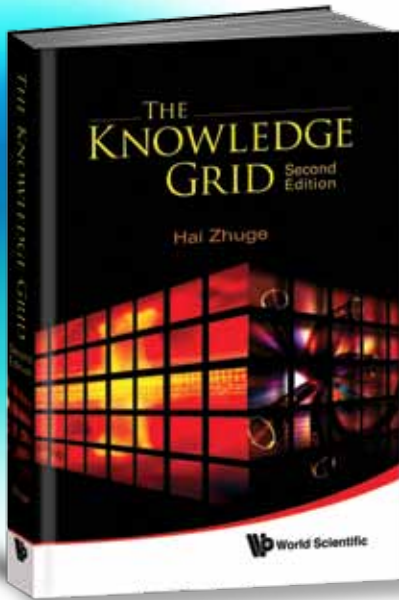


# New and Forthcoming Neural Networks 2012



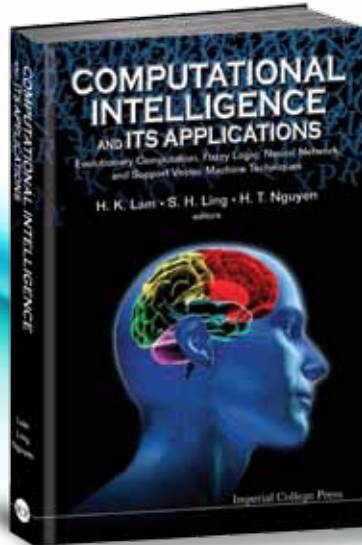
## THE KNOWLEDGE GRID (2nd Edition)

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**



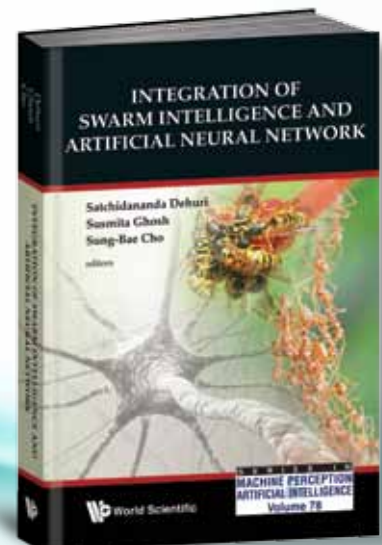
## COMPUTATIONAL INTELLIGENCE AND ITS APPLICATIONS: Evolutionary Computation, Fuzzy Logic, Neural Network and Support Vector Machine Techniques

edited by **H K Lam** (*King's College London, UK*), **Steve S H Ling** & **Hung T Nguyen** (*University of Technologies Sydney, Australia*)

This book focuses on computational intelligence techniques and their applications — fast-growing and promising research topics that have drawn a great deal of attention from researchers over the years. It brings together many different aspects of the current research on intelligence technologies such as neural networks, support vector machines, fuzzy logic and evolutionary computation, and covers a wide range of applications from pattern recognition and system modeling, to intelligent control problems and biomedical applications.

**Readership:** Graduates and researchers in computer science, especially those specialising in artificial intelligence, neural networks, fuzzy logic and pattern recognition.

**300pp** **Sep 2011**  
**978-1-84816-691-2** **US\$95 £59**  
**978-1-84816-692-9(ebook)** **US\$124**



Series in Machine Perception and Artificial Intelligence

## INTEGRATION OF SWARM INTELLIGENCE AND ARTIFICIAL NEURAL NETWORK

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

This book provides a new forum for the dissemination of knowledge in both theoretical and applied research on swarm intelligence (SI) and artificial neural network (ANN). It accelerates interaction between the two bodies of knowledge and fosters a unified development in the next generation of computational model for machine learning. To the best of our knowledge, the integration of SI and ANN is the first attempt to integrate various aspects of both the independent research area into a single volume.

**Readership:** Researchers, academics and graduate students in neural networks, machine vision, artificial intelligence, electrical & electronic engineering and industrial engineering.

**352pp** **May 2011**  
**978-981-4280-14-3** **US\$99 £65**  
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### HIGHLIGHTS

**BUILDING SECURE AND HIGH-PERFORMANCE SOFTWARE SYSTEMS**

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

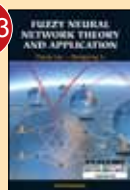
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Series in Machine Perception and Artificial Intelligence - Vol. 59

**FUZZY NEURAL NETWORK THEORY AND APPLICATION**

by **Puyin Liu** (*National University of Defense Technology, Changsha, China*) & **Hongxing Li** (*Beijing Normal University, Beijing, China*)

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Advances in Computer Science and Engineering: Texts - Vol. 4

**ANALYSIS AND SYNTHESIS OF COMPUTER SYSTEMS (2nd Edition)**

by **Erol Gelenbe** (*Imperial College, UK*) & **Isi Mitrani** (*University of Newcastle upon Tyne, UK*)

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## BUILDING SECURE AND HIGH-PERFORMANCE SOFTWARE SYSTEMS

by **Issa Traore & 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**

## THE HANDBOOK ON REASONING-BASED INTELLIGENT SYSTEMS

edited by **Kazumi Nakamatsu** (University of Hyogo, Japan) & **Lakhmi C Jain** (University of South Australia, Australia)

This book consists of various contributions in conjunction with the keywords "reasoning" and "intelligent systems", which widely covers theoretical to practical aspects of intelligent systems. Therefore, it is suitable for researchers or graduate students who want to study intelligent systems generally.

**Readership:** Graduate students, software engineers and researchers in theoretical computer science, artificial intelligence and neural networks.

**700pp** **Jan 2012**  
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IISc Lecture Notes Series

## INTRODUCTION TO PATTERN RECOGNITION AND MACHINE LEARNING

by **M Narasimha Murty & Der V Susheela Devi**  
(Indian Institute of Science, India)

This book adopts a detailed and methodological algorithmic approach to explain the concepts of pattern recognition. While the text provides a systematic account of its major topics such as pattern representation and nearest neighbour based classifiers, current topics — neural networks, support vector machines and decision trees — attributed to the recent vast progress in this field are also dealt with. *Pattern Recognition: An Algorithmic Approach* will equip readers, especially senior computer science undergraduates, with a deeper understanding of the subject matter.

**Readership:** Academics and working professionals in computer science.

**300pp** **Jul 2012**  
**978-981-4335-45-4** **US\$108 £67**  
**978-981-4335-46-1(ebook)** **US\$140**



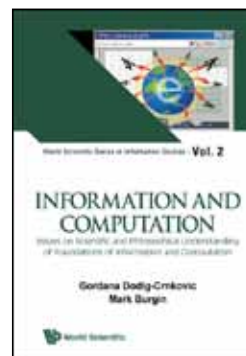
## World Scientific Series in Information Studies - Vol. 2 INFORMATION AND COMPUTATION: Essays on Scientific and Philosophical Understanding of Foundations of Information and Computation

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**



## GMDH-METHODOLOGY AND IMPLEMENTATION IN C (With CD-ROM)

edited by **Godfrey Onwubolu** (Humber College Institute of Technology & Applied Learning, Canada)



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.

**300pp** **Mar 2012**  
**978-1-84816-610-3** **US\$96 £66**  
**978-1-84816-611-0(ebook)** **US\$125**

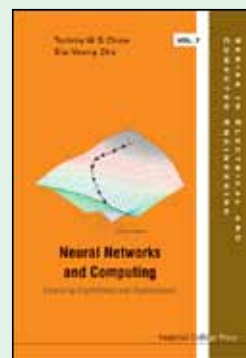
## Series in Electrical and Computer Engineering - Vol. 7 NEURAL NETWORKS AND COMPUTING: Learning Algorithms and Applications

by **Tommy W S Chow** (City University of Hong Kong, Hong Kong) & **Siu-Yeung Cho** (Nanyang Technological University, Singapore)

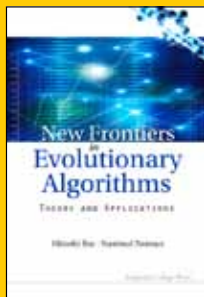
This book covers neural networks with special emphasis on advanced learning methodologies and applications. It includes practical issues of weight initializations, stalling of learning, and escape from a local minima, which have not been covered by many existing books in this area. Additionally, the book highlights the important feature selection problem, which baffles many neural networks practitioners because of the difficulties handling large datasets. It also contains several interesting IT, engineering and bioinformatics applications.

**Readership:** Postgraduates and researchers in neural networks, pattern recognition and electrical and electronic engineering.

**324pp** **Aug 2007**  
**978-1-86094-758-2** **US\$170 £112**  
**978-1-86094-969-2(ebook)** **US\$221**



**Bestseller**



**NEW FRONTIERS IN EVOLUTIONARY ALGORITHMS: Theory and Applications**

by **Hitoshi Iba** (*University of Tokyo, Japan*) & **Nasimul Noman** (*University of Tokyo, Japan*)

The emphasis of this book is on applicability to the real world. Tasks from application areas – optimization of the trading rule in foreign exchange (FX) and stock prices, economic load dispatch in power system, exit/door placement for evacuation planning, and gene regulatory network inference in bioinformatics – are studied, and the resultant empirical investigations demonstrate how successful the proposed approaches are when solving real-world tasks of great importance.

**Readership:** Undergraduates, postgraduates and researchers specialising in computer science, especially Genetic Algorithms (GA).

**316pp** **Jul 2011**  
**978-1-84816-681-3** **US\$76** **£47**  
**978-1-84816-682-0(ebook)** **US\$99**

**ADVANCED TOPICS IN BIOMETRICS**

edited by **Haizhou Li, 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.

**Readership:** Information scientists and engineers specializing in this field.

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

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**

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**  
**978-1-84816-387-4(ebook)** **US\$116**

Series in Machine Perception and Artificial Intelligence - Vol. 59

**FUZZY NEURAL NETWORK THEORY AND APPLICATION**

by **Puyin Liu** (*National University of Defense Technology, Changsha, China*) & **Hongxing Li** (*Beijing Normal University, Beijing, China*)

This book systematically synthesizes research achievements in the field of fuzzy neural networks in recent years. Special emphasis is placed on the fundamental concepts and architecture analysis of fuzzy neural networks. The book is unique in treating all kinds of fuzzy neural networks and their learning algorithms and universal approximations, and employing simulation examples which are carefully designed to help the reader grasp the underlying theory.

**Readership:** Scientists, engineers and graduate students in applied mathematics, computer science, automatic control and information processing.

**396pp** **Jun 2004**  
**978-981-238-786-8** **US\$165** **£109**  
**978-981-279-421-5(ebook)** **US\$215**



**ENCYCLOPEDIA ON AD HOC AND UBIQUITOUS COMPUTING: Theory and Design of Wireless Ad Hoc, Sensor, and Mesh Networks**

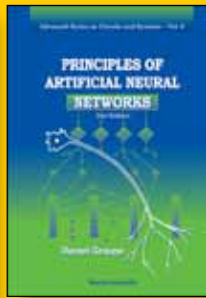
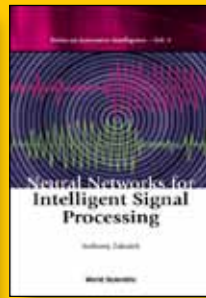
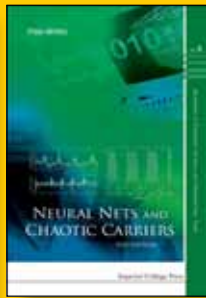
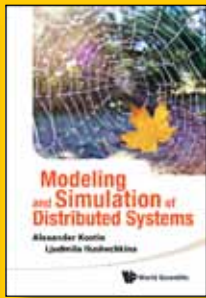
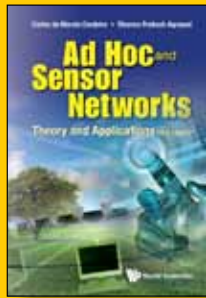
edited by **Dharma P Agrawal & Bin Xie** (*University of Cincinnati, USA*)

This book aims to provide a complete understanding of these networks by investigating the evolution of ad hoc, sensor, and mesh networking technologies from theoretic concept to implementation protocols, from fundamentals to real applications. It provides the necessary background material needed to go deeper into the subject and explore the research literature.

**Readership:** Advanced undergraduates and graduate students in computer engineering; instructors; researchers; engineers and other professionals.

**688pp** **Sep 2009**  
**978-981-283-348-8** **US\$215** **£142**  
**978-981-283-349-5(ebook)** **US\$280**





**AD HOC AND SENSOR NETWORKS: Theory and Applications (2nd Edition)**

by **Carlos de Morais Cordeiro** (Intel Corporation, USA) & **Dharma Prakash Agrawal** (University of Cincinnati, USA)

This book provides a comprehensive yet easy coverage of ad hoc and sensor networks and fills the gap of existing literature in this growing field. It emphasizes that there is a major interdependence among various layers of the network protocol stack.

**Readership:** Researchers, developers and institutions keen in the applications of wireless devices, and graduate and senior undergraduate students in networking, computer engineering and electrical engineering.

<b>664pp</b>	<b>Feb 2011</b>	
<b>978-981-4338-88-2</b>	<b>US\$98</b>	<b>£61</b>
<b>978-981-4338-89-9(pbk)</b>	<b>US\$51</b>	<b>£32</b>
<b>978-981-4338-90-5(ebook)</b>	<b>US\$127</b>	

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

*"This book provides the necessary tools for modeling and simulation of distributed systems with Petri Nets, it is well written and has good organization. The book is suitable as a graduate-level textbook as well as may benefit the professionals in the field."*

**M Mehmet Ali, Concordia University, Canada**

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

<b>440pp</b>	<b>Jun 2010</b>	
<b>978-981-4291-67-5</b>	<b>US\$85</b>	<b>£56</b>
<b>978-981-4291-68-2(ebook)</b>	<b>US\$111</b>	

Advances in Computer Science and Engineering: Texts - Vol. 5  
**NEURAL NETS AND CHAOTIC CARRIERS (2nd Edition)**

by **Peter Whittle** (University of Cambridge, UK)

This book develops rational principles for the design of associative memories, with a view to applying these principles to models with irregularly oscillatory operation so evident in biological neural systems, and necessitated by the meaninglessness of absolute signal levels.

**Readership:** Professionals and graduates in areas associated with artificial neural networks.

<b>244pp</b>	<b>Jul 2010</b>	
<b>978-1-84816-590-8</b>	<b>US\$85</b>	<b>£58</b>
<b>978-1-84816-591-5(ebook)</b>	<b>US\$111</b>	

**HANDBOOK ON SENSOR NETWORKS**

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

The *Handbook on Sensor Networks* is a collection of approximately 40 chapters on sensor network theory and applications. The book spans a wide spectrum and includes topics in medium access control, routing, security and privacy, coverage and connectivity, modeling and simulations, multimedia, energy efficiency, localization and tracking, design and implementation, as well as sensor network applications.

**Readership:** Professionals and researchers in the area of sensor networks. It is also a comprehensive textbook for senior undergraduate students and graduate students who are interested in sensor network theory and applications.

<b>912pp</b>	<b>Aug 2010</b>	
<b>978-981-283-730-1</b>	<b>US\$220</b>	<b>£145</b>
<b>978-981-283-731-8(ebook)</b>	<b>US\$286</b>	

Series on Innovative Intelligence - Vol. 4

**NEURAL NETWORKS FOR INTELLIGENT SIGNAL PROCESSING**

by **Anthony Zaknich** (The University of Western Australia, Australia)

This book provides a thorough theoretical and practical introduction to the application of neural networks to pattern recognition and intelligent signal processing. It has been tested on students, unfamiliar with neural networks, who were able to pick up enough details to successfully complete their masters or final year undergraduate projects. The text also presents a comprehensive treatment of a class of neural networks called common bandwidth spherical basis function NNs, including the probabilistic NN, the modified probabilistic NN and the general regression NN.

**Readership:** Students and professionals in computer science and engineering.

<b>508pp</b>	<b>Jan 2003</b>	
<b>978-981-238-305-1</b>	<b>US\$128</b>	<b>£84</b>
<b>978-981-279-685-1(ebook)</b>	<b>US\$166</b>	



Advanced Series in Circuits and Systems - Vol. 6

**PRINCIPLES OF ARTIFICIAL NEURAL NETWORKS (2nd Edition)**

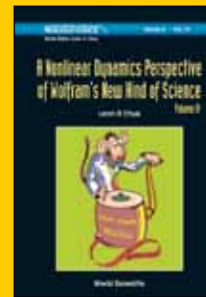
by **Daniel Graupe** (University of Illinois, Chicago, USA)

Covering major neural network approaches and architectures with the theories, this text presents detailed case studies for each of the approaches, accompanied with complete computer codes and the corresponding computed results. The case studies are designed to allow easy comparison of network performance to illustrate strengths and weaknesses of the different networks.

**Readership:** Graduate and advanced senior students in electrical and computer engineering, computer science, biomedical engineering, systems analysts and data mining engineers.

<b>320pp</b>	<b>Apr 2007</b>	
<b>978-981-270-624-9</b>	<b>US\$125</b>	<b>£83</b>
<b>978-981-277-057-8(ebook)</b>	<b>US\$163</b>	





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**CLUSTER COMPUTING FOR ROBOTICS AND COMPUTER VISION**

by **Damian M Lyons** (*Fordham University, USA*)

The objective of the book is to give professionals working in the beowulf cluster or robotics and computer vision fields a concrete view of the strong synergy between the areas as well as to spur further fruitful exploitation of this connection. The key concepts in robotics, computer vision and cluster computing are introduced before being used to make the text useful to a wide audience in these fields.

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<b>200pp</b>	<b>Jul 2011</b>	
<b>978-981-283-635-9</b>	<b>US\$61</b>	<b>£42</b>
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(*National Taiwan University of Science and Technology, Taiwan*)

This book introduces a unified function approximation approach to the control of uncertain robot manipulators containing general uncertainties. It works for free space tracking control as well as compliant motion control. It is applicable to the rigid robot and the flexible joint robot. Even with actuator dynamics, the unified approach is still feasible.

**Readership:** Researchers, practitioners, and graduate students in the field of robot control.

<b>276pp</b>	<b>Apr 2010</b>	
<b>978-981-4307-41-3</b>	<b>US\$99</b>	<b>£68</b>
<b>978-981-4307-42-0(ebook)</b>	<b>US\$129</b>	

Advances in Computer Science and Engineering: Texts - Vol. 4

**ANALYSIS AND SYNTHESIS OF COMPUTER SYSTEMS (2nd Edition)**

by **Erol Gelenbe** (*Imperial College, UK*) & **Isi Mitrani** (*University of Newcastle upon Tyne, UK*)

*Analysis and Synthesis of Computer Systems* presents a broad overview of methods that are used to evaluate the performance of computer systems and networks, manufacturing systems, and interconnected services systems. Aside from a highly readable style that rigorously addresses all subjects, this second edition includes new chapters on numerical methods for queueing models and on G-networks, the latter being a new area of queueing theory that one of the authors has pioneered.

**Readership:** Academic, students, professionals, telecommunications industry, operations management and industry.

<b>324pp</b>	<b>Apr 2010</b>	
<b>978-1-84816-395-9</b>	<b>US\$99</b>	<b>£68</b>
<b>978-1-84816-396-6(ebook)</b>	<b>US\$129</b>	

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by **Willi-Hans Steeb** (*University of Johannesburg, South Africa*)

The book not only covers the theoretical aspects of the topics but also provides the practical tools. To understand the material, more than 100 worked out examples and 150 ready to run programs are included. New topics added to the fifth edition are Langton's ant, chaotic data communication, self-controlling feedback, differential forms and optimization, T-norms and T-conorms with applications.

**Readership:** Students and researchers in mathematics, physics and computer science.

<b>644pp</b>	<b>Mar 2011</b>	
<b>978-981-4335-77-5</b>	<b>US\$128</b>	<b>£79</b>
<b>978-981-4335-78-2(pbk)</b>	<b>US\$62</b>	<b>£38</b>
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World Scientific Series on Nonlinear Science, Series A - Vol. 76

**A NONLINEAR DYNAMICS PERSPECTIVE OF WOLFRAM'S NEW KIND OF SCIENCE (Volume IV)**

by **Leon O Chua** (*University of California at Berkeley, USA*)

Volume IV continues the author's odyssey on I-D cellular automata as chronicled in Volumes I, II and III, by uncovering a novel quasi-ergodicity phenomenon involving orbits meandering among omega-limit orbits of complex (group 5) and hyper (group 6) Bernoulli rules. This discovery is embellished with analytical formulas characterizing the fractal properties of characteristic functions, as well as explicit formulas for generating colorful and pedagogically revealing isomorphic basin tree diagrams. Many new results were derived and proved by uncovering subtle symmetries endowed by various subsets of the 256 Boolean cubes.

**Readership:** Graduate students, researchers and academics interested in nonlinear dynamics, computer science and complexity theory.

<b>404pp</b>	<b>Apr 2011</b>	
<b>978-981-4317-30-6</b>	<b>US\$178</b>	<b>£123</b>
<b>978-981-4317-31-3(ebook)</b>	<b>US\$231</b>	

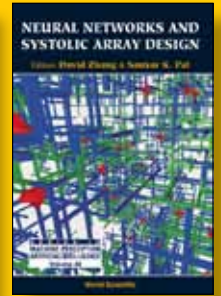
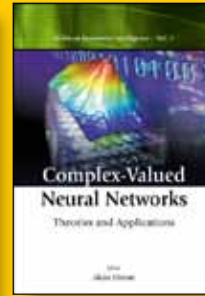
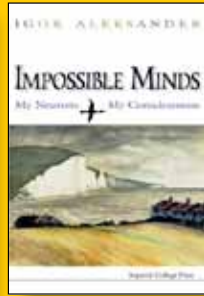
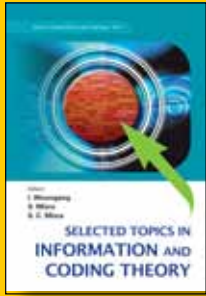
**A CALCULUS OF IDEAS: A Mathematical Study of Human Thought**

by **Ulf Grenander** (*Brown University, USA*)

This monograph reports a thought experiment with a mathematical structure intended to illustrate the workings of a mind. It presents a mathematical theory of human thought based on pattern theory with a graph-based approach to thinking. The method illustrated and produced by extensive computer simulations is related to neural networks. Based mainly on introspection, it is speculative rather than empirical such that it differs radically in attitude from the conventional wisdom of current cognitive science.

**Readership:** Graduate students in applied mathematics, statistics and cognitive science as well as postgraduates and researchers in these fields.

<b>236pp</b>	<b>Apr 2012</b>	
<b>978-981-4383-18-9</b>	<b>US\$88</b>	<b>£58</b>
<b>978-981-4383-19-6(ebook)</b>	<b>US\$114</b>	



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Series on Coding Theory and Cryptology - Vol. 7

**SELECTED TOPICS IN INFORMATION AND CODING THEORY**

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**S Misra** (Indian Institute of Technology, Kharagpur, India) &  
**S C Misra** (State University of New York at Buffalo, USA)

Supporting Powerpoint Slides are available upon request. All of the chapters are integrated in a manner that renders the book as a supplementary reference volume or textbook for use in both undergraduate and graduate courses on information and coding theory.

**Readership:** Undergraduate and graduate students, researchers and practitioners in the areas of coding and information theory.

**724pp** **Feb 2010**  
**978-981-283-716-5** **US\$201** **£133**  
**978-981-283-717-2(ebook)** **US\$261**

Progress in Neural Processing - Vol. 19

**VISION: IMAGES, SIGNALS AND NEURAL NETWORKS**

Models of Neural Processing in Visual Perception  
by **Jeanny Héroult** (University Joseph Fourier &  
Institut National Polytechnique of Grenoble, France)

This book addresses the problem of human and computer vision on the basis of cognitive modeling. After recalling the physics of light and its transformation through media and optics, Héroult presents the principles of the primate's visual system in terms of anatomy and functionality. All along the book, many comparisons between the models and human perception are discussed as well as detailed applications to computer vision.

**Readership:** Students, teachers and researchers in human vision modeling.

**308pp** **Mar 2010**  
**978-981-4273-68-8** **US\$65** **£43**  
**978-981-4273-69-5(ebook)** **US\$85**

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by **Igor Aleksander** (Imperial College, London)

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**William Clocksin, Nature**

**Readership:** General.

**368pp** **Sep 1996**  
**978-1-86094-030-9** **US\$40** **£26**  
**978-1-86094-036-1(pbk)** **US\$23** **£15**  
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**LEAST SQUARES SUPPORT VECTOR MACHINES**

by **Johan A K Suykens, Tony Van Gestel, Jos De Brabanter, Bart De Moor & Joos Vandewalle** (K U Leuven, Belgium)

This book focuses on Least Squares Support Vector Machines (LS-SVMs) which are reformulations to standard SVMs. LS-SVMs are closely related to regularization networks and Gaussian processes but additionally emphasize and exploit primal-dual interpretations from optimization theory. The authors explain the natural links between LS-SVM classifiers and kernel Fisher discriminant analysis. Bayesian inference of LS-SVM models is discussed, together with methods for imposing sparseness and employing robust statistics.

**Readership:** Graduate students and researchers in neural networks; machine learning; data-mining; signal processing; circuit, systems and control theory; pattern recognition; and statistics.

**308pp** **Nov 2002**  
**978-981-238-151-4** **US\$99** **£66**  
**978-981-277-665-5(ebook)** **US\$129**

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**COMPLEX-VALUED NEURAL NETWORKS: Theories and Applications**

edited by **Akira Hirose** (The University of Tokyo, Japan)

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**Readership:** Graduate students, academics, researchers, and industrialists in neural networks.

**388pp** **Nov 2003**  
**978-981-238-464-5** **US\$175** **£116**  
**978-981-279-118-4(ebook)** **US\$228**

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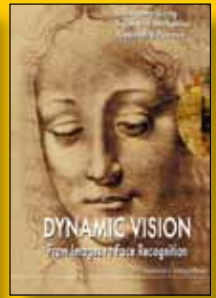
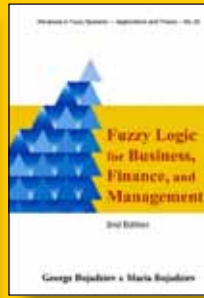
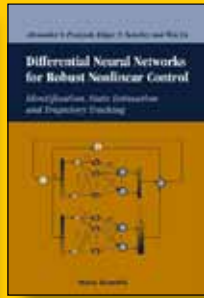
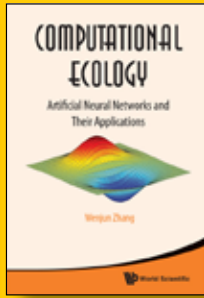
**NEURAL NETWORKS AND SYSTOLIC ARRAY DESIGN**

edited by **David Zhang** (Hong Kong Polytechnic University, Hong Kong) &  
**Sankar K Pal** (The Indian Statistical Institute, Calcutta, India)

Neural networks (NNs) and systolic arrays (SAs) have many similar features. This volume describes, in a unified way, the basic concepts, theories and characteristic features of integrating or formulating different facets of NNs and SAs, as well as presents recent developments and significant applications. The articles, written by experts from all over the world, demonstrate the various ways this integration can be made to efficiently design methodologies, algorithms and architectures, and also implementations, for NN applications.

**Readership:** Researchers in neural networks and electrical & electronic engineering.

**420pp** **Jun 2002**  
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Applications in Neural Networks

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Neuro-fuzzy systems aim at combining the advantages of the two paradigms. This book is a collection of papers describing state-of-the-art work in this emerging field. It covers topics such as feature selection, classification, classifier training, and clustering. Also included are applications of neuro-fuzzy systems in speech recognition, land mine detection, medical image analysis, and autonomous vehicle control.

**Readership:** Graduate students, lecturers and researchers in computer science and computer engineering.

276pp Dec 2000  
 978-981-02-4418-7 US\$98 £65  
 978-981-279-220-4(ebook) US\$127

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**Readership:** Research scientists, university teachers, graduate students and high-level undergraduates in the area of ecology, environmental sciences and computational science.

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 978-981-4282-62-8 US\$96 £66  
 978-981-4282-63-5(ebook) US\$125

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Explorations in Learning, Self-Organization and Adaptive Computation by **Jiming Liu** (Hong Kong Baptist University)

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**Readership:** Undergraduate and graduate students in computer science and most engineering disciplines, as well as computer scientists, engineers, researchers and practitioners in the field of machine intelligence.

300pp Aug 2001  
 978-981-02-4282-4 US\$113 £75  
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**International Journal of Adaptive Control and Signal Processing**

**Readership:** Graduate students, researchers, academics/lecturers and industrialists in neural networks.

456pp Sep 2001  
 978-981-02-4624-2 US\$198 £131  
 978-981-281-129-5(ebook) US\$257

Advances in Fuzzy Systems—Applications and Theory - Vol. 23

**FUZZY LOGIC FOR BUSINESS, FINANCE, AND MANAGEMENT (2nd Edition)**

by **George Bojadziev** (Simon Fraser University, Canada) & **Maria Bojadziev** (British Columbia Institute of Technology, Canada)

This is truly an interdisciplinary book for knowledge workers in business, finance, management and socio-economic sciences based on fuzzy logic. It serves as a guide to and techniques for forecasting, decision making and evaluations in an environment involving uncertainty, vagueness, impression and subjectivity.

**Readership:** Researchers and students in fuzzy logic, neural networks, business, finance and management.

252pp Apr 2007  
 978-981-270-649-2 US\$137 £90  
 978-981-277-062-2(ebook) US\$178

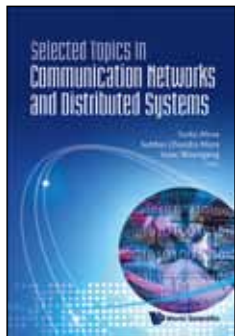
**DYNAMIC VISION: From Images to Face Recognition**

by **Shaogang Gong** (Queen Mary and Westfield College), **Stephen J McKenna** (University of Dundee) & **Alexandra Psarrou** (University of Westminster)

This book describes the latest models and algorithms that are capable of performing face recognition in a dynamic setting. The key question is how to design computer vision and machine learning algorithms that can operate robustly and quickly under poorly controlled and changing conditions. Consideration of face recognition as a problem in dynamic vision is perhaps both novel and important. The algorithms described have numerous potential applications in areas such as visual surveillance, verification, access control, video-conferencing, multimedia and visually mediated interaction.

**Readership:** Researchers in image processing, computer vision, neural networks, artificial intelligence, pattern recognition, robotics and real-time systems.

364pp May 2000  
 978-1-86094-181-8 US\$80 £53  
 978-1-86094-385-0(ebook) US\$104



## SELECTED TOPICS IN COMMUNICATION NETWORKS AND DISTRIBUTED SYSTEMS

edited by **Sudip Misra, Subhas Chandra Misra** (Indian Institute of Technology, Kanpur, India) & **Isaac Woungang** (Ryerson University, Canada)

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**Readership:** Undergraduates, graduates, instructors, researchers, engineers and strategists in the field of communication networks and distributed systems.

808pp Apr 2010 978-981-283-943-5 US\$168 £111 978-981-283-944-2(ebook) US\$174

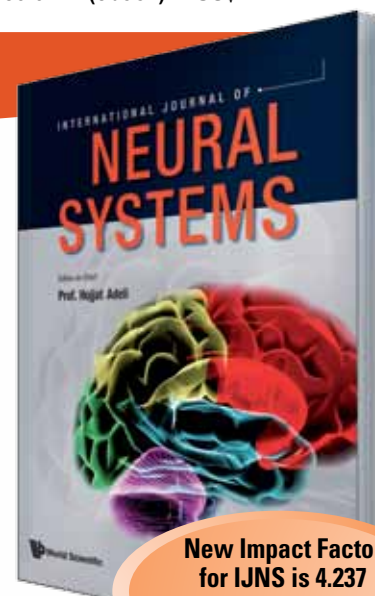
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**Hojjat Adeli** currently holds the Abba G. Lichtenstein Professorship at The Ohio State University. **He has authored over 500 scientific publications including 14 books since he received his Ph.D. from Stanford University in 1976 at the age of 26.** In 1998 he received OSU's highest research honor, the Distinguished Scholar Award "in recognition of extraordinary accomplishment in research and scholarship". In 2007 he received the Peter L. and Clara M. Scott Award for Excellence in Engineering Education as well as Charles E. MacQuigg Outstanding Teaching Award. He was elected a Distinguished Member of ASCE in 2005 and a Fellow of AAAS in 2008. He has been a Keynote Lecturer at 82 research conferences held in 6 continents and 42 countries.

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