first to present a comprehensive and self-contained theory of Z-arithmetic and its applications. Many of the concepts and techniques described in the book, with carefully worked-out examples, are original and appear in the literature for the first time.

Readership: Researchers, academics, professionals and graduate students in fuzzy logic, decision sciences and artificial intelligence.

300pp Jul 2015
978-981-4675-28-4 US$105 £69
978-981-4675-29-1(ebook) US$137 £90

Latest Advances in Inductive Logic Programming
edited by Stephen H Muggleton (Imperial College London, UK), Hiroaki Watanabe (Imperial College London, UK)

This book represents a selection of papers presented at the Inductive Logic Programming (ILP) workshop held at Cumberland Lodge, Great Windsor Park. The collection marks two decades since the first ILP workshop in 1991. During this period the area has developed into the main forum for work on logic-based machine learning. The chapters cover a wide variety of topics, ranging from theory and ILP implementations to state-of-the-art applications in real-world domains. The international contributors represent leaders in the field from prestigious institutions in Europe, North America and Asia.

Readership: Graduate students and researchers in the field of ILP, and academics and researchers in the fields of artificial intelligence and natural sciences.

264pp Dec 2014
978-1-78326-508-4 US$98 £65
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Topological Quantum Computing
Making Quantum Computers Robust by Manipulating Quantum Bits in Topological Quantum Fields
by Hugo de Garis (Xiamen University, China)

Topological Quantum Computing is the first book of its kind, dealing with mathematical, physics and computing principles needed to understand TQC, which will revolutionize both computer science and its teaching. Covers pure mathematics, mathematical physics, and quantum computing principles needed to understand TQC.

Readership: Graduate students, educators and researchers in the areas of computer science, quantum computing and mathematical physics.

500pp Aug 2016
978-981-4324-40-3 US$180 £120

Artificial Intelligence
A Guide to Intelligent Vehicle
by Ming Xie (Nanyang Technological University, Singapore), Hui Chen (Tongji University, China) & Zhencheng Hu (Kumamoto University, Japan)

This book provides a broad introduction to the three key modules behind the design and development of intelligent vehicles for the ultimate purpose of actively ensuring driving safety as well as preventing accidents from all possible causes. Self-contained and unified in presentation, the book explains in detail the fundamental solutions of vehicle perception, vehicle decision-making and vehicle action-taking in a pedagogic order.

Readership: Advanced undergraduate and graduate students in automotive engineering, mechanical engineering and computer science; researchers and practitioners in automotive industries.

300pp Apr 2016
978-981-4271-63-9 US$88 £61

Robot Hands and Multi-Fingered Haptic Interfaces
Fundamentals and Applications
by Haruhiwa Kawasaki (Gifu University, Japan)

This work discusses the design of robot hands; contact models at grasping; kinematic models of constraint; dynamic models of the multi-fingered hand; the stability theorem of non-linear control systems; robot hand control; design and control of multi-fingered haptic interfaces; application systems using multi-fingered haptic interfaces; and telecontrol of robot hands using a multi-fingered haptic interface.

Readership: Academic and Professional, Researchers, Graduate and Post-Graduate Engineering students specializing in robotics.

352pp May 2015
978-981-4635-61-5(ebook) US$128 £84
978-981-4635-60-8 US$166 £109

Telexistence
2nd Edition
by Susumu Tachi (The University of Tokyo, Japan & Keio University, Japan)

This book is the second edition of the original Telexistence; new contents cover recent advancements of the technology in areas such as human augmentation, autostereoscopy, tangible visuo-haptic 3D display, face-to-face communication, and haptic sensations and technologies. Case studies of the mobile mutual telexistence system TELESAR IV and haptic telexistence avatar system TELESAR V are also included.

Readership: Academics; Researchers and Graduate students in robotics and automated systems, computer engineering, mechanical engineering, systems engineering and electrical & electronic engineering.

296pp Feb 2015
978-981-4618-07-6(ebook) US$127 £85
ICP Primers in Electronics and Computer Science

Programming: A Primer
Coding for Beginners

by Tom Bell (University of Southampton, UK)

This book gets you going straight away with the fundamentals of what programming is, basic programming with Python and the fundamental aspects of practical web development. In this book, you’ll learn about: What programming is and how it can benefit you, variables and operations as the building blocks of a program, If statements, For loops and Methods in Python, Classes, Objects and Inheritance in Python, Web development using HTML, CSS, JavaScript, PHP and SQL.

Readership: Any readers who are interested in programming and looking for an introduction to the topic.

200pp Sep 2015
978-1-78326-706-4 US$75 £50
978-1-78326-707-1 (pbk) US$35 £23
Computer Arithmetic
Volume I
edited by Earl E Swartzlander (University of Texas at Austin, USA)

The book provides many of the basic papers in computer arithmetic. These papers describe the concepts and basic operations (in the words of the original developers) that would be useful to the designers of computers and embedded systems. Although the main focus is on the basic operations of addition, multiplication and division, advanced concepts such as logarithmic arithmetic and the calculations of elementary functions are also covered.

Key Features:
- It reprints the classic papers
- It covers the basic arithmetic operations
- It does this in the words of the creators

Readership: Graduate students and research professionals interested in computer arithmetic.

396pp May 2015
978-981-4651-36-1 US$128 £84
978-981-4651-37-8(ebook) US$166 £109

Computer Arithmetic
Volume II
edited by Earl E Swartzlander (University of Texas at Austin, USA)

This second volume presents topics on error tolerant arithmetic, digit on-line arithmetic, number systems, and now in this new edition, a topic on implementations of arithmetic operations, all wrapped with an updated overview and a new introduction for each chapter.

Readership: Graduate students and research professionals interested in computer arithmetic.

484pp May 2015
978-981-4641-46-3 US$138 £91
978-981-4641-47-0(ebook) US$179 £118

Computer Arithmetic
Volume III
edited by Earl E Swartzlander (University of Texas at Austin, USA), Carl E Lemonds (Qualcomm, Austin, USA)

Volume III is specifically oriented to the needs of designers and users of both general-purpose computers and special-purpose digital processors. The book should also be useful to systems engineers, computer architects, and logic designers. It is also intended to serve as a primary text for a course on floating-point arithmetic, as well as a supplementary text for courses in digital arithmetic and high-speed signal processing.

Readership: Graduate students and research professionals interested in computer arithmetic.

472pp Apr 2015
978-981-4651-13-4 US$138 £91
978-981-4651-14-1(ebook) US$179 £118

Modern Digital Technology
From Ideas to Devices
by Allen Klinger (UCLA)

Modern Digital Technology develops the everyday connections of fundamental ideas instead of putting technical terms forward as steps that must be accomplished. It introduces tools like drawing, numbering, partitioning, and limits, and explores how solids and gaming are connected through randomness. Its medical imaging applications illustrate how more than one answer can be valid and how training literature describes physical events. The text provides an overview of events that led from mechanical desk calculators to digital devices like smart phones, tablets and gaming consoles. This material is supplemented by appendices that open the reader to means for binary numbers to be implemented in electronic circuits.

Sample questions and quizzes are included in this book. They offer a model for assessing the accomplishments of students at secondary/high school levels, and go along with visuals that enable responding with answers that reward the full disclosure of partial knowledge. Groups of questions can be compiled into a short quiz, while larger accumulations of questions can be a way to compare different levels of achievement by individuals.

Readership: General; High-School level and above. People interested in understanding modern digital technology and how they came to be.

330pp Jan 2016
978-981-4644-04-4 US$88 £58
978-981-4644-05-1(pbk) US$38 £25
978-981-4644-06-8(ebook) US$114 £75

Advances in Computer Science and Engineering: Texts — Vol. 9
The Human Face of Computing
edited by Cristian S Calude (University of Auckland, New Zealand)

Written as a series of conversations with influential computer scientists, mathematicians and physicists, this book provides access to the inner thinking of those who have made essential contributions to the development of computing and its applications. You will learn about the interviewees’ education, career path, influences, methods of work, how they cope with failure and success, how they relax, how they see the future, and much more.

Readership: Readers interested in the lives and motivations of eminent computer scientists.

380pp Oct 2015
978-1-78326-644-9(ebook) US$166 £109
978-1-78326-643-2 US$128 £84

Series in Electrical and Computer Engineering — Vol. 4
A Mathematical Introduction to Control Theory
2nd Edition
by Shlomo Engelberg (Jerusalem College of Technology, Israel)

Striking a nice balance between mathematical rigor and engineering-oriented applications, this second edition covers the bedrock parts of classical control theory — the Routh-Hurwitz theorem and applications, Nyquist diagrams, Bode plots, root locus plots, and the design of controllers (phase-lag, phase-lead, lag-lead, and PID). It also covers three more advanced topics — non-linear control, modern control, and discrete-time control.

Readership: Researchers, academics, professionals, undergraduate and graduate students in electrical & electronic engineering, computer engineering, mechanical engineering & chemical engineering.

450pp Jun 2015
978-1-78326-779-8 US$98 £65
978-1-78326-778-1(pbk) US$35 £25
978-1-78326-780-4(ebook) US$176 £116
International Journal of Humanoid Robotics (IJHR)
http://www.worldscientific.com/ijhr

Editors-in-Chief
Ming Xie (Nanyang Technological University, Singapore), Juyang (John) Weng (Michigan State University, USA) & Jean-Guy Fontaine (Robotic Centre of Ile de France, France)

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 | Current Contents®/Engineering, Computing & Technology | DBLP Computer Science Bibliography | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | io-port.net | ISI Alerting Services | OCLC WorldCat | Proquest Summon | SciSearch® | Scopus

International Journal of Software Engineering and Knowledge Engineering (IJSEKE)
http://www.worldscientific.com/ijseke

Editor-in-Chief
Professor S.K. Chang (University of Pittsburgh)

About IJSEKE: Aims & Scope
The journal publishes papers in the areas of software engineering methods and practices, object-oriented systems, rapid prototyping, software reuse, classroom 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-base maintenance, reverse engineering in software design, and applications in various domains of interest.

Abstracting/Indexing: Compendex | CompuMath Citation Index® | Computer Abstracts | DBLP Computer Science Bibliography | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | io-port.net | ISI Alerting Services | OCLC WorldCat® | Proquest Summon | Science Citation Index Expanded | SciSearch® | Scopus

International Journal of Modeling, Simulation, and Scientific Computing (IJMSSC)
http://www.worldscientific.com/ijmssc/

About IJMSSC: Aims & Scope
This is a quarterly journal which deals with the fields of system modeling, simulation and scientific computing. The scope of the journal covers, but is not limited to

- Modeling theory and methodology for complex systems, system simulation theory and methodology
- Complex applications of high level simulation languages, Multi-parameter Optimization in simulation
- Verification, validation and accreditation of theory and technology
- Finite element methods, finite difference methods, Approximation theory
- Distributed/High-Performance/Pervasive/Grid/Cloud Computing, Bioinformatics/Data-Mining, High Performance simulation technology
- Computational electromagnetics, electrodynamics, fluid dynamics, computational heat, mass, and momentum transfer
- M&S technology of continuous systems/discrete systems/hybrid systems/Intelligent systems, complex systems/open systems/huge systems
- SBA/virtual prototyping engineering technology
- Simulation language methodology, supporting platforms, application techniques

Abstracting/Indexing: Compendex | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | OCLC WorldCat® | Proquest Summon | Scopus

Unmanned Systems (US)
http://www.worldscientific.com/worldscinet/us

Editors-in-Chief
Ben M. Chen (National University of Singapore, Singapore), Lihua Xie (Nanyang Technological University, Singapore), Siva S. Banda (Air Force Research Laboratory, USA)

Unmanned Systems (US) aims to cover all subjects related to the development of automatic machine systems, which include advanced technologies in unmanned hardware platforms (aerial, ground, underwater and unconventional platforms), unmanned software systems, energy systems, modeling and control, communications systems, computer vision systems, sensing and information processing, navigation and path planning, computing, information fusion, multi-agent systems, mission management, machine intelligence, artificial intelligence, and innovative application case studies.
International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems (IJUFKS)

http://www.worldscientific.com/ijufks

Editor-in-Chief
Bernadette Bouchon-Meunier (UPMC-CNRS-LIP6)

About IJUFKS: Aims & Scope

The International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems is a forum for research on various methodologies for the management of imprecise, vague, uncertain or incomplete information. The aim of the journal is to promote theoretical, methodological or practical works dealing with all kinds of methods to represent and manipulate imperfectly described pieces of knowledge. It is published bimonthly, with worldwide distribution to researchers, engineers, decision-makers, and educators.

Abstracting/Indexing: ACM Guide to Computing Literature | Compendex | CompuMath Citation Index® | Current Contents®/Engineering, Computing & Technology | DBLP Computer Science Bibliography | INSPEC | ISI Alerting Services | Mathematical Reviews | Science Citation Index Expanded (also known as ScSearch®) | Scopus | Zentralblatt MATH

New Mathematics and Natural Computation (NMNC)

http://www.worldscientific.com/worldscinet/nmnc

Editor-in-Chief
Phillip C-Y Sheu (University of California, Irvine, USA)

About NMNC: Aims & Scope

Recognizing the world is full of vagueness and uncertainty, this journal has chosen three very focused areas of research:


The close cooperation of the above three areas is of paramount importance. This journal strongly encourages the suggestions of any topic within these three general areas of research. The journal has demonstrated there is room for artificial intelligence & modern control theory in contributing solutions to some selected economic problems. We shall continue to explore other possibilities. A new initiative on cognitive science and economics is a good example.

Over the years, this journal has published some papers on pattern recognition, image processing, and natural languages vis-a-vis artificial intelligence. We welcome any proposal on worthy new initiatives.

Abstracting/Indexing: CNKI | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | Mathematical Reviews | OCLC WorldCat® | Proquest Summon | Scopus | Zentralblatt MATH

International Journal of Semantic Computing (IJSC)

http://www.worldscientific.com/worldscinet/ijsc

Editor-in-Chief
Phillip C-Y Sheu (University of California, Irvine, USA)

About IJSC: Aims & Scope

The 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: DBLP Computer Science Bibliography | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | io-port.net | OCLC WorldCat® | Proquest Summon

International Journal of Computational Intelligence and Applications (IJCIA)

http://www.worldscientific.com/ijcia

Editor-in-Chief
Brijesh Verma (Central Queensland University, Australia)

About IJCIA: Aims & Scope

The International Journal of Computational Intelligence and Applications, IJCIA, is a refereed journal dedicated to the theory and applications of computational intelligence (artificial neural networks, fuzzy systems, evolutionary computation and hybrid systems). The main goal of this journal is to provide the scientific community and industry with a vehicle whereby ideas using two or more conventional and computational intelligence based techniques could be discussed.

The IJCIA welcomes original works in areas such as neural networks, fuzzy logic, evolutionary computation, pattern recognition, hybrid intelligent systems, symbolic machine learning, statistical models, image/audio/video compression and retrieval. The IJCIA greatly encourages new ideas, combining two or more areas, such as neuro-fuzzy, neuro-symbolic, neuro-evolutionary, neuro-symbolic, neuro-pattern recognition, fuzzy-evolutionary, evolutionary-symbolic, fuzzy-evolutionary, evolutionary-symbolic, fuzzy-symbolic, etc. to be submitted.

Abstracting/Indexing: Compendex | CompuMath Citation Index® | DBLP Computer Science Bibliography | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | OCLC WorldCat® | Proquest Summon | Scopus
**International Journal of Computational Geometry and Applications (IJCGA)**
http://www.worldscientific.com/ijcga

**Editors-in-Chief**
D T Lee (Academia Sinica, Taiwan), J S B Mitchell (State University of New York at Stony Brook, USA)

**About IJCGA: Aims & Scope**
The International Journal of Computational Geometry & Applications (IJCGA) is a bimonthly journal devoted to the field of computational geometry within the framework of design and analysis of algorithms.

Emphasis is placed on the computational aspects of geometric problems that arise in various fields of science and engineering including computer-aided geometry design (CAGD), computer graphics, constructive solid geometry (CSG), operations research, pattern recognition, robotics, solid modelling, VLSI routing/layout, and others. Research contributions ranging from theoretical results in algorithm design — sequential or parallel, probabilistic or randomized algorithms — to applications in the above-mentioned areas are welcome. Research findings or experiences in the implementations of geometric algorithms, such as numerical stability, and papers with a geometric flavour related to algorithms or the application areas of computational geometry are also welcome.

**Abstracting/Indexing:** Computer Abstracts | Engineering, Computing & Technology | DBLP Computer Science Bibliography | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | ISI Alerting Services | Mathematical Reviews | OCLC WorldCat® | Proquest Summon | Scopus | Zentralblatt MATH

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**Journal of Interconnection Networks (JOIN)**
http://www.worldscientific.com/join/

**Editor-in-Chief**
Francis C. M. Lau (The University of Hong Kong)

Emeritus Editor-in-Chief
Howard C. T. Ho (IBM Almaden Research Center)

**About JOIN: Aims & Scope**
The Journal of Interconnection Networks (JOIN) is an international scientific journal dedicated to advancing the state-of-the-art of interconnection networks. The journal addresses all aspects of interconnection networks including their theory, analysis, design, implementation and application, and corresponding issues of communication, computing and function arising from (or applied to) a variety of multifaceted networks. Interconnection problems occur at different levels in the hardware and software design of communicating entities in integrated circuits, multiprocessors, multicomputers, and communication networks as diverse as telephone systems, cable network systems, computer networks, mobile communication networks, satellite network systems, the Internet and biological systems.

**Abstracting/Indexing:** CNKI | Compendex | DBLP Bibliography Server | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | io-port.net | Proquest Summon | Scopus

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**Parallel Processing Letters (PPL)**
http://www.worldscientific.com/worldscinet/ppl

**Editor-in-Chief**
Selim G Ali (Queen’s University, Canada)

**Aims & Scope**
This journal has a wide scope and topics covered include:
- design and analysis of parallel and distributed algorithms
- theory of parallel computation
- parallel programming languages
- parallel programming environments
- parallel architectures and VLSI circuits
- unconventional computational problems (e.g., time-varying variables, interacting variables, time-varying complexity)
- unconventional computational paradigms (e.g., biomolecular computing, chemical computing, quantum computing)
- computing in nature (e.g., photosynthesis, plant respiration, bacterial communication)
- nature-inspired algorithms (e.g., genetic algorithms, neural networks, swarm intelligence)

**Abstracted/Indexing:** CNKI | Compendex | DBLP Computer Science Bibliography | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | | io-port.net | Mathematical Reviews | OCLC WorldCat® | Proquest Summon | Scopus | Zentralblatt MATH

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**International Journal of Foundations of Computer Science (IJFCS)**
http://www.worldscientific.com/ijfcs

**Editor-in-Chief**
O H Ibarra (University of California, Santa Barbara, USA)

**About IJFCS: Aims & Scope**
The theoretical and mathematical aspects covered include:
- Algebraic theory of computing and formal systems, Algorithm and system implementation, issues, Approximation, probabilistic, and randomized algorithms, Automata and formal languages, Automated deduction, Combinatorics and graph theory, Complexity theory, Computational biology and bioinformatics, Cryptography, Database theory, Data structures, Design and analysis of algorithms, DNA computing, Foundations of computer science, Foundations of high-performance computing, Logic in computer science, Foundations of high-performance computing, Logic in computer science, Model checking and computer-aided verification, Models of computation, Quantum computing, Semantics, concurrency, and type theory, Theories and models of internet computing, Theory of learning and inductive inference, Theory of parallel and distributed computing, Wireless networks and mobile computing.

**Abstracting/Indexing:** CompuMath Citation Index® | Computer Abstracts | Current Contents® /Engineering, Computing & Technology | DBLP Computer Science Bibliography | Ebsco Discovery Service | ExLibris Primo Central | Google Scholar | INSPEC | ISI Alerting Services | | Mathematical Reviews | MathSciNet | OCLC WorldCat® | Proquest Summon | SciSearch® | Scopus
**General**

**Series on Quality, Reliability and Engineering Statistics**

**Design for Six Sigma for Engineers**
by Matthew Hu (Wayne State University, USA),
Kai Yang (Wayne State University, USA), Michael Sheh (Enginuous Software Inc., USA) & Malik Kayupov (Enginuous Software Inc., USA)

Design for Six Sigma (DFSS) is a systematic approach for manufacturing companies to address product and process issues at the early development stage. Through inventive thought processes, early error elimination, and robust design, DFSS has dramatically impacted product quality and performance and increased profit. In this comprehensive volume, the four-phase IDOV — Identify-Design-Optimize-Verify — DFSS methodology is discussed in detail. The various practices from inventive design methodologies, deterministic and stochastic numerical methods, and the use of CAE simulation techniques, are mapped to the DFSS procedure. Many case studies are used to illustrate how tools are used in DFSS processes.

**Readership:** Graduate students, engineers and industrialists interested in the Design for Six Sigma methodology.

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<th>500pp</th>
<th>Jan 2016</th>
<th>US$115</th>
<th>£76</th>
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<td>978-981-256-063-6</td>
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**Advanced Series in Electrical and Computer Engineering**

**Active Network Analysis**

**Feedback Amplifier Theory**

2nd Edition

by Wai-Kai Chen (University of Illinois, Chicago, USA)

This 2nd edition provides an in-depth, up-to-date, unified, and comprehensive treatment of the fundamentals of the theory of active networks and its applications to feedback amplifier design. A special feature of the book is that it bridges the gap between theory and practice, with abundant examples showing how theory solves problems. These examples are actual practical problems, not idealized illustrations of the theory. The topic on topological analysis of active networks is also expanded to benefit more discerning readers.

**Readership:** Researchers, academics, graduate and undergraduate students in electrical & electronic engineering and computer engineering.

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<th>400pp</th>
<th>Nov 2015</th>
<th>US$86</th>
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**World Scientific Series on 50 Years of Nation-Building**

**50 Years of Engineering in Singapore**

edited by Tao Soon Cham (Emeritus President, NTU, Singapore)

A joint publication by The Institution of Engineers, Singapore, and World Scientific Publishing, to celebrate Singapore's 50th birthday, 50 Years of Engineering in Singapore brings to life the extraordinary engineering feats across multiple disciplines and tells the stories of these exceptional engineers who, with their determinations and courage, turned the little red dot into a jewel of a city. A vibrant record of engineering excellence, the publication traces the goliath challenges impeding the nation's growth over the past five decades, and the engineering innovations that brought about wealth creation, higher standards of living, and enhanced liveability.

This compendium covers air and sea hub; manufacturing in the areas of electronics, precision engineering, chemical and pharmaceutical/bio-medical engineering; housing/cities/infrastructure and land use (reclamation and underground); transportation (ERP system, MRT and LRT, roads and buses system); water management and engineering; energy (supply and maintenance); and telecommunications, ICT and software.

**Readership:** Researchers, professionals, academics, and laymen interested in all aspects of engineering.

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<th>400pp</th>
<th>Nov 2015</th>
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<td>978-981-4632-30-0(ebook)</td>
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**Series on Emerging Technologies in Circuits and Systems**

**Advances in 3D Integrated Circuits and Systems**

by Hao Yu (NTU, Singapore),
Chuan Seng Tan (NTU, Singapore)

Contents presented in this book include fabrication techniques for 3DTSV and 2.5D TSI; device modeling; physical designs; thermal, power and I/O management; and 3D designs of sensors, I/Os, multi-core processors, and memory.

**Readership:** Advanced undergraduates, graduate students, researchers and professionals dealing with 3D Integrated Circuits and Systems.

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<th>370pp</th>
<th>Oct 2015</th>
<th>US$110</th>
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<td>978-981-4699-00-6</td>
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Foundations and Trends® in Programming Languages
A Framework For Efficient Modular Heap Analysis
by Ravichandran Madhavan (EPFL, Lausanne, Switzerland), G Ramalingam (Microsoft Research, India) & Kapil Vaswani (Microsoft Research, India)

Framework. It formalizes the framework and the instances, and presents a correctness (soundness and termination) proof of the framework using the theory of abstract interpretation.

Readership: Students, researchers and professors of computer science.

128pp 978-1-68083-002-6(pbk) US$85 £56 €72

Foundations and Trends® in Information Retrieval
Search Result Diversification
by Rodrigo L T Santos (Universidade Federal de Minas Gerais, Brazil), Craig Macdonald (University of Glasgow, United Kingdom) & Iadh Ounis (University of Glasgow, United Kingdom)

Contents: Notations; Introduction; Search Result Diversification; Implicit Diversification; Explicit Diversification; Diversity Evaluation; Advanced Topics and Applications; Summary and Open Directions; References.

Readership: Postgraduates, researchers in computer science, information retrieval and machine learning.

108pp 978-1-68083-000-2(pbk) US$75 £49 €68

Foundations and Trends® in Computer Graphics and Vision
Domain Adaptation for Visual Recognition
by Raghuraman Gopalan (AT&T Labs-Research, USA), Ruonan Li (Harvard University, USA), Vishal M Patel (University of Maryland, College Park, USA) & Rama Chellappa (University of Maryland, College Park, USA)

Contents: Introduction; Unsupervised Adaptation; Semi-supervised Adaptation; Adaptation with Multiple, Heterogeneous Domains; Recent Advances and Open Problems; Conclusion; References.

Readership: Students, researchers and professors of computer science in vision and graphics.

108pp 978-1-68083-030-9(pbk) US$75 £49 €68

Foundations and Trends® in Information Retrieval
Computational Advertising Techniques for Targeting Relevant Ads
by Kushal Dave (International Institute of Information Technology, Hyderabad, India) & Vasudeva Varma (International Institute of Information Technology, Hyderabad, India)

Surveys and discusses the problems and solutions pertaining to the information retrieval, machine learning and statistics domain of Computational Advertising.

Readership: Postgraduates, researchers in computer science, information retrieval, machine learning.

174pp 978-1-60198-832-4(pbk) US$99 £62 €78

Foundations and Trends® in Human-Computer Interaction
Information Technology for Active Ageing
A Review of Theory and Practice
by Cristian Parra (University of Trento, Italy), Patricia Silveira (University of Trento, Italy), Iman Khaghani Far (University of Trento, Italy), Florian Daniel (University of Trento, Italy), Eling D de Bruin (ETH Zürich, Switzerland), Luca Cernuzzi (Universidad Católica “Nuestra Señora de la Asunción”, Paraguay), Vincenzo D’Andrea (University of Trento, Italy) & Fabio Casati (University of Trento, Italy)

Sheds light on the role information technology (IT) might play in helping older adults to age actively. The goal is to understand how IT can better support an Active Ageing, which is defined here as a physically, mentally and socially active lifestyle as a person ages.

Readership: Researchers and graduate students in Human-Computer Interaction.

114pp 978-1-60198-922-2(pbk) US$80 £51 €64

Foundations and Trends® in Computer Graphics and Vision
Sparse Modeling for Image and Vision Processing
by Julien Mairal (Inria, Paris, France), Francis Bach (Inria, Paris, France) & Jean Ponce (Ecole Normale Supérieure, Paris, France)

Contents: A Short Introduction to Parsimony; Discovering the Structure of Natural Images; Sparse Models for Image Processing; Sparse Coding for Visual Recognition; Optimization Algorithms; Conclusions; Conclusions; References.

Readership: Graduate students and researchers in computer scientists.

216pp 978-1-68083-008-8(pbk) US$99 £63 €80

Foundations and Trends® in Machine Learning
Explicit-Duration Markov Switching Models
by Silvia Chiappa (University of Cambridge, UK and Microsoft Research Cambridge, UK)

Provides a simple and clear description of explicit duration modeling. The presentation is pedagogical, focusing on making distinctions that help structure the space of models and in laying out inference and learning in a clear way.

Readership: Graduate students, researchers, and professors of machine learning.

98pp 978-1-60198-830-0(pbk) US$70 £45 €56
Foundations and Trends® in Programming Languages

Formal Models and Techniques for Analyzing Security Protocols

A Tutorial

by Véronique Cortier (LORIA, CNRS, France), Steve Kremer (INRIA, Nancy, France)

Provides the reader with a tutorial on some modern techniques to model and automatically analyze security protocols.

Readership: Students, researchers and professors of computer science.

134pp
978-1-60198-902-4(pbk) US$90 £56 €71

Dec 2014

Foundations and Trends® in Theoretical Computer Science

Sketching as a Tool for Numerical Linear Algebra

by David P Woodruff (IBM Research Almaden, USA)

Contents: Introduction; Subspace Embeddings and Least Squares Regression; Least Absolute Deviation Regression; Low Rank Approximation; Graph Sparsification; Sketching Lower Bounds for Linear Algebra; Open Problems; Acknowledgements; References.

Readership: Students, researchers and professors of theoretical computer science.

160pp
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