

# Frontlist 2014 Quarter 1

Mathsciences



## Computer Science

A. Adamatzky, University of the West of England, Bristol, United Kingdom; L. Chua, University of California, Berkeley, USA (Eds.)

### Memristor Networks

Using memristors one can achieve circuit functionalities that are not possible to establish with resistors, capacitors and inductors, therefore the memristor is of great pragmatic usefulness. Potential unique applications of memristors are in spintronic devices, ultra-dense information storage, neuromorphic circuits and programmable electronics. Memristor Networks focuses on the design, fabrication, modelling of and implementation of computation in spatially extended discrete media with many memristors. Top experts in computer science, mathematics, electronics, physics and computer engineering present foundations of the memristor theory and applications, demonstrate how to design[...]

#### Features

Using memristors one can achieve circuit functionalities that are not possible to establish with resistors, capacitors and inductors, therefore the memristor is of great pragmatic usefulness. Potential unique applications of memristors are in spintronic devices, ultra-dense information storage, neuromorphic circuits, and programmable electronics. Memristor Networks focuses on the design, fabrication, [...]

#### Contents

Preface.- The Fourth Element.- Aftermath of Finding the Memristor.- Resistance Switching Memories are Memristors.- The Detectors Used in the First Radios were Memristors.- Memristor, Hodgkin-Huxley and Edge of Chaos.- Why are Memristor and Memristor Different Devices?.- Synapse as a Memristor.- Memristors and Memristive Devices for Neuromorphic Computing.- Bio-inspired Neural Networks.- Self-organization and Emergence of Dynamical Structures in Neuromorphic Atomic Switch Networks.- Spike-Timing-Dependent-Plasticity with Memristors.- Memristor Bridge-based Artificial Neural Weighting[...]

#### Fields of interest

Computer Hardware; Theory of Computation; Circuits and Systems

#### Target groups

Research

#### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-02629-9](http://www.springer.com/978-3-319-02629-9)

#### Hardcover

2014. XVI, 750 p. 445 illus., 292 illus. in color.  
ISBN 978-3-319-02629-9

**Due: January 31, 2014**

P.K. Atrey, University of Winnipeg, Winnipeg, Canada; M. Kankanhalli, A. Cavallaro (Eds.)

W.S. Bainbridge

### Intelligent Multimedia Surveillance

#### Current Trends and Research

Intelligent multimedia surveillance concerns the analysis of multiple sensing inputs including video and audio streams, radio-frequency identification (RFID), and depth data. These data are processed for the automated detection and tracking of people, vehicles, and other objects. The goal is to locate moving targets, to understand their behavior, and to detect suspicious or abnormal activities for crime prevention. Despite its benefits, there is societal apprehension regarding the use of such technology, so an important challenge in this research area is to balance public safety and privacy. This edited book presents recent findings in the field of intelligent multimedia surveillance[...]

#### Features

Intelligent multimedia surveillance concerns the analysis of multiple sensing inputs including video and audio streams, radio-frequency identification (RFID), and depth data. These data are processed for the automated detection and tracking of people, vehicles, and other objects. The goal is to locate moving targets, to understand their behavior, and to detect suspicious or abnormal activities for crime [...]

#### Contents

Chap. 1 - Intelligent Video Surveillance as a Service.- Chap. 2 - A Literature Review on Video Analysis of Crowded Scenes.- Chap. 3 - Privacy and Security in Video Surveillance.- Chap. 4 - Object Video Streams: A Framework for Preserving Privacy in Video Surveillance.- Chap. 5 - Surveillance Privacy Protection.- Chap. 6 - RFID Localization Improved by Motion Segmentation in Multimedia Surveillance Systems.- Chap. 7 - A Framework For Object Tracking Using Visual Saliency Information.- Chap. 8 - Scene Understanding Via Multiresolution Disparity Map in PTZ Camera Network.- Chap. 9 - [...]

#### Fields of interest

Artificial Intelligence (incl. Robotics); Multimedia Information Systems; Image Processing and Computer Vision; Signal, Image and Speech Processing

#### Target groups

Research

#### Type of publication

Monograph

More on [www.springer.com/978-3-642-41511-1](http://www.springer.com/978-3-642-41511-1)

#### Hardcover

2013. IX, 192 p. 76 illus., 57 illus. in color.  
ISBN 978-3-642-41511-1

**usually dispatched within 3 to 5 business days**

### Personality Capture and Emulation

Personality Capture and Emulation is the gateway to an amazing future that actually may be achieved, enabling the preservation and simulation of human personalities at progressively higher levels of fidelity. This challenge is no longer the province merely of uninhibited visionaries, but has become a solid field of research, drawing upon a wide range of information technologies in human-centered computing and cyber-human systems. Even at modest levels of accomplishment, research in this emerging area requires convergence of cognitive, social, and cultural sciences, in cooperation with information engineering and artificial intelligence, thus stimulating new multidisciplinary[...]

#### Features

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#### Contents

Background.- Massive Questionnaires.- Mobile and Ubiquitous Capture.- Recommender Systems.- Cognitive Abilities.- Autobiographical Memories.- Text Analysis.- Virtual Worlds.- Appendix: Ten Personality Capture and Analysis Programs.- Glossary.

#### Fields of interest

User Interfaces and Human Computer Interaction; Computer Appl. in Social and Behavioral Sciences; Sociology, general; Philosophy of Mind

#### Target groups

Research

#### Type of publication

Monograph

More on [www.springer.com/978-1-4471-5603-1](http://www.springer.com/978-1-4471-5603-1)

#### Hardcover

2014. VI, 213 p. 8 illus. With online files/update.  
(Human-Computer Interaction Series)  
ISBN 978-1-4471-5603-1

**usually dispatched within 3 to 5 business days**

J. Barnes, John Barnes Informatics, Reading, United Kingdom

## Ada 2012 Rationale

The Language -- The Standard Libraries

Ada 2012 is the latest version of the international standard for the programming language Ada. It is designated ISO/IEC 8652:2012 (E) and is a new edition replacing the 2005 version. The primary goals for the new version were to further enhance its capabilities particularly in those areas where its reliability and predictability are of great value. Many important new features have been included such as those defining dynamic contracts and for handling multiprocessors and are integrated within the existing language framework in an elegant and coherent manner. The Ada 2012 Rationale describes not only the changes from Ada 2005 but also the reason for the changes. It starts with an[...]

### Features

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### Contents

Introduction.- Contracts and Aspects.- Expressions.- Structure and Visibility.- Tasking and Real-Time.- Iterators, Pools, etc.- Overview of changes.- Predefined Library.- Containers.- Epilogue.

### Fields of interest

Programming Languages, Compilers, Interpreters; Operating Systems; Programming Techniques; Software Engineering

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-45209-3](http://www.springer.com/978-3-642-45209-3)

### Softcover

2013. XI, 213 p. 3 illus. (Programming and Software Engineering, Vol. 8338)  
ISBN 978-3-642-45209-3

**Due: December 12, 2013**

Y. Borenstein, VisualDNA, London, United Kingdom; A. Moraglio, University of Birmingham, Birmingham, United Kingdom (Eds.)

## Theory and Principled Methods for the Design of Metaheuristics

Metaheuristics, and evolutionary algorithms in particular, are known to provide efficient, adaptable solutions for many real-world problems, but the often informal way in which they are defined and applied has led to misconceptions, and even successful applications are sometimes the outcome of trial and error. Ideally, theoretical studies should explain when and why metaheuristics work, but the challenge is huge: mathematical analysis requires significant effort even for simple scenarios and real-life problems are usually quite complex. In this book the editors establish a bridge between theory and practice, presenting principled methods that incorporate problem knowledge in[...]

### Features

Metaheuristics, and evolutionary algorithms in particular, are known to provide efficient, adaptable solutions for many real-world problems, but the often informal way in which they are defined and applied has led to misconceptions, and even successful applications are sometimes the outcome of trial and error. Ideally, theoretical studies should explain when and why metaheuristics work, but the challenge is [...]

### Contents

No Free Lunch Theorems: Limitations and Perspectives of Metaheuristics.- Convergence Rates of Evolutionary Algorithms and Parallel Evolutionary Algorithms.- Rugged and Elementary Landscapes.- Single-Funnel and Multi-funnel Landscapes and Subthreshold Seeking Behavior.- Black-Box Complexity for Bounding the Performance of Randomized Search Heuristics.- Designing an Optimal Search Algorithm with Respect to Prior Information.- The Bayesian Search Game.- Principled Design of Continuous Stochastic Search: From Theory to Practice.- Parsimony Pressure Made Easy: Solving the Problem of Bloat in[...]

### Fields of interest

Theory of Computation; Computational Intelligence; Artificial Intelligence (incl. Robotics); Optimization; Operation Research / Decision Theory

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-33205-0](http://www.springer.com/978-3-642-33205-0)

### Hardcover

2013. XX, 270 p. 62 illus., 16 illus. in color. (Natural Computing Series)  
ISBN 978-3-642-33205-0

**Due: December 31, 2013**

K.C. Budka, J.G. Deshpande, M. Thottan

## Communication Networks for Smart Grids

Making Smart Grid Real

This book presents an application-centric approach to the development of smart grid communication architecture. The coverage includes in-depth reviews of such cutting-edge applications as advanced metering infrastructure, distribution automation, demand response and synchrophasors. Features: examines a range of exciting utility applications made possible through smart grid evolution; describes the core-edge network architecture for smart grids, introducing the concept of WANs and FANs; explains how the network design paradigm for smart grids differs from that for more established data networks, and discusses network security in smart grids; provides an overview of communication[...]

### Features

A 21st century clean energy economy demands a 21st century electricity grid, yet the communication networks of many utilities today are ill-equipped for smart grid evolution. This must-read text/reference presents an application-centric approach to the development of smart grid communication architecture and network transformation. The coverage includes in-depth reviews of such cutting-edge [...]

### Contents

Introduction to Smart Grids.- Elements of Power Systems for Networking Practitioners.- Elements of Communication Networking for Power Systems Practitioners.- Conventional Applications in Utility Operations.- Smart Grid Applications.- A Communication Network Architecture for the Smart Grid.- An Overview of Smart Grid Network Design Process.- Network Security.- WAN and FAN Technologies for the Smart Grid.- Smart Grid Data Management.- Communication Network Transformation.- Future of Smart Grid Communication Networks.- Icons Used in Figures.- Smart Grid Characterization.- Fourier[...]

### Fields of interest

Computer Communication Networks; Data Encryption; Power Electronics, Electrical Machines and Networks

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-1-4471-6301-5](http://www.springer.com/978-1-4471-6301-5)

### Hardcover

2014. X, 359 p. 91 illus., 1 illus. in color. (Computer Communications and Networks)  
ISBN 978-1-4471-6301-5

**Due: January 31, 2014**

S. Cagnoni, M. Mirolli, Istituto di Scienze e Tecnologie, Rome, Italy; M. Villani, University of Modena and Reggio Emilia, Reggio Emilia, Italy (Eds.)

## Evolution, Complexity and Artificial Life

Evolution and complexity characterize both biological and artificial life – by direct modeling of biological processes and the creation of populations of interacting entities from which complex behaviors can emerge and evolve. This edited book includes invited chapters from leading scientists in the fields of artificial life, complex systems, and evolutionary computing. The contributions identify both fundamental theoretical issues and state-of-the-art real-world applications. The book is intended for researchers and graduate students in the related domains.

### Features

Traditionally, artificial evolution, complex systems, and artificial life were separate fields, with their own research communities, but we are now seeing increased engagement and hybridization. Evolution and complexity characterize biological life but they also permeate artificial life, through direct modeling of biological processes and the creation of populations of interacting entities from which [...]

### Contents

One Artefact – Many Phenomena.- Taming the Complexity of Natural and Artificial Evolutionary Dynamics.- Models of Gene Regulation: Integrating Modern Knowledge into the Random Boolean Network Framework.- Attractors Perturbations in Biological Modelling: Avalanches and Cellular Differentiation.- Automatic Design of Boolean Networks for Modeling Cell Differentiation.- Towards the Engineering of Chemical Communication Between Semi-synthetic and Natural Cells.- Cumulative Learning Through Intrinsic Reinforcements.- Development of Categorization Abilities in Evolving Embodied Agents: A Study[...]

### Fields of interest

Artificial Intelligence (incl. Robotics); Complexity; Computational Intelligence

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-37576-7](http://www.springer.com/978-3-642-37576-7)

### Hardcover

2013. XII, 272 p. 98 illus., 38 illus. in color.  
ISBN 978-3-642-37576-7

**Due: December 31, 2013**

J.M. Carroll, The Pennsylvania State University, University Park, USA (Ed.)

## Innovative Practices in Teaching Information Sciences and Technology

### Experience Reports and Reflections

University teaching and learning has never been more innovative than it is now. This has been enabled by a better contemporary understanding of teaching and learning. Instructors now present situated projects and practices to their students, not just foundational principles. Lectures and structured practice are now often replaced by engaging and constructivist learning activities that leverage what students know about, think about and care about. Teaching innovation has also been enabled by online learning in the classroom, beyond the classroom and beyond the campus. Learning online is perhaps not the panacea sometimes asserted but it is a disruptively rich and expanding set of tools[...]

### Features

University teaching and learning has never been more innovative than it is now. This has been enabled by a better contemporary understanding of teaching and learning. Instructors now present situated projects and practices to their students, not just foundational principles. Lectures and structured practice are now often replaced by engaging and constructivist learning activities that leverage what [...]

### Contents

Introduction.- The Karate Kid Method of Problem Based Learning.- Hungry Wolves, Creepy Sheepies: The Gamification of the Programmer's Classroom.- Teaching and Learning in Technical IT Courses.- Towards an Egalitarian Pedagogy for the Millennial Generation: A Reflection.- Higher Education Classroom Community Game: Together We Are Smarter.- The Tinker Toy Challenge – Peeking Under the Cloak of Invisibility in Information System Design.- Learning by Design.- Teaching Structured Analytical Thinking with Data using Visual-analytic Tools.- The Analytic Decision Game.- Cyber Forensic War Room:[...]

### Fields of interest

Computers and Education; Teaching and Teacher Education; Science Education

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-03655-7](http://www.springer.com/978-3-319-03655-7)

### Hardcover

2014. I, 260 p. 30 illus.  
ISBN 978-3-319-03655-7

**Due: February 28, 2014**

J. Cecilio, P. Furtado, University of Coimbra, Coimbra, Portugal

## Wireless Sensors in Industrial Time-Critical Environments

This book introduces the fundamentals of DCS, and shows how to include wireless technology in their design while guaranteeing the desired operation characteristics. The text also presents insights and results gained from extensive practical experience in implementing and testing systems within a specific industrial setting. Features: examines the operations that the DCS implements, covering human-machine interfaces, diagnostics and maintenance interfaces, and controllers; discusses industrial control system and wireless network protocols; reviews scheduling in wireless sensor networks; describes a latency model for heterogeneous DCS with wired and wireless parts, that predicts[...]

### Features

Modern industrial systems are often highly automated, with hundreds or even thousands of sensors and actuators monitoring the various processes, overseen by a distributed control system (DCS). Such control systems increasingly make use of wireless communications, yet these must still satisfy all safety-critical requirements. This unique text introduces the components, operations, industry protocols [...]

### Contents

Introduction.- Industrial Control Systems: Concepts, Components and Architectures.- Distributed Control System Operations.- Industrial Protocols and Planning Considerations.- Scheduling of Wireless Sensor Networks.- Latency Modeling for Distributed Control Systems with Wired and Wireless Sensors.- Planning for Distributed Control Systems with Wired and Wireless Sensors.- Performance and Debugging.- Application Scenario: An Industrial Case Study.- Network Configuration: Example.- Network Layout: Example.- Evaluation of Planning and Monitoring Approaches: Details.

### Fields of interest

Computer Communication Networks; Control

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02888-0](http://www.springer.com/978-3-319-02888-0)

### Hardcover

2014. XVII, 127 p. 75 illus., 68 illus. in color. (Computer Communications and Networks)  
ISBN 978-3-319-02888-0

**Due: January 31, 2014**

C. Cioffi-Revilla, George Mason University, Fairfax, USA

## Introduction to Computational Social Science

### Principles and Applications

This reader-friendly textbook is the first work of its kind to provide a unified Introduction to Computational Social Science (CSS). Four distinct methodological approaches are examined in detail, namely automated social information extraction, social network analysis, social complexity theory and social simulation modeling. The coverage of these approaches is supported by a discussion of the historical context, as well as by a list of texts for further reading. Features: highlights the main theories of the CSS paradigm as causal explanatory frameworks that shed new light on the nature of human and social dynamics; explains how to distinguish and analyze the different levels of [...]

### Features

The emerging field of computational social science (CSS) is devoted to the pursuit of interdisciplinary social science research from an information processing perspective, through the medium of advanced computing and information technologies. This reader-friendly textbook/reference is the first work of its kind to provide a comprehensive and unified Introduction to Computational Social Science. [...]

### Contents

Introduction.- Computation and Social Science.- Automated Information Extraction.- Social Networks.- Social Complexity I: Origins and Measurement.- Social Complexity II: Laws.- Social Complexity III: Theories.- Simulations I: Methodology.- Simulations II: Variable-Oriented Models.- Simulations III: Object-Oriented Models.

### Fields of interest

Computer Appl. in Social and Behavioral Sciences; Methodology of the Social Sciences; Data Mining and Knowledge Discovery; Graph Theory; Simulation and Modeling

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-1-4471-5660-4](http://www.springer.com/978-1-4471-5660-4)

### Hardcover

2014. XXXIII, 312 p. 59 illus., 21 illus. in color. (Texts in Computer Science)

ISBN 978-1-4471-5660-4

**Due: January 31, 2014**

N. Dershowitz, Tel Aviv University, Tel Aviv, Israel; E. Nissam, University of London, London, United Kingdom (Eds.)

## Language, Culture, Computation: Computing - Theory and Technology

### Essays Dedicated to Yaacov Choueka on the Occasion of His 75 Birthday, Part I

This Festschrift volume is published in Honor of Yaacov Choueka on the occasion of this 75th birthday. The present three-volumes liber amicorum, several years in gestation, honours this outstanding Israeli computer scientist and is dedicated to him and to his scientific endeavours. Yaacov's research has had a major impact not only within the walls of academia, but also in the daily life of lay users of such technology that originated from his research. An especially amazing aspect of the temporal span of his scholarly work is that half a century after his influential research from the early 1960s, a project in which he is currently involved is proving to be a sensation, as will become[...]

### Features

This Jubilee set of three volumes constitutes a condign tribute to Yaacov Choueka, a computer scientist, mathematician, computational linguist, and lexicographer: he is one of the founders of the fields of full-text information retrieval, computational linguistics, humanities computing, and legal databases. The three volumes (LNCS 8001–8003) comprise 61 chapters, and are each devoted to a broad theme. The [...]

### Fields of interest

Artificial Intelligence (incl. Robotics); Language Translation and Linguistics; Information Storage and Retrieval; Theory of Computation

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-45320-5](http://www.springer.com/978-3-642-45320-5)

### Softcover

2014. XII, 622 p. (Information Systems and Applications, incl. Internet/Web, and HCI, Vol. 8001)

ISBN 978-3-642-45320-5

**Due: February 18, 2014**

N. Dershowitz, Tel Aviv University, Tel Aviv, Israel; E. Nissam, University of London, London, United Kingdom (Eds.)

## Language, Culture, Computation: Computing for the Humanities, Law, and Narratives

### Essays Dedicated to Yaacov Choueka on the Occasion of His 75 Birthday, Part II

This Festschrift volume is published in Honor of Yaacov Choueka on the occasion of this 75th birthday. The present three-volumes liber amicorum, several years in gestation, honours this outstanding Israeli computer scientist and is dedicated to him and to his scientific endeavours. Yaacov's research has had a major impact not only within the walls of academia, but also in the daily life of lay users of such technology that originated from his research. An especially amazing aspect of the temporal span of his scholarly work is that half a century after his influential research from the early 1960s, a project in which he is currently involved is proving to be a sensation, as will become[...]

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### Fields of interest

Artificial Intelligence (incl. Robotics); Language Translation and Linguistics; Information Storage and Retrieval; Theory of Computation

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-45323-6](http://www.springer.com/978-3-642-45323-6)

### Softcover

2014. XII, 556 p. (Information Systems and Applications, incl. Internet/Web, and HCI, Vol. 8002)

ISBN 978-3-642-45323-6

**Due: February 18, 2014**

N. Dershowitz, Tel Aviv University, Tel Aviv, Israel; E. Nissam, University of London, London, United Kingdom (Eds.)

## Language, Culture, Computation: Computational Linguistics and Linguistics

Essays Dedicated to Yaacov Choueka on the Occasion of His 75 Birthday, Part III

This Festschrift volume is published in Honor of Yaacov Choueka on the occasion of this 75th birthday. The present three-volumes liber amicorum, several years in gestation, honours this outstanding Israeli computer scientist and is dedicated to him and to his scientific endeavours. Yaacov's research has had a major impact not only within the walls of academia, but also in the daily life of lay users of such technology that originated from his research. An especially amazing aspect of the temporal span of his scholarly work is that half a century after his influential research from the early 1960s, a project in which he is currently involved is proving to be a sensation, as will become[...]

### Features

This Festschrift volume is published in Honor of Yaacov Choueka on the occasion of this 75th birthday. The present three-volumes liber amicorum, several years in gestation, honours this outstanding Israeli computer scientist and is dedicated to him and to his scientific endeavours. Yaacov's research has had a major impact not only within the walls of academia, but also in the daily life of lay users of such [...]

### Fields of interest

Artificial Intelligence (incl. Robotics); Language Translation and Linguistics; Information Storage and Retrieval; Theory of Computation

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-45326-7](http://www.springer.com/978-3-642-45326-7)

### Softcover

2014. XII, 728 p. (Information Systems and Applications, incl. Internet/Web, and HCI, Vol. 8003)  
ISBN 978-3-642-45326-7

**Due: February 18, 2014**

G.A. Fink

## Markov Models for Pattern Recognition

From Theory to Applications

This thoroughly revised and expanded new edition now includes a more detailed treatment of the EM algorithm, a description of an efficient approximate Viterbi-training procedure, a theoretical derivation of the perplexity measure and coverage of multipass decoding based on n-best search. Supporting the discussion of the theoretical foundations of Markov modeling, special emphasis is also placed on practical algorithmic solutions. Features: introduces the formal framework for Markov models; covers the robust handling of probability quantities; presents methods for the configuration of hidden Markov models for specific application areas; describes important methods for efficient[...]

### Features

Markov models are extremely useful as a general, widely applicable tool for many areas in statistical pattern recognition. This unique text/reference places the formalism of Markov chain and hidden Markov models at the very center of its examination of current pattern recognition systems, demonstrating how the models can be used in a range of different applications. Thoroughly revised and expanded, [...]

### Contents

Introduction.- Application Areas.- Part I: Theory.- Foundations of Mathematical Statistics.- Vector Quantization and Mixture Estimation.- Hidden Markov Models.- N-Gram Models.- Part II: Practice.- Computations with Probabilities.- Configuration of Hidden Markov Models.- Robust Parameter Estimation.- Efficient Model Evaluation.- Model Adaptation.- Integrated Search Methods.- Part III: Systems.- Speech Recognition.- Handwriting Recognition.- Analysis of Biological Sequences.

### Fields of interest

Pattern Recognition; Image Processing and Computer Vision; Language Translation and Linguistics; Artificial Intelligence (incl. Robotics)

### Target groups

Research

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-1-4471-6307-7](http://www.springer.com/978-1-4471-6307-7)

### Hardcover

2014. XII, 287 p. 58 illus. (Advances in Computer Vision and Pattern Recognition)  
ISBN 978-1-4471-6307-7

**Due: January 29, 2014**

F. Frommlet, University of Vienna, Vienna, Austria; M. Bogdan, Wrocław University of Technology, Wrocław, Poland

## Phenotypes and Genotypes

Search for Influential Genes

This book presents the methodology of association mapping in experimental populations and genome-wide association studies (GWAS). The main emphasis is placed on methods based on modifications of the Bayesian information criterion, designed specifically to handle multiple testing problems in large-scale genome scans for trait loci (TL). The book is written at the level of a graduate course for bioinformatics students. The first chapter introduces the major concepts of quantitative trait loci (QTL) mapping. The second chapter discusses the methodology of QTL mapping in experimental populations, with the main emphasis on the related issues of model selection in linear models. The[...]

### Features

This book presents the methodology of association mapping in experimental populations and genome-wide association studies (GWAS). The main emphasis is placed on methods based on modifications of the Bayesian information criterion, designed specifically to handle multiple testing problems in large-scale genome scans for trait loci (TL). The book is written at the level of a graduate course for bioinformatics [...]

### Fields of interest

Computational Biology / Bioinformatics; Bioinformatics; Statistics for Life Sciences, Medicine, Health Sciences

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4471-5309-2](http://www.springer.com/978-1-4471-5309-2)

### Hardcover

2014. X, 290 p. (Computational Biology, Vol. 18)  
ISBN 978-1-4471-5309-2

**Due: July 28, 2014**

D.M. Gabbay, Bar-Ilan University, Ramat-Gan, Israel

## Reactive Kripke Semantics

This text offers an extension to the traditional Kripke semantics for non-classical logics by adding the notion of reactivity. Reactive Kripke models change their accessibility relation as we progress in the evaluation process of formulas in the model. This feature makes the reactive Kripke semantics strictly stronger and more applicable than the traditional one. Here we investigate the properties and axiomatisations of this new and most effective semantics, and we offer a wide landscape of applications of the idea of reactivity. Applied topics include reactive automata, reactive grammars, reactive products, reactive deontic logic and reactive preferential structures. Reactive Kripke[...]

### Features

This text offers an extension to the traditional Kripke semantics for non-classical logics by adding the notion of reactivity. Reactive Kripke models change their accessibility relation as we progress in the evaluation process of formulas in the model. This feature makes the reactive Kripke semantics strictly stronger and more applicable than the traditional one. Here we investigate the properties and [...]

### Contents

Chap.1 - A Theory of Hypermodal Logics.- Chap.2 - Introducing Reactive Kripke Semantics and Arc Accessibility.- Chap.3 - Introducing Reactive Modal Tableaux.- Chap.4 - Reactive Intuitionistic Tableaux.- Chap.5 - Completeness Theorems for Reactive Modal Logics.- Chap.6 - Modal Logics for Reactive Frames.- Chap.7 - Global View on Reactivity: Switch Graphs and their Logics.- Chap.8 - Reactive Automata.- Chap.9 - Reactivity and Grammars: An Exploration.- Chap.10 - Reactive Flow Products.- Chap.11 - Reactive Standard Deontic Logic.- Chap.12 - Reactive Preferential Structures and Non-monotonic[...]

### Fields of interest

Mathematical Logic and Formal Languages; Artificial Intelligence (incl. Robotics); Mathematical Logic and Foundations; Logic

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41388-9](http://www.springer.com/978-3-642-41388-9)

### Hardcover

2013. XII, 442 p. 201 illus., 10 illus. in color. (Cognitive Technologies)  
ISBN 978-3-642-41388-9

**usually dispatched within 3 to 5 business days**  
**December 31, 2013**

M.L. Gavrilova, C.J.K. Tan, CloudfabriQ Ltd., London, United Kingdom; A. Abraham, Technical University of Ostrava, Ostrava, Czech Republic (Eds.)

## Transactions on Computational Science XXI

### Special Issue on Innovations in Nature-Inspired Computing and Applications

This, the 21st issue of the Transactions on Computational Science journal, edited by Ajith Abraham, is devoted to the topic of nature-inspired computing and applications. The 15 full papers included in the volume focus on the topics of neurocomputing, evolutionary algorithms, swarm intelligence, artificial immune systems, membrane computing, computing with words, artificial life and hybrid approaches.

### Features

This, the 21st issue of the Transactions on Computational Science journal, edited by Ajith Abraham, is devoted to the topic of nature-inspired computing and applications. The 15 full papers included in the volume focus on the topics of neurocomputing, evolutionary algorithms, swarm intelligence, artificial immune systems, membrane computing, computing with words, artificial life and hybrid approaches.

### Fields of interest

Theory of Computation; Computational Intelligence; Artificial Intelligence (incl. Robotics); Data Mining and Knowledge Discovery; Numeric Computing

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-45317-5](http://www.springer.com/978-3-642-45317-5)

### Softcover

2013. XVI, 367 p. 164 illus. (Transactions on Computational Science, Vol. 8160)  
ISBN 978-3-642-45317-5

**usually dispatched within 3 to 5 business days**

A. Gkoulalas-Divanis, IBM Research - Ireland, Mulhuddart, Ireland; A. Labbi, IBM Research-Zurich, Rüschlikon, Switzerland (Eds.)

## Large-Scale Data Analytics

This edited book collects state-of-the-art research related to large-scale data analytics that has been accomplished over the last few years. This is among the first books devoted to this important area based on contributions from diverse scientific areas such as databases, data mining, supercomputing, hardware architecture, data visualization, statistics, and privacy. There is increasing need for new approaches and technologies that can analyze and synthesize very large amounts of data, in the order of petabytes, that are generated by massively distributed data sources. This requires new distributed architectures for data analysis. Additionally, the heterogeneity of such sources[...]

### Features

This edited book collects state-of-the-art research related to large-scale data analytics that has been accomplished over the last few years. This is among the first books devoted to this important area based on contributions from diverse scientific areas such as databases, data mining, supercomputing, hardware architecture, data visualization, statistics, and privacy. There is increasing need for new [...]

### Contents

The Family of Map-Reduce.- Optimization of Massively Parallel Data Flows.- Mining Tera-Scale Graphs with "Pegasus".- Customer Analyst for the Telecom Industry.- Machine Learning Algorithm Acceleration using Hybrid (CPU-MPP) MapReduce Clusters.- Large-Scale Social Network Analysis.- Visual Analysis and Knowledge Discovery for Text.- Practical Distributed Privacy-Preserving Data Analysis at Large Scale.

### Fields of interest

Database Management; Information Systems and Communication Service; Business Information Systems; Data Mining and Knowledge Discovery; Systems and Data Security

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4614-9241-2](http://www.springer.com/978-1-4614-9241-2)

### Hardcover

2014. XXIII, 257 p. 83 illus., 53 illus. in color.  
ISBN 978-1-4614-9241-2

**Due: January 31, 2014**

B. Goertzel, G/F 51C Lung Mei Village, Tai Po, Hong Kong, China (P.R.); C. Pennachin, Igenesis Av. Prof. M'ario, Minas Gerais, Brazil; N. Geisweiller

## Engineering General Intelligence, Part 1

**A Path to Advanced AGI via Embodied Learning and Cognitive Synergy**

The work outlines a novel conceptual and theoretical framework for understanding Artificial General Intelligence and based on this framework outlines a practical roadmap for the development of AGI with capability at the human level and ultimately beyond.

### Features

The work outlines a novel conceptual and theoretical framework for understanding Artificial General Intelligence and based on this framework outlines a practical roadmap for the development of AGI with capability at the human level and ultimately beyond.

### Contents

A Brief Overview of Cog Prime.- Build Me Something I Haven't Seen: A Cog Prime Thought Experiment.- What is Human-Like General Intelligence? A Patternist Philosophy of Mind.- Brief Survey of Cognitive Architectures.- A Generic Architecture of Human-Like Cognition.- A Formal Model of Intelligent Agents.- Cognitive Synergy.- General Intelligence in the Everyday Human World.- A Mind-World Correspondence Principle.- Stages of Cognitive Development.- The Engineering and Development of Ethics.- Local, Global and Glocal Knowledge Representation.- Representing Implicit Knowledge via[...]

### Fields of interest

Artificial Intelligence (incl. Robotics); Computational Intelligence; Complexity; Neurosciences; Mathematical Models of Cognitive Processes and Neural Networks

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-94-6239-026-3](http://www.springer.com/978-94-6239-026-3)

### Hardcover

2014. XXII, 391 p. 105 illus., 32 illus. in color. (Atlantis Thinking Machines, Vol. 5)  
ISBN 978-94-6239-026-3

**Due: December 31, 2013**

B. Goertzel, G/F 51C Lung Mei Village, Tai Po, Hong Kong, China (P.R.); C. Pennachin, Igenesis Av. Prof. M'ario, Minas Gerais, Brazil; N. Geisweiller

## Engineering General Intelligence, Part 2

**The CogPrime Architecture for Integrative, Embodied AGI**

The work outlines a detailed blueprint for the creation of an Artificial General Intelligence system with capability at the human level and ultimately beyond, according to the Cog Prime AGI design and the Open Cog software architecture.

### Features

The work outlines a detailed blueprint for the creation of an Artificial General Intelligence system with capability at the human level and ultimately beyond, according to the Cog Prime AGI design and the Open Cog software architecture.

### Contents

The Open Cog Framework.- Knowledge Representation Using the Atomspace.- Representing Procedural Knowledge.- Emotion, Motivation, Attention and Control.- Attention Allocation.- Economic Goal and Action Selection.- Integrative Procedure Evaluation.- Perceptual and Motor Hierarchies.- Integrating Cog Prime with a Compositional Spatiotemporal Deep Learning Network.- Making DeSTIN Representationally Transparent.- Bridging the Symbolic/Sub-symbolic Gap.- Procedure Learning as Program Learning.- Learning Procedures via Imitation, Reinforcement and Correction.- Procedure Learning via Adaptively[...]

### Fields of interest

Artificial Intelligence (incl. Robotics)

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-94-6239-029-4](http://www.springer.com/978-94-6239-029-4)

### Hardcover

2014. XXII, 555 p. 42 illus., 9 illus. in color. (Atlantis Thinking Machines, Vol. 6)  
ISBN 978-94-6239-029-4

**Due: December 31, 2013**

S. Gong, Queen Mary University of London, London, United Kingdom; M. Cristani, S. Yan, C.C. Loy, The Chinese University of Hong Kong, Shatin, Hong Kong (Eds.)

## Person Re-Identification

The first book of its kind dedicated to the challenge of person re-identification, this text provides an in-depth, multidisciplinary discussion of recent developments and state-of-the-art methods. Features: introduces examples of robust feature representations, reviews salient feature weighting and selection mechanisms and examines the benefits of semantic attributes; describes how to segregate meaningful body parts from background clutter; examines the use of 3D depth images and contextual constraints derived from the visual appearance of a group; reviews approaches to feature transfer function and distance metric learning and discusses potential solutions to issues of data[...]

### Features

Re-identification offers a useful tool for non-invasive biometric validation, surveillance, and human-robot interaction in a broad range of applications from crowd traffic management to personalised healthcare. This comprehensive volume is the first work of its kind dedicated to addressing the challenge of Person Re-Identification, presenting insights from an international selection of [...]

### Contents

The Re-Identification Challenge.- Part I: Features and Representations.- Discriminative Image Descriptors for Person Re-Identification.- SDALF.- Re-Identification by Covariance Descriptors.- Attributes-Based Re-Identification.- Person Re-Identification by Attribute-Assisted Clothes Appearance.- Person Re-Identification by Articulated Appearance Matching.- One-Shot Person Re-Identification with a Consumer Depth Camera.- Group Association.- Evaluating Feature Importance for Re-Identification.- Part II: Matching and Distance Metric.- Learning Appearance Transfer for Person[...]

### Fields of interest

Image Processing and Computer Vision; Pattern Recognition; Mathematical Applications in Computer Science; Information Systems Applications (incl. Internet); User Interfaces and Human Computer Interaction; Artificial Intelligence (incl. Robotics)

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4471-6295-7](http://www.springer.com/978-1-4471-6295-7)

### Hardcover

2014. XVI, 456 p. 163 illus., 154 illus. in color. (Advances in Computer Vision and Pattern Recognition)  
ISBN 978-1-4471-6295-7

**Due: January 13, 2014**

A. Hameurlain, Paul Sabatier University, Toulouse, France; J. Küng, University of Linz, FAW, Linz, Austria; R. Wagner, University of Linz, FAW, Linz, Austria; B. Amann, P. Lamarre, Université de Lyon, Lyon, France (Eds.)

## Transactions on Large-Scale Data- and Knowledge-Centered Systems XI

Special Issue on Advanced Data Stream Management and Continuous Query Processing

This, the 11th issue of Transactions on Large-Scale Data- and Knowledge-Centered Systems, contains five selected papers focusing on Advanced Data Stream Management and Processing of Continuous Queries. The contributions cover different methods for avoiding unauthorized access to streaming data, modeling complex real-time behavior of stream processing applications, comparing different event-centric and data-centric platforms for the development of applications in pervasive environments, capturing localized repeated associative relationships from multiple time series, and obtaining uniform and fresh sampling strategies over input data streams generated by large open systems containing[...]

### Features

This, the 11th issue of Transactions on Large-Scale Data- and Knowledge-Centered Systems, contains five selected papers focusing on Advanced Data Stream Management and Processing of Continuous Queries. The contributions cover different methods for avoiding unauthorized access to streaming data, modeling complex real-time behavior of stream processing applications, comparing different event-centric and [...]

### Contents

ASSIST: Access Controlled Ship Identification Streams.- The HIT Model: Workflow-Aware Event Stream Monitoring.- P-Bench: Benchmarking in Data-Centric Pervasive Application Development.- Efficient Mining of Lag Patterns in Evolving Time Series.- On the Power of the Adversary to Solve the Node Sampling Problem.

### Fields of interest

Database Management; Data Mining and Knowledge Discovery

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-45268-0](http://www.springer.com/978-3-642-45268-0)

### Softcover

2013. X, 127 p. 37 illus. (Transactions on Large-Scale Data- and Knowledge-Centered Systems, Vol. 8290) ISBN 978-3-642-45268-0

usually dispatched within 3 to 5 business days

A. Hameurlain, Paul Sabatier University, Toulouse, France; J. Küng, University of Linz, FAW, Linz, Austria; R. Wagner, University of Linz, FAW, Linz, Austria (Eds.)

## Transactions on Large-Scale Data- and Knowledge-Centered Systems XII

This, the 12th issue of Transactions on Large-Scale Data and Knowledge-Centered Systems, contains five revised selected regular papers. Topics covered include schema matching and schema mapping, update propagation in decision support systems, routing methods in peer-to-peer systems, distributed stream analytics and dynamic data partitioning.

### Features

This, the 12th issue of Transactions on Large-Scale Data and Knowledge-Centered Systems, contains five revised selected regular papers. Topics covered include schema matching and schema mapping, update propagation in decision support systems, routing methods in peer-to-peer systems, distributed stream analytics and dynamic data partitioning.

### Fields of interest

Database Management; Data Mining and Knowledge Discovery

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-45314-4](http://www.springer.com/978-3-642-45314-4)

### Softcover

2013. X, 129 p. 39 illus. (Transactions on Large-Scale Data- and Knowledge-Centered Systems, Vol. 8320) ISBN 978-3-642-45314-4

usually dispatched within 3 to 5 business days

R. Hausser, Friedrich-Alexander-Universität, Erlangen, Germany

## Foundations of Computational Linguistics

Human-Computer Communication in Natural Language

The central task of a future-oriented computational linguistics is the development of cognitive machines which humans can freely talk with in their respective natural language. In the long run, this task will ensure the development of a functional theory of language, an objective method of verification, and a wide range of practical applications. Natural communication requires not only verbal processing, but also non-verbal perception and action. Therefore the content of this textbook is organized as a theory of language for the construction of talking robots. The main topic is the mechanism of natural language communication in both the speaker and the hearer. In the third edition the[...]

### Features

The central task of a future-oriented computational linguistics is the development of cognitive machines which humans can freely talk with in their respective natural language. In the long run, this task will ensure the development of a functional theory of language, an objective method of verification, and a wide range of practical applications. Natural communication requires not only verbal processing, [...]

### Contents

Chap. 1 - Computational Analysis of Natural Language.- Chap. 2 - Smart vs. Solid Solutions.- Chap. 3 - Cognitive Foundations of Semantics.- Chap. 4 - Language Communication.- Chap. 5 - Using Language Signs on Suitable Contexts.- Chap. 6 - Structure and Functioning of Signs.- Chap. 7 - Formal Grammar.- Chap. 8 - Language Hierarchies and Complexity.- Chap. 9 - Basic Notions of Parsing.- Chap. 10 - Left-Associative Grammar (LAG).- Chap. 11 - Hierarchy of LA Grammar.- Chap. 12 - LA and PS Hierarchies in Comparison.- Chap. 13 - Words and Morphemes.- Chap. 14 - Word Form Recognition in LA[...]

### Fields of interest

Language Translation and Linguistics; Computational Linguistics; Artificial Intelligence (incl. Robotics); User Interfaces and Human Computer Interaction

### Target groups

Upper undergraduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-642-41430-5](http://www.springer.com/978-3-642-41430-5)

### Hardcover

2014. XXVIII, 522 p. 233 illus. ISBN 978-3-642-41430-5

Due: January 31, 2014

B. Henderson-Sellers, University of Technology, Sydney, Broadway, Australia; J. Ralyté, University of Geneva, Carouge, Switzerland; P.J. Ågerfalk, Uppsala University, Uppsala, Sweden; M. Rossi

## Situational Method Engineering

While previously available methodologies for software – like those published in the early days of object technology – claimed to be appropriate for every conceivable project, situational method engineering (SME) acknowledges that most projects typically have individual characteristics and situations. Thus, finding the most effective methodology for a particular project needs specific tailoring to that situation. Such a tailored software development methodology needs to take into account all the bits and pieces needed for an organization to develop software, including the software process, the input and output work products, the people involved, the languages used to describe[...]

### Features

While previously available methodologies for software – like those published in the early days of object technology – claimed to be appropriate for every conceivable project, situational method engineering (SME) acknowledges that most projects typically have individual characteristics and situations. Thus, finding the most effective methodology for a particular project needs specific tailoring to that [...]

### Contents

Part I SME Basics.- Chapter 1 Introduction.- Chapter 2 Method chunks, method fragments and method components.- Chapter 3 Method Engineering as a Social Practice.- Chapter 4 Formal descriptions.- Part II Applying SME in Practice.- Chapter 5 Identification and construction of individual method chunks/fragments.- Chapter 6 Processes for creating a methodology from method parts.- Chapter 7 Tailoring a constructed method.- Chapter 8 Assessing quality.- Chapter 9 Examples of constructed processes.- Part III The Future of SME.- Chapter 10 Recent advances in SME.- Chapter 11 Final summary and[...]

### Fields of interest

Software Engineering; Management of Computing and Information Systems

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41466-4](http://www.springer.com/978-3-642-41466-4)

### Hardcover

2014. XX, 308 p. 100 illus.  
ISBN 978-3-642-41466-4

**Due: January 31, 2014**

S. Jajodia, George Mason University, Fairfax, USA; K. Kant, George Mason University, Fairfax, USA; P. Samarati, University of Milan, Crema, Italy; A. Singhal, National Institute of Standards, Gaithersburg, USA; V. Swarup, The MITRE Corporation, McLean, USA; C. Wang, Information Sciences Directorate, Triangle Park, USA (Eds.)

## Secure Cloud Computing

This book presents a range of cloud computing security challenges and promising solution paths. The first two chapters focus on practical considerations of cloud computing. In Chapter 1, Chandramouli, Iorga, and Chokani describe the evolution of cloud computing and the current state of practice, followed by the challenges of cryptographic key management in the cloud. In Chapter 2, Chen and Sion present a dollar cost model of cloud computing and explore the economic viability of cloud computing with and without security mechanisms involving cryptographic mechanisms. The next two chapters address security issues of the cloud infrastructure. In Chapter 3, Szefer and Lee describe a[...]

### Features

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### Contents

Cryptographic Key Management Issues and Challenges in Cloud Services.- Costs and Security in Clouds.- Hardware-enhanced Security for Cloud Computing.- Cloud Computing Security: What Changes with Software-Defined Networking?.- Proof of Isolation for Cloud Storage.- Selective and Fine-Grained Access to Data in the Cloud.- Enabling Collaborative Data Authorization Between Enterprise Clouds.- Making Query Execution Over Encrypted Data Practical.- Privacy-preserving Keyword Search over Encrypted Data in Cloud Computing.- Towards Data Confidentiality and a Vulnerability Analysis Framework for[...]

### Fields of interest

Systems and Data Security; Information Systems Applications (incl.Internet); Computer Communication Networks; Information Systems and Communication Service

### Target groups

Professional/practitioner

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4614-9277-1](http://www.springer.com/978-1-4614-9277-1)

### Hardcover

2014. VIII, 338 p. 92 illus., 56 illus. in color.  
ISBN 978-1-4614-9277-1

**Due: January 31, 2014**

R. Klette

## Concise Computer Vision

An Introduction into Theory and Algorithms

This textbook provides an accessible general introduction to the essential topics in computer vision. Classroom-tested programming exercises and review questions are also supplied at the end of each chapter. Features: provides an introduction to the basic notation and mathematical concepts for describing an image and the key concepts for mapping an image into an image; explains the topologic and geometric basics for analysing image regions and distributions of image values and discusses identifying patterns in an image; introduces optic flow for representing dense motion and various topics in sparse motion analysis; describes special approaches for image binarization and segmentation[...]

### Features

Many textbooks on computer vision can be unwieldy and intimidating in their coverage of this extensive discipline. This textbook addresses the need for a concise overview of the fundamentals of this field. Concise Computer Vision provides an accessible general introduction to the essential topics in computer vision, highlighting the role of important algorithms and mathematical concepts. [...]

### Contents

Image Data.- Image Processing.- Image Analysis.- Dense Motion Analysis.- Image Segmentation.- Cameras, Coordinates and Calibration.- 3D Shape Reconstruction.- Stereo Matching.- Feature Detection and Tracking.- Object Detection.

### Fields of interest

Image Processing and Computer Vision; Computing Methodologies

### Target groups

Upper undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-1-4471-6319-0](http://www.springer.com/978-1-4471-6319-0)

### Softcover

2014. XVI, 432 p. 299 illus., 221 illus. in color. (Undergraduate Topics in Computer Science)  
ISBN 978-1-4471-6319-0

**Due: January 29, 2014**

C. Kościelny, M. Kurkowski, Czestochowa University of Technology, Czestochowa, Poland; M. Srebrny, Polish Academy of Sciences, Warsaw, Poland

## Modern Cryptography Primer

### Theoretical Foundations and Practical Applications

Cryptography has experienced rapid development, with major advances recently in both secret and public key ciphers, cryptographic hash functions, cryptographic algorithms and multiparty protocols, including their software engineering correctness verification, and various methods of cryptanalysis. This textbook introduces the reader to these areas, offering an understanding of the essential, most important, and most interesting ideas, based on the authors' teaching and research experience. After introducing the basic mathematical and computational complexity concepts, and some historical context, including the story of Enigma, the authors explain symmetric and asymmetric cryptography, [...]

### Features

Cryptography has experienced rapid development, with major advances recently in both secret and public key ciphers, cryptographic hash functions, cryptographic algorithms and multiparty protocols, including their software engineering correctness verification, and various methods of cryptanalysis. This textbook introduces the reader to these areas, offering an understanding of the essential, most important, [...]

### Contents

Chap. 1 Basic Concepts and Historical Overview.- Chap. 2 Mathematical Foundations of Cryptography.- Chap. 3 Foundations of Symmetric Cryptography.- Chap. 4 Foundations of Asymmetric Cryptography.- Chap. 5 An Electronic Signature and Hash Functions.- Chap. 6 PGP Systems and True Crypt.- Chap. 7 Public Key Infrastructure.- Chap. 8 Cryptographic Protocols.- Chap. 9 Cryptography Application for Data Security.- References.- Index.

### Fields of interest

Data Structures, Cryptology and Information Theory; Systems and Data Security; e-commerce / e-business; Computer Systems Organization and Communication Networks

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-642-41385-8](http://www.springer.com/978-3-642-41385-8)

### Hardcover

2013. XIV, 238 p. 97 illus.  
ISBN 978-3-642-41385-8

**usually dispatched within 3 to 5 business days**

P. Lake, P. Crowther

## Concise Guide to Databases

### A Practical Introduction

This easy-to-read textbook/reference presents a comprehensive introduction to databases, opening with a concise history of databases and of data as an organisational asset. As relational database management systems are no longer the only database solution, the book takes a wider view of database technology, encompassing big data, NoSQL, object and object-relational and in-memory databases. The text also examines the issues of scalability, availability, performance and security encountered when building and running a database in the real world. Topics and features: presents review and discussion questions at the end of each chapter, in addition to skill-building, hands-on exercises; [...]

### Features

Modern businesses depend on data for their very survival, creating a need for sophisticated databases and database technologies to help store, organise and transport their valuable data. This easy-to-read textbook/reference presents a comprehensive introduction to databases, opening with a concise history of databases and of data as an organisational asset. As relational database management systems [...]

### Contents

Part I: Databases in Context.- Data: An Organisational Asset.- The History of Databases.- Physical Storage and Distribution.- Part II: Database Types.- Relational: The Start of the Modern Era in Databases.- NoSQL: Column-Based and Document-Based Databases.- Big Data.- Object and Object-Relational.- In-Memory Databases.- Part III: What Database Professionals Worry About.- Scalability.- Availability.- Performance.- Security.

### Fields of interest

Database Management; Information Storage and Retrieval; Data Structures, Cryptology and Information Theory; Software Engineering / Programming and Operating Systems

### Target groups

Upper undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-1-4471-5600-0](http://www.springer.com/978-1-4471-5600-0)

### Softcover

2013. XIX, 307 p. 113 illus. (Undergraduate Topics in Computer Science)  
ISBN 978-1-4471-5600-0

**usually dispatched within 3 to 5 business days**

W. Lawrenz, C&S group GmbH, Wolfenbüttel, Germany (Ed.)

## CAN System Engineering

### From Theory to Practical Applications

This book addresses the various challenges and open questions relating to CAN communication networks. Opening with a short introduction into the fundamentals of CAN, the book then examines the problems and solutions for the physical layout of networks, including EMC issues and topology layout. Additionally, a discussion of quality issues with a particular focus on test techniques is presented. Each chapter features a collection of illuminating insights and detailed technical information supplied by a selection of internationally-regarded experts from industry and academia. Features: presents thorough coverage of architectures, implementations and application of CAN transceiver, data [...]

### Features

The controller area network (CAN) microcontroller communication protocol is now ubiquitous in a staggering wide range of transportation and industrial control applications. This fully revised and updated new edition addresses the various challenges and open questions relating to CAN communication networks. Opening with a short introduction into the fundamentals of CAN, the book then examines the [...]

### Contents

CAN Basic Architectures.- Physical Layer.- Data Link Layer Implementation.- Higher Level Protocols.- Applications.- Testing.

### Fields of interest

Computer Systems Organization and Communication Networks; Control, Robotics, Mechatronics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4471-5612-3](http://www.springer.com/978-1-4471-5612-3)

### Hardcover

2013. XXV, 353 p. 186 illus.  
ISBN 978-1-4471-5612-3

**usually dispatched within 3 to 5 business days  
December 14, 2013**

R.J. Lipton, Georgia Institute of Technology, Atlanta, USA; K.W. Regan, The State University of New York, Buffalo, USA

## People, Problems, and Proofs

Essays from Gödel's Lost Letter: 2010

People, problems, and proofs are the lifeblood of theoretical computer science. Behind the computing devices and applications that have transformed our lives are clever algorithms, and for every worthwhile algorithm there is a problem that it solves and a proof that it works. Before this proof there was an open problem: can one create an efficient algorithm to solve the computational problem? And, finally, behind these questions are the people who are excited about these fundamental issues in our computational world. In this book the authors draw on their outstanding research and teaching experience to showcase some key people and ideas in the domain of theoretical computer science, [...]

### Features

People, problems, and proofs are the lifeblood of theoretical computer science. Behind the computing devices and applications that have transformed our lives are clever algorithms, and for every worthwhile algorithm there is a problem that it solves and a proof that it works. Before this proof there was an open problem: can one create an efficient algorithm to solve the computational problem? And, finally, [...]

### Contents

The Claimant, the Readers, and the Crowd.- Kenneth Iverson: Notation and Thinking.- Edmund Hillary: Proofs and Mountain Climbing.- Leonardo da Vinci: Proofs as Art.- Michael Atiyah: The Role of Proof.- Subhash Khot: Unique Games Conjecture.- Arno van den Essen: An Amazing Conjecture.- Richard Hamilton: Group Efforts.- Grigori Perelman: A New Clay Problem.- Eric Allender: Solvable Groups.- Enrico Bombieri: On Intuition.- Fred Hennie: Lower Bounds.- Volker Strassen: Amazing Results.- Adam Smith: Dumb Channels.- Georg Cantor: Diagonal Method.- Raymond Smullyan: The Reals Are Uncountable.- [...]

### Fields of interest

Theory of Computation; History of Computing; Mathematics of Computing; History of Mathematics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41421-3](http://www.springer.com/978-3-642-41421-3)

### Hardcover

2013. XVIII, 333 p. 33 illus., 5 illus. in color.  
ISBN 978-3-642-41421-3

Due: December 31, 2013

R. Maes, Katholieke Universiteit Leuven, Heverlee, Belgium

## Physically Unclonable Functions

Constructions, Properties and Applications

Physically unclonable functions (PUFs) are innovative physical security primitives that produce unclonable and inherent instance-specific measurements of physical objects; in many ways they are the inanimate equivalent of biometrics for human beings. Since they are able to securely generate and store secrets, they allow us to bootstrap the physical implementation of an information security system. In this book the author discusses PUFs in all their facets: the multitude of their physical constructions, the algorithmic and physical properties which describe them, and the techniques required to deploy them in security applications. The author first presents an extensive overview and [...]

### Features

Physically unclonable functions (PUFs) are innovative physical security primitives that produce unclonable and inherent instance-specific measurements of physical objects; in many ways they are the inanimate equivalent of biometrics for human beings. Since they are able to securely generate and store secrets, they allow us to bootstrap the physical implementation of an information security system. In this [...]

### Contents

Chap. 1 - Introduction and Preview.- Chap. 2 - Physically Unclonable Functions: Concept and Constructions.- Chap. 3 - Physically Unclonable Functions: Properties.- Chap. 4 - Implementation and Experimental Analysis of Intrinsic PUFs.- Chap. 5 - PUF-Based Entity Identification and Authentication.- Chap. 6 - PUF-Based Key Generation.- Chap. 7 - Conclusion and Future Work.- App. A - Notation and Definitions from Probability Theory and Information Theory.- App. B - Non-intrinsic PUF(-like) Constructions.- References.

### Fields of interest

Data Structures, Cryptology and Information Theory; Electrical Engineering; Security Science and Technology

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41394-0](http://www.springer.com/978-3-642-41394-0)

### Hardcover

2013. XVII, 193 p. 28 illus.  
ISBN 978-3-642-41394-0

usually dispatched within 3 to 5 business days

N. Magnenat-Thalmann, MIRALab - University of Geneva, Carouge, Switzerland; O. Ratib, University Hospital of Geneva, Geneva, Switzerland; H.F. Choi, MIRALab - University of Geneva, Carouge, Switzerland (Eds.)

## 3D Multiscale Physiological Human

3D Multiscale Physiological Human aims to promote scientific exchange by bringing together overviews and examples of recent scientific and technological advancements across a wide range of research disciplines. As a result, the variety in methodologies and knowledge paradigms are contrasted, revealing potential gaps and opportunities for integration. Chapters have been contributed by selected authors in the relevant domains of tissue engineering, medical image acquisition and processing, visualization, modeling, computer aided diagnosis and knowledge management. The multi-scale and multi-disciplinary research aspects of articulations in humans are highlighted, with a particular [...]

### Features

3D Multiscale Physiological Human aims to promote scientific exchange by bringing together overviews and examples of recent scientific and technological advancements across a wide range of research disciplines. As a result, the variety in methodologies and knowledge paradigms are contrasted, revealing potential gaps and opportunities for integration. Chapters have been contributed by selected authors [...]

### Contents

Preface.- Part I - Introduction.- Towards Effective Diagnosis and Prediction via 3D Patient Model - A Complete Research Plan.- Part II - Cell and Tissue Engineering.- Tissue Engineering and Regenerative Medicine Strategies for the Treatment of Osteochondral Lesions.- Part III - Imaging and Visualization.- Hybrid Imaging: From Anatomy to Function.- Deformable Models in Medical Image Segmentation.- Visualization and User Interaction Methods for Multiscale Biomedical Data.- Part IV - Simulation and Articulations.- Modeling and Simulating Virtual Anatomical Humans.- Clinical Gait Analysis [...]

### Fields of interest

Computer Graphics; Bioinformatics; Human Physiology

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4471-6274-2](http://www.springer.com/978-1-4471-6274-2)

### Hardcover

2014. VIII, 323 p. 110 illus., 99 illus. in color.  
ISBN 978-1-4471-6274-2

Due: January 31, 2014

T. Mens, University of Mons, Mons, Belgium; A. Serebrenik, Eindhoven University of Technology, Eindhoven, Netherlands; A. Cleve, University of Namur, Namur, Belgium (Eds.)

## Evolving Software Systems

During the last few years, software evolution research has explored new domains such as the study of socio-technical aspects and collaboration between different individuals contributing to a software system, the use of search-based techniques and meta-heuristics, the mining of unstructured software repositories, the evolution of software requirements, and the dynamic adaptation of software systems at runtime. Also more and more attention is being paid to the evolution of collections of inter-related and inter-dependent software projects, be it in the form of web systems, software product families, software ecosystems or systems of systems. With this book, the editors present insightful[...]

### Features

During the last few years, software evolution research has explored new domains such as the study of socio-technical aspects and collaboration between different individuals contributing to a software system, the use of search-based techniques and meta-heuristics, the mining of unstructured software repositories, the evolution of software requirements, and the dynamic adaptation of software systems at [...]

### Contents

Part I Evolving Software Artefacts.- 1 An Overview of Requirements Evolution.- 2 Coupled Evolution of Software Meta models and Models.- 3 Software Product Quality Models.- Part II Techniques.- 4 Search Based Software Maintenance: Methods and Tools.- 5 Mining Unstructured Software Repositories.- 6 Leveraging Web 2.0 for Software Evolution.- Part III Evolution of Specific Types of Software Systems.- 7 Evolution of Web Systems.- 8 Runtime Evolution of Highly Dynamic Software.- 9 Evolution of Software Product Lines.- 10 Studying Evolving Software Ecosystems based on Ecological Models.- Part [...]

### Fields of interest

Software Engineering; Management of Computing and Information Systems; Information Systems Applications (incl. Internet)

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-45397-7](http://www.springer.com/978-3-642-45397-7)

### Hardcover

2013. X, 414 p. 83 illus., 35 illus. in color.  
ISBN 978-3-642-45397-7

**Due: December 31, 2013**

P.M. Nugues

## Language Processing with Perl and Prolog

### Theories, Implementation, and Application

The areas of natural language processing and computational linguistics have continued to grow in recent years, driven by the demand to automatically process text and spoken data. With the processing power and techniques now available, research is scaling up from lab prototypes to real-world, proven applications. This book teaches the principles of natural language processing, first covering linguistics issues such as encoding, entropy, and annotation schemes; defining words, tokens and parts of speech; and morphology. It then details the language-processing functions involved, including part-of-speech tagging using rules and stochastic techniques; using Prolog to write phase-structure[...]

### Features

The areas of natural language processing and computational linguistics have continued to grow in recent years, driven by the demand to automatically process text and spoken data. With the processing power and techniques now available, research is scaling up from lab prototypes to real-world, proven applications. This book teaches the principles of natural language processing, first covering [...]

### Contents

Chap. 1 - An Overview of Language Processing.- Chap. 2 - Corpus Processing Tools.- Chap. 3 - Encoding and Annotation Schemes.- Chap. 4 - Topics in Information Theory and Machine Learning.- Chap. 5 - Counting Words.- Chap. 6 - Words, Parts of Speech, and Morphology.- Chap. 7 - Part-of-Speech Tagging Using Rules.- Chap. 8 - Part-of-Speech Tagging Using Statistical Techniques.- Chap. 9 - Phrase-Structure Grammars in Prolog.- Chap. 10 - Partial Parsing.- Chap. 11 - Syntactic Formalisms.- Chap. 12 - Parsing Techniques.- Chap. 13 - Dependency Parsing.- Chap. 14 - Semantics and Predicate [...]

### Fields of interest

Language Translation and Linguistics; Computational Linguistics; Artificial Intelligence (incl. Robotics); User Interfaces and Human Computer Interaction

### Target groups

Lower undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-3-642-41463-3](http://www.springer.com/978-3-642-41463-3)

### Hardcover

2014. XX, 645 p. (Cognitive Technologies)  
ISBN 978-3-642-41463-3

**Due: January 29, 2014**

A. Osherenko

## Social Interaction, Globalization and Computer-Aided Analysis

### A Practical Guide to Developing Social Simulation

Tackling globalization is a great challenge – it is both extremely beneficial and essentially problematic. This comprehensive, multidisciplinary study confronts this ambivalence through the use of computer simulation. It discusses the findings of social interaction and social simulation through the use of understandable global examples. Readers can use this book as a tool to outline significant aspects of intercultural simulation and highlight the issues that need to be considered in the reader's analysis. The author leads the reader via sequential narration from a colloquial description of intercultural situations to final simulation prototypes; each step is accompanied by descriptive[...]

### Features

Tackling globalization is a great challenge – it is both extremely beneficial and essentially problematic. This comprehensive, multidisciplinary study confronts this ambivalence through the use of computer simulation. It discusses the findings of social interaction and social simulation through the use of understandable global examples. Readers can use this book as a tool to outline significant [...]

### Contents

Preface.- List of Tables.- List of Figures.- Acronyms.- Part I – Multidisciplinary Part.- Introduction.- Related Work on Social Interaction and Social Simulation.- Scenarios of Social Interaction.- Part II – Developmental Part.- Acquisition of Intercultural Data.- Framework for Data Processing.- Prototypes of Social Simulation.- Evaluation of the Prototyping Approach.- Conclusion.- Index.

### Fields of interest

User Interfaces and Human Computer Interaction; Computer Appl. in Social and Behavioral Sciences; Psycholinguistics; Community & Environmental Psychology; Cultural Studies; Interdisciplinary Studies

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4471-6259-9](http://www.springer.com/978-1-4471-6259-9)

### Hardcover

2014. XVIII, 244 p. 83 illus. (Human-Computer Interaction Series)  
ISBN 978-1-4471-6259-9

**Due: January 31, 2014**

D. Page, University of Bristol, Bristol, United Kingdom; N. Smart, University of Bristol, Bristol, United Kingdom

## What Is Computer Science?

An Information Security Perspective

This engaging and accessible text addresses the fundamental question: What Is Computer Science? The book showcases a set of representative concepts broadly connected by the theme of information security, for which the presentation of each topic can be treated as a "mini" lecture course, demonstrating how it allows us to solve real problems, as well as how it relates to other subjects. The discussions are further supported by numerous examples and practical hands-on exercises. Features: presents a concise introduction to the study of algorithms and describes how computers work; introduces the concepts of data compression, and error detection and correction; highlights the role of data[...]

### Features

The remarkable diversity of ideas within the subject of computer science makes it highly rewarding and exciting to study, yet also difficult to describe in essence. This engaging and accessible text addresses the fundamental question: What Is Computer Science? Rather than supplying a brief overview of every relevant topic, the book showcases a set of representative concepts broadly connected by [...]

### Contents

Part I: Foundations of Computer Science.- Compressing and Correcting Digital Media.- Writing and Comparing Algorithms.- Playing Hide-and-Seek with Virus Scanners.- How Long is a Piece of String?.- Demystifying Web-Search: The Mathematics of PageRank.- Part II: Examples from Information Security.- Using Short Programs to Make and Break Historical Ciphers.- Generation and Testing of Random Numbers.- Safety in Numbers: Modern Cryptography from Ancient Arithmetic.- Hiding a Needle in a Haystack: Concealed Messages.- Picking Digital Pockets.

### Fields of interest

Computer Science (general); Data Encryption; Algorithm Analysis and Problem Complexity; Computers and Education

### Target groups

Lower undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-3-319-04041-7](http://www.springer.com/978-3-319-04041-7)

### Softcover

2014. VIII, 254 p. 38 illus. (Undergraduate Topics in Computer Science)  
ISBN 978-3-319-04041-7

**Due: January 30, 2014**

M. Pelillo, Università "Ca' Foscari" di Venezia, Venezia Mestre, Italy (Ed.)

## Similarity-Based Pattern Analysis and Recognition

This accessible text/reference presents a coherent overview of the emerging field of non-Euclidean similarity learning. The book presents a broad range of perspectives on similarity-based pattern analysis and recognition methods, from purely theoretical challenges to practical, real-world applications. The coverage includes both supervised and unsupervised learning paradigms, as well as generative and discriminative models. Topics and features: explores the origination and causes of non-Euclidean (dis)similarity measures, and how they influence the performance of traditional classification algorithms; reviews similarity measures for non-vectorial data, considering both a "kernel[...]

### Features

The pattern recognition and machine learning communities have, until recently, focused mainly on feature-vector representations, typically considering objects in isolation. However, this paradigm is being increasingly challenged by similarity-based approaches, which recognize the importance of relational and similarity information. This accessible text/reference presents a coherent overview of [...]

### Contents

Introduction.- Part I: Foundational Issues.- Non-Euclidean Dissimilarities.- SIMBAD.- Part II: Deriving Similarities for Non-vectorial Data.- On the Combination of Information Theoretic Kernels with Generative Embeddings.- Learning Similarities from Examples under the Evidence Accumulation Clustering Paradigm.- Part III: Embedding and Beyond.- Geometricity and Embedding.- Structure Preserving Embedding of Dissimilarity Data.- A Game-Theoretic Approach to Pairwise Clustering and Matching.- Part IV: Applications.- Automated Analysis of Tissue Micro-Array Images on the Example of Renal[...]

### Fields of interest

Pattern Recognition

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4471-5627-7](http://www.springer.com/978-1-4471-5627-7)

### Hardcover

2013. XIV, 291 p. 65 illus., 46 illus. in color. (Advances in Computer Vision and Pattern Recognition)  
ISBN 978-1-4471-5627-7

**usually dispatched within 3 to 5 business days**

J. Poon, Information Technologies, Sydney, Australia; S. Poon, University of Sydney, Sydney, Australia (Eds.)

## Data Analytics for Traditional Chinese Medicine Research

This contributed volume explores how data mining, machine learning, and similar statistical techniques can analyze the types of problems arising from Traditional Chinese Medicine (TCM) research. The book focuses on the study of clinical data and the analysis of herbal data. Challenges addressed include diagnosis, prescription analysis, ingredient discoveries, network based mechanism deciphering, pattern-activity relationships, and medical informatics. Each author demonstrates how they made use of machine learning, data mining, statistics and other analytic techniques to resolve their research challenges, how successful if these techniques were applied, any insight noted and how these[...]

### Features

This contributed volume explores how data mining, machine learning, and similar statistical techniques can analyze the types of problems arising from Traditional Chinese Medicine (TCM) research. The book focuses on the study of clinical data and the analysis of herbal data. Challenges addressed include diagnosis, prescription analysis, ingredient discoveries, network based mechanism deciphering, [...]

### Contents

Foreword.- Searching for Evidence in Traditional Chinese Medicine Research: A Review and New Opportunities.- Causal Complexities of TCM Prescriptions: Understanding the underlying mechanisms of herbal formulation.- Medical Diagnosis by Using Machine Learning Techniques.- Network based deciphering of the mechanism of TCM.- Prescription Analysis and Mining.- Statistical Validation of TCM Syndrome Postulates in the Context of Depressive Patients.- Artificial Neural Network-based Chinese Medicine Diagnosis in Decision Support Manner and Herbal Ingredient Discoveries.- Chromatographic[...]

### Fields of interest

Data Mining and Knowledge Discovery; Health Informatics; Health Informatics; Pattern Recognition

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-03800-1](http://www.springer.com/978-3-319-03800-1)

### Hardcover

2014. XXII, 260 p. 59 illus., 44 illus. in color.  
ISBN 978-3-319-03800-1

**Due: February 28, 2014**

T. Ravindra Babu, Infosys Ltd., Bangalore, India; M.N. Murty, Indian Institute of Science, Bangalore, India; S.V. Subrahmanya, Infosys Technologies Ltd., Bangalore, India

## Compression Schemes for Mining Large Datasets

A Machine Learning Perspective

This book addresses the challenges of data abstraction generation using a least number of database scans, compressing data through novel lossy and non-lossy schemes, and carrying out clustering and classification directly in the compressed domain. Schemes are presented which are shown to be efficient both in terms of space and time, while simultaneously providing the same or better classification accuracy. Features: describes a non-lossy compression scheme based on run-length encoding of patterns with binary valued features; proposes a lossy compression scheme that recognizes a pattern as a sequence of features and identifying subsequences; examines whether the identification of[...]

### Features

As data mining algorithms are typically applied to sizable volumes of high-dimensional data, these can result in large storage requirements and inefficient computation times. This unique text/reference addresses the challenges of data abstraction generation using a least number of database scans, compressing data through novel lossy and non-lossy schemes, and carrying out clustering and [...]

### Contents

Introduction.- Data Mining Paradigms.- Run-Length Encoded Compression Scheme.- Dimensionality Reduction by Subsequence Pruning.- Data Compaction through Simultaneous Selection of Prototypes and Features.- Domain Knowledge-Based Compaction.- Optimal Dimensionality Reduction.- Big Data Abstraction through Multiagent Systems.- Intrusion Detection Dataset: Binary Representation.

### Fields of interest

Pattern Recognition; Data Mining and Knowledge Discovery; Artificial Intelligence (incl. Robotics)

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4471-5606-2](http://www.springer.com/978-1-4471-5606-2)

### Hardcover

2013. XVI, 197 p. 62 illus., 3 illus. in color. (Advances in Computer Vision and Pattern Recognition)  
ISBN 978-1-4471-5606-2

usually dispatched within 3 to 5 business days

M.P. Robillard, McGill University, Montréal, Canada; W. Maalej, University of Hamburg, Hamburg, Germany; R.J. Walker, University of Calgary, Calgary, Canada; Th. Zimmermann, Microsoft Research, Redmond, USA (Eds.)

## Recommendation Systems in Software Engineering

With the growth of public and private data stores and the emergence of off-the-shelf data-mining technology, recommendation systems have emerged that specifically address the unique challenges of navigating and interpreting software engineering data. This book collects, structures, and formalizes knowledge on recommendation systems in software engineering. It adopts a pragmatic approach with an explicit focus on system design, implementation, and evaluation. The book is divided into three parts: "Part I – Techniques" introduces basics for building recommenders in software engineering, including techniques for collecting and processing software engineering data, but also for presenting[...]

### Features

With the growth of public and private data stores and the emergence of off-the-shelf data-mining technology, recommendation systems have emerged that specifically address the unique challenges of navigating and interpreting software engineering data. This book collects, structures, and formalizes knowledge on recommendation systems in software engineering. It adopts a pragmatic approach with an [...]

### Fields of interest

Software Engineering; Management of Computing and Information Systems; Information Storage and Retrieval

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-45134-8](http://www.springer.com/978-3-642-45134-8)

### Hardcover

2014. XII, 628 p. 108 illus., 46 illus. in color.  
ISBN 978-3-642-45134-8

Due: January 31, 2014

P.K. Saha, University of Iowa, Iowa City, USA; U. Maulik, S. Basu, Jadavpur University, Kolkata, India (Eds.)

## Advanced Computational Approaches to Biomedical Engineering

There has been rapid growth in biomedical engineering in recent decades, given advancements in medical imaging and physiological modelling and sensing systems, coupled with immense growth in computational and network technology, analytic approaches, visualization and virtual-reality, man-machine interaction and automation. Biomedical engineering involves applying engineering principles to the medical and biological sciences and it comprises several topics including biomedicine, medical imaging, physiological modelling and sensing, instrumentation, real-time systems, automation and control, signal processing, image reconstruction, processing and analysis, pattern recognition, and[...]

### Features

There has been rapid growth in biomedical engineering in recent decades, given advancements in medical imaging and physiological modelling and sensing systems, coupled with immense growth in computational and network technology, analytic approaches, visualization and virtual-reality, man-machine interaction, and automation. Biomedical engineering involves applying engineering principles to the medical and [...]

### Contents

Part I – Advanced Computational Methods.- Chap. 1 – Graph Algorithmic Techniques for Biomedical Image Segmentation.- Chap. 2 – Information Theoretic Clustering for Medical Image Segmentation.- Chap. 3 – Multiobjective Differential Evolution Based Fuzzy Clustering for MR Brain Image Segmentation.- Chap. 4 – Spectral and Non-linear Analysis of Thalamocortical Neural Mass Model Oscillatory Dynamics.- Chap. 5 – A Meta-learning Approach for Protein Function Prediction.- Part II – Biomedical Applications.- Chap. 6 – Segmentation of the Carotid Arteries from 3D Ultrasound Images.- Chap. 7 – [...]

### Fields of interest

Artificial Intelligence (incl. Robotics); Computational Intelligence; Computational Biology / Bioinformatics; Image Processing and Computer Vision; Mathematical and Computational Biology

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41538-8](http://www.springer.com/978-3-642-41538-8)

### Hardcover

2014. XII, 217 p. 100 illus., 69 illus. in color.  
ISBN 978-3-642-41538-8

Due: January 31, 2014

J.T. Streib, Illinois College, Jacksonville, USA; T. Soma, Illinois College, Jacksonville, USA

## Guide to Java

### A Concise Introduction to Programming

This book presents a focused and accessible primer on the fundamentals of Java programming, with extensive use of examples and hands-on exercises. Topics and features: provides an introduction to variables, input/output and arithmetic operations; describes objects and contour diagrams, explains selection structures, and demonstrates how iteration structures work; discusses object-oriented concepts such as overloading and classes methods, and introduces string variables and processing; illustrates arrays and array processing and examines recursion; explores inheritance and polymorphism and investigates elementary files; presents a primer on graphical input/output, discusses elementary[...]

### Features

Seeking to learn quickly how to program in Java without prior experience? This Guide to Java presents a focused and accessible primer on the fundamentals of Java programming, with extensive use of illustrative examples and hands-on exercises. Addressing the need to acquire a good working model of objects in order to avoid possible misconceptions, the text introduces the core concepts of [...]

### Contents

Variables, Input / Output and Arithmetic.- Objects: An Introduction.- Selection Structures.- Iteration Structures.- Objects: Revisited.- Strings.- Arrays.- Recursion.- Objects: Inheritance and Polymorphism.- Elementary File Input and Output.- Simple Graphical Input and Output.- Exceptions.- Java doc Comments.- Glossary.- Answers to Selected Exercises.

### Fields of interest

Programming Techniques; Programming Languages, Compilers, Interpreters

### Target groups

Lower undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-1-4471-6316-9](http://www.springer.com/978-1-4471-6316-9)

### Softcover

2014. X, 372 p. 150 illus., 2 illus. in color. (Undergraduate Topics in Computer Science)  
ISBN 978-1-4471-6316-9

**Due: February 28, 2014**

V.S. Subrahmanian, University of Maryland, College Park, USA; A. Mannes, University of Maryland, College Park, USA; A. Roul, R.K. Raghavan

## Indian Mujahideen

### Computational Analysis and Public Policy

Advance Praise for Indian Mujahideen: Computational Analysis and Public Policy "This book presents a highly innovative computational approach to analyzing the strategic behavior of terrorist groups and formulating counter-terrorism policies. It would be very useful for international security analysts and policymakers." Uzi Arad, National Security Advisor to the Prime Minister of Israel and Head, Israel National Security Council (2009-2011) "An important book on a complex security problem. Issues have been analysed in depth based on quality research. Insightful and well-balanced in describing the way forward." Naresh Chandra, Indian Ambassador to the USA (1996-2001) and Cabinet[...]

### Features

Advance Praise for Indian Mujahideen: Computational Analysis and Public Policy "This book presents a highly innovative computational approach to analyzing the strategic behavior of terrorist groups and formulating counter-terrorism policies. It would be very useful for international security analysts and policymakers." Uzi Arad, National Security Advisor to the Prime Minister of [...]

### Contents

Introduction.- Indian Mujahideen (IM).- Temporal Probabilistic Behavior Rules.- Targeting Public Sites.- Bombings.- Simultaneous and Timed Attacks.- Total Deaths in IM Attacks.- Computing Policy Options.- Suggested Counter-Terrorism Policies.- Building a National Counter-Terrorism Center.- Appendix A: Data Methodology.- Appendix B: List of All Terrorist Attacks Carried out by IM.- Appendix C: Temporal Probabilistic Rules Presented in This Book.- Appendix D: Instances of Improved Diplomatic Relations between India and Pakistan.- Appendix E: Instances of Indian Mujahideen Conferences.- [...]

### Fields of interest

Data Mining and Knowledge Discovery; Political Science, general; Criminology & Criminal Justice; Public International Law

### Target groups

Professional/practitioner

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02817-0](http://www.springer.com/978-3-319-02817-0)

### Hardcover

2013. XVIII, 173 p. 22 illus. (Terrorism, Security, and Computation)  
ISBN 978-3-319-02817-0

**usually dispatched within 3 to 5 business days**

S.T. Taft, SofCheck, Inc., Burlington, USA; R.A. Duff, R.L. Brukardt, AXE Consultants, Madison, USA; E. Ploedereder, University of Stuttgart, Stuttgart, Germany; P. Leroy, Google Zurich, Zurich, Switzerland; E. Schonberg, New York University, New York, USA (Eds.)

## Ada 2012 Reference Manual. Language and Standard Libraries

### International Standard ISO/IEC 8652/2012 (E)

The Ada 2012 Reference Manual is an enhanced version of the text of International Standard ISO/IEC 8652/2012(E) for the programming language Ada. The Ada 2012 Reference Manual combines all of the previous corrections of Technical Corrigendum 1 and Amendment 1 with changes and additions that improve the capabilities of the language and the reliability of programs written in the language. The Ada 2012 Reference Manual will replace the former versions as an indispensable working companion for anybody using Ada professionally or learning and studying the language systematically.

### Features

The Ada 2012 Reference Manual is an enhanced version of the text of International Standard ISO/IEC 8652/2012(E) for the programming language Ada. The Ada 2012 Reference Manual combines all of the previous corrections of Technical Corrigendum 1 and Amendment 1 with changes and additions that improve the capabilities of the language and the reliability of programs written in the language. The Ada 2012 Reference [...]

### Contents

General.- Lexical Elements.- Declarations and Types.- Names and Expressions.- Statements.- Subprograms.- Packages.- Visibility Rules.- Tasks and Synchronization.- Program Structure and Compilation Issues.- Exceptions.- Generic Units.- Representation Issues.- The Standard Libraries.- Annex A (normative) Predefined Language Environment.- Annex B (normative) Interface to Other Languages.- Annex C (normative) Systems Programming.- Annex D (normative) Real-Time Systems.- Annex E (normative) Distributed Systems.- Annex F (normative) Information Systems.- Annex G (normative) Numerics.- Annex H[...]

### Fields of interest

Programming Techniques; Programming Languages, Compilers, Interpreters; Operating Systems; Software Engineering

### Target groups

Professional/practitioner

### Type of publication

Manual

More on [www.springer.com/978-3-642-45418-9](http://www.springer.com/978-3-642-45418-9)

### Softcover

2013. XXVIII, 921 p. (Programming and Software Engineering, Vol. 8339)  
ISBN 978-3-642-45418-9

**Due: December 30, 2013**

A. Trendowicz, Fraunhofer Institute for Experimental, Kaiserslautern, Germany; R. Jeffery, The University of New South Wales, Sydney, Australia

## Software Project Effort Estimation

Foundations and Best Practice Guidelines for Success

Software effort estimation is one of the oldest and most important problems in software project management, and thus today there are a large number of models, each with its own unique strengths and weaknesses in general, and even more importantly, in relation to the environment and context in which it is to be applied. Trendowicz and Jeffery present a comprehensive look at the principles of software effort estimation and support software practitioners in systematically selecting and applying the most suitable effort estimation approach. Their book not only presents what approach to take and how to apply and improve it, but also explains why certain approaches should be used in specific[...]

### Features

Software effort estimation is one of the oldest and most important problems in software project management, and thus today there are a large number of models, each with its own unique strengths and weaknesses in general, and even more importantly, in relation to the environment and context in which it is to be applied. Trendowicz and Jeffery present a comprehensive look at the principles of software [...]

### Contents

PART I Foundations.- Challenges of Predictable Software Development.- Principles of Effort and Cost Estimation.- Common Factors Influencing Software Project Effort.- Estimation under Uncertainty.- Basic Estimation Strategies.- PART II Selecting An Appropriate Estimation Method.- Classification of Effort Estimation Methods.- Finding the Most Suitable Estimation Method.- PART III Popular Effort Estimation Methods.- Statistical Regression Analysis.- Constructive Cost Model – COCOMO.- Classification and Regression Trees.- Case-Based Reasoning.- Wideband Delphi.- Planning Poker.- Bayesian[...]

### Fields of interest

Software Engineering; Management of Computing and Information Systems; Project Management

### Target groups

Professional/practitioner

### Type of publication

Professional book

More on [www.springer.com/978-3-319-03628-1](http://www.springer.com/978-3-319-03628-1)

### Hardcover

2014. XV, 485 p. 86 illus. in color.  
ISBN 978-3-319-03628-1

**Due: January 31, 2014**

J. Vince, Bournemouth University, Ashstead, United Kingdom

## Mathematics for Computer Graphics

John Vince explains a wide range of mathematical techniques and problem-solving strategies associated with computer games, computer animation, virtual reality, CAD and other areas of computer graphics in this updated and expanded fourth edition. The first four chapters revise number sets, algebra, trigonometry and coordinate systems, which are employed in the following chapters on vectors, transforms, interpolation, 3D curves and patches, analytic geometry and barycentric coordinates. Following this, the reader is introduced to the relatively new topic of geometric algebra, and the last two chapters provide an introduction to differential and integral calculus, with an emphasis on[...]

### Features

John Vince explains a wide range of mathematical techniques and problem-solving strategies associated with computer games, computer animation, virtual reality, CAD, and other areas of computer graphics in this updated and expanded fourth edition. The first four chapters revise number sets, algebra, trigonometry and coordinate systems, which are employed in the following chapters on [...]

### Contents

Preface.- Mathematics.- Numbers.- Algebra.- Trigonometry.- Coordinate Systems.- Vector.- Transforms.- Interpolation.- Curves and Patches.- Analytic Geometry.- Barycentric Coordinates.- Geometric Algebra.- Calculus: Derivatives.- Calculus: Integration.- Worked Examples.- Conclusion.- Index.

### Fields of interest

Computer Graphics; Mathematical Applications in Computer Science

### Target groups

Lower undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-1-4471-6289-6](http://www.springer.com/978-1-4471-6289-6)

### Softcover

2014. XVIII, 416 p. 280 illus. (Undergraduate Topics in Computer Science)  
ISBN 978-1-4471-6289-6

**Due: January 31, 2014**

W. Widlak, Skłodowska-Curie Memorial Cancer Center, Gliwice, Poland

## Molecular Biology - Not Only for Bioinformaticians

Bioinformatics, which can be defined as the application of computer science and information technology to the field of biology and medicine, has been rapidly developing over the past few decades. It generates new knowledge as well as the computational tools to create that knowledge. Understanding the basic processes in living organisms is therefore indispensable for bioinformaticians. This book addresses beginners in molecular biology, especially computer scientists who would like to work as bioinformaticians. It presents basic processes in living organisms in a condensed manner. Additionally, principles of several high-throughput technologies in molecular biology, which need the[...]

### Features

Bioinformatics, which can be defined as the application of computer science and information technology to the field of biology and medicine, has been rapidly developing over the past few decades. It generates new knowledge as well as the computational tools to create that knowledge. Understanding the basic processes in living organisms is therefore indispensable for bioinformaticians. This book addresses [...]

### Fields of interest

Computational Biology / Bioinformatics; Bioinformatics; Computer Science (general)

### Target groups

Upper undergraduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-642-45360-1](http://www.springer.com/978-3-642-45360-1)

### Softcover

2013. XII, 153 p. 122 illus. (Lecture Notes in Bioinformatics, Vol. 8248)  
ISBN 978-3-642-45360-1

**usually dispatched within 3 to 5 business days**

I. Zitouni, Microsoft Research, Redmond, USA (Ed.)

## Natural Language Processing of Semitic Languages

Research in Natural Language Processing (NLP) has rapidly advanced in recent years, resulting in exciting algorithms for sophisticated processing of text and speech in various languages. Much of this work focuses on English; in this book we address another group of interesting and challenging languages for NLP research: the Semitic languages. The Semitic group of languages includes Arabic (206 million native speakers), Amharic (27 million), Hebrew (7 million), Tigrinya (6.7 million), Syriac (1 million) and Maltese (419 thousand). Semitic languages exhibit unique morphological processes, challenging syntactic constructions, and various other phenomena that are less prevalent in other[...]

### Features

Research in Natural Language Processing (NLP) has rapidly advanced in recent years, resulting in exciting algorithms for sophisticated processing of text and speech in various languages. Much of this work focuses on English; in this book we address another group of interesting and challenging languages for NLP research: the Semitic languages. The Semitic group of languages includes Arabic (206 million [...])

### Contents

Part I Natural Language Processing Core-Technologies.- 1.Linguistic Introduction: The Orthography, Morphology and Syntax of Semitic Languages. R.Fabri, M.Gasser, N.Habash, G.Kiraz, and S.Wintner.- 2.Morphological Processing of Semitic Languages. S.Wintner.- 3.Syntax and Parsing of Semitic Languages. R.Tsarfaty.- 4.Semantic Processing of Semitic Languages. M.Diab and Y.Marton.- 5.Language Modeling. I.Heintz.- Part II Natural Language Processing Applications.- 6.Statistical Machine Translation. H.Hassan and K.Darwish.- 7.Named Entity Recognition. B.Mohit.- 8.Anaphora Resolution.[...]

### Fields of interest

Language Translation and Linguistics; Computational Linguistics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-45357-1](http://www.springer.com/978-3-642-45357-1)

### Hardcover

2014. X, 420 p. (Theory and Applications of Natural Language Processing)  
ISBN 978-3-642-45357-1

**Due: June 11, 2014**

## Economics

A. Agnetis, Università di Siena, Siena, Italy; J.-C. Billaut, Université Tours, Tours, France; S. Gawiejnowicz, Adam Mickiewicz University, Poznan, Poland; D. Pacciarelli, A. Soukhal

## Multiagent Scheduling

### Models and Algorithms

Scheduling theory has received a growing interest since its origins in the second half of the 20th century. Developed initially for the study of scheduling problems with a single objective, the theory has been recently extended to problems involving multiple criteria. However, this extension has still left a gap between the classical multi-criteria approaches and some real-life problems in which not all jobs contribute to the evaluation of each criterion. In this book, we close this gap by presenting and developing multi-agent scheduling models in which subsets of jobs sharing the same resources are evaluated by different criteria. Several scenarios are introduced, depending on the[...]

### Features

Scheduling theory has received a growing interest since its origins in the second half of the 20th century. Developed initially for the study of scheduling problems with a single objective, the theory has been recently extended to problems involving multiple criteria. However, this extension has still left a gap between the classical multi-criteria approaches and some real-life problems in which not all [...]

### Contents

1. Multiagent Scheduling Fundamentals.- 2. Problems, Algorithms and Complexity.- 3. Single Machine Problems.- 4. Batching Scheduling Problems.- 5. Parallel Machine Scheduling Problems.- 6. Scheduling Problems with Variable Job Processing Times.- References.

### Fields of interest

Operation Research / Decision Theory; Models and Principles

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41879-2](http://www.springer.com/978-3-642-41879-2)

### Hardcover

2014. XII, 277 p. 55 illus.  
ISBN 978-3-642-41879-2

**Due: February 28, 2014**

R. Boutellier, ETH Zürich, Zürich, Switzerland; M. Heinen, ETH Zürich, Zürich, Switzerland

## Growth Through Innovation

### Managing the Technology-Driven Enterprise

Capitalism produced entrepreneurs and property rights, the two basic pillars of innovation and growth. As the speed of technology is steadily increasing only radical innovation can be the name of the game. This book discusses technology and innovation trends by looking into historical examples and telling the latest business stories. It opens the discourse about pirates, pioneers, innovators and imitators; proposes the framework of dominant, science-driven and high-tech industry for innovation management and gives insights into intellectual property rights, industrial designs and technical risk management. Finally, it offers 8 important innovation principles for technology driven[...]

### Features

Capitalism produced entrepreneurs and property rights, the two basic pillars of innovation and growth. As the speed of technology is steadily increasing only radical innovation can be the name of the game. This book discusses technology and innovation trends by looking into historical examples and telling the latest business stories. It opens the discourse about pirates, pioneers, innovators and imitators; [...]

### Contents

Technology Changes our Life.- Paradigms and Hidden Research Strategies.- Technology, Driver of Growth.- Technology Speed and Substitution.- Diffusion of New Technologies.- The Myth of the Pioneer.- Pirates, Pioneers, Innovators and Imitators.- Dominant Design Industry.- Science-Driven Industry.- High-Tech Industries.- Basic Innovation Principles.- Radical Versus Routine Innovation.- Trend Towards Routine Innovation.- Design of Industrial Goods.- Protection of Innovation.- Core Capabilities.- Technical Risk Management.- Human Aspects of Technical Risk Management.- Non-Proliferation of[...]

### Fields of interest

Technology Management; R & D / Technology Policy; Organization / Planning; Emerging Markets / Globalization

### Target groups

Professional/practitioner

### Type of publication

Professional book

More on [www.springer.com/978-3-319-04015-8](http://www.springer.com/978-3-319-04015-8)

### Hardcover

2014. X, 264 p. 79 illus. (Management for Professionals)  
ISBN 978-3-319-04015-8

**Due: February 10, 2014**

X. Cai, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong; X. Wu, East China Normal University, Shanghai, China (P.R.); X. Zhou, Macquarie University, North Ryde, Australia

## Optimal Stochastic Scheduling

Many interesting and important results on stochastic scheduling problems have been developed in recent years, with the aid of probability theory. This book provides a comprehensive and unified coverage of studies in stochastic scheduling. The objective is two-fold: (i) to summarize the elementary models and results in stochastic scheduling, so as to offer an entry-level reading material for students to learn and understand the fundamentals of this area and (ii) to include in details the latest developments and research topics on stochastic scheduling, so as to provide a useful reference for researchers and practitioners in this area. Optimal Stochastic Scheduling is organized into two [...]

### Features

Many interesting and important results on stochastic scheduling problems have been developed in recent years, with the aid of probability theory. This book provides a comprehensive and unified coverage of studies in stochastic scheduling. The objective is two-fold: (i) to summarize the elementary models and results in stochastic scheduling, so as to offer an entry-level reading material for students to [...]

### Contents

Basic Concepts.- Regular Performance Measures.- Irregular Performance Measures.- Stochastic Machine Breakdowns.- Optimal Stopping Problems.- Multi-armed Bandit Processes.- Dynamic Policies.- Stochastic Scheduling with Incomplete Information.- Optimal Policies in Time-varying Scheduling.- More Stochastic Scheduling Models.

### Fields of interest

Operation Research / Decision Theory; Production / Logistics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4899-7404-4](http://www.springer.com/978-1-4899-7404-4)

### Hardcover

2014. X, 420 p. 3 illus. (International Series in Operations Research & Management Science, Vol. 207) ISBN 978-1-4899-7404-4

**Due: February 28, 2014**

A.K. Chakravarty, Northeastern University, Boston, MA, USA

## Supply Chain Transformation

Evolving with Emerging Business Paradigms

Today, supply chain transformation for creating customer value continues to be a priority for many companies, as it enables them to gain a competitive advantage. While value creation is shaped by external drivers such as market volatility, technology, product and service offering and disruption, it can be stymied by the internal stresses arising from the need to minimize costs, limitations in process redesign, waste minimization and the unavailability of knowledge capital. Therefore, for companies to survive and prosper, the relevant questions to ask would be how to identify the external/internal forces driving changes and how to map the business drivers to the attributes of [...]

### Features

Today, supply chain transformation for creating customer value continues to be a priority for many companies, as it enables them to gain a competitive advantage. While value creation is shaped by external drivers such as market volatility, technology, product and service offering, and disruption, it can be stymied by the internal stresses arising from the need to minimize costs, limitations in process [...]

### Contents

Chapter 1: A Framework for Transformation.- Chapter 2: Managing the Customer.- Chapter 3: Products and Processes.- Chapter 4: Managing Suppliers.- Chapter 5: Logistics and Fulfillment Services.- Chapter 6: Transforming the Contemporary Supply Chain.- Chapter 7: Incorporating Emerging Economics in the Supply Chain.- Chapter 8: Humanitarian Relief Chain.- Chapter 9: Sustainable Supply Chains.- Chapter 10: Healthcare Delivery Network.

### Fields of interest

Production / Logistics; Industrial and Production Engineering; Sustainable Development; e-commerce / e-business

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-642-41910-2](http://www.springer.com/978-3-642-41910-2)

### Hardcover

2014. XII, 376 p. 152 illus., 52 illus. in color. (Springer Texts in Business and Economics) ISBN 978-3-642-41910-2

**Due: February 28, 2014**

G. Chen, Xiamen University, Xiamen, China (P.R.); S. Hamori, Kobe University, Kobe, Japan

## Rural Labor Migration, Discrimination, and the New Dual Labor Market in China

This book studies some important issues in China's labor market, such as rural labor migration, employment and wage discrimination, the new dual labor market, and economic returns on schooling, using the newer and representative data and advanced estimation models. This approach has yielded many interesting results, including a solution to the dilemma of two ongoing crises since 2004: the rural labor surplus and severe shortage of migrant labor. While male workers generally received less favorable treatment and consequently enjoyed a lower average employment probability than female workers in 1996, they also received preferential treatment over female workers, who otherwise had [...]

### Features

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### Contents

Introduction.- Rural Migration and Sectoral Earning Differences in Urban China.- A Solution to the Migrant Labor Shortage and Rural Labor Surplus in China.- Do Chinese Employers Discriminate against Females when Hiring Employees?.- An Empirical Analysis of Gender Wage Differentials in Urban China.- Bivariate Probit Analysis of the Differences between Male and Female Formal Employment in Urban China.- Formal and Informal Employment in Urban China - Income Differentials.- Economic Returns to Schooling in Urban China: OLS and the Instrumental Variables Approach.- First Publication.

### Fields of interest

Labor Economics; Social Sciences (general); Statistics for Social Science, Behavioral Science, Education, Public Policy, and Law

### Target groups

Research

### Type of publication

Brief

More on [www.springer.com/978-3-642-41108-3](http://www.springer.com/978-3-642-41108-3)

### Softcover

2014. X, 118 p. 9 illus. (SpringerBriefs in Economics) ISBN 978-3-642-41108-3

**usually dispatched within 3 to 5 business days  
December 31, 2013**

J. Chen, Shanghai University of Finance and Econo, Shanghai, China (P.R.); M. Stephens, Heriot-Wat University, Edinburgh, United Kingdom; Y. Man, Peking University, Beijing, China (P.R.) (Eds.)

## The Future of Public Housing

Ongoing Trends in the East and the West

Public housing was once an important strand in western housing policies, but is seldom seen as a mainstream policy instrument for the future. In contrast, in many East Asian countries large public housing programs are underway. Behind these generalizations, there are exceptions, too. By including perspectives of scholars from across the world, this book provides new insights into public housing in its various forms. It contains in-depth chapters on public housing in five East Asian countries and six Western countries, together with three comparative overview chapters.

### Features

Public housing was once an important strand in western housing policies, but is seldom seen as a mainstream policy instrument for the future. In contrast, in many East Asian countries large public housing programs are underway. Behind these generalizations, there are exceptions, too. By including perspectives of scholars from across the world, this book provides new insights into public housing in its various [...]

### Contents

Preface.- Public Housing in the East.- Public Housing in the West.- Concluding Part.

### Fields of interest

Public Finance & Economics; Political Economy

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-41621-7](http://www.springer.com/978-3-642-41621-7)

### Hardcover

2013. XXV, 312 p. 36 illus., 27 illus. in color.

ISBN 978-3-642-41621-7

Due: January 31, 2014

E. Chew, Queen Mary University of London, London, United Kingdom

## Mathematical and Computational Modeling of Tonality

Theory and Applications

From the Preface:Blending ideas from operations research, music psychology, music theory, and cognitive science, this book aims to tell a coherent story of how tonality pervades our experience, and hence our models, of music. The story is told through the developmental stages of the Spiral Array model for tonality, a geometric model designed to incorporate and represent principles of tonal cognition, thereby lending itself to practical applications of tonal recognition, segmentation, and visualization. Mathematically speaking, the coils that make up the Spiral Array model are in effect helices, a spiral referring to a curve emanating from a central point. The use of "spiral" here is[...]

### Features

From the Preface:Blending ideas from operations research, music psychology, music theory, and cognitive science, this book aims to tell a coherent story of how tonality pervades our experience, and hence our models, of music. The story is told through the developmental stages of the Spiral Array model for tonality, a geometric model designed to incorporate and represent principles of tonal [...]

### Contents

Tonality.- An Abbreviated Survey.- The Spiral Array.- The CEG Algorithm (Part I).- The CEG Algorithm (Part II): Validation.- Determining Key Boundaries.- Argus Segmentation Method.- Real-Time Pitch Spelling.- MuSA.RT.- Visible Humor.- Sensitivity Analysis.- Model Calibration.- CEG Key Finding: Bach's WTC book I.

### Fields of interest

Operation Research / Decision Theory; Computational Mathematics and Numerical Analysis; Music; Cognitive Psychology

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9474-4](http://www.springer.com/978-1-4614-9474-4)

### Hardcover

2014. XIV, 307 p. 154 illus., 46 illus. in color. (International Series in Operations Research & Management Science, Vol. 204)

ISBN 978-1-4614-9474-4

Due: January 31, 2014

P. Chuan, Macau Uni. of Sci. and Tech., Macau, Macao; V. Khachidze, CeBA Canada, Vanier, Canada; I.K.W. Lai, Macau Uni. of Sci. and Tech., Macau, Macao; Y. Liu, Macau University of Science and Technology, Macau, Macao; S. Siddiqui, CeBA Canada, Ottawa, Canada; T. Wang (Eds.)

## Innovation in the High-Tech Economy

This book constitutes the proceedings of the First International Conference on Management Science and Engineering: Innovation and High-tech Services, ICMSE 2013, held in Macau, in June 2013. The papers are contributed by innovative researchers, engineers and practitioners in the field of management science, information system, finance, economics and accounting and offer a platform for exchanging the latest research findings in the field of management science and management innovation, for looking forward to the future trends in the management science and management innovation field in the 21st century, and to promote management modernization and high-tech innovation services.

### Features

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### Contents

Development Strategy of E-health in China.- E-commerce of Eco Bags on Basis of Pareto Improvement.- The Impact of Technical Barriers to Trade: The Cases of Trade between China, Japan, Korea, and the US.- An Appraisal of Internet Business Models as a Research Paradigm.- The Study of Usability Performance in the E-Commerce Websites.- E-Business and Cloud Computing: A New Practice or a Trend.- Multi-Level Access Control in the Data Pipeline of the International Supply Chain System.- A Smart Parking and Reservation System for QR-Code-Based Car Park.- A Study on Smart Work Center.- An[...]

### Fields of interest

Management/Business for Professionals; Finance / Banking

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-41584-5](http://www.springer.com/978-3-642-41584-5)

### Hardcover

2013. VI, 151 p. 37 illus., 17 illus. in color. (Contributions to Economics)

ISBN 978-3-642-41584-5

Due: January 31, 2014

J.M. Cockburn, Université Laval, Québec, Canada; Y. Dissou, University of Ottawa, Ottawa, Canada; J.-Y. Duclos, Laval University, Québec, Canada; L. Tiberti, Laval University, Québec, Canada (Eds.)

## Infrastructure and Economic Growth in Asia

Public spending on infrastructure plays an important role in promoting economic growth and poverty alleviation. Empirical studies unequivocally show that under-investment in infrastructure limit economic growth. At the same time, numerous other studies have shown that investment in infrastructure can be a highly effective tool in fighting poverty reduction. In that context, the financing of infrastructure has been a critical element of most economic growth and poverty reduction strategies in developing countries, since the start of this millennium. This book provides a comparative analysis of the aggregate and sectoral implications of higher spending on infrastructure in three very [...]

### Features

Public spending on infrastructure plays an important role in promoting economic growth and poverty alleviation. Empirical studies unequivocally show that under-investment in infrastructure limits economic growth. At the same time, numerous other studies have shown that investment in infrastructure can be an effective tool in fighting poverty reduction. In that context, the financing of infrastructure has been [...]

### Contents

Introduction.- Infrastructure and Growth.- Approach.- China.- Pakistan.- Philippines.- Summary and conclusion.

### Fields of interest

Development Economics; Economic Growth; Public Finance & Economics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-03136-1](http://www.springer.com/978-3-319-03136-1)

### Hardcover

2013. IX, 148 p. 19 illus., 15 illus. in color. (Economic Studies in Inequality, Social Exclusion and Well-Being) ISBN 978-3-319-03136-1

**usually dispatched within 3 to 5 business days  
December 31, 2013**

W.D. Cook, York University, Toronto, Canada; J. Zhu, Worcester Polytechnic Institute, Worcester, USA (Eds.)

## Data Envelopment Analysis

A Handbook of Modeling Internal Structure and Network

This handbook serves as a complement to the Handbook on Data Envelopment Analysis (eds, W.W. Cooper, L.M. Seiford and J. Zhu, 2011, Springer) in an effort to extend the frontier of DEA research. It provides a comprehensive source for the state-of-the-art DEA modeling on internal structures and network DEA. Chapter 1 provides a survey on two-stage network performance decomposition and modeling techniques. Chapter 2 discusses the pitfalls in network DEA modeling. Chapter 3 discusses efficiency decompositions in network DEA under three types of structures, namely series, parallel and dynamic. Chapter 4 studies the determination of the network DEA frontier. In chapter 5 additive[...]

### Features

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DEA for Two-State Networks: Efficiency Decompositions and Modeling Techniques.- Network DEA Pitfalls: Divisional Efficiency and Frontier Projection.- Efficiency Decomposition in Network Data Envelopment Analysis.- Two-Stage Network Processes: DEA Frontier Identification.- Additive Efficiency Decomposition in Network DEA.- Scale Efficiency Measurement in Two-Stage Production Systems.- Decomposing Efficiency and Returns to Scale in Two-Stage Network Systems.- Evaluating Two-Stage Network Structures: Bargaining Game Approach.- Shared Resources and Efficiency Decomposition in Two-Stage[...]

### Fields of interest

Operation Research / Decision Theory; Operations Research, Mathematical Programming; Industrial and Production Engineering

### Target groups

Research

### Type of publication

Handbook

More on [www.springer.com/978-1-4899-8067-0](http://www.springer.com/978-1-4899-8067-0)

### Hardcover

2014. XVI, 700 p. 109 illus., 41 illus. in color. (International Series in Operations Research & Management Science, Vol. 208) ISBN 978-1-4899-8067-0

**Due: February 28, 2014**

T.U. Daim, Portland State University, Portland, USA; M. Pizarro, Daimler Trucks North America, Happy Valley, USA; R. Talla, GE Healthcare, Hillsboro, USA (Eds.)

## Planning and Roadmapping Technological Innovations

Cases and Tools

Across industries, firms vary broadly on how they operate with respect to their Research & Development (R&D) activities. This volume presents a holistic approach to evaluating the critical elements of R&D management, including planning, organization, portfolio management, project management, and knowledge transfer—by assessing R&D management from different sectors. Featuring empirical research and in-depth case studies from industries as diverse as medical imaging, electric vehicles, and cyber security, the authors identify common features of successful R&D management, despite fundamental differences, such as company size, number of employees, industry sector, and the R&D budget. In[...]

### Features

Across industries, firms vary broadly on how they operate with respect to their Research & Development (R&D) activities. This volume presents a holistic approach to evaluating the critical elements of R&D management, including planning, organization, portfolio management, project management, and knowledge transfer—by assessing R&D management from different sectors. Featuring empirical [...]

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Preface.- 1 Communication.- 2 Project Selection.- 3 Design Structure Matrix.- 4 Project Management Criteria.- 5 Technology Road Mapping for Medical Imaging.- 6 Technology Roadmap: The 'Complete EHR' Toward Higher Quality Patient care.- 7 Technology Roadmap for Automotive Flexible Display.- 8 Technology Roadmap for Next Generation PC.- 9 Technology Roadmap for Tesla Motors Sedan EV.- 10 A Proposed Roadmap for Cyber Security in Cloud Computing at Portland State University.

### Fields of interest

Technology Management; R & D / Technology Policy; Business Strategy / Leadership

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-02972-6](http://www.springer.com/978-3-319-02972-6)

### Hardcover

2014. XII, 270 p. 102 illus., 95 illus. in color. (Innovation, Technology, and Knowledge Management) ISBN 978-3-319-02972-6

**Due: December 31, 2013**

P. Dorman, The Evergreen State College, Olympia, USA

## Macroeconomics

### A Fresh Start

The world has changed dramatically in recent years and so has the field of economics, but many introductory economics textbooks have remained stuck in the past. This book provides a new beginning for the study of macroeconomics, fundamentally international in its approach and emphasizing current debates and research trends. The first, mostly descriptive half of the book presents the main macroeconomic and financial patterns observed across the world, the institutions that govern national economies and the policy options available to decision-makers. In the second half, different schools of thought in macroeconomics are introduced with an emphasis on their underlying assumptions, so[...]

### Features

The world has changed dramatically in recent years and so has the field of economics, but many introductory economics textbooks have remained stuck in the past. This book provides a new beginning for the study of macroeconomics, fundamentally international in its approach and emphasizing current debates and research trends. The first, mostly descriptive half of the book presents the main macroeconomic and [...]

### Contents

1 Introduction: Economic Growth and Development in Historical Perspective.- 2 Some Relevant Microeconomics.- Part I: The Terrain of Macroeconomics.- 3 Accounts and Measurements.- 4 The Fundamental Macroeconomic Identities.- 5 Macroeconomic Issues: Output, Employment, Inflation, Financial Stability.- 6 Macroeconomic Adjustment.- 7 An Introduction to Money, Banks and Financial Systems.- 8 International Finance: A World of Many Moneys.- 9 International Trade in an Interdependent World.- Part II: Macroeconomic Theories in Conflict.- 10 Classical Economic Doctrine and the Keynesian[...]

### Fields of interest

Macroeconomics / Monetary Economics; Economics

### Target groups

Lower undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-3-642-37440-1](http://www.springer.com/978-3-642-37440-1)

### Hardcover

2014. Approx. 350 p. 117 illus. (Springer Texts in Business and Economics)  
ISBN 978-3-642-37440-1

**Due: January 31, 2014**

P. Dorman, The Evergreen State College, Olympia, USA

## Microeconomics

### A Fresh Start

The world has changed dramatically in recent years and so has the field of economics, but many introductory economics textbooks have remained stuck in the past. This book provides a new beginning for the study of microeconomics, emphasizing current debates and research trends. It is international in outlook and reflects the shift toward empirical methods, as well as the study of institutions and economic behavior. It is also written to fit in with an approach to teaching based on active learning and critical thinking. Mainstream material is still covered, but within a new context, making it more relevant, realistic and responsive to the deeper questions economists are now asking about[...]

### Features

The world has changed dramatically in recent years and so has the field of economics, but many introductory economics textbooks have remained stuck in the past. This book provides a new beginning for the study of microeconomics, emphasizing current debates and research trends. It is international in outlook and reflects the shift toward empirical methods, as well as the study of institutions and economic [...]

### Contents

Part I: Foundations.- 1 Economics and the Economy.- 2 Economics Yesterday and Today.- 3 Four Building Blocks of Economic Theory.- 4 Values and Objectives.- 5 Analyzing Markets.- 6 Markets and Human Well-Being. Appendix: Markets and Freedom.- 7 Markets.- 8 Firms.- 9 Government.- 10 Civil Society.- Part III: A Closer Look at Markets.- 11 The Theory of Demand. Appendix: Indifference Curves.- 12 Production Costs and the Theory of Supply.- 13 Monopoly Power.- 14 The Economics of Bargaining Power.- 15 Market Failure.- Part IV: Microeconomic Challenges.- 16 Labor and Employment.- 17 Financial[...]

### Fields of interest

Microeconomics; Political Economy

### Target groups

Lower undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-3-642-37433-3](http://www.springer.com/978-3-642-37433-3)

### Hardcover

2014. Approx. 350 p. 116 illus. (Springer Texts in Business and Economics)  
ISBN 978-3-642-37433-3

**Due: January 31, 2014**

G. Dutrenit, G. Crespi (Eds.)

## Science, Technology and Innovation Policies for Development

### The Latin American Experience

This book examines the implementation of science, technology and innovation (STI) policy in eight Latin American countries and the different paths these policies have taken. It provides empirical evidence to examine the extent to which STI policies are contributing to the development of the region, as well as to the solution of market failures and the stimulus of the region's innovation systems. Since the pioneering work of Solow (1957), it has been recognized that innovation is critical for economic growth both in developed and in less-developed countries. Unfortunately Latin America lags behind world trends and although over the last 20 years the region has established a more stable[...]

### Features

This book examines the implementation of science, technology and innovation (STI) policy in eight Latin American countries and the different paths these policies have taken. It provides empirical evidence to examine the extent to which STI policies are contributing to the development of the region, as well as to the solution of market failures and the stimulus of the region's innovation systems. [...]

### Contents

1. The changing role of science, technology and innovation policy in building systems of innovation: the case of Mexico.- 2. Evolution of the Public Institutions of Science, Technology and Innovation in Chile: 1990-2012.- 3. Insights into the impact of BID's Technology Modernization Program on Argentina's STI policy.- 4. Innovation, Production and Innovation Systems and the BNDES' Contribution.- 5. Inclusive Innovation Against all Odds: the case of Peru.- 6. Value attributed to STI Activities and Policies in Uruguay.- 7. From Design to the Institutional Construction of a Policy for[...]

### Fields of interest

R & D / Technology Policy; Technology Management; Engineering Economics, Organization, Logistics, Marketing

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-04107-0](http://www.springer.com/978-3-319-04107-0)

### Hardcover

2014. I, 334 p. 8 illus., 4 illus. in color.  
ISBN 978-3-319-04107-0

**Due: April 28, 2014**

M.A. Ferraz Dias de Moraes, University of São Paulo, San Dimas, Brazil; D. Zilberman, University of California, Berkeley, USA

## Production of Ethanol from Sugarcane in Brazil

From State Intervention to a Free Market

The success of Brazil in the large-scale production and use of fuel ethanol has been widely discussed and analyzed by other countries interested in adopting policies designed to encourage the use of bio-fuels. Within this context, certain questions arise: Could the Brazilian experience be replicated in other countries? What were the conditions that enabled the creation of the Brazilian Proálcool (National Ethanol Program) and what lessons can be learned? To examine these issues, it is important to understand the functioning of the key, interconnected markets (those for sugarcane, sugar and ethanol), which, from their inception, were the objects of extensive government intervention until[...]

### Features

The success of Brazil in the large-scale production and use of fuel ethanol has been widely discussed and analyzed by other countries interested in adopting policies designed to encourage the use of bio-fuels. Within this context, certain questions arise: Could the Brazilian experience be replicated in other countries? What were the conditions that enabled the creation of the Brazilian Proálcool (National [...])

### Contents

Production of Ethanol from Sugarcane in Brazil.- From State Intervention to a Free Market.- Introduction.- PART I.- STATE INTERVENTION IN THE SUGARCANE ETHANOL INDUSTRY IN BRAZIL.- State intervention in the chain of production of ethanol from sugarcane in Brazil: its forms and effects on the development of the sector between the 1930s and 1980s.- PART II.- THE GOVERNMENT DISTANCES ITSELF IN THE 1990S: THE BREAK AND THE LEARNING CURVE.- The 1990s: deregulation of the sector.- Organizational changes within the public sphere.- Organizational changes within the private sphere.- Changes[...]

### Fields of interest

Environmental Economics; Energy Policy, Economics and Management; Environmental Law / Policy / Ecojustice; Development Economics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-03139-2](http://www.springer.com/978-3-319-03139-2)

### Hardcover

2014. 275 p. 36 illus. in color. (Natural Resource Management and Policy, Vol. 43)  
ISBN 978-3-319-03139-2

**Due: December 15, 2013**

K. Ganesh, McKinsey Knowledge Center India, Gurgaon, India; S. Mohapatra, S. Nagarajan

## Design and Development of Knowledge Management for Manufacturing

Framework, Solution and Strategy

This book examines the modules/elements required before implementing knowledge management solutions in typical manufacturing and service industry. The objective is to develop a framework, design and model suitable for all requirements and a strategy to properly implement. Related case studies from organizations are included, with the results provided to use as a solution to problems experienced when implementing knowledge management in the industry. Implementing a knowledge management system can be complex and dynamic, no matter how well planned and developed. Inevitably a degree of organizational inertia is focused on the current state rather than the new. Within an enterprise,[...]

### Features

This book examines the modules/elements required before implementing knowledge management solutions in typical manufacturing and service industry. The objective is to develop a framework, design and model suitable for all requirements and a strategy to properly implement. Related case studies from organizations are included, with the results provided to use as a solution to problems experienced when [...]

### Contents

Introduction.- Literature Review.- Readiness Assessment for Knowledge Management Solution Implementation.- Behavior Assessment for Knowledge Management Solutions Implementation.- Taxonomy and Technology Architecture for Knowledge Management Solution Implementation.- Process Design for Knowledge Management Solution Implementation.- Learning Design for Knowledge Management Solution Implementation.- Balance Scorecard Framework for Knowledge Management Solution Implementation.- Vendor Management Framework for Knowledge Management Solution Implementation. Conclusions.

### Fields of interest

Production / Logistics; Industrial Organization; Industrial and Production Engineering

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02891-0](http://www.springer.com/978-3-319-02891-0)

### Hardcover

2014. XIX, 194 p. 93 illus., 8 illus. in color.  
ISBN 978-3-319-02891-0

**usually dispatched within 3 to 5 business days**

M. Gascó-Hernández (Ed.)

## Open Government

Opportunities and Challenges for Public Governance

On January 2009, President Obama signed the Memorandum on Transparency and Open Government. The memorandum declares the new Administration's commitment to creating an unprecedented level of openness in Government and establishing a system linking three principles: transparency, public participation and collaboration. Since then, federal agencies in the United States and public administrations around the world have embarked on open government initiatives and have worked to redefine their relationship with citizens and with each other. On September 20th, 2011, eight governments gathered in New York City to launch the Open Government Partnership, a new multilateral initiative to promote[...]

### Features

On January 2009, President Obama signed the Memorandum on Transparency and Open Government. The memorandum declares the new Administration's commitment to creating an unprecedented level of openness in Government and establishing a system linking three principles: transparency, public participation and collaboration. Since then, federal agencies in the United States and public administrations around the world [...]

### Contents

1.Preface.- 2.List of contributors.- 3.Introduction.- 4.Section I. Open government theories.- 5.Section II. Open government case studies.- 6.Section III. Conclusions.

### Fields of interest

Public Administration; Political Science, general; Comparative Politics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4614-9562-8](http://www.springer.com/978-1-4614-9562-8)

### Hardcover

2014. Approx. 350 p. 40 illus. in color.  
ISBN 978-1-4614-9562-8

**Due: February 28, 2014**

A. Grove, CSU Channel Islands, Camarillo, USA; G. Berg, CSU-Channel Islands, Camarillo, USA (Eds.)

## Social Business

### Theory, Practice, and Critical Perspectives

Conceptualized and put into practice by Nobel Peace Prize Laureate and Presidential Medal of Freedom recipient Dr. Muhammad Yunus, social businesses work to address social ills such as poverty, lack of health care, gaps in education and environmental challenges. This book explores the ideation, practice and evaluation of the concept of social business. Not just theoretical foundations but several case studies of social businesses around the world and state-of-the-art assessment of the issues that arise in the planning, marketing and evaluation of social businesses, are featured in this book. This cutting-edge collection of articles, presented by the California Institute for Social[...]

### Features

Conceptualized and put into practice by Nobel Peace Prize Laureate and Presidential Medal of Freedom recipient Dr. Muhammad Yunus, social businesses work to address social ills such as poverty, lack of health care, and environmental challenges. This book explores the ideation, practice and evaluation of the concept of social business. Not just theoretical foundations, but several case [...]

### Contents

Part I: Introduction: Background and Theory.- Part II: Case Studies.- Part III: Practice: Lessons Learned About Designing Social Businesses.

### Fields of interest

Non-Profit Enterprises / Corporate Social Responsibility; Entrepreneurship; Sustainable Development

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-45274-1](http://www.springer.com/978-3-642-45274-1)

### Hardcover

2014. VIII, 258 p. 22 illus., 17 illus. in color. ISBN 978-3-642-45274-1

**Due: February 28, 2014**

G. Halevi, Technion, Tel Aviv, Israel

## Industrial Management -- Control and Profit

### A Technical Approach

This volume presents controlling tools for management in order to be in a position to communicate with control engineers concerning technological decisions. The main objective of manufacturing management is to make profit. However, in traditional manufacturing systems none of the separate stages in the process support this objective. Management is not expert in any of these stages and therefore is dependent on specific experts at each stage and must follow their decisions. Each stage has its own first priority which is not profit and cost. This means that management does not have real control over these functional stages, nor over the process as a whole. This book presents controlling[...]

### Features

This volume presents controlling tools for management in order to be in a position to communicate with control engineers concerning technological decisions. The main objective of manufacturing management is to make profit. However, in traditional manufacturing systems none of the separate stages in the process support this objective. Management is not expert in any of these stages, and therefore is [...]

### Contents

1 Introduction.- Part one: Management control engineering.- 2 Product design.- 3 Process planning.- 4 Lot size & Profit.- 5 Traditional production planning.- 6 Flexible production planning.- 7 Quality control SQC & SPC.- Part two: Engineering support management.- 8 Inventory and management control.- 9 Resource planning.- 10 Master production planning.- 11 Determine delivery date and cost.- 12 company level of performance.- Index.

### Fields of interest

Production / Logistics; Industrial and Production Engineering; Engineering Design

### Target groups

Professional/practitioner

### Type of publication

Monograph

More on [www.springer.com/978-3-319-03469-0](http://www.springer.com/978-3-319-03469-0)

### Hardcover

2014. 250 p. (Lecture Notes in Management and Industrial Engineering, Vol. 1) ISBN 978-3-319-03469-0

**Due: April 28, 2014**

R. Hall, University of Southern California, Los Angeles, USA (Ed.)

## Patient Flow

### Reducing Delay in Healthcare Delivery

This book is dedicated to improving healthcare through reducing delays experienced by patients. With an interdisciplinary approach, this new edition, divided into five sections, begins by examining healthcare as an integrated system. Chapter 1 provides a hierarchical model of healthcare, rising from departments, to centers, regions and the "macro system." A new chapter demonstrates how to use simulation to assess the interaction of system components to achieve performance goals, and Chapter 3 provides hands-on methods for developing process models to identify and remove bottlenecks, and for developing facility plans. Section 2 addresses crowding and the consequences of delay. Two new[...]

### Features

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### Contents

Modeling Patient Flows Through the Healthcare System.- Interdependency of Hospital Departments and Hospital-Wide Patient Flows.- Hospitals and Clinical Facilities, Processes and Design for Patient Flow.- Emergency Department Crowding, The Nature of the Problem and Why it Matters.- The Consequences of Emergency Department Crowding and Delays for Patients.- Access to Surgery and Medical Consequences of Delays.- Breakthrough Demand-Capacity Management Strategies to Improve Hospital Flow, Safety, and Satisfaction.- Managing Patient Appointments in Primary Care.- Waiting Lists for Surgery.- [...]

### Fields of interest

Operation Research / Decision Theory; Health Administration; Operations Research, Mathematical Programming

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9511-6](http://www.springer.com/978-1-4614-9511-6)

### Hardcover

2013. XII, 553 p. 107 illus. (International Series in Operations Research & Management Science, Vol. 206) ISBN 978-1-4614-9511-6

**Due: December 31, 2013**

K. Hallmann, German Sport University Cologne, Cologne, Germany; K. Petry, German Sport University Cologne, Cologne, Germany (Eds.)

## Comparative Sport Development

Systems, Participation and Public Policy

The aim of this book is to provide an overview of perspectives and approaches to sports development focusing on sport systems, sport participation and public policy towards sports. It includes twelve European countries covering all regions of Europe and eleven countries from around the globe. The objective is to present an overview of the diversity of approaches taken to sport development, focusing on the different sport systems and how sport is financed, the underlying applications of sport policy and how it is reflected in sport participation. This book takes a comparative approach which is reflected in each chapter following a similar structure. The diversity of sports systems in[...]

### Features

The aim of this book is to provide an overview of perspectives and approaches to sports development focusing on sport systems, sport participation and public policy towards sports. It includes twelve European countries covering all regions of Europe and eleven countries from around the globe. The objective is to present an overview of the diversity of approaches taken to sport development, focusing on the [...]

### Contents

1. Introduction to sport development, sport participation and sport policies including theoretical framework. PART I: Europe.- 2. Belgium.- 3. Estonia.- 4. Finland.- 5. France.- 6. Germany.- 7. Hungary.- 8. Ireland.- 9. The Netherlands.- 10. Poland.- 11. Russia.- 12. Spain.- 13. UK.- PART II: The Rest of the World.- 14. Israel.- 15. China.- 16. Japan.- 17. India.- 18. Australia.- 19. New Zealand.- 20. South Africa.- 21. Uganda.- 22. Argentina.- 23. Brazil.- 24. USA.- 25. Canada.- PART III: Conclusion.- 26. Conclusion.

### Fields of interest

Economic Policy; Management/Business for Professionals; Business & Economics (general)

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4614-8904-7](http://www.springer.com/978-1-4614-8904-7)

### Hardcover

2013. X, 355 p. 56 illus., 5 illus. in color. (Sports Economics, Management and Policy, Vol. 8)  
ISBN 978-1-4614-8904-7

**usually dispatched within 3 to 5 business days**

M.R. Hammock, Middle Tennessee State University, Nashville, USA; J.W. Mixon, Berry College, Waynesville, USA

## Microeconomic Theory and Computation

Applying the Maxima Open-Source Computer Algebra System

Economists can use computer algebra systems to manipulate symbolic models, derive numerical computations, and analyze empirical relationships among variables. Maxima is an open-source multiplatform computer algebra system that rivals proprietary software. Maxima's symbolic and computational capabilities enable economists and financial analysts to develop a deeper understanding of models by allowing them to explore the implications of differences in parameter values, providing numerical solutions to problems that would be otherwise intractable, and by providing graphical representations that can guide analysis. This book provides a step-by-step tutorial for using this program to[...]

### Features

Economists can use computer algebra systems to manipulate symbolic models, derive numerical computations, and analyze empirical relationships among variables. Maxima is an open-source multiplatform computer algebra system that rivals proprietary software. Maxima's symbolic and computational capabilities enable economists and financial analysts to develop a deeper understanding of models by allowing them to [...]

### Contents

1 Introduction.- 2 Simple Economic Models.- 3 Demand Theory: Preferences.- 4 Demand Theory: Constraints and Optimization.- 5 Preferences and Demand.- 6 Production Theory.- 7 Cost Theory.- 8 Firm and Industry Supply in the Short-run.- 9 Long-run Supply.- 10 Competitive Markets: Extensions and Application.- 11 General Equilibrium.- 12 Price-Searcher Markets.- 13 Nonlinear Pricing: Capturing Consumer Surplus.- 14 Oligopoly.- 15 Time.- 16 Uncertainty.

### Fields of interest

Microeconomics; Econometrics; Game Theory, Economics, Social and Behav. Sciences; Mathematical Software

### Target groups

Graduate

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9416-4](http://www.springer.com/978-1-4614-9416-4)

### Hardcover

2013. XIX, 385 p. 275 illus., 8 illus. in color.  
ISBN 978-1-4614-9416-4

**usually dispatched within 3 to 5 business days  
December 31, 2013**

R.M. Harris, Centre for Research in Education, Mawson Lakes, Australia; Th.W. Short, Centre for Research in Education, Mawson Lakes, Australia (Eds.)

## Workforce Development

Perspectives and Issues

This book captures the essence of current workforce development perspectives and draws on extensive global research to uncover a range of issues confronting organisations. Taking primarily an Australian outlook after the global financial crisis and tracing the progress of a national industry sector, each chapter delves into a major area of interest for leaders. Overall, the authors make the case that workforce development is an amalgam of activities influenced by context, politics and economic development. As the world becomes increasingly connected and mobile, workforce development is proving to be a major activity for organisations because it impacts their longer-term survival and[...]

### Features

This book captures the essence of current workforce development perspectives and draws on extensive global research to uncover a range of issues confronting organisations. Taking primarily an Australian outlook after the global financial crisis and tracing the progress of a national industry sector, each chapter delves into a major area of interest for leaders. Overall, the authors make the case that [...]

### Contents

1. Exploring the Notion of Workforce Development.- Part I Sustainability, Growth and Diversity.- 2. Attracting and Retaining Staff: The Role of Branding and Industry Image.- 3. International Developments in Skills Migration: A Case Study of the Opportunities, Threats and Dilemmas for Australia.- 4. Career Paths: Challenges and Opportunities.- 5. Skills Recognition and Recognition of Prior Learning for Workforce Development: Challenges and Possibilities.- 6. Recognition of the Skills and Knowledge of Indigenous Employees.- 7. Women and Engineering: A Workforce Development Issue.- Part II[...]

### Fields of interest

Personnel Management; Professional and Vocational Education

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-981-4560-57-3](http://www.springer.com/978-981-4560-57-3)

### Hardcover

2014. XVIII, 387 p. 23 illus.  
ISBN 978-981-4560-57-3

**usually dispatched within 3 to 5 business days**

S. Heep

## China in Global Finance

Domestic Financial Repression and International Financial Power

Against the backdrop of China's increasingly influential role in the international financial architecture, this book seeks to characterize and evaluate China's financial power potential. It does so by analyzing the relationship between domestic financial repression and international financial power in the context of the political economy of the developmental state. On the basis of a novel theoretical framework for the analysis of the financial power potential of developmental states, the book provides an in-depth analysis of China's approach to currency internationalization, its creditor status and its policies towards the Bretton Woods institutions while contrasting the country's[...]

### Features

Against the backdrop of China's increasingly influential role in the international financial architecture, this book seeks to characterize and evaluate China's financial power potential. It does so by analyzing the relationship between domestic financial repression and international financial power in the context of the political economy of the developmental state. On the basis of a novel theoretical framework [...]

### Contents

1 Introduction.- 2 Financial Power and the Developmental State.- 3 Financial Repression and Structural Financial Power.- 4 Financial Repression and Currency Internationalization.- 5 Financial Repression and Relational Financial Power.- 6 Developmental States in the Bretton Woods Institutions.- 7 Conclusion.

### Fields of interest

Emerging Markets / Globalization; Political Economy; Finance / Banking; International Relations; Financial Economics; International Economics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02465-3](http://www.springer.com/978-3-319-02465-3)

### Hardcover

2014. XVI, 156 p. (Global Power Shift)  
ISBN 978-3-319-02465-3

**Due: January 31, 2014**

J.-L. Hervás-Oliver, Universitat Politècnica de València, Valencia, Spain; M. Peris-Ortiz (Eds.)

## Management Innovation

Antecedents, Complementarities and Performance Consequences

Under a framework in which technology and organizational innovation are markedly separated, this book advances knowledge on the topic by exploring the antecedents of a firm's adoption of organizational innovation and its performance consequences. The concept of organizational innovation encompasses the introduction of new administrative organizational and managerial activities, although currently it is accepted that these terms overlap. There are two different kinds of organizational innovation, usually inter-related: structural innovations (organizational arrangement and the division of labour within it) and managerial innovations (the way a firm organizes its activities or its [...])

### Features

Under a framework in which technology and organizational innovation are markedly separated, this book advances knowledge on the topic by exploring the antecedents of a firm's adoption of organizational innovation and its performance consequences. The concept of organizational innovation encompasses the introduction of new administrative organizational and managerial activities, although [...]

### Contents

Management Innovation: An Introduction.- Supermodularity in the complex management and technological innovation cross-roads.- Managing management innovation in the UK.- Management innovation: antecedents of its adoption.- Understanding technological and managerial complementarities.- Organizational innovation.- Management innovation and its organizational effects.- Unfolding longitudinal data for management innovation adopters.- Management innovation in Germany.

### Fields of interest

Technology Management; Organization / Planning; Business Strategy / Leadership

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-03133-0](http://www.springer.com/978-3-319-03133-0)

### Hardcover

2014. VI, 160 p. 17 illus., 3 illus. in color. (Springer Proceedings in Business and Economics)  
ISBN 978-3-319-03133-0

**Due: February 28, 2014**

S.O. Idowu, K. Çalıyurt, Trakya Üniversitesi, Edirne, Turkey (Eds.)

## Corporate Governance

An International Perspective

This book brings together a representative collection of perspectives on the way how corporate governance is being aligned with the social responsibility of an organization and the accountability of its management both in large corporations and in medium sized businesses. Examples are given from various industries and branches as well as from different countries and regions across the globe. All examples are commented and explained in detail. Written by a group of selected academic teachers this book is suitable for adoption as a resource for a case driven approach to teaching "Corporate Governance" courses at an upper undergraduate or graduate level.

### Features

This book brings together a representative collection of perspectives on the way how corporate governance is being aligned with the social responsibility of an organization and the accountability of its management both in large corporations and in medium sized businesses. Examples are given from various industries and branches as well as from different countries and regions across the globe. All examples are [...]

### Contents

Part I: Corporate Governance in Europe.- Part II: Corporate governance in Africa.- Part III: Corporate Governance in Asia.- Part IV: Final Words.

### Fields of interest

Organization / Planning; Business Strategy / Leadership; Emerging Markets / Globalization; Non-Profit Enterprises / Corporate Social Responsibility; Ethics

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-642-45166-9](http://www.springer.com/978-3-642-45166-9)

### Hardcover

2014. Approx. 450 p.  
ISBN 978-3-642-45166-9

**Due: February 28, 2014**

K. Ito, Hitotsubashi University, Kunitachi, Japan; M. Nakano, Hitotsubashi University, Kunitachi, Japan (Eds.)

## International Perspectives on Accounting and Corporate Behavior

Despite the globalization of accounting standards occurring through convergence to International Financial Reporting Standards, local accounting systems are deeply intertwined with each country's unique institutions such as its corporate system, disclosure practices and enforcement mechanisms. First, this book empirically analyzes the effects of globalization and localization of accounting rules on corporate behavior such as earnings management, signaling, investment behavior and dividend payout policy. Second, the book unravels the economic consequences of disclosure based on the concept of self-disciplining enforcement such as management forecasts, environmental disclosures and risk[...]

### Features

Despite the globalization of accounting standards occurring through convergence to International Financial Reporting Standards, local accounting systems are deeply intertwined with each country's unique institutions such as its corporate system, disclosure practices, and enforcement mechanisms. First, this book empirically analyzes the effects of globalization and localization of accounting rules on corporate [...]

### Contents

1 Overview (Kunio Ito). Part 1 Earnings Attributes and Corporate Behavior.- 2 What do Smoothed Earnings Tell Us about the Future? (Yusuke Takasu and Makoto Nakano).- 3 The Effect of Accounting Conservatism on Corporate Investment Behavior (Souhei Ishida and Kunio Ito).- 4 Matching expenses with revenues around the world (Tetsuyuki Kagaya ).- 5 Does Comprehensive Income Influence Dividends? Empirical Evidence from Japan (Kunio Ito and Takuma Kochiyama).- 6 Accounting Policy Choice for Negative Goodwill (Yukari Takahashi).- 7 Fair Value Accounting of Pension Liabilities and Discretionary[...]

### Fields of interest

Accounting / Auditing; Business Taxation; Business & Management Science; Finance / Banking

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-4-431-54791-4](http://www.springer.com/978-4-431-54791-4)

### Hardcover

2014. X, 350 p. 43 illus., 34 illus. in color. (Advances in Japanese Business and Economics, Vol. 6)  
ISBN 978-4-431-54791-4

**Due: January 31, 2014**

M. Kolbusa, EXECUTIVE Consulting GmbH, Hamburg, Germany

## Implementation Management

### High-Speed Strategy Implementation

Current technological, demographic and globalization trends are not only leading to intensified competition; they also indicate that new business models are rapidly emerging but only to disappear again just as quickly. Timely recognition of the new changes, jettisoning of old approaches and rapid implementation of the currently required changes within a company are now decisive competitive factors. Those who best survive (and thrive) in the future will be those who dramatically increase their success rate within this change process. Building on his best-selling book 'The Strategy Scout' Matthias Kolbusa explains the decisive principles in this rapidly changing business environment.

### Features

Current technological, demographic and globalization trends are not only leading to intensified competition; they also indicate that new business models are rapidly emerging, but only to disappear again just as quickly. Timely recognition of the new changes, jettisoning of old approaches, and rapid implementation of the currently required changes within a company are now decisive competitive factors. Those who [...]

### Contents

The Difference Between Goal, Strategy, Tactics and Execution.- The Implementation Dilemma.- The Quintessence of Implementation Success – Concept Development.- Method Cancer – Diagnosis, Elimination and Avoidance.- How Not to Be Confused – Mastering Complexity.- The Million Dollar Question – What About Integration?.- Staying on the Ball – Consistency Instead of Severity.- Moving Up a Gear – Implementation Gravitation and Implementation Excellence.- Overview – Quick Steps to Accelerate Implementation.- Appendix.

### Fields of interest

Business Strategy / Leadership; Organization / Planning; Project Management

### Target groups

Professional/practitioner

### Type of publication

Professional book

More on [www.springer.com/978-3-642-42035-1](http://www.springer.com/978-3-642-42035-1)

### Hardcover

2014. I, 269 p. 44 illus. (Management for Professionals)  
ISBN 978-3-642-42035-1

**Due: January 31, 2014**

P. Korhonen, Aalto University, Helsinki, Finland; H. Moskowitz, Purdue University, West Lafayette, USA; J. Wallenius, Aalto University, Helsinki, Finland

## The Rocky Road to Publishing in the Management and Decision Sciences

This book documents the history of two research papers, from the first drafts to the final polished published articles, including the reviewer comments and the author responses. The documentary provides unique insights into the publishing process, which at times is filled with uncertainties, not only for young researchers. The book discusses lessons learned and also provides an experienced editor's and reviewer's perspective. In the light of the high pressure on young faculty to publish successfully, this book offers itself as a guide to publishing efficiently and effectively in a highly competitive scientific environment.

### Features

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### Contents

Part 1: Prologue.- Part 2: Case Study 1 (Choice Behaviour in Interactive MCDM: A Rocky road).- Part 3: Case Study 2 (Can a Linear Value Function Explain Choices? An Experimental Study: A Not So Rocky Road).- Part 4: Epilogue.

### Fields of interest

Operation Research / Decision Theory; Operations Research, Mathematical Programming; Business & Management Science

### Target groups

Research

### Type of publication

Brief

More on [www.springer.com/978-3-642-42047-4](http://www.springer.com/978-3-642-42047-4)

### Softcover

2014. VIII, 181 p. 15 illus. (SpringerBriefs in Business)  
ISBN 978-3-642-42047-4

**Due: January 31, 2014**

P. Koundouri, Athens University of Economics and Business, Athens, Greece; N.A. Papandreou, Andreas G. Papandreou Foundation, Athens, Greece (Eds.)

## Water Resources Management Sustaining Socio-Economic Welfare

The Implementation of the European Water Framework Directive in Asopos River Basin in Greece

The aim of this book is to offer a river-basin management plan which is directly implementable and consistent with the European Union - Water Framework Directive (EU WFD). The contributors, who are leading world experts in their respective fields, develop an integrated water resources management plan for the Asopos river basin in Greece which is economically efficient, socially equitable and environmentally sustainable. The program offers explicit technical and investment solutions, socioeconomic and legal instruments and recommendations for institutional restructuring. The introductory chapter describes the water situation in Greece and assesses the potential of timely implementation[...]

### Features

The aim of this book is to offer a river-basin management plan which is directly implementable and consistent with the European Union - Water Framework Directive (EU WFD). The contributors, who are leading world experts in their respective fields, develop an integrated water resources management plan for the Asopos river basin in Greece which is economically efficient, socially equitable and environmentally [..]

### Contents

Contributors.- Preface.- Chapter 1: A Bird's Eye View of the Greek Water Situation: The Potential for the Implementation of the EU WFD.- Chapter 2: Introducing the Case Study, the Asopos River Basin in Greece.- Chapter 3: The Economic Characterization of Asopos River Basin.- Chapter 4: Simulating Residential Water Demand and Water Pricing Issues.- Chapter 5: An Econometric Analysis of Agricultural Production, Focusing on the Shadow Price of Groundwater: Policies Towards Socio-Economic Sustainability.- Chapter 6: A Choice Experiment for the Estimation of the Economic Value of the River[...]

### Fields of interest

Environmental Economics; Waste Management / Waste Technology; Social Sciences (general); Earth Sciences (general); Water, general; Statistics (general)

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-94-007-7635-7](http://www.springer.com/978-94-007-7635-7)

### Hardcover

2014. XXIII, 181 p. 27 illus., 22 illus. in color. (Global Issues in Water Policy, Vol. 7)  
ISBN 978-94-007-7635-7

**usually dispatched within 3 to 5 business days  
December 31, 2013**

D. Köhn, KfW Entwicklungsbank, Frankfurt am Main, Germany (Ed.)

## Microfinance 3.0

Reconciling Sustainability with Social Outreach and Responsible Delivery

This book focuses on the achievements, current trends and further potential of microfinance to scale-up and serve many more clients with financial services that enable them to improve their living conditions. The book asks what it takes to achieve sustainable impact: to know your clients and to understand their needs, to treat them in a fair and transparent way, and to safeguard the synthesis between the financial and social dimension of sustainable microfinance. The book also sheds light on the future funding landscape and what is necessary to bring more commercial funders on board while ensuring that these new funders will continue the commitment to responsible finance. While being[...]

### Features

This book focuses on the achievements, current trends and further potential of microfinance to scale-up and serve many more clients with financial services that enable them to improve their living conditions. The book asks what it takes to achieve sustainable impact: to know your clients and to understand their needs, to treat them in a fair and transparent way, and to safeguard the synthesis between the [..]

### Contents

Microfinance in India: Lessons from the Andhra Crisis.- Armageddon or Adolescence? Making Sense of Microfinance's Recent Travails.- Core Values of Microfinance Under Scrutiny: Back to Basics?.- Microcredit Interest Rates and Their Determinants: 2004 - 2011.- Financial Services That Clients Need: The 3.0 Business Models, Reconciling Outreach with Sustainability.- "Microfinance 3.0" - Perspectives for Sustainable Financial Service Delivery.- Microfinance Beyond the Standard? Evaluating Adequacy and Performance of Agricultural Microcredit.- The Role of DFIs in the Emerging 3.0 Responsible[...]

### Fields of interest

Development Economics; Financial Economics; Finance / Banking; Business Strategy / Leadership; Ethics; Economic Growth

### Target groups

Professional/practitioner

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-41703-0](http://www.springer.com/978-3-642-41703-0)

### Hardcover

2013. XI, 199 p. 38 illus.  
ISBN 978-3-642-41703-0

**usually dispatched within 3 to 5 business days  
December 31, 2013**

C. Leardini, University of Verona, Verona, Italy; G. Rossi, University of Udine, Udine, Italy; S. Moggi, University of Verona, Verona, Italy

## Board Governance in Bank Foundations

The Italian Experience

Bank foundations serve an important purpose in the Italian nonprofit sector. This book presents the legal grounds, areas of intervention, and basic tools involved in the asset management and grant-making activities that such organizations undertake. A special emphasis focuses on the analyses of the organizational structure of bank foundations and the relevant aspects of governance, particularly with regard to the composition, roles, and responsibilities of bank foundation boards. The general reduction in the resources to which they have access requires a new strategy that clearly defines long-term goals and the necessary procedures to achieve them. The topic of strategic planning is[...]

### Features

Bank foundations serve an important purpose in the Italian nonprofit sector. This book presents the legal grounds, areas of intervention, and basic tools involved in the asset management and grant-making activities that such organizations undertake. A special emphasis focuses on the analyses of the organizational structure of bank foundations and the relevant aspects of governance, particularly with regard to [..]

### Contents

Italian Bank Foundations and Governance.- Outlining Italian Bank Foundations.- Governance Roles and Responsibilities.- Composition of the Boards.- Governance and Strategic Planning.- Appendix.

### Fields of interest

Non-Profit Enterprises / Corporate Social Responsibility; Finance / Banking; Organization / Planning

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41305-6](http://www.springer.com/978-3-642-41305-6)

### Hardcover

2014. IV, 123 p. 13 illus., 5 illus. in color. (Contributions to Management Science)  
ISBN 978-3-642-41305-6

**Due: February 28, 2014**

C.-F. Lee, Rutgers University, New Brunswick, USA; J.C. Lee (Eds.)

## Handbook of Financial Econometrics and Statistics

The Handbook of Financial Econometrics and Statistics provides, in three volumes and over 100 chapters, a comprehensive overview of the primary methodologies in econometrics and statistics as applied to financial research. Including overviews of key concepts by the editors and in-depth contributions from leading scholars around the world, the Handbook is the definitive resource for both classic and cutting-edge theories, policies, and analytical techniques in the field. Volume 1 (Parts I and II) covers all of the essential theoretical and empirical approaches. Volumes 2 and 3 feature contributed entries that showcase the application of financial econometrics and statistics to such[...]

### Features

The Handbook of Financial Econometrics and Statistics provides, in three volumes and over 100 chapters, a comprehensive overview of the primary methodologies in econometrics and statistics as applied to financial research. Including overviews of key concepts by the editors and in-depth contributions from leading scholars around the world, the Handbook is the definitive resource for both classic and [...]

### Contents

Introduction to Financial Econometrics and Statistics.- Experience, Information Asymmetry, and Rational Forecast Bias.- An Overview of Modeling Dimensions for Performance Appraisal of Global Mutual Funds.- Simulation as a Research Tool for Market Architects.- Motivations for Issuing Puttable Debt: An Empirical Analysis.- Multi Risk-Premia Model of U.S. Bank Returns: An Integration of CAPM and APT.- Non-Parametric Bounds for European Option Prices.- Can Time-Varying Copulas Improve Mean-Variance Portfolio?- Determinations of Corporate Earnings Forecast Accuracy: Taiwan Market[...]

### Fields of interest

Finance / Banking; Quantitative Finance; Statistics for Business, Economics, Mathematical Finance, Insurance; Econometrics

### Target groups

Research

### Type of publication

Handbook

More on [www.springer.com/978-1-4614-7749-5](http://www.springer.com/978-1-4614-7749-5)

### Hardcover

2014. Approx. 1500 p. In 3 volumes, not available separately.

ISBN 978-1-4614-7749-5

**Due: April 30, 2014**

### Hardcover

2014. Approx. 1500 p. Print + eReference. In 3 volumes, not available separately.

ISBN 978-1-4614-7751-8

**Due: April 30, 2014**

R. Levaggi, University of Brescia, Brescia, Italy; M. Montefiori, University of Genoa, Genoa, Italy (Eds.)

## Health Care Provision and Patient Mobility

### Health Integration in the European Union

Patient mobility across Europe is markedly increasing and new generations will actively ask to be treated by the health-care system that best meets their needs. At a political level, the EU issued the EU Directive no. 24/2011/CE of 9th March 2011 concerning the application of patients' rights in cross-border health care and has contributed to improving the level of freedom of choice for the European citizen, but it does not seem to have increased actual patient mobility across Europe. Freedom to choose is necessary to grant the people of Europe the same access to public-sector health-care services. The latter is a key instrument for an efficiently functioning "single market" ensuring[...]

### Features

Patient mobility across Europe is markedly increasing and new generations will actively ask to be treated by the health-care system that best meets their needs. At a political level, the EU issued the EU Directive no. 24/2011/CE of 9th March 2011 concerning the application of patients' rights in cross-border health care and has contributed to improving the level of freedom of choice for the European [...]

### Contents

Patient choice, mobility and competition among health care providers.- Using Discrete Choice Experiments to understand preferences in health care.- Implications of the EU patients' rights directive in cross-border healthcare on the German sickness fund system.- The possible effects of health professional mobility on access to care for patients.- Patient choice and mobility in the UK Health System: Internal and external markets.- What drives patient mobility across Italian regions? Evidence from hospital discharge data.- The impact of federalism on the healthcare system in terms of[...]

### Fields of interest

Health Economics; Migration; Statistics for Social Science, Behavioral Science, Education, Public Policy, and Law; Computational Mathematics and Numerical Analysis; Economic Policy; Public Finance & Economics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-88-470-5479-0](http://www.springer.com/978-88-470-5479-0)

### Hardcover

2014. X, 244 p. 13 illus. (Developments in Health Economics and Public Policy, Vol. 12)

ISBN 978-88-470-5479-0

**Due: December 31, 2013**

N. Longley, University of Massachusetts, Amherst, USA

## An Absence of Competition

### The Sustained Competitive Advantage of the Monopoly Sports Leagues

This book takes a multi-disciplinary approach to analyzing the nature of 'competition' and 'competitive advantage' within the U.S. pro sport industry. By many measures, the four major pro sports leagues in the U.S. – the National Football League (NFL), National Basketball Association (NBA), National Hockey League (NHL), and Major League Baseball (MLB) – are now some of the most successful business entities in the country. While these established leagues have generally been highly profitable throughout their respective existences, the past two decades have been particularly lucrative, with franchise values in all four leagues growing rapidly, and at levels well beyond market rates of[...]

### Features

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### Contents

1 Introduction.- 2 Some Conceptual Foundations: A Primer on the Economic Structure of Professional Sport.- 3 The USFL as a Case Study.- 4 A Brief History of Post-World War II Rival Leagues.- 5 Explaining Competitiveness: Alternate Theoretical Frameworks.- 6 Property-Based Resources: Franchise Locations, Stadiums, and Players.- 7 Knowledge-Based Resources.- Managerial Competencies.- 8 The Way Ahead: The Prospects for the Re-Emergence of Rival Leagues.- Index.

### Fields of interest

Economics; Management/Business for Professionals; Media Management

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9484-3](http://www.springer.com/978-1-4614-9484-3)

### Hardcover

2013. XII, 119 p. (Sports Economics, Management and Policy, Vol. 5)

ISBN 978-1-4614-9484-3

**Due: December 31, 2013**

K.C.P. Low, S.O. Iidowu, London Metropolitan University, London, United Kingdom; S.L. Ang, University of Brunei Darussalam, Gadong, Brunei Darussalam (Eds.)

## Corporate Social Responsibility in Asia

### Practice and Experience

This book presents a rich collection of research studies on the theory and practice of CSR in Asia. It includes valuable contributions of practice-oriented researchers from various Asian countries such as Brunei, China, India, Indonesia, Japan, Korea, Malaysia, and Singapore, and from several non-Asian countries, such as Australia, Canada and the USA. The book presents a comprehensive overview of the practice of CSR in Asia. Normally CSR is seen in the Western angles, but here, in this book, Asian philosophies and thoughts are also examined. Touted as the first of its kind, the book also compares Western and Asian perspectives on CSR and presents them in the light of Asian[...]

### Features

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### Contents

Part One: East and South Asia.- Part Two: Brunei and South East Asia/United States of America.- Part Three: Pacific Asia.

### Fields of interest

Non-Profit Enterprises / Corporate Social Responsibility; Business Strategy / Leadership; Regional Science

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-01531-6](http://www.springer.com/978-3-319-01531-6)

### Hardcover

2014. XXV, 203 p. 16 illus. (CSR, Sustainability, Ethics & Governance)  
ISBN 978-3-319-01531-6

**usually dispatched within 3 to 5 business days**

K. Ludlow, Monash University, VIC, Australia; S.J. Smyth, University of Saskatchewan, Saskatoon, Canada; J. Falck-Zepeda, International Food Policy Research Inst., Washington, DC, USA (Eds.)

## Socio-Economic Considerations in Biotechnology Regulation

Within the context of the Convention on Biological Diversity (CBD), the Cartagena Protocol on Biosafety (CPB) was established as an implementing agreement. The CPB is an international agreement establishing the rights of recipient countries to be notified of and to approve or reject the domestic import and/or production of living modified organisms (LMOs). Decisions regarding import/production are to be on the basis of a biosafety assessment. Article 26.1 of the CPB allows for the (optional) inclusion of socio-economic considerations (SECs) into that biosafety assessment process. This book compiles expert assessments of the issues relevant to SEC assessment of LMOs and fundamental for[...]

### Features

Within the context of the Convention on Biological Diversity (CBD), the Cartagena Protocol on Biosafety (CPB) was established as an implementing agreement. The CPB is an international agreement establishing the rights of recipient countries to be notified of and to approve or reject the domestic import and/or production of living modified organisms (LMOs). Decisions regarding import/production are to be on the [...]

### Contents

Introduction to Regulating LMOs.- The State of Science-based Regulation and GM crops.- Socio-Economic Considerations and the Regulations of LMOs.- Benefits to Producers and Society.- Consumer Choice.- Environmental Impacts.- Ethical/Equity.- Food Security.- Health Impacts.- Impacts on Biodiversity.- Indigenous Knowledge.- Intellectual Property Rights.- Labor Impacts.- Market Access and Trade.- Producer Choice.- Religious/Cultural.- Animal Welfare.- Potential Consequences from the Inclusion of Socio-economics in Decision Making.- A Decision Making Framework for Implementation Issues.-[...]

### Fields of interest

Agricultural Economics; Food Science; R & D / Technology Policy

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4614-9439-3](http://www.springer.com/978-1-4614-9439-3)

### Hardcover

2014. XII, 313 p. 15 illus., 5 illus. in color. (Natural Resource Management and Policy, Vol. 37)  
ISBN 978-1-4614-9439-3

**usually dispatched within 3 to 5 business days**

**December 31, 2013**

A. Lundstrom, C. Zhou, Midsweden University, Shenyang, Beijing, China (P.R.); Y. von Friedrichs, E. Sundin (Eds.)

## Social Entrepreneurship

### Leveraging Economic, Political, and Cultural Dimensions

This contributed volume features state-of-the-art research from ten different countries on implementation, institutionalization and the future prospects of social entrepreneurship. This volume aims at bringing together research that considers the context of economy, politics and cultural issues combining with the needs of social and human development. By conceptualizing the notion of social entrepreneurship and societal entrepreneurship, this volume aims to disseminate the numerous streams of research and theory of social entrepreneurship to educators, libraries, scholars, non-profit researchers, public policy makers, practitioners, undergraduate and graduate students, and any[...]

### Features

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### Contents

Part 1: Rethinking Social Entrepreneurship.- Part 2: Implementing Social Entrepreneurship.- Part 3: The Institutionalization of Social Entrepreneurship.- Part 4: The Future of Social Entrepreneurship.

### Fields of interest

Entrepreneurship; Non-Profit Enterprises / Corporate Social Responsibility; Technology Management; Social Policy

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-01395-4](http://www.springer.com/978-3-319-01395-4)

### Hardcover

2014. VI, 363 p. 26 illus.  
ISBN 978-3-319-01395-4

**usually dispatched within 3 to 5 business days**

D. Maltritz, University of Erfurt, Erfurt, Germany; M. Berlemann, Helmut-Schmidt-University Hamburg, Hamburg, Germany (Eds.)

## Financial Crises, Sovereign Risk and the Role of Institutions

The recent world economic crisis showed very clearly that financial crises and sovereign defaults are severe threats to economic and social prosperity. In addition, it became apparent that currency crises and banking crises often occur together and are closely related to sovereign debt crises and defaults. The present book contains new research on various important issues related to financial crises and sovereign default risk by leading experts in the field. The book discusses new modelling approaches to financial crises, defaults and their interdependencies. It also sheds light on the consequences of different sorts of crises for the trust in the institutions which are concerned with[...]

### Features

The recent world economic crisis showed very clearly that financial crises and sovereign defaults are severe threats to economic and social prosperity. In addition, it became apparent that currency crises and banking crises often occur together and are closely related to sovereign debt crises and defaults. The present book contains new research on various important issues related to financial crises [...]

### Contents

Introduction.- Gold-backed Sovereign Bonds - An Effective Alternative to OMTs.- Trust in the European Central Bank Throughout the Worldwide Financial Crisis and the European Debt Crisis.- SIFIs in the Cross Sea - How Are Large German Banks Adjusting to a Rough Economic Environment and a New Regulatory Setting?.- The Endogenous Fragility at European Periphery.- The Danger of Tax Havens for Financial Stability.- The Evolution of International Geo-Political Risk 1956-2001.- Financial Crises and Sovereign Default: Dependencies, Timing and Uncertainty in a Stochastic Framework.- The Risk of[...]

### Fields of interest

Financial Economics; Public Finance & Economics; Macroeconomics / Monetary Economics; European Integration; Finance / Banking; International Economics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-03103-3](http://www.springer.com/978-3-319-03103-3)

### Hardcover

2013. IX, 197 p. 42 illus.  
ISBN 978-3-319-03103-3

**Due: January 31, 2014**

W. Marty, Swiss Bond Commission, Stallikon, Switzerland

## Portfolio Analytics

### An Introduction to Return and Risk Measurement

This textbook first introduces the reader to return measurement and then goes on to compare the time-weighted rate of return (TWR) with the money-weighted rate of return (MWR). To emphasize the importance of risk in conjunction with return, different tracking errors are analyzed and ex-post versus ex-ante risk figures are compared. The author then proceeds to modern portfolio theory (MPT) and illustrates how the constraints interfere substantially in the construction of optimized portfolios. As a conclusion, the book provides the reader with all the essential aspects of investment controlling.

### Features

This textbook first introduces the reader to return measurement and then goes on to compare the time-weighted rate of return (TWR) with the money-weighted rate of return (MWR). To emphasize the importance of risk in conjunction with return, different tracking errors are analyzed and ex-post versus ex-ante risk figures are compared. The author then proceeds to modern portfolio theory (MPT) and illustrates [...]

### Contents

1. Introduction.- 2. Return analysis.- 3. Risk Measurement.- 4. Performance Measurements.- 5. Investment Controlling.

### Fields of interest

Finance / Banking; Quantitative Finance; Financial Economics; Business Mathematics; Statistics for Business, Economics, Mathematical Finance, Insurance; Accounting / Auditing

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-319-03508-6](http://www.springer.com/978-3-319-03508-6)

### Hardcover

2014. X, 229 p. 53 illus., 14 illus. in color. (Springer Texts in Business and Economics)  
ISBN 978-3-319-03508-6

**Due: January 31, 2014**

P. Mateos, University College London, London, United Kingdom

## Names, Ethnicity and Populations

### Tracing Identity in Space

Ethnicity has become one of the most studied human dimensions in social and biomedical sciences over the past decade. However, there are important shortcomings in the means available to researchers to define and classify human group difference in past, as well as contemporary populations. Personal naming conventions usually adhere to unwritten social norms and customs that with time end up producing distinctive cultural, ethnic, linguistic, religious and geographic patterns in name distributions. This book follows the fascinating journey of personal names across the world, using maps and networks to identify alternative combinations of ethnic and geographic origins in contemporary[...]

### Features

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### Contents

Part I: Theory: Identity and names.- Part II: Methods: Name-based ethnicity classifications.- Part III: Applications: Mapping names and ethnicity.

### Fields of interest

Regional Science; Human Geography; Economic Geography; Demography; Migration

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-45412-7](http://www.springer.com/978-3-642-45412-7)

### Hardcover

2014. Approx. 260 p. 6 illus. in color. (Advances in Spatial Science)  
ISBN 978-3-642-45412-7

**Due: March 6, 2014**

M. Matsui, Kanagawa University, Yokohama-shi, Japan

## Manufacturing and Service Enterprise with Risks II

The Physics and Economics of Management

This book presents recent work in the physics and economics of management through the developmental theory and practice of management science/operations research (MS/OR) that goes beyond the author's earlier book on the same subject. (Volume 125 in Springer's MS/OR series) This current work makes a useful contribution to the next-generation discrete system of science and management for a better society. The scope of the book is focused on the science and management of the 3M&I-Time system in the discrete world, where that system is a complex class consisting of humans, material/machine, money and time. The system is treated by a stochastic/intelligence (medium) approach. The science of [...]

### Features

This book presents recent work in the physics and economics of management through the developmental theory and practice of management science/operations research (MS/OR) that goes beyond the author's earlier book on the same subject. (Volume 125 in Springer's MS/OR series) This current work makes a useful contribution to the next-generation discrete system of science and management for a better [...]

### Contents

Problem and Preliminaries.- Management Issues in the Cloud-ICT Age.- Discrete Science and Knowledge Form.- Basic Method for Higher Management.- Traffic Accounting Method.- Progressive Control Method.- Developments for Higher Management.- Performance System for Real-Time Management.- Invisible Balancing/Collaborations of Enterprises.- Soft Tools for Post-ERP/SCM.- SALPS for Stochastic Assembly Lines.- DSMAP for Demand-to-Supply Planning.

### Fields of interest

Operation Research / Decision Theory; Operations Research, Mathematical Programming; Production / Logistics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-4-431-54618-4](http://www.springer.com/978-4-431-54618-4)

### Hardcover

2014. VIII, 150 p. 92 illus., 33 illus. in color. (International Series in Operations Research & Management Science, Vol. 202)

ISBN 978-4-431-54618-4

Due: February 28, 2014

P. McKiernan, University of Strathclyde, Glasgow, United Kingdom; D. Purg (Eds.)

## Hidden Champions in CEE and Turkey

Carving Out a Global Niche

This book presents hidden champions in Central and Eastern Europe (CEE) and Turkey that have been studied as a joint project between CEEMAN and IEDC-Bled School of Management, Slovenia. This is an outcome of extensive research undertaken by over 30 researchers and covers 15 countries from Russia to Albania; covering many contexts, political systems, cultures and infrastructures. The reader is provided with a detailed introduction to the concept of hidden champions and describes the cases studied in this project. This book is an invaluable resource providing a culmination of interdisciplinary, cross-study chapters ranging from leadership to performance drivers; from [...]

### Features

This book presents hidden champions in Central and Eastern Europe (CEE) and Turkey that have been studied as a joint project between CEEMAN and IEDC-Bled School of Management, Slovenia. This is an outcome of extensive research undertaken by over 30 researchers and covers 15 countries from Russia to Albania; covering many contexts, political systems, cultures and infrastructures. The reader is provided with a [...]

### Contents

1.Introduction.- 2.Research Methodology.- 3.Leadership of Hidden Champions from Vision to Communityship.- 4.Three Bivalent-Performance Factors of Hidden Champions Ownership, Organizational Culture and Organizational Governance.- 5.Innovation Behaviour of Hidden Champions.- 6.International Marketing.- 7.In Search of Sustainable Business in Central and Eastern Europe.- 8.Financial Aspects of HCs Business Models.- 9.Hidden Champions of Albania.- 10.Hidden Champions of Belarus.- 11.Hidden Champions of Bosnia and Herzegovina.- 12.Hidden Champions of Croatia.- 13.Hidden Champions of Estonia.- [...]

### Fields of interest

Technology Management; Emerging Markets / Globalization; Entrepreneurship; Regional Science; Business Strategy / Leadership

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-40503-7](http://www.springer.com/978-3-642-40503-7)

### Hardcover

2013. X, 435 p. 5 illus.  
ISBN 978-3-642-40503-7

Due: December 19, 2013

J.M. Morales, Tech Univ of Denmark, Dept Applied, Lyngby, Denmark; A.J. Conejo, H. Madsen, Tech Univ of Denmark, Dept Info, Lyngby, Denmark; P. Pinson, M. Zugno

## Integrating Renewables in Electricity Markets

Operational Problems

This addition to the ISOR series addresses the analytics of the operations of electric energy systems with increasing penetration of stochastic renewable production facilities, such as wind- and solar-based generation units. As stochastic renewable production units become ubiquitous throughout electric energy systems, an increasing level of flexible backup provided by non-stochastic units and other system agents is needed if supply security and quality are to be maintained. Within the context above, this book provides up-to-date analytical tools to address challenging operational problems such as: • The modeling and forecasting of stochastic renewable power production. • The [...]

### Features

This addition to the ISOR series addresses the analytics of the operations of electric energy systems with increasing penetration of stochastic renewable production facilities, such as wind- and solar-based generation units. As stochastic renewable production units become ubiquitous throughout electric energy systems, an increasing level of flexible backup provided by non-stochastic units and other [...]

### Contents

Introduction.- Renewable Energy Sources - Modeling and Forecasting.- Clearing the Day-Ahead Market with a High Penetration of Stochastic Production.- Balancing Markets.- Managing Uncertainty with Flexibility.- Impact of Stochastic Renewable Energy Generation on Market Quantities.- Trading Stochastic Production in Electricity Pools.- Virtual Power Plants.- Facilitating Renewable Integration by Demand Response.- Random Variables and Stochastic Processes.- Basics of Optimization.- Introduction to Stochastic Programming.- Introduction to Robust Optimization.- GAMS Codes.

### Fields of interest

Operation Research / Decision Theory; Power Electronics, Electrical Machines and Networks; Operations Research, Mathematical Programming

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-1-4614-9410-2](http://www.springer.com/978-1-4614-9410-2)

### Hardcover

2014. XVI, 429 p. 92 illus., 12 illus. in color. (International Series in Operations Research & Management Science, Vol. 205)

ISBN 978-1-4614-9410-2

usually dispatched within 3 to 5 business days  
December 31, 2013

G.M. Mudacumura, Cheyney University, Cheyney, USA; G. Morçöl, Penn State – Harrisburg, Middletown, USA (Eds.)

## Challenges to Democratic Governance in Developing Countries

Despite the large amounts of human and financial resources invested to foster democratic governance in developing countries, statistics show that the majority of these countries have not yet achieved significant improvements in living standards. While some regions make strides towards improving the living conditions of their citizens, Sub-Saharan Africa, for instance, is still trapped in poverty with more than 40% of its 600 million people living below the internationally recognized absolute poverty line of one US dollar per day. Poor governance and corruption should be highlighted as the most important systemic factors contributing to poverty in developing countries. As a result the[...]

### Features

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### Contents

Accountability & Transparency: Cornerstones of Democratic Governance.- Will Ghana Avoid the resource Curse?.- Tackling Cultural Corruption.- Perceptions of Societal Corruption and Levels of Trust in Government.- Citizen Engagement in Fostering Democratic Governance in Rwanda.- Organizational Culture and its Influence on Corruption: NGOs in Kenya.- Role of legislation for social accountability: a comparison of South Africa and Zambia.- Prosecute and punish: Attempts by Kenya to curb political and administrative corruption.- Corruption in African Countries: A Symptom of Leadership and[...]

### Fields of interest

Public Administration; Development Economics; Comparative Politics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-03142-2](http://www.springer.com/978-3-319-03142-2)

### Hardcover

2014. XII, 287 p. 16 illus., 15 illus. in color. (Public Administration, Governance and Globalization, Vol. 11)  
ISBN 978-3-319-03142-2

**Due: December 31, 2013**

P.C. Murschetz, Universität Salzburg, Salzburg, Austria (Ed.)

## State Aid for Newspapers

### Theories, Cases, Actions

Ever since newspaper companies first turned to their governments for support in the 1950s, print media has been supported by state aid in many parts of the world. Today, the principles and practicalities of these subsidies have been called into question, endangering the secure funding of expensive high-quality press output. This book provides a comprehensive analysis of today's global challenges in the print news media's struggle for survival. It presents current practices concerning government subsidies to newspapers for political, economic, and socio-cultural purposes against the background of declining readership and revenues, increased inter-media competition, austerity budgets[...]

### Features

Ever since newspaper companies first turned to their governments for support in the 1950s, print media has been supported by state aid in many parts of the world. Today, the principles and practicalities of these subsidies have been called into question, endangering the secure funding of expensive high-quality press output. This book provides a comprehensive analysis of today's global challenges in [...]

### Contents

Preface.- Part I: Introduction.- 1 Context, Purpose and Structure of the Book.- 2 State Aid for Newspapers.- Part II: Theories.- 3 State Support for News.- 4 Industrial Subsidies.- 5 Newspaper Subsidies and Journalistic Quality.- 6 State Aid to the Press in the EU.- 7 Press Governance.- Part III: Cases and Actions.- 8 Australia: State Aid to Newspapers.- 9 Austria: Press Subsidies in Search of a New Design.- 10 Belgium: Big Changes in a Small News Economy.- 11 Bulgaria: Press Subsidies in the Shadows.- 12 Finland: The Rise and Fall of a Democratic Subsidy Scheme.- 13 France: Press[...]

### Fields of interest

Media Management; Public Finance & Economics; Industrial Organization

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-35690-2](http://www.springer.com/978-3-642-35690-2)

### Hardcover

2014. Approx. 620 p. 29 illus. (Media Business and Innovation)  
ISBN 978-3-642-35690-2

**Due: January 31, 2014**

R. Müller, University of St. Gallen, St. Gallen, Switzerland; A. Wittmer, University of St. Gallen, St. Gallen, Switzerland; C. Drax, P3 Group, Lorsch, Germany (Eds.)

## Aviation Risk and Safety Management

### Methods and Applications in Aviation Organizations

The International Civil Aviation Organization's (ICAO) decision to require aviation organizations to adopt Safety Management Systems poses a major problem especially for small and medium sized aviation companies. The complexity of regulations overstrains the aviation stakeholders who seek to fully advantage from them but have no clear guidance. The aim of the book is to show the implementation of such a new system with pragmatic effort in order to gain a gradation for smaller operators. This approach should illustrate the leeway in order to adapt the processes and to show the interfaces between Corporate Risk Management and Safety Management. The book shows how to build a system with[...]

### Features

The International Civil Aviation Organization's (ICAO) decision to require aviation organizations to adopt Safety Management Systems poses a major problem especially for small and medium sized aviation companies. The complexity of regulations overstrains the aviation stakeholders who seek to fully advantage from them but have no clear guidance. The aim of the book is to show the implementation of such a new [...]

### Contents

Introduction.-Theoretical Background of Risk and Safety Management.-Practical Implications of Risk and Safety Management.-Implementation and Optimization of Risk and Safety Management.

### Fields of interest

Organization / Planning; Operation Research / Decision Theory; Law of the Sea, Air and Outer Space; Quality Control, Reliability, Safety and Risk

### Target groups

Professional/practitioner

### Type of publication

Professional book

More on [www.springer.com/978-3-319-02779-1](http://www.springer.com/978-3-319-02779-1)

### Hardcover

2014. Approx. 200 p. 20 illus. (Management for Professionals)  
ISBN 978-3-319-02779-1

**Due: February 28, 2014**

M.K. Nandakumar, Indian Institute of Management Kozhikode, Kunnammangalam, Kozhikode, India; S. Jharkharia, Indian Institute of Management Kozhikode, Kunnammangalam, Kozhikode, India; A.S. Nair, Indian Institute of Management Kozhikode, Kunnammangalam, Kozhikode, India (Eds.)

## Organisational Flexibility and Competitiveness

The proposed book is intended to provide a conceptual framework of 'Organisational Flexibility and Competitiveness' supported by research studies in various types of flexibilities exhibited by an organisation. The need for enterprise flexibility in an era of rapidly advancing technology, increasing competition, and globalization, is apparent. Flexibility can be thought of as an ability of the enterprise to quickly and efficiently respond to market changes and to bring new products and services quickly to the market place. Beyond this definition, a truly flexible enterprise should proactively change the market through its ability to create truly new and innovative products and [...]

### Features

The volume is intended to provide a conceptual framework of 'Organisational Flexibility and Competitiveness' supported by research studies in various types of flexibilities exhibited by an organisation. The need for enterprise flexibility in an era of rapidly advancing technology, increasing competition, and globalization, is apparent. Flexibility can be thought of as an ability of the enterprise to quickly [...]

### Contents

Strategic Flexibility and Competitiveness.- Adapt: A Critical Pillar of Strategy Execution Process.- Flexibility and Sustainability of Mentorship Model for Entrepreneurship Development: An Exploratory Study.- Strategic Flexibility, Information System Flexibility and Enterprise Performance Management.- A Value Optimising Structure in Virtual Enterprises for Manufacturing Systems.- Competitiveness of Key Segment in Solar Photovoltaic Industry in India: An Exploratory Study.- New Perspectives for Industrial Competitiveness: Exploring the Role of IITs.- Organizational and Human Resources [...]

### Fields of interest

Business Strategy / Leadership; Organization / Planning; Personnel Management; Production / Logistics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-81-322-1667-4](http://www.springer.com/978-81-322-1667-4)

### Hardcover

2014. I, 439 p. 55 illus. (Flexible Systems Management)  
ISBN 978-81-322-1667-4

**Due: January 31, 2014**

K. North, G. Kumba

## Knowledge Management

### Value Creation Through Organizational Learning

This textbook on Knowledge Management is a result of more than twenty years of research, teaching and consulting experience of the authors. This is the first comprehensive text which brings together European, Asian and American perspectives on knowledge-based value creation. This book is intended not only for academic education but also for providing guidance to managers, consultants, trainers, coaches and those interested to learn about organizations in a knowledge economy in business, public administration and non-profit organizations. Many case studies, examples, questions, assignments as well as easy to use knowledge management tools make this work a compendium for learning, and [...]

### Features

This textbook on Knowledge Management is a result of more than twenty years of research, teaching and consulting experience of the authors. This is the first comprehensive text which brings together European, Asian and American perspectives on knowledge-based value creation. This book is intended not only for academic education but also for providing guidance to managers, consultants, trainers, coaches and [...]

### Contents

1 On the Way to a Knowledge Society.- 2 Knowledge in Organisations.- 3 Organisational Forms to Leverage Knowledge.- 4 Knowledge is Human.- 5 Strategies for Managing Knowledge.- 6 Context Specific Knowledge Management Strategies.- 7 How Can Information and Communication Technology Support Knowledge Work.- 8 Measuring and Safeguarding Knowledge.- 9 How to Put Knowledge Management into Practice.

### Fields of interest

Technology Management; Personnel Management; Organization / Planning; Industrial Organization

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-319-03697-7](http://www.springer.com/978-3-319-03697-7)

### Hardcover

2014. XXVI, 352 p. 84 illus. (Springer Texts in Business and Economics)

ISBN 978-3-319-03697-7

**Due: January 31, 2014**

J. O'Neill, CMAS Holdings LLC, New York, USA; E.M. Noam, Columbia Institute for Tele-Infoma, New York, USA; D. Gerbarg, DVI, Ltd, New York, USA (Eds.)

## Broadband as a Video Platform

### Strategies for Africa

This volume features contributions from a conference held in Lusaka, Zambia, to explore the role and prospects of broadband in Africa as a video platform—with emphasis on the strategies and building blocks for deployment and advancement. While it may seem that such networks and their applications are not a realistic scenario for developing countries, it would be short-sighted and economically dangerous to ignore the emerging trends. The pace of introduction of next-generation networks in industrialized countries is rapid and the developing world will not be able to stand aside. The risks of falling behind are great and in any country there will be elements of business and society who [...]

### Features

This volume features contributions from a conference held in Lusaka, Zambia, to explore the role and prospects of broadband in Africa as a video platform—with emphasis on the strategies and building blocks for deployment and advancement. While it may seem that such networks and their applications are not a realistic scenario for developing countries, it would be short-sighted and economically [...]

### Contents

Preface.- Foreword.- 1 Introduction.- 2 Media Entertainment as Development Strategy.- 3 Let Them Eat Movies: (How) Will Next Generation Broadband Diffuse Through Africa?.- 4 The State of Broadband in Africa: What's here and What's coming?.- 5 The Cost of Deploying a Successful Video Broadband Business in Africa and the Cost of Not Deploying.- 6 Implications of Broadband Video on National and International Media Systems.- 7 What to Expect from Platforms and Applications.- 8 Technology Trends on Connect Africa.- 9 The Impact of Policy on the Performance of the ICT Sector.- 10 Information [...]

### Fields of interest

Media Management; Development Economics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-03616-8](http://www.springer.com/978-3-319-03616-8)

### Hardcover

2014. XIX, 205 p. 83 illus., 72 illus. in color. (The Economics of Information, Communication, and Entertainment)

ISBN 978-3-319-03616-8

**Due: January 31, 2014**

K.-M. Osei-Bryson, O. Ngwenyama (Eds.)

## Advances in Research Methods for Information Systems Research

Data Mining, Data Envelopment Analysis, Value Focused Thinking

Advances in social science research methodologies and data analytic methods are changing the way research in information systems is conducted. New developments in statistical software technologies for data mining (DM) such as regression splines or decision tree induction can be used to assist researchers in systematic post-positivist theory testing and development. Established management science techniques like data envelopment analysis (DEA), and value focused thinking (VFT) can be used in combination with traditional statistical analysis and data mining techniques to more effectively explore behavioral questions in information systems research. As adoption and use of these research[...]

### Features

Advances in social science research methodologies and data analytic methods are changing the way research in information systems is conducted. New developments in statistical software technologies for data mining (DM) such as regression splines or decision tree induction can be used to assist researchers in systematic post-positivist theory testing and development. Established management science techniques [...]

### Contents

Introduction.- Logical Foundations of Social Science Research.- Overview on Decision Tree Induction.- Using Decision Tree Induction for Theory Development.- A Hybrid Decision Tree-based Method for Exploring Cumulative Abnormal Returns.- An Ethnographic Decision Tree Modeling: An Exploration of Telecentre Usage in the Human Development Context.- Using Association Rules Mining to Facilitate Qualitative Data Analysis in Theory Building.- Overview on Multivariate Adaptive Regression Splines.- Reexamining the Impact of Information Technology Investment on Productivity Using Regression Tree[...]

### Fields of interest

Business Information Systems; Data Mining and Knowledge Discovery; Information Systems and Communication Service

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9462-1](http://www.springer.com/978-1-4614-9462-1)

### Hardcover

2014. VII, 231 p. 52 illus., 30 illus. in color. (Integrated Series in Information Systems, Vol. 34)  
ISBN 978-1-4614-9462-1

**usually dispatched within 3 to 5 business days**

K.-M. Osei-Bryson, Virginia Commonwealth University, Richmond, USA; G. Mansingh, University of the West Indies, Mona, Kingston, Jamaica; L. Rao, University of the West Indies, Mona, Kingston, Jamaica (Eds.)

## Knowledge Management for Development

Domains, Strategies and Technologies for Developing Countries

A number of developing countries, including small island states have common problems that have affected their development and growth. Knowledge Management (KM) initiatives can be used to address some of these issues, but these developing countries need to understand what is needed to implement them, in order to improve economic conditions. While many of these countries have access to technologies that can be used to assist in knowledge management, relevant and low cost KM initiatives need to be considered in improving their existing KM processes. Sectors critical to the growth of these developing countries include health care, crime management, disaster recovery management, small and[...]

### Features

A number of developing countries, including small island states, have common problems that have affected their development and growth. Knowledge Management (KM) initiatives can be used to address some of these issues, but these developing countries need to understand what is needed to implement them, in order to improve economic conditions. While many of these countries have access to technologies that can [...]

### Contents

Chapter 1 Towards Understanding and Applying Knowledge Management and Knowledge Management Systems in Developing Countries: Some Conceptual Foundations.- Chapter 2 Towards a Community-Centered Knowledge Management Architecture for Disaster Management in Sub Saharan Africa.- Chapter 3 Managing Expert Knowledge to Assist in the Management of Coffee Pests and Diseases in Jamaica.- Chapter 4 Implementation of a Multiagent Supervisory System for an Agricultural Products Sourcing Network.- Chapter 5 Progressive Usage of Business and Spatial Intelligence for Decision Support in the Delivery of[...]

### Fields of interest

Emerging Markets / Globalization; Information Systems and Communication Service; Economic Systems

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4899-7391-7](http://www.springer.com/978-1-4899-7391-7)

### Hardcover

2014. XX, 230 p. 37 illus., 15 illus. in color. (Integrated Series in Information Systems, Vol. 35)  
ISBN 978-1-4899-7391-7

**Due: January 31, 2014**

G. Owusu, P. O'Brien, J. McCall, N.F. Doherty (Eds.)

## Transforming Field and Service Operations

Methodologies for Successful Technology-Driven Business Transformation

The drive to realise operational efficiencies, improve customer service, develop new markets and accelerate the introduction of new products has substantially increased the complexity of field service operations. To maximise the efficiency and effectiveness of these operations, organisations have embarked on a wide range of transformation programmes that have sought to introduce automation through the use of workforce management technologies. Despite the potential business value that can be provided by such transformation programmes, too often, the automation technologies have not been fully utilised and their expected benefits have as such not been realised.Scholars of organisation[...]

### Features

The drive to realise operational efficiencies, improve customer service, develop new markets, and accelerate the introduction of new products has substantially increased the complexity of field service operations. To maximise the efficiency and effectiveness of these operations, organisations have embarked on a wide range of transformation programmes that have sought to introduce automation through the use [...]

### Fields of interest

Business Information Systems; Computer Appl. in Administrative Data Processing; Organization / Planning

### Target groups

Research

### Type of publication

Professional book

More on [www.springer.com/978-3-642-44969-7](http://www.springer.com/978-3-642-44969-7)

### Hardcover

2014. XII, 276 p. 73 illus., 45 illus. in color.  
ISBN 978-3-642-44969-7

**Due: January 31, 2014**

L. Pate, Decision Systems International, Littleton, USA; C. Wankel (Eds.)

## Emerging Research Directions in Social Entrepreneurship

This book takes an inside-out approach to examine the broad topic of social entrepreneurship. Instead of looking inward at what social entrepreneurship is, this book looks forward from the view of successful social entrepreneurs to answer the important question, "Where is social entrepreneurship going next?" First, the volume looks at the essential qualities of social entrepreneurs, including the importance of humility as a trait in the social entrepreneur, the way in which social entrepreneurs define themselves as such, and if and how opportunity recognition differs in social and traditional entrepreneurs. Next, the volume looks at the impact of social entrepreneurial businesses on[...]

### Features

This book takes an inside-out approach to examine the broad topic of social entrepreneurship. Instead of looking inward at what social entrepreneurship is, this book looks forward from the view of successful social entrepreneurs to answer the important question, "Where is social entrepreneurship going next?" First, the volume looks at the essential qualities of social entrepreneurs, including the importance of [...]

### Contents

Introduction.- Part One: Essential Qualities of Social Entrepreneurs.- Part Two: The Wider Impact of Social Entrepreneurship.- Part Three: Social Entrepreneurship and Global Change.- Conclusion.

### Fields of interest

Entrepreneurship; International and Comparative Education; Ethics; Social Work

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-94-007-7895-5](http://www.springer.com/978-94-007-7895-5)

### Hardcover

2014. Approx. 310 p. 20 illus. (Advances in Business Ethics Research, Vol. 4)  
ISBN 978-94-007-7895-5

**Due: March 2014**

P.E. Petrakis, P.C. Kostis, D.G. Valsamis

## European Economics and Politics in the Midst of the Crisis

From the Outbreak of the Crisis to the Fragmented European Federation

This book presents an overview of the economics and politics implemented in the European Union and especially the Eurozone during the crisis of 2008-2012. Although it focuses on these four years, the analysis starts from the establishment of the European Union and covers the period up to the outbreak of the Cypriot banking crisis in mid-2013. The long-term creation of structural changes in European economics and politics is associated with growth lag within the global economic environment dynamics. The economic and political consequences of the crisis and the development of new institutions will shape the future growth dynamics towards a Fragmented European Federation.

### Features

This book presents an overview of the economics and politics implemented in the European Union and especially the Eurozone during the crisis of 2008-2012. Although it focuses on these four years, the analysis starts from the establishment of the European Union and covers the period up to the outbreak of the Cypriot banking crisis in mid-2013. The long-term creation of structural changes in European [...]

### Contents

The European Crisis.- The Structural Elements of the Crisis.- The Policy Response.- The Political Economy of European Synthesis and the Medium Future.

### Fields of interest

Economic Policy; European Integration; Macroeconomics / Monetary Economics; Public Finance & Economics; Development Economics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41343-8](http://www.springer.com/978-3-642-41343-8)

### Hardcover

2014. X, 270 p. 93 illus., 3 illus. in color.  
ISBN 978-3-642-41343-8

**Due: January 31, 2014**

P.E. Petrakis

## Culture, Growth and Economic Policy

It is a wide-spread belief that the cultural background inherited in a society affects the requirements of economic development. This relationship requires theoretical and empirical justification. The present book provides this together with an analysis of the development of cultural background itself. Cultural background is embodied in political institutions, in transactions, knowledge, incentives, in social capital, even in the tangibles of the economy. Thus, economic development is shaped and the rate of growth is affected. Conversely, economic development affects cultural background. When this interaction takes place at a non-developmental cultural background level, which is[...]

### Features

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### Contents

Introduction.- The Foundations: Human Needs and Cultural Background.- Culture in Economic Thinking.- Cultural Background and Economic System.- The Effect of Cultural Background on Incentives, Growth and Distribution and Vice Versa.- Cultural Background and Rationality.- The Cultural Dimensions and the Cultural Background Change: Cultural Surveys.- Collectivism as an Air or Obstacle to Economic Growth.- Power Distance, Uncertainty, Time and Growth.- The Cultural Background Change.- Cultural Background, Growth and Policy: Economic Growth and Cultural Background.- Cultural Background,[...]

### Fields of interest

Economic Growth; Cultural Studies; Development Economics; Economic Theory; Political Economy

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41439-8](http://www.springer.com/978-3-642-41439-8)

### Hardcover

2014. 250 p.  
ISBN 978-3-642-41439-8

**Due: March 31, 2014**

N. Pfeffermann, ISEIC Pfeffermann Consulting, Bremen, Germany; T. Minshall, University of Cambridge, Cambridge, United Kingdom; L. Mortara, University of Cambridge, Cambridge, United Kingdom (Eds.)

## Strategy and Communication for Innovation

The innovation economy sets new standards for global business and requires efficient innovation management to plan, execute and evaluate innovation activities, establish innovation capability and coordinate resources and capacities for innovation on an intra- and inter-organizational level. Communication has become a critical factor underpinning successful innovation. As a new communication field, innovation communication facilitates the successful launches of new products and services, the establishment of stakeholder relationships, and the strengthening of corporate reputation in the long-run. Consequently, firms today need to develop a strong portfolio of communication tools as an[...]

### Features

The innovation economy sets new standards for global business and requires efficient innovation management to plan, execute and evaluate innovation activities, establish innovation capability and coordinate resources and capacities for innovation on an intra- and inter-organizational level. Communication has become a critical factor underpinning successful innovation. As a new communication field, innovation [..]

### Contents

Part I - Strategic Perspectives on Innovation.- Part II - Communicative Perspectives on Innovation.- Part III - Integrated Perspectives on Innovation.- Part IV - Best Practices and Case Examples.

### Fields of interest

Technology Management; Engineering Economics, Organization, Logistics, Marketing; Industrial Organization

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-41478-7](http://www.springer.com/978-3-642-41478-7)

### Hardcover

2014. XV, 529 p. 61 illus., 29 illus. in color.  
ISBN 978-3-642-41478-7

**Due: December 28, 2013**

P.S. Pulat, The University of Oklahoma, Norman, USA; S.C. Sarin, Virginia Tech, Blacksburg, USA; R. Uzsoy, North Carolina State University, Raleigh, USA (Eds.)

## Essays in Production, Project Planning and Scheduling

A Festschrift in Honor of Salah Elmaghraby

From the Preface:This festschrift is devoted to recognize the career of a man who not only witnessed the growth of operations research from its inception, but also contributed significantly to this growth. Dr. Salah E. Elmaghraby received his doctorate degree from Cornell University in 1958, and since then, his scholarly contributions have enriched the fields of production planning and scheduling and project scheduling. This collection of papers is contributed in his honor by his students, colleagues, and acquaintances. It offers a tribute to the inspiration received from his work, and from his guidance and advice over the years, and recognizes the legacy of his many contributions.Dr.[...]

### Features

From the Preface:This festschrift is devoted to recognize the career of a man who not only witnessed the growth of operations research from its inception, but also contributed significantly to this growth. Dr. Salah E. Elmaghraby received his doctorate degree from Cornell University in 1958, and since then, his scholarly contributions have enriched the fields of production planning and scheduling and [..]

### Contents

Ubiquitous OR in Production Systems.- Integrated Production Planning and Pricing Decisions in Congestion-Prone Capacitated Production Systems.- Refined EM Method for Solving Linearly Constrained Global Optimization Problems.- The Price of Anarchy for a Network of Queues in Heavy Traffic.- A Comparative Study of Procedures for the Multinomial Selection Problem.- Vulnerability Discussion in Multimodal Freight Systems.- Scheduling and Financial Planning in Stochastic Activity Networks.- A Risk Integrated Methodology for Project Planning Under Uncertainty.- Dynamic Resource Constrained[...]

### Fields of interest

Operation Research / Decision Theory; Production / Logistics; Operations Research, Mathematical Programming

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9055-5](http://www.springer.com/978-1-4614-9055-5)

### Hardcover

2014. XIV, 414 p. 102 illus., 30 illus. in color. (International Series in Operations Research & Management Science, Vol. 200)  
ISBN 978-1-4614-9055-5

**usually dispatched within 3 to 5 business days  
December 31, 2013**

H. Rampersad, Business Schools of the Americas, Miramar, USA; S. Hussain, Saleh Hussain Consultancy, Manama, Bahrain

## Authentic Governance

Aligning Personal Governance with Corporate Governance

Over the past years, we have heard and read plenty about how executives should behave more responsibly in the light of corporate governance. Despite all these efforts, many implementations of corporate governance provide no protection from potentially catastrophic ethical failures. This book emphasizes the introduction of a new corporate governance blueprint for addressing these concerns in a more authentic, organic and holistic way. It is a roadmap toward a high-performance ethical culture. By way of this innovative system, Dr. Hubert Rampersad and Saleh Hussain, MBA, are launching a revolutionary concept that actively has human capital embedded in corporate governance in a manner[...]

### Features

Over the past years, we have heard and read plenty about how executives should behave more responsibly in the light of corporate governance. Despite all these efforts, many implementations of corporate governance provide no protection from potentially catastrophic ethical failures. This book emphasizes the introduction of a new corporate governance blueprint for addressing these concerns in a more [..]

### Contents

Preface.- 1 Introduction.- 2 Authentic Governance Model.- Part I: Authentic Personal Governance.- 3 Personal Ambition.- 4 Personal Balanced Scorecard.- 5 Personal Governance.- 6 Alignment with Yourself.- Part II: Authentic Corporate Governance.- 7 Corporate Ambition.- 8 Corporate Balanced Scorecard.- 9 Corporate Governance.- 10 Alignment with your organization.- Epilogue.- Appendices.- References and Recommended Reading.- Authors' Profiles.

### Fields of interest

Management/Business for Professionals; Business Strategy / Leadership; Ethics

### Target groups

Professional/practitioner

### Type of publication

Monograph

More on [www.springer.com/978-3-319-03112-5](http://www.springer.com/978-3-319-03112-5)

### Hardcover

2014. X, 203 p. 20 illus. in color. (Management for Professionals)  
ISBN 978-3-319-03112-5

**Due: January 31, 2014**

Th.A. Rhoads, Towson University, Towson, USA

## The Call Up to the Majors

A Systematic Approach to the Economics of Minor League Baseball

Just like any other business, Major League Baseball (MLB) seeks to continually increase brand awareness and brand value. Maintaining high consumer demand for its product is an important element of this business strategy. It is the unique relationship that MLB has with Minor League Baseball (MiLB)—and more precisely, the fact that the fan base for MLB and MiLB are very similar—that allows the MLB brand to reach outside of the major leagues, into the minor leagues, and into the way the minor league game is structured and played. Major League teams provide each of their Minor League affiliates with players and coaches in order to develop baseball players who can eventually play for the[...]

### Features

Just like any other business, Major League Baseball (MLB) seeks to continually increase brand awareness and brand value. Maintaining high consumer demand for its product is an important element of this business strategy. It is the unique relationship that MLB has with Minor League Baseball (MiLB)—and more precisely, the fact that the fan base for MLB and MiLB are very similar—that allows the MLB brand to [...]

### Contents

1.Introduction.- 2.Structure of MiLB and comparison to MLB.- 3.Comparison of MiLB to other sports.- 4.Value of the MLB brand.- 5.Regulations imposed by MLB on MiLB.- 6.Competitive Balance in MiLB.- 7.Regionalizing affiliates.- 8.Spring Training agglomeration affects.- 9.Conclusion.

### Fields of interest

Business & Economics (general); Development Economics; Economic Policy

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-8923-8](http://www.springer.com/978-1-4614-8923-8)

### Hardcover

2014. Approx. 200 p. 20 illus., 10 illus. in color. (Sports Economics, Management and Policy, Vol. 7)  
ISBN 978-1-4614-8923-8

**Due: February 2014**

X. Richet, Université Sorbonne Nouvelle-Paris 3, Paris, France; V. Delteil, Université Sorbonne Nouvelle - Paris 3, Paris, France; P. Dieuaide, Université Sorbonne Nouvelle - Paris 3, Paris, France (Eds.)

## Strategies of Multinational Corporations and Social Regulations

European and Asian Perspectives

This contributed volume seeks to provide a unique window on the globalization process by analyzing the dynamics of Foreign Direct Investment (FDI) in Europe and Asia, as well as its influence on the renewal of public policies and regulations, both transnational and local. It discusses the link between the trans-nationalization of productive and business systems and the renewal of local regulations in the light of concerns over competitiveness and attractiveness, as well as new social tensions. Multinational corporations (MNCs) as key actors of globalization are central for understanding the new interactions between the global, regional and local dimensions as well as for highlighting[...]

### Features

This contributed volume seeks to provide a unique window on the globalization process by analyzing the dynamics of Foreign Direct Investment (FDI) in Europe and Asia, as well as its influence on the renewal of public policies and regulations, both transnational and local. It discusses the link between the trans-nationalization of productive and business systems and the renewal of local regulations in the [...]

### Contents

Introduction.- Part I: FDI Flows and Institutional Dynamics in Europe and Asia.- Part II: Redesigning of Public Policies to Meet Competitiveness and Attractiveness Challenges, while Dealing with Business Lobbying.- Part III: Multinational Companies across Home and Host Countries: Transfer, Hybridization, Adaptation of Business Model and Labour Relations?.- Part IV: Reshaping Industrial Relations and Labour Activism in Multinational Companies.

### Fields of interest

Emerging Markets / Globalization; Labor Economics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-41368-1](http://www.springer.com/978-3-642-41368-1)

### Hardcover

2014. VI, 218 p. 16 illus., 13 illus. in color.  
ISBN 978-3-642-41368-1

**Due: March 28, 2014**

M.P. Rodríguez-Bolívar, University of Granada, Granada, Spain (Ed.)

## Measuring E-government Efficiency

The Opinions of Public Administrators and Other Stakeholders

E-government has the potential to improve public services, information transparency, and the engagement of civic participation of the public sector management. This book analyzes the achievement of expectations created by public managers, policy-makers, and stakeholders with regard to the implementation of e-government policies and applications. It also tries to determine whether e-government applications have been introduced as a fad or according to real demands from citizenry and if efforts within e-government have been effective. This book investigates how public managers and policy-makers imagine e-government policies and the impact of those policies on their management and[...]

### Features

E-government has the potential to improve public services, information transparency, and the engagement of civic participation of the public sector management. This book analyzes the achievement of expectations created by public managers, policy-makers, and stakeholders with regard to the implementation of e-government policies and applications. It also tries to determine whether e-government applications [...]

### Contents

Foreword.- Preface.- List of contributors.- List of reviewers.- Contents (Index).- Introduction.- Part I. Theories on measuring e-government efficiency.- Part II. Case studies on perceptions about efficiency of e-government technologies by public sector officials and politicians.- Part III. Case studies on perceptions about efficiency of e-government technologies by stakeholders.- Conclusions and future research.

### Fields of interest

Public Administration; Technology Management; Political Science, general

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4614-9981-7](http://www.springer.com/978-1-4614-9981-7)

### Hardcover

2014. Approx. 250 p. 17 illus. (Public Administration and Information Technology, Vol. 5)  
ISBN 978-1-4614-9981-7

**Due: May 2, 2014**

M. Sakawa, Hiroshima University, Higashi-Hiroshima, Japan; H. Yano, Graduate School of Humanities and Social, Nagoya, Japan; I. Nishizaki

## Linear and Multiobjective Programming with Fuzzy Stochastic Extensions

Although several books or monographs on multiobjective optimization under uncertainty have been published, there seems to be no book which starts with an introductory chapter of linear programming and is designed to incorporate both fuzziness and randomness into multiobjective programming in a unified way. In this book, five major topics, linear programming, multiobjective programming, fuzzy programming, stochastic programming, and fuzzy stochastic programming, are presented in a comprehensive manner. Especially, the last four topics together comprise the main characteristics of this book, and special stress is placed on interactive decision making aspects of multiobjective[...]

### Features

Although several books or monographs on multiobjective optimization under uncertainty have been published, there seems to be no book which starts with an introductory chapter of linear programming and is designed to incorporate both fuzziness and randomness into multiobjective programming in a unified way. In this book, five major topics, linear programming, multiobjective programming, fuzzy programming, [...]

### Contents

Introduction.- Linear Programming.- Multiobjective Linear Programming.- Fuzzy Linear Programming.- Stochastic Linear Programming.- Interactive Fuzzy Multiobjective Stochastic Linear Programming.- Purchase and Transportation Planning for Food Retailing.- Linear Algebra.- Nonlinear Programming.- Usage of Excel Solver.

### Fields of interest

Operation Research / Decision Theory; Operations Research, Mathematical Programming; Probability Theory and Stochastic Processes

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-1-4614-9398-3](http://www.springer.com/978-1-4614-9398-3)

### Hardcover

2013. XIII, 339 p. 59 illus., 21 illus. in color. (International Series in Operations Research & Management Science, Vol. 203)

ISBN 978-1-4614-9398-3

**usually dispatched within 3 to 5 business days  
December 31, 2013**

R. Salomone, G. Saija, University of Messina, Messina, Italy (Eds.)

## Pathways to Environmental Sustainability

### Methodologies and Experiences

This book brings together, in a single volume, an overview of multiple applications of the concept of environmental sustainability, featuring examples of useful methodologies and tools for pursuing environmental targets, experiences and case studies spanning a variety of sectors, embracing both industry and research projects; and case studies applied to very different territorial contexts. The first section of the book covers methodologies and tools for environmental sustainability, including Industrial Ecology, Urban Metabolism, Life Cycle Assessment, analysis of industrial water footprint and such chemical technologies as Hypercritical Separation Technology (HYST). Part Two provides[...]

### Features

This book brings together, in a single volume, an overview of multiple applications of the concept of environmental sustainability, featuring examples of useful methodologies and tools for pursuing environmental targets, experiences and case studies spanning a variety of sectors, embracing both industry and research projects; and case studies applied to very different territorial contexts. The first [...]

### Contents

Preface.- Part I: Methodologies and tools for environmental sustainability.- 1 Food for thought: seeking the essence of Industrial Symbiosis.- 2 LCA and linear programming for the environmental optimization of waste management systems: a simulation.- 3 Urban Metabolism: many open questions for future answers.- 4 Water footprint to support environmental management: an overview.- 5 Marketing strategies for the agri-food sector: adaptation requirements and contradictions.- 6 Hypercritical Separation Technology (HYST): a sustainable technology for agricultural by-products valorization.- 7[...]

### Fields of interest

Economic Systems; Environment (general); Environmental Management; Sustainable Development; Environmental Economics; Management/Business for Professionals

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-03825-4](http://www.springer.com/978-3-319-03825-4)

### Hardcover

2014. I, 274 p. 49 illus.

ISBN 978-3-319-03825-4

**Due: February 28, 2014**

Th. Scherngell (Ed.)

## The Geography of Networks and R&D Collaborations

The geography of networks and R&D collaborations, in particular the spatial dimension of interactions between organisations performing joint R&D, have attracted a burst of attention in the last decade, both in the scientific study of the networks and in the policy sector. The volume is intended to bring together a selection of articles providing novel theoretical and empirical insights into the geographical dynamics of such networks and R&D collaborations, using new, systematic data sources and employing cutting-edge spatial analysis and spatial econometric techniques. It comprises a section on analytic advances and methodology and two thematic sections on structure and spatial[...]

### Features

The geography of networks and R&D collaborations, in particular the spatial dimension of interactions between organisations performing joint R&D, have attracted a burst of attention in the last decade, both in the scientific study of the networks and in the policy sector. The volume is intended to bring together a selection of articles providing novel theoretical and empirical insights into the [...]

### Contents

Editorial Introduction.- Part A: Analytic Advances and Methodology.- Part B: Structure and Spatial Characteristics of R&D Networks.- Part C: Impact of R&D Networks and Policy Implications.- Epilogue.

### Fields of interest

Regional Science; Economic Geography; R & D / Technology Policy; Industrial Organization

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-02698-5](http://www.springer.com/978-3-319-02698-5)

### Hardcover

2014. VII, 381 p. 71 illus., 23 illus. in color. (Advances in Spatial Science)

ISBN 978-3-319-02698-5

**Due: December 31, 2013**

F. Schleer-van Gellecom (Ed.)

## Advances in Non-linear Economic Modeling

### Theory and Applications

In recent years nonlinearities have gained increasing importance in economic and econometric research, particularly after the financial crisis and the economic downturn after 2007. This book contains theoretical, computational and empirical papers that incorporate nonlinearities in econometric models and apply them to real economic problems. It intends to serve as an inspiration for researchers to take potential nonlinearities in account. Researchers should be aware of applying linear model-types spuriously to problems which include non-linear features. It is indispensable to use the correct model type in order to avoid biased recommendations for economic policy.

### Features

In recent years non-linearities have gained increasing importance in economic and econometric research, particularly after the financial crisis and the economic downturn after 2007. This book contains theoretical, computational and empirical papers that incorporate non-linearities in econometric models and apply them to real economic problems. It intends to serve as an inspiration for researchers to take [...]

### Contents

Non-Linearities Related to the Financial Sector: Mitnik, S., Semmler, W.: Estimating a Banking-Macro Model Using a Multi-Regime VAR.- Martínez-García, E.: U.S. Business Cycles, Monetary Policy and the External Finance Premium.- Gallegati, M.: Early Warning Signals of Financial Stress: A "Wavelet-Based" Composite Indicators Approach.- Non-Linearities in Other Fields of Research: Sandberg, R.: Least Absolute Deviation Based Unit Root Tests in Smooth Transition Type of Models.- Benati, L., Lubik, T.A.: The Time-Varying Beveridge Curve.- Charemza, W., Kharin, Y., Maevskiy, V.: Bilinear[...]

### Fields of interest

Econometrics; Macroeconomics / Monetary Economics; Economic Theory; Financial Economics

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-42038-2](http://www.springer.com/978-3-642-42038-2)

### Hardcover

2014. IX, 262 p. 59 illus. (Dynamic Modeling and Econometrics in Economics and Finance, Vol. 17)  
ISBN 978-3-642-42038-2

**Due: December 31, 2013**

S. Sreejesh, IFHE University, Hyderabad, India; S. Mohapatra

## Mixed Method Research Design

### An Application in Consumer-Brand Relationships (CBR)

This book is a comprehensive guide to design and conduct the research in management-related field, such as marketing management and human resources management. It provides an overview of the real research conducted by authors throughout their careers and explains the important and growing research design used in management research-mixed method research design. Video tutorials are also included for complete qualitative data collection and data analysis. These videos are included to help readers understand the research and apply the techniques using the recommended software programs. Mixed Method Research Design: An Application in Consumer-Brand Relationships (CBR) begins with an[...]

### Features

This book is a comprehensive guide to design and conduct the research in management-related field, such as marketing management and human resources management. It provides an overview of the real research conducted by authors throughout their careers and explains the important and growing research design used in management research-mixed method research design. Video tutorials are also included for [...]

### Contents

Introduction.- Literature Review.- Theoretical Development and Hypotheses.- Research Methodology.- Analysis and Results.- Discussion, Implications and Conclusions.

### Fields of interest

Market Research; Personnel Management; Marketing

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02686-2](http://www.springer.com/978-3-319-02686-2)

### Hardcover

2014. XIII, 174 p. 27 illus. With online files/update.  
ISBN 978-3-319-02686-2

**usually dispatched within 3 to 5 business days**

C. Staudter, UMS (Consulting) GmbH, Frankfurt, Germany; C. Hugo, P. Bosselmann, UMS (Consulting) GmbH, Frankfurt am Main, Germany; J.-P. Mollenhauer, UMS (Consulting) GmbH, Frankfurt, Germany; R. Meran, UMS (Consulting) GmbH, Frankfurt, Germany; O. Roenpage, UMS (Consulting) GmbH, Frankfurt, Germany; S. Lunau, UMS (Consulting) GmbH, Frankfurt, Germany (Ed.)

## Design for Six Sigma + LeanToolset

### Mindset for Successful Innovations

The Toolset is a comprehensive collection of the relevant Design for Six Sigma+Lean tools, which are necessary for successfully implementing innovations. All tools are presented in a clear structure, providing a good overview of the methodology. The chronology of the listed tools corresponds to the procedure in a Design for Six Sigma+Lean development project with the stages Define, Measure, Analyze, Design, and Verify. Due to this unique structure by which tools can be found and applied quickly we created a book that facilitates project work in practical use enormously. Migrating from a tool based approach to a question based approach is a decisive success factor in our opinion enabling[...]

### Features

The Toolset is a comprehensive collection of the relevant Design for Six Sigma+Lean tools, which are necessary for successfully implementing innovations. All tools are presented in a clear structure, providing a good overview of the methodology. The chronology of the listed tools corresponds to the procedure in a Design for Six Sigma+Lean development project with the stages [...]

### Contents

Define.- Measure.- Analyze.- Design.- Verify.

### Fields of interest

Technology Management; Production / Logistics; Quality Control, Reliability, Safety and Risk

### Target groups

Professional/practitioner

### Type of publication

Professional book

More on [www.springer.com/978-3-642-41454-1](http://www.springer.com/978-3-642-41454-1)

### Hardcover

2013. XIII, 553 p. 155 illus. (Management for Professionals)

ISBN 978-3-642-41454-1

**Due: January 28, 2014**

K. Storbacka, R. Pennanen

## Solution Business

Designing a Platform for Organic Growth

Success in solution business starts by accepting that solution business is a separate business model, not simply another product category or an extension of the existing product business. This book identifies the business model areas that firms need to focus on when transforming into solution business. It further organizes these areas into three sets of capabilities and practices: commercialization, industrialization and solution platforms. This is the first book to take a comprehensive view of success in solution business and its relevance therefore extends to all functions of firms wanting to become solution providers as well as to many managerial levels. The book will also help you[...]

### Features

Success in solution business starts by accepting that solution business is a separate business model, not simply another product category or an extension of the existing product business. This book identifies the business model areas that firms need to focus on when transforming into solution business. It further organizes these areas into three sets of capabilities and practices: commercialization, [...]

### Contents

Driving Growth and Profit With Solution Business.- Develop Solutions: Identifying New Value Creation Opportunities.- Create Demand: Generating Sales Opportunities.- Sell Solution: Turning an Opportunity to an Order.- Deliver Solution: Securing Customer Value Creation and Firm Value Capture.- Solution Platform: Foundation for Sustainable Success.- Making It Happen: Are You Ready for Solution Business?.

### Fields of interest

Business Strategy / Leadership; Organization / Planning; Sales / Distribution / Call Center / Customer Service; Technology Management; Production / Logistics

### Target groups

Professional/practitioner

### Type of publication

Professional book

More on [www.springer.com/978-3-319-03975-6](http://www.springer.com/978-3-319-03975-6)

### Hardcover

2014. 180 p. (Management for Professionals)  
ISBN 978-3-319-03975-6

**Due: February 28, 2014**

N. Taher, B. Al-Hajjar

## Energy and Environmental Concerns and Opportunities in Saudi Arabia

The vast oil resources in Saudi Arabia have for decades encouraged a generous system of oil subsidies, making the Kingdom one of the leading countries in the world with the cheapest domestic price of oil. Such subsidies have, however, encouraged inefficient utilization of oil, which is largely consumed in the power, water and transportation sectors, contributing substantially to CO2 emission in the country. These problems are exacerbated by demographic dynamics, urbanization, changes in income and consumption patterns, and industrialization. On current trends of domestic consumption patterns, Saudi Arabia will consume the whole of the oil it will produce by 2030, which will reflect[...]

### Features

The vast oil resources in Saudi Arabia have for decades encouraged a generous system of oil subsidies, making the Kingdom one of the leading countries in the world with the cheapest domestic price of oil. Such subsidies have, however, encouraged inefficient utilization of oil, which is largely consumed in the power, water and transportation sectors, contributing substantially to CO2 emission in the country. [...]

### Contents

Environmental Challenges, Regulations and Institutions in Saudi Arabia.- Environmental Concerns and Policies in Saudi Arabia.- Environmental Investments.- Incentive Structures.- Environmental Business Channels.- The Way Forward.

### Fields of interest

Economic Policy; Economic Growth; Energy Policy, Economics and Management

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02981-8](http://www.springer.com/978-3-319-02981-8)

### Hardcover

2014. XXIX, 203 p. 76 illus.  
ISBN 978-3-319-02981-8

**Due: December 31, 2013**

L. Talmon-Gros

## Development Patterns of Material Productivity

Convergence or Divergence?

Increasing concerns regarding the world's natural resources and sustainability continue to be a major issue for global development. As a result several political initiatives and strategies for green or resource-efficient growth both on national and international levels have been proposed. A core element of these initiatives is the promotion of an increase of resource or material productivity. This dissertation examines material productivity developments in the OECD and BRICS countries between 1980 and 2008. By applying the concept of convergence stemming from economic growth theory to material productivity the analysis provides insights into both aspects: material productivity[...]

### Features

Increasing concerns regarding the world's natural resources and sustainability continue to be a major issue for global development. As a result several political initiatives and strategies for green or resource-efficient growth both on national and international levels have been proposed. A core element of these initiatives is the promotion of an increase of resource or material productivity. This dissertation [...]

### Contents

Introduction.- Overuse, Scarcity and the Debate About Sustainable Development.- The Relationship Between Technological Progress and Material Consumption.- Convergence - Theory, Econometrics and Empirics.- Material Productivity Measurement.- Empirical Evidence on the Development of Material Consumption and Material Productivity.- Research Question.- Data and Descriptive Statistics.- Examination of Material Productivity Convergence.- Discussion.- Conclusion.

### Fields of interest

Environmental Economics; Economic Growth; Sustainable Development; Econometrics; Technology Management

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02537-7](http://www.springer.com/978-3-319-02537-7)

### Hardcover

2014. XX, 264 p. 25 illus., 7 illus. in color. (Contributions to Economics)

ISBN 978-3-319-02537-7

**Due: January 31, 2014**

S. Vali, Fordham University, New York, USA

## Principles of Mathematical Economics

Under the assumption of a basic knowledge of algebra and analysis, micro and macro economics, this self-contained and self-sufficient textbook is targeted towards upper undergraduate audiences in economics and related fields such as business, management and the applied social sciences. The basic economics core ideas and theories are exposed and developed, together with the corresponding mathematical formulations. From the basics, progress is rapidly made to sophisticated nonlinear, economic modelling and real-world problem solving. Extensive exercises are included, and the textbook is particularly well-suited for computer-assisted learning.

### Features

Under the assumption of a basic knowledge of algebra and analysis, micro and macro economics, this self-contained and self-sufficient textbook is targeted towards upper undergraduate audiences in economics and related fields such as business, management and the applied social sciences. The basic economics core ideas and theories are exposed and developed, together with the corresponding mathematical [...]

### Contents

Household Expenditure.- Variables, a Short Taxonomy.- Sets and Functions.- Market Equilibrium Model.- Rates of Change and the Derivative.- Optimal Level of Output and Long Run Price.- Nonlinear Models.- Additional Topics in Perfect and Imperfect Competition.- Logarithmic and Exponential Functions.- Production Function, Least-Cost Combination.- Economic Dynamics.- Mathematics of Interest Rates and Finance.- Matrices and Their Applications.

### Fields of interest

Business & Economics (general); Mathematics (general)

### Target groups

Upper undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-94-6239-035-5](http://www.springer.com/978-94-6239-035-5)

### Hardcover

2014. XXVIII, 491 p. 121 illus., 60 illus. in color. (Mathematics Textbooks for Science and Engineering, Vol. 3) ISBN 978-94-6239-035-5

usually dispatched within 3 to 5 business days

December 31, 2013

J. Vitting Andersen, A. Nowak, University of Warsaw, Warsaw, Poland

## An Introduction to Socio-Finance

This introductory text is devoted to exposing the underlying nature of price formation in financial markets as a predominantly sociological phenomenon that relates individual decision-making to emergent and co-evolving social and financial structures. Two different levels of this sociological influence are considered: First, we examine how price formation results from the social dynamics of interacting individuals, where interaction occurs either through the price or by direct communication. Then the same processes are revisited and examined at the level of larger groups of individuals. In this book, models of both levels of socio-finance are presented, and it is shown, in particular, [...]

### Features

This introductory text is devoted to exposing the underlying nature of price formation in financial markets as a predominantly sociological phenomenon that relates individual decision-making to emergent and co-evolving social and financial structures. Two different levels of this sociological influence are considered: First, we examine how price formation results from the social dynamics of [...]

### Contents

The Traditional Approach to Finance.- Behavioral Finance.- Financial Markets as Interacting Individuals: Price Formation From Models of Complexity.- A Psychological Galilean Principle for Price Movements: Fundamental Framework for Technical Analysis.- Catching Animal Spirits: Using Complexity Theory to Detect Speculative Moments of the Markets.- Social Framing Creating Bull Markets of the Past: Growth Theory of Financial Markets.- Complexity Theory and Systemic Risk in the World's Financial Markets.- Communication and the Stock Market.- References.- Index.

### Fields of interest

Financial Economics; Socio- and Econophysics, Population and Evolutionary Models; Quantitative Finance

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-642-41943-0](http://www.springer.com/978-3-642-41943-0)

### Hardcover

2013. XIII, 185 p. 44 illus., 9 illus. in color. ISBN 978-3-642-41943-0

Due: December 31, 2013

U.R. Wagle

## The Heterogeneity Link of the Welfare State and Redistribution

Ethnic Heterogeneity, Welfare State Policies, Poverty, and Inequality in High Income Countries

This book situates ethnic heterogeneity in the larger discussion of the welfare state and its redistributive outcomes, poverty and inequality. By using comprehensive, longitudinal data covering 1980 to 2010 from 17 high income countries, this analysis helps achieve a major milestone in comparative welfare state research both conceptually and methodologically. Conceptually, it elevates the relevance of growing ethnic heterogeneity in thinking about how politics and economics of the welfare state operate, collectively impacting the magnitudes of poverty and inequality. Methodologically, the analysis conducted in this book provides broader empirical tests for the many propositions and [...]

### Features

Using data covering 1980 to 2005 across 17 high income countries, this book offers a thorough and systematic analysis of the relevance of population heterogeneity in determining variations in welfare state policies as well as inequality and poverty. Comparative analysis provides a new look into the ongoing drive for welfare state retrenchment amidst increasing heterogeneity across many countries and its [...]

### Contents

Introduction.- Ethnic Heterogeneity.- The Welfare State.- Poverty and Inequality.- Ethnic Heterogeneity and the Welfare State.- Ethnic Heterogeneity and Poverty and Inequality.- Conclusion.- References.- Index.

### Fields of interest

Development Economics; Social Structure, Social Inequality; Comparative Politics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02814-9](http://www.springer.com/978-3-319-02814-9)

### Hardcover

2013. XIII, 302 p. 18 illus. in color. ISBN 978-3-319-02814-9

usually dispatched within 3 to 5 business days

W.H. Wallace

## The American Monetary System

An Insider's View of Financial Institutions, Markets and Monetary Policy

Today's financial system is considerably more complex than in years past, as new financial instruments have been introduced that are not well understood even by the people and institutions that invest in them. Numerous high-risk opportunities are available, and the number of people who unwittingly wander into such ventures seems to grow daily. There is also the realization that people's lives are affected by the financial system without their overt participation in it. Despite no active participation, pensions can be emasculated by a sudden decline in interest rates, or a rise in rates can increase the monthly payments on a mortgage, credit cards or other debt. This book looks at the[...]

### Features

Today's financial system is considerably more complex than in years past, as new financial instruments have been introduced that are not well understood even by the people and institutions that invest in them. Numerous high-risk opportunities are available, and the number of people who unwittingly wander into such ventures seems to grow daily. There is also the realization that people's lives are affected by [...]

### Contents

Introduction.- Part I.- Historical Perspectives on Money, Financial Institutions and Markets.- What Gives Money Its Value? -- From Gold to Paper.- What is Driving the Financial World Today?.- Part II Banking: Asset & Liability Management; Banking Supervision & Regulation.- How Are Banks Funded?.- How Do Banks Use Their Funds?.- Who Owns the Banks? Bank Capital and the Basel Accord.- How Safe Are Our Banks?.- Part III Financial Markets and the Management of Financial Risk.- What Makes the System Work?.- Who Finances American Industry? -- The Relative Roles of Commercial and[...]

### Fields of interest

Macroeconomics / Monetary Economics; Economic Systems; Public Finance & Economics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02906-1](http://www.springer.com/978-3-319-02906-1)

### Hardcover

2014. X, 340 p. 15 illus., 12 illus. in color.  
ISBN 978-3-319-02906-1

**Due: December 31, 2013**

P.J.J. Welfens

## Social Security and Economic Globalization

Economic globalization is a complex phenomenon where the links between social security expenditures and globalization are not well understood so far. This study summarizes new key findings and highlights new theoretical insights in the field of social security systems, labor standards, taxation and economic globalization. Moreover, new thoughts on the links between social security systems and migration as well as between free trade areas and social market economy development are presented. The book analyzes the role of a changing age dependency using a Branson model and it derives implications for the stock market price index, the exchange rate and the interest rate. Economic[...]

### Features

Economic globalization is a complex phenomenon where the links between social security expenditures and globalization are not well understood so far. This study summarizes new key findings and highlights new theoretical insights in the field of social security systems, labor standards, taxation and economic globalization. Moreover, new thoughts on the links between social security systems and migration as [...]

### Contents

Introduction.- Key Problems.- Theoretical Aspects of Globalization, Economic Growth, Social Security.- Conclusions.- Appendix.

### Fields of interest

Social Policy; International Economics; Social Structure, Social Inequality; Public Finance & Economics; Labor Economics; Economic Growth

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-40879-3](http://www.springer.com/978-3-642-40879-3)

### Hardcover

2013. XIV, 147 p. 28 illus.  
ISBN 978-3-642-40879-3

**Due: December 31, 2013**

P. Wu, Central Queensland University, Rockhampton, Australia;  
S.P. Low, National University of Singapore, Singapore, Singapore

## Lean and Cleaner Production

Applications in Prefabrication to Reduce Carbon Emissions

This book explains how in moving towards Cleaner Production, the Lean Production Philosophy can be applied to reduce carbon emissions in prefabrication - one major source of the Greenhouse Gas (GHG) emissions which contribute to global climate change. This book examines theories and principles in the Lean Production Philosophy to develop situation-based carbon reduction strategies for precast concrete manufacturers and contractors in terms of Site layout, Supply Chain, Production, Stocks and Installation Management. It presents the empirical findings of surveys and case studies with managers and professionals working for precasters and contractors in Singapore, findings which provide[...]

### Features

This book explains how in moving towards Cleaner Production, the Lean Production Philosophy can be applied to reduce carbon emissions in prefabrication - one major source of the Greenhouse Gas (GHG) emissions which contribute to global climate change. This book examines theories and principles in the Lean Production Philosophy to develop situation-based carbon reduction strategies for precast concrete [...]

### Contents

Introduction.- Sustainable Development and Global Climate Change.- Lean Production Philosophy.- The Precast Concrete Industry.- Modelling the Lean Production Philosophy.- Research Design and Methodology.- Applications in Precast Concrete Factories.- Case study of a Precast Concrete Factory.- Precast Concrete Products in Construction Sites.- Case study of a Construction Site.- Carbon Labelling and Reflections.- Conclusions and Recommendations.- References.

### Fields of interest

Business & Economics (general); Environmental Economics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-42061-0](http://www.springer.com/978-3-642-42061-0)

### Hardcover

2013. XXII, 344 p. 76 illus., 31 illus. in color.  
ISBN 978-3-642-42061-0

**Due: January 31, 2014**

J. vom Brocke, M. Rosemann (Eds.)

## Handbook on Business Process Management 1

Introduction, Methods, and Information Systems

Business Process Management (BPM) has become one of the most widely used approaches for the design of modern organizational and information systems. The conscious treatment of business processes as significant corporate assets has facilitated substantial improvements in organizational performance but is also used to ensure the conformance of corporate activities. This Handbook presents in two volumes the contemporary body of knowledge as articulated by the world's leading BPM thought leaders. This first volume focuses on arriving at a sound definition of Business Process Management approaches and examines BPM methods and process-aware information systems. As such, it provides[...]

### Features

Business Process Management (BPM) has become one of the most widely used approaches for the design of modern organizational and information systems. The conscious treatment of business processes as significant corporate assets has facilitated substantial improvements in organizational performance but is also used to ensure the conformance of corporate activities. This Handbook presents in two volumes the [...]

### Contents

Introduction.- Methods.- Information Systems.

### Fields of interest

Business Information Systems; Information Systems Applications (incl.Internet)

### Target groups

Research

### Type of publication

Handbook

More on [www.springer.com/978-3-642-45099-0](http://www.springer.com/978-3-642-45099-0)

### Hardcover

2014. Approx. 700 p. (International Handbooks on Information Systems)  
ISBN 978-3-642-45099-0

Due: February 28, 2014

J. vom Brocke, M. Rosemann, QUT, Rosemann, Australia (Eds.)

## Handbook on Business Process Management 2

Strategic Alignment, Governance, People and Culture

Business Process Management (BPM) has become one of the most widely used approaches for the design of modern organizational and information systems. The conscious treatment of business processes as significant corporate assets has facilitated substantial improvements in organizational performance but is also used to ensure the conformance of corporate activities. This Handbook presents in two volumes the contemporary body of knowledge as articulated by the world's leading BPM thought leaders. This second volume focuses on the managerial and organizational challenges of Business Process Management such as strategic and cultural alignment, governance and the education of BPM[...]

### Features

Business Process Management (BPM) has become one of the most widely used approaches for the design of modern organizational and information systems. The conscious treatment of business processes as significant corporate assets has facilitated substantial improvements in organizational performance but is also used to ensure the conformance of corporate activities. This Handbook presents in two volumes the [...]

### Contents

Strategic Alignment.- Governance.- People and culture.

### Fields of interest

Business Information Systems; Information Systems Applications (incl.Internet)

### Target groups

Research

### Type of publication

Handbook

More on [www.springer.com/978-3-642-45102-7](http://www.springer.com/978-3-642-45102-7)

### Hardcover

2014. Approx. 700 p. (International Handbooks on Information Systems)  
ISBN 978-3-642-45102-7

Due: February 28, 2014

## Mathematics

T. Andreescu, D. Andrica

## Complex Numbers from A to ... Z

It is impossible to imagine modern mathematics without complex numbers. The second edition of Complex Numbers from A to ... Z introduces the reader to this fascinating subject that from the time of L. Euler has become one of the most utilized ideas in mathematics. The exposition concentrates on key concepts and then elementary results concerning these numbers. The reader learns how complex numbers can be used to solve algebraic equations and to understand the geometric interpretation of complex numbers and the operations involving them. The theoretical parts of the book are augmented with rich exercises and problems at various levels of difficulty. Many new problems and solutions have[...]

### Features

It is impossible to imagine modern mathematics without complex numbers. The second edition of Complex Numbers from A to ... Z introduces the reader to this fascinating subject that, from the time of L. Euler, has become one of the most utilized ideas in mathematics. The exposition concentrates on key concepts and then elementary results concerning these numbers. The reader learns how complex [...]

### Contents

Preface.- Complex Numbers in Algebraic Form.- Complex Numbers in Trigonometric Form.- Complex Numbers and Geometry.- More on Complex Numbers and Geometry.- Olympiad-Caliber Problems.- Answers, Hints and Solutions to Proposed Problems.- Glossary.- References.- Index of Authors.

### Fields of interest

Number Theory; Algebraic Geometry; Geometry

### Target groups

Lower undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-0-8176-8414-3](http://www.springer.com/978-0-8176-8414-3)

### Softcover

2014. X, 435 p. 81 illus.  
ISBN 978-0-8176-8414-3

Due: January 31, 2014

L. Beirao da Veiga, Università degli Studi di Milano, Milano, Italy; K. Lipnikov, Los Alamos National Laboratory, Los Alamos, USA; G. Manzini, Los Alamos National Laboratory, Los Alamos, USA

## The Mimetic Finite Difference Method for Elliptic Problems

This book describes the theoretical and computational aspects of the mimetic finite difference method for a wide class of multidimensional elliptic problems, which includes diffusion, advection-diffusion, Stokes, elasticity, magnetostatics and plate bending problems. The modern mimetic discretization technology developed in part by the Authors allows one to solve these equations on unstructured polygonal, polyhedral and generalized polyhedral meshes. The book provides a practical guide for those scientists and engineers that are interested in the computational properties of the mimetic finite difference method such as the accuracy, stability, robustness, and efficiency. Many examples[...]

### Features

This book describes the theoretical and computational aspects of the mimetic finite difference method for a wide class of multidimensional elliptic problems, which includes diffusion, advection-diffusion, Stokes, elasticity, magnetostatics and plate bending problems. The modern mimetic discretization technology developed in part by the Authors allows one to solve these equations on unstructured polygonal, [...]

### Contents

1 Model elliptic problems.- 2 Foundations of mimetic finite difference method.- 3 Mimetic inner products and reconstruction operators.- 4 Mimetic discretization of bilinear forms.- 5 The diffusion problem in mixed form.- 6 The diffusion problem in primal form.- 7 Maxwells equations. 8. The Stokes problem. 9 Elasticity and plates.- 10 Other linear and nonlinear mimetic schemes.- 11 Analysis of parameters and maximum principles.- 12 Diffusion problem on generalized polyhedral meshes.

### Fields of interest

Computational Mathematics and Numerical Analysis; Mathematical Applications in the Physical Sciences; Partial Differential Equations; Appl. Mathematics / Computational Methods of Engineering

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02662-6](http://www.springer.com/978-3-319-02662-6)

### Hardcover

2014. XVI, 392 p. (MS&A, Vol. 11)  
ISBN 978-3-319-02662-6

**Due: December 31, 2013**

F. Borceux

## An Axiomatic Approach to Geometry

Geometric Trilogy I

Focusing methodologically on those historical aspects that are relevant to supporting intuition in axiomatic approaches to geometry, the book develops systematic and modern approaches to the three core aspects of axiomatic geometry: Euclidean, non-Euclidean and projective. Historically, axiomatic geometry marks the origin of formalized mathematical activity. It is in this discipline that most historically famous problems can be found, the solutions of which have led to various presently very active domains of research, especially in algebra. The recognition of the coherence of two-by-two contradictory axiomatic systems for geometry (like one single parallel, no parallel at all,[...])

### Features

Focusing methodologically on those historical aspects that are relevant to supporting intuition in axiomatic approaches to geometry, the book develops systematic and modern approaches to the three core aspects of axiomatic geometry: Euclidean, non-Euclidean and projective. Historically, axiomatic geometry marks the origin of formalized mathematical activity. It is in this discipline that most historically [...]

### Contents

Introduction.- Preface.- 1.The Prehellenic Antiquity.- 2.Some Pioneers of Greek Geometry.- 3.Euclid's Elements.- 4.Some Masters of Greek Geometry.- 5.Post-Hellenic Euclidean Geometry.- 6.Projective Geometry.- 7.Non-Euclidean Geometry.- 8.Hilbert's Axiomatics of the Plane.- Appendices: A.Constructibility.- B.The Three Classical Problems.- C.Regular Polygons.- Index.- Bibliography.

### Fields of interest

Geometry; History of Mathematics; Projective Geometry

### Target groups

Graduate

### Type of publication

Monograph

More on [www.springer.com/978-3-319-01729-7](http://www.springer.com/978-3-319-01729-7)

### Hardcover

2014. XV, 403 p. 288 illus.  
ISBN 978-3-319-01729-7

**usually dispatched within 3 to 5 business days**

F. Borceux

## An Algebraic Approach to Geometry

Geometric Trilogy II

This is a unified treatment of the various algebraic approaches to geometric spaces. The study of algebraic curves in the complex projective plane is the natural link between linear geometry at an undergraduate level and algebraic geometry at a graduate level, and it is also an important topic in geometric applications, such as cryptography. 380 years ago, the work of Fermat and Descartes led us to study geometric problems using coordinates and equations. Today, this is the most popular way of handling geometrical problems. Linear algebra provides an efficient tool for studying all the first degree (lines, planes, ...) and second degree (ellipses, hyperboloids, ...) geometric figures,[...]

### Features

This is a unified treatment of the various algebraic approaches to geometric spaces. The study of algebraic curves in the complex projective plane is the natural link between linear geometry at an undergraduate level and algebraic geometry at a graduate level, and it is also an important topic in geometric applications, such as cryptography. 380 years ago, the work of Fermat and Descartes led us to [...]

### Contents

Introduction.- Preface.- 1.The Birth of Analytic Geometry.- 2.Affine Geometry.- 3.More on Real Affine Spaces.- 4.Euclidean Geometry.- 5.Hermitian Spaces.- 6.Projective Geometry.- 7.Algebraic Curves.- Appendices: A.Polynomials Over a Field.- B.Polynomials in Several Variables.- C.Homogenous Polynomials.- D.Resultants.- E.Symmetric Polynomials.- F.Complex Numbers.- G.Quadratic Forms.- H.Dual Spaces.- Index.- Bibliography.

### Fields of interest

Geometry; Projective Geometry; History of Mathematics

### Target groups

Graduate

### Type of publication

Monograph

More on [www.springer.com/978-3-319-01732-7](http://www.springer.com/978-3-319-01732-7)

### Hardcover

2014. XVII, 430 p. 117 illus.  
ISBN 978-3-319-01732-7

**usually dispatched within 3 to 5 business days**

F. Borceux

## A Differential Approach to Geometry

Geometric Trilogy III

This book presents the classical theory of curves in the plane and three-dimensional space, and the classical theory of surfaces in three-dimensional space. It pays particular attention to the historical development of the theory and the preliminary approaches that support contemporary geometrical notions. It includes a chapter that lists a very wide scope of plane curves and their properties. The book approaches the threshold of algebraic topology, providing an integrated presentation fully accessible to undergraduate-level students. At the end of the 17th century, Newton and Leibniz developed differential calculus, thus making available the very wide range of differentiable[...]

### Features

This book presents the classical theory of curves in the plane and three-dimensional space, and the classical theory of surfaces in three-dimensional space. It pays particular attention to the historical development of the theory and the preliminary approaches that support contemporary geometrical notions. It includes a chapter that lists a very wide scope of plane curves and their properties. The book [...]

### Contents

Introduction.- Preface.- 1.The Genesis of Differential Methods.- 2.Plane Curves.- 3.A Museum of Curves.- 4.Skew Curves.- 5.Local Theory of Surfaces.- 6.Towards Riemannian Geometry.- 7.Elements of Global Theory of Surfaces.- Appendices: A.Topology.- B.Differential Equations.- Index.- Bibliography.

### Fields of interest

Geometry; Differential Geometry; History of Mathematics

### Target groups

Graduate

### Type of publication

Monograph

More on [www.springer.com/978-3-319-01735-8](http://www.springer.com/978-3-319-01735-8)

### Hardcover

2014. XVI, 452 p. 159 illus.  
ISBN 978-3-319-01735-8

**usually dispatched within 3 to 5 business days**

J. Chaskalovic, Institut Jean le Rond d'Alembert,, Paris, France

## Mathematical and Numerical Methods for Partial Differential Equations

Applications for Engineering Sciences

This self-tutorial offers a concise yet thorough introduction into the mathematical analysis of approximation methods for partial differential equation. A particular emphasis is put on finite element methods. The unique approach first summarizes and outlines the finite-element mathematics in general and then in the second and major part, formulates problem examples that clearly demonstrate the techniques of functional analysis via numerous and diverse exercises. The solutions of the problems are given directly afterwards. Using this approach, the author motivates and encourages the reader to actively acquire the knowledge of finite- element methods instead of passively absorbing the[...]

### Features

This self-tutorial offers a concise yet thorough introduction into the mathematical analysis of approximation methods for partial differential equation. A particular emphasis is put on finite element methods. The unique approach first summarizes and outlines the finite-element mathematics in general and then, in the second and major part, formulates problem examples that clearly demonstrate the techniques of [...]

### Contents

From the Contents: Introduction to functional analytical methods of partial differential equations.- The finite element method.- Variational Formulations of elliptic boundary problems.- Finite Elements and differential Introduction to functional analytical methods of partial differential equations.- The finite element method.- Variational Formulations of elliptic boundary problems.

### Fields of interest

Numerical Analysis; Continuum Mechanics and Mechanics of Materials; Partial Differential Equations; Appl. Mathematics / Computational Methods of Engineering

### Target groups

Research

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-319-03562-8](http://www.springer.com/978-3-319-03562-8)

### Hardcover

2014. XI, 329 p. 38 illus. (Mathematical Engineering)  
ISBN 978-3-319-03562-8

**Due: January 31, 2014**

P.G. Ciarlet, City University of Hong Kong, Hong Kong, Hong Kong; T. Li, Fudan University, Shanghai, China (P.R.); Y. Maday, Université Pierre et Marie, Paris Cedex 05, France (Eds.)

## Partial Differential Equations: Theory, Control and Approximation

In Honor of the Scientific Heritage of Jacques-Louis Lions

This book collects papers mainly presented at the "International Conference on Partial Differential Equations: Theory, Control and Approximation" (May 28 to June 1, 2012 in Shanghai) in honor of the scientific legacy of the exceptional mathematician Jacques-Louis Lions. The contributors are leading experts from all over the world, including members of the Academies of Sciences in France, the USA and China etc., and their papers cover key fields of research, e.g. partial differential equations, control theory and numerical analysis, that Jacques-Louis Lions created or contributed so much to establishing.

### Features

This book collects papers mainly presented at the "International Conference on Partial Differential Equations: Theory, Control and Approximation" (May 28 to June 1, 2012 in Shanghai) in honor of the scientific legacy of the exceptional mathematician Jacques-Louis Lions. The contributors are leading experts from all over the world, including members of the Academies of Sciences in France, the USA and China [...]

### Contents

Control and Nash Games with Mean Field Effect.- The Rain on Underground Porous Media Part I: Analysis of a Richards Model.- Finite Volume Multilevel Approximation of the Shallow Water Equations.- Non-gaussian Test Models for Prediction and State Estimation with Model Errors.- Asymptotic Analysis in a Gas-Solid Combustion Model with Pattern Formation.- Implicit Sampling, with Application to Data Assimilation.- Periodic Homogenization for Inner Boundary Conditions with Equivalued Surfaces: the Unfolding Approach.- Global Null Controllability of the 1-Dimensional Nonlinear Slow Diffusion[...]

### Fields of interest

Partial Differential Equations; Calculus of Variations and Optimal Control; Optimization; Numerical Analysis

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-642-41400-8](http://www.springer.com/978-3-642-41400-8)

### Hardcover

2014. VIII, 429 p. 73 illus., 43 illus. in color.  
ISBN 978-3-642-41400-8

**usually dispatched within 3 to 5 business days**

**December 31, 2013**

A. Contin, Politecnico di Milano, Milano, Italy; P. Paolini, Politecnico di Milano, Milano, Italy; R. Salerno, Politecnico di Milano, Milano, Italy (Eds.)

## Innovative Technologies in Urban Mapping

### Built Space and Mental Space

The book presents a comprehensive vision of the impact of ICT on the contemporary city, heritage, public spaces and meta-cities on both urban and metropolitan scales, not only in producing innovative perspectives but also related to newly discovered scientific methods, which can be used to stimulate the emerging reciprocal relations between cities and information technologies. Using the principles established by multi-disciplinary interventions as examples and then expanding on them, this book demonstrates how by using ICT and new devices, metropolises can be organized for a future that preserves the historic nucleus of the city and the environment while preparing the necessary[...]

### Features

The book presents a comprehensive vision of the impact of ICT on the contemporary city, heritage, public spaces and meta-cities on both urban and metropolitan scales, not only in producing innovative perspectives but also related to newly discovered scientific methods, which can be used to stimulate the emerging reciprocal relations between cities and information technologies. Using the principles established [...]

### Contents

Part I The Academic Question of Research.- Part II The institution's claim.- Part III Technologies for communicating architecture and urban spaces.- Part IV Modelling tool software, Processing language and environment methodology, urban simulation and projects evaluation.- Part V Advanced digital design and manufacturing technologies and Architectonic and Urban design project.- Part VI Critical reactions: A bridge between academic core concepts and new PhD researches.

### Fields of interest

Mathematical Software; Computer Systems Organization and Communication Networks; Multimedia Information Systems; User Interfaces and Human Computer Interaction; Cities, Countries, Regions

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-03797-4](http://www.springer.com/978-3-319-03797-4)

### Softcover

2014. Approx. 200 p. (Sxl - Springer for Innovation / Sxl - Springer per l'Innovazione, Vol. 10)  
ISBN 978-3-319-03797-4

**Due: January 28, 2014**

B. Duplantier, Service de Physique Théorique, Gif-sur-Yvette Cedex, France; S. Nonnenmacher, CEA Saclay, Gif-sur-Yvette, France; V. Rivasseau, Université Paris-Sud, Orsay, France (Eds.)

## Chaos

### Poincaré Seminar 2010

This twelfth volume in the Poincaré Seminar Series presents a complete and interdisciplinary perspective on the concept of Chaos, both in classical mechanics in its deterministic version, and in quantum mechanics. This book expounds some of the most wide ranging questions in science, from uncovering the fingerprints of classical chaotic dynamics in quantum systems, to predicting the fate of our own planetary system. Its seven articles are also highly pedagogical, as befits their origin in lectures to a broad scientific audience. Highlights include a complete description by the mathematician É. Ghys of the paradigmatic Lorenz attractor, and of the famed Lorenz butterfly effect as it is[...]

### Features

This twelfth volume in the Poincaré Seminar Series presents a complete and interdisciplinary perspective on the concept of Chaos, both in classical mechanics in its deterministic version, and in quantum mechanics. This book expounds some of the most wide ranging questions in science, from uncovering the fingerprints of classical chaotic dynamics in quantum systems, to predicting the fate of our own [...]

### Contents

Foreword.- 1 Étienne Ghys, The Lorenz Attractor, a Paradigm for Chaos.- 2 Stéphane Fauve, Chaotic Dynamos Generated by Fully Turbulent Flows.- 3 Uzy Smilansky, Discrete Graphs - A Paradigm Model for Quantum Chaos.- 4 Paul Bourgade and Jonathan P. Keating, Quantum Chaos, Random Matrix Theory, and the Riemann  $\zeta$ -function.- 5 Hans-Jürgen Stöckmann, Chaos in Microwave Resonators.- 6 Stéphane Nonnenmacher, Anatomy of Quantum Chaotic Eigenstates.- 7 Jacques Laskar, Is the Solar System Stable?.

### Fields of interest

Dynamical Systems and Ergodic Theory; Number Theory; Quantum Field Theories, String Theory; Statistical Physics, Dynamical Systems and Complexity

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-0348-0696-1](http://www.springer.com/978-3-0348-0696-1)

### Hardcover

2013. XII, 270 p. 100 illus., 61 illus. in color. (Progress in Mathematical Physics, Vol. 66)  
ISBN 978-3-0348-0696-1

**usually dispatched within 3 to 5 business days**

M. Emmer, Sapienza University of Rome, Rome, Italy (Ed.)

## Imagine Math 3

### Between Culture and Mathematics

Imagine mathematics, imagine with the help of mathematics, imagine new worlds, new geometries, new forms. This volume in the series Imagine Math casts light on what is new and interesting in the relationships between mathematics, imagination, and culture. The book opens by examining the connections between modern and contemporary art and mathematics, the contributors including Linda D. Henderson. Two very interesting papers are provided by the architect and engineer Mark Burry, who is in charge of completing the famous "Sagrada Familia" in Barcelona, the incredible vision of Gaudi. Several further papers are devoted to mathematical models and their influence on modern and contemporary[...]

### Features

Imagine mathematics, imagine with the help of mathematics, imagine new worlds, new geometries, new forms. This volume in the series Imagine Math casts light on what is new and interesting in the relationships between mathematics, imagination, and culture. The book opens by examining the connections between modern and contemporary art and mathematics, the contributors including Linda D. Henderson. Two very [...]

### Contents

Science Fiction, Art and the Fourth Dimension.- From Modernity to Immortality: Art and Mathematics in the Twenties.- Geometrical Models and Imaginations.- From Sinigalli to Hiroshi Sugimoto.- Mathematical Narratives and the Surrealist Tradition.- Anxious Geometries.- Pasta By Design: The New Geometries of Pasta.- Photos, Objects and 3D Reconstructions.- Geometry, Numbers & Diagrams in the New York Art Scene around 1960.- The Islands of Benoit Mandelbrot: On the relationship between abstract reasoning and visual imagination.- Fractals and Nervous System.- New Mathematics and[...]

### Fields of interest

Mathematics in Art and Architecture; Mathematics Education; Popular Science in Mathematics / Natural Science / Technology

### Target groups

Upper undergraduate

### Type of publication

Monograph

More on [www.springer.com/978-3-319-01230-8](http://www.springer.com/978-3-319-01230-8)

### Hardcover

2014. X, 270 p. 50 illus.  
ISBN 978-3-319-01230-8

**Due: May 17, 2014**

D.G. Figueiredo, D.G. Costa, University of Nevada Las Vegas, Las Vegas, USA (Ed.)

## Djairo G. de Figueiredo - Selected Papers

This volume presents a collection of selected papers by the prominent Brazilian mathematician Djairo G. de Figueiredo, who has made significant contributions in the area of Differential Equations and Analysis. His work has been highly influential as a challenge and inspiration to young mathematicians as well as in development of the general area of analysis in his home country of Brazil. In addition to a large body of research covering a variety of areas including geometry of Banach spaces, monotone operators, nonlinear elliptic problems and variational methods applied to differential equations, de Figueiredo is known for his many monographs and books. Among others, this book offers a [...]

### Features

This volume presents a collection of selected papers by the prominent Brazilian mathematician Djairo G. de Figueiredo, who has made significant contributions in the area of Differential Equations and Analysis. His work has been highly influential as a challenge and inspiration to young mathematicians as well as in development of the general area of analysis in his home country of Brazil. In addition [...]

### Contents

Preface.- A Short Summary of the Scientific Life of Djairo G. de Figueiredo.- 43 Papers by Djairo G. de Figueiredo.- Complete List of Publications by Djairo G. de Figueiredo.- List of D.Sc. Students of Djairo de Figueiredo.- Acknowledgements.

### Fields of interest

Partial Differential Equations; Ordinary Differential Equations; Functional Analysis

### Target groups

Research

### Type of publication

Collected works

More on [www.springer.com/978-3-319-02855-2](http://www.springer.com/978-3-319-02855-2)

### Hardcover

2014. XX, 738 p. 63 illus., 14 illus. in color.  
ISBN 978-3-319-02855-2

**Due: February 28, 2014**

A. Freed

## Soft Solids

A Primer to the Theoretical Mechanics of Materials

This textbook presents the physical principles pertinent to the mathematical modeling of soft materials used in engineering practice, including both man-made materials and biological tissues. It is intended for seniors and masters-level graduate students in engineering, physics or applied mathematics. It will also be a valuable resource for researchers working in mechanics, biomechanics and other fields where the mechanical response of soft solids is relevant. *Soft Solids: A Primer to the Theoretical Mechanics of Materials* is divided into two parts. Part I introduces the basic concepts needed to give both Eulerian and Lagrangian descriptions of the mechanical response of soft solids. [...]

### Features

This textbook presents the physical principles pertinent to the mathematical modeling of soft materials used in engineering practice, including both man-made materials and biological tissues. It is intended for seniors and masters-level graduate students in engineering, physics, or applied mathematics. It will also be a valuable resource for researchers working in mechanics, biomechanics, and other fields [...]

### Contents

Part I: Continuum

Fields.- 1 Kinematics.- 2 Deformation.- 3 Strain.- 4 Stress

II: Constitutive Equations.- 5 Explicit

Elasticity.- 6 Implicit

Elasticity.- 7 Viscoelasticity.- Appendices.- A Linear

Algebra.- B Covariant and Contravariant

Issues: Configuration Physics.- C Kronecker

Products.- D General Linear ODE Solver.- E Solver

for Convolution Integrals.- F Solver for the Mit-

tag-Leer Function.- Bibliography.- Index.

### Fields of interest

Functional Analysis; Soft and Granular Matter, Complex Fluids and Microfluidics; Mathematical Applications in the Physical Sciences; Biomaterials

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-319-03550-5](http://www.springer.com/978-3-319-03550-5)

### Hardcover

2014. VIII, 426 p. 57 illus., 1 illus. in color. (Modeling and Simulation in Science, Engineering and Technology)  
ISBN 978-3-319-03550-5

**Due: February 28, 2014**

G. Frei, F. Lemmermeyer, P.J. Roquette, Universität Heidelberg, Heidelberg, Germany (Eds.)

## Emil Artin and Helmut Hasse

The Correspondence 1923-1958

This volume consists of the English translations of the letters exchanged between Emil Artin to Helmut Hasse written from 1921 until 1958. The letters are accompanied by extensive comments explaining the mathematical background and giving the information needed for understanding these letters. Most letters deal with class field theory and shed a light on the birth of one of its most profound results: Artin's reciprocity law.

### Features

This volume presents English translations of the letters exchanged between Emil Artin and Helmut Hasse written from 1921 to 1958. The letters are accompanied by extensive comments explaining the mathematical background and providing other essential context. Most letters deal with class field theory and shed new light on the birth of one of its most profound results: Artin's reciprocity law.

### Contents

Part I: Introduction to the Correspondence.- 1. Introduction.- 2. Emil Artin, his Life and his Work.- 3. Reminiscing Helmut Hasse.- 4. Reciprocity Laws for Power Residues.- 5. Class Field Theory.- 6. Time Table.- Part II: The Letters. References.- Name Index.- Subject Index.

### Fields of interest

Number Theory; History of Mathematics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-0348-0714-2](http://www.springer.com/978-3-0348-0714-2)

### Hardcover

2014. X, 401 p. 28 illus. (Contributions in Mathematical and Computational Sciences, Vol. 5)  
ISBN 978-3-0348-0714-2

**Due: December 31, 2013**

L. Fridman, Universidad Nacional Autonoma De Mexico, Mexico City, Mexico; A. Poznyak, Centro de Investigacion y, México City, Mexico; F.J. Bejarano Rodriguez

## Robust Output LQ Optimal Control via Integral Sliding Modes

Featuring original research from well-known experts in the field of sliding mode control, this monograph presents new design schemes for implementing LQ control solutions in situations where the output system is the only information provided about the state of the plant. This new design works under the restrictions of matched disturbances without losing its desirable features. On the cutting-edge of optimal control research, Robust Output LQ Optimal Control via Integral Sliding Modes is an excellent resource for both graduate students and professionals involved in linear systems, optimal control, observation of systems with unknown inputs, and automatization. In the theory of optimal[...]

### Features

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### Contents

Introduction.- Part I OPTIMAL CONTROL AND SLIDING MODE.- 2 Integral Sliding Mode Control.- 3 Observer Based on ISM.- 4 Output Integral Sliding Mode Based Control.- Part II MINI-MAX OUTPUT ROBUST LQ CONTROL.- 5 The Robust Maximum Principle.- 6 Multimodel and ISM Control.- 7 Multiplant and ISM Output Control.- 8 Fault Detection.- 9 Stewart Platform.- 10 Magnetic Bearing.- Part IV APPENDIXES.- B Min-Max Multimodel LQ Control.- Notations.- References.- Index.

### Fields of interest

Systems Theory, Control; Control; Calculus of Variations and Optimal Control; Optimization; Appl. Mathematics / Computational Methods of Engineering; Engineering Design; Vibration, Dynamical Systems, Control

### Target groups

Professional/practitioner

### Type of publication

Monograph

More on [www.springer.com/978-0-8176-4961-6](http://www.springer.com/978-0-8176-4961-6)

### Hardcover

2014. XV, 146 p. 40 illus., 34 illus. in color. (Systems & Control: Foundations & Applications)  
ISBN 978-0-8176-4961-6

**Due: March 15, 2014**

M. Gorelik, Weizmann Institute of Science, Rehovot, Israel; P. Papi, Sapienza Università di Roma, Roma, Italy (Eds.)

## Advances in Lie Superalgebras

The volume is the outcome of the conference "Lie superalgebras," which was held at the Istituto Nazionale di Alta Matematica, in 2012. The conference gathered many specialists in the subject, and the talks held provided comprehensive insights into the newest trends in research on Lie superalgebras (and related topics like vertex algebras, representation theory and supergeometry). The book contains contributions of many leading experts in the field and provides a complete account of the newest trends in research on Lie Superalgebras.

### Features

The volume is the outcome of the conference "Lie superalgebras," which was held at the Istituto Nazionale di Alta Matematica, in 2012. The conference gathered many specialists in the subject, and the talks held provided comprehensive insights into the newest trends in research on Lie superalgebras (and related topics like vertex algebras, representation theory and supergeometry). The book contains [...]

### Contents

1 A. Alldridge, Z. Shaikh: Superbosonisation, Riesz superdistributions, and highest weight modules.- 2 K. Coulembier: Homological algebra for  $\mathfrak{osp}(1|2n)$ .- 3 A. D'Andrea: Finiteness and orbifold vertex operator algebras.- 4 A. De Sole: On classical finite and affine  $W$ -algebras.- 5 M. Gorelik, D. Grantcharov:  $Q$ -type Lie superalgebras.- 6 C. Hoyt: Weight modules for the Lie superalgebra  $D(2,1,a)$ .- 7 R. Fiorese, S. Kwok: On SUSY curves.- 8 V. G. Kac, P. Moseneder Frajria, P. Papi: Dirac operators and the Very Strange Formula for Lie superalgebras.- 9 V. Mazorchuk: Parabolic category  $O$  for [...]

### Fields of interest

Algebra; Topology

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-02951-1](http://www.springer.com/978-3-319-02951-1)

### Hardcover

2014. VIII, 280 p. (Springer INdAM Series, Vol. 7)  
ISBN 978-3-319-02951-1

**Due: December 31, 2013**

V. Gupta, Netaji Subhas Institute of Technology, New Delhi, India; R.P. Agarwal, Texas A&M University - Kingsville, Kingsville, USA

## Convergence Estimates in Approximation Theory

The study of linear positive operators is an area of mathematical studies with significant relevance to studies of computer-aided geometric design, numerical analysis, and differential equations. This book focuses on the convergence of linear positive operators in real and complex domains. The theoretical aspects of these operators have been an active area of research over the past few decades. In this volume, authors Gupta and Agarwal explore new and more efficient methods of applying this research to studies in Optimization and Analysis. The text will be of interest to upper-level students seeking an introduction to the field and to researchers developing innovative approaches.

### Features

The study of linear positive operators is an area of mathematical studies with significant relevance to studies of computer-aided geometric design, numerical analysis, and differential equations. This book focuses on the convergence of linear positive operators in real and complex domains. The theoretical aspects of these operators have been an active area of research over the past few decades. In this volume, [...]

### Contents

1. Preliminaries.- 2. Approximation by Certain Operators.- 3. Complete Asymptotic Expansion.- 4. Linear and Iterative Combinations.- 5. Better Approximation.- 6. Complex Operators in Compact Disks.- 7. Rate of Convergence for Functions of BV.- 8. Convergence for BV/Bounded Functions on Bezier Variants.- 9. Some More Results on Rate of Convergence.- 10. Rate of Convergence in Simultaneous Approximation.- 11. Future Scope and Open Problems.

### Fields of interest

Approximations and Expansions; Operator Theory; Analysis; Partial Differential Equations

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02764-7](http://www.springer.com/978-3-319-02764-7)

### Hardcover

2014. VIII, 300 p.  
ISBN 978-3-319-02764-7

**Due: January 31, 2014**

W. Hackbusch, MPI für Mathematik in den, Leipzig, Germany

## The Concept of Stability in Numerical Mathematics

In this book, the author compares the meaning of stability in different subfields of numerical mathematics. Concept of Stability in numerical mathematics opens by examining the stability of finite algorithms. A more precise definition of stability holds for quadrature and interpolation methods, which the following chapters focus on. The discussion then progresses to the numerical treatment of ordinary differential equations (ODEs). While one-step methods for ODEs are always stable, this is not the case for hyperbolic or parabolic differential equations, which are investigated next. The final chapters discuss stability for discretisations of elliptic differential equations and integral[...]

### Features

In this book, the author compares the meaning of stability in different subfields of numerical mathematics. Concept of Stability in numerical mathematics opens by examining the stability of finite algorithms. A more precise definition of stability holds for quadrature and interpolation methods, which the following chapters focus on. The discussion then progresses to the numerical treatment of [...]

### Contents

Preface.- Introduction.- Stability of Finite Algorithms.- Quadrature.- Interpolation.- Ordinary Differential Equations.- Instationary Partial Difference Equations.- Stability for Discretisations of Elliptic Problems.- Stability for Discretisations of Integral Equations.- Index.

### Fields of interest

Numerical Analysis; Partial Differential Equations; Integral Equations

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-642-39385-3](http://www.springer.com/978-3-642-39385-3)

### Hardcover

2014. X, 196 p. (Springer Series in Computational Mathematics, Vol. 45)  
ISBN 978-3-642-39385-3

**Due: February 28, 2014**

G.T. Herman, The Graduate Center, New York, USA; J. Frank, Columbia University, New York, USA (Eds.)

## Computational Methods for Three-Dimensional Microscopy Reconstruction

Approaches to the recovery of three-dimensional information on a biological object, which are often formulated or implemented initially in an intuitive way, are concisely described here based on physical models of the object and the image-formation process. Both three-dimensional electron microscopy and X-ray tomography can be captured in the same mathematical framework, leading to closely-related computational approaches, but the methodologies differ in detail and hence pose different challenges. The editors of this volume, Gabor T. Herman and Joachim Frank, are experts in the respective methodologies and present research at the forefront of biological imaging and structural[...]

### Features

Approaches to the recovery of three-dimensional information on a biological object, which are often formulated or implemented initially in an intuitive way, are concisely described here based on physical models of the object and the image-formation process. Both three-dimensional electron microscopy and X-ray tomography can be captured in the same mathematical framework, leading to closely-related [...]

### Contents

1 Introduction.- 2 Interchanging geometry conventions in 3DEM: Mathematical context for the development of standards.- 3 Fully automated particle selection and verification in single-particle cryo-EM.- 4 Quantitative analysis in iterative classification schemes for cryo-EM applications.- 5 High-resolution cryo-EM structure of the Trypanosoma brucei ribosome of a case study.- 6 Computational methods for electron tomography of influenza virus.- 7 Reconstruction from microscopic projections with defocus-gradient and attenuation effects.- 8 Soft X-ray tomography imaging for biological[...]

### Fields of interest

Physiological, Cellular and Medical Topics; Computational Biology / Bioinformatics; Bioinformatics; Visualization; Mathematical Modeling and Industrial Mathematics; Manifolds and Cell Complexes (incl. Diff. Topology)

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-1-4614-9520-8](http://www.springer.com/978-1-4614-9520-8)

### Hardcover

2014. XIV, 260 p. 111 illus., 59 illus. in color. (Applied and Numerical Harmonic Analysis)  
ISBN 978-1-4614-9520-8

**Due: December 31, 2013**

F. Hiai, Tohoku University, Sendai, Japan; D. Petz, Budapest University of Technology, Budapest, Hungary

## Introduction to Matrix Analysis and Applications

Matrices can be studied in different ways. They are a linear algebraic structure and have a topological/analytical aspect (for example, the normed space of matrices) and they also carry an order structure that is induced by positive semidefinite matrices. The interplay of these closely related structures is an essential feature of matrix analysis. This book explains these aspects of matrix analysis from a functional analysis point of view. After an introduction to matrices and functional analysis, it covers more advanced topics such as matrix monotone functions, matrix means, majorization and entropies. Several applications to quantum information are also included. Introduction to [...]

### Features

Matrices can be studied in different ways. They are a linear algebraic structure and have a topological/analytical aspect (for example, the normed space of matrices) and they also carry an order structure that is induced by positive semidefinite matrices. The interplay of these closely related structures is an essential feature of matrix analysis. This book explains these aspects of matrix analysis [...]

### Contents

Fundamentals of operators and matrices.- Mappings and algebras.- Functional calculus and derivation.- Matrix monotone functions and convexity.- Matrix means and inequalities.- Majorization and singular values.- Some applications.

### Fields of interest

Linear and Multilinear Algebras, Matrix Theory

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-319-04149-0](http://www.springer.com/978-3-319-04149-0)

### Softcover

Jointly published with HBA, New Delhi, India  
2014. Approx. 345 p. 1 illus. (Universitext)  
ISBN 978-3-319-04149-0

**Due: July 2014**

N. Hritonenko, Prairie View A&M University, Prairie View, USA; Y. Yatsenko, Houston Baptist University, Houston, USA

## Mathematical Modeling in Economics, Ecology and the Environment

Updated to textbook form by popular demand, this second edition discusses diverse mathematical models used in economics, ecology, and the environmental sciences with emphasis on control and optimization. It is intended for graduate and upper-undergraduate course use, however, applied mathematicians, industry practitioners, and a vast number of interdisciplinary academics will find the presentation highly useful. Core topics of this text are: Economic growth and technological development- Population dynamics and human impact on the environment- Resource extraction and scarcity- Air and water contamination- Rational management of the economy and environment- Climate change and global[...]

### Features

Updated to textbook form by popular demand, this second edition discusses diverse mathematical models used in economics, ecology, and the environmental sciences with emphasis on control and optimization. It is intended for graduate and upper-undergraduate course use, however, applied mathematicians, industry practitioners, and a vast number of interdisciplinary academics will find the presentation highly [...]

### Contents

Preface.- 1. Introduction: Principles and Tools of Mathematical Modeling. Part I. Models of Controlled Economic Systems.- 2. Aggregate Models of Economic Dynamics.- 3. Modeling of Technological Change.- 4. Models with Heterogeneous Capital.- 5. Optimization of Economic Renovation.- Part II. Models in Ecology and Environment.- 6. Mathematical Models of Biological Populations.- 7. Modeling and Control of Biological Communities.- 8. Models of Air Pollution Propagation.- 9. Models of Water Pollution Propagation.- Part III. Models of Economic-Environmental Systems.- 10. Modeling of[...]

### Fields of interest

Mathematical Modeling and Industrial Mathematics; Business & Economics (general); Math. Appl. in Environmental Science

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-1-4614-9310-5](http://www.springer.com/978-1-4614-9310-5)

### Hardcover

2013. XII, 242 p. 34 illus., 8 illus. in color. (Springer Optimization and Its Applications, Vol. 88)  
ISBN 978-1-4614-9310-5

Due: February 28, 2014

M. Joswig, TU Berlin, Berlin, Germany

## Essentials of Tropical Combinatorics

The goal of this book is to explain, at the graduate student level, how tropical geometry can be accessed via geometric combinatorics. This way the book offers a viable path to a topic of very active research. At the same time the reader learns how a number of seemingly unrelated combinatorial results fall into place, once viewed through the "tropical lens". No attempt is made to cover the entire field of tropical geometry, which has been evolving too rapidly anyway to be covered by a book so small. The book's central concept is the "tropical convexity" introduced by Develin and Sturmfels, which is a version of "tropical linear algebra". This is used in the book as a general language[...]

### Features

The goal of this book is to explain, at the graduate student level, how tropical geometry can be accessed via geometric combinatorics. This way the book offers a viable path to a topic of very active research. At the same time the reader learns how a number of seemingly unrelated combinatorial results fall into place, once viewed through the "tropical lens". No attempt is made to cover the entire field of [...]

### Contents

Preface.- Contents.- Introduction.- 1 Tropical Arithmetic and Polynomials.- 2 Puiseux Series and Tropicalization.- 3 Graph Algorithms and the Tropical Determinant.- 4 Tropical Polytopes.- 5 Products of Simplices.- 6 Tropical Halfspaces.- 7 Polytopes.- 8 Resolutions of Monomial Ideals.- 9 Tropical Linear Spaces.- 10 Matroid Subdivisions of Hyper-simplices.- 11 Buildings.- 12Using polymake.- Appendix A Ordinary Convex Polytopes.- Appendix B Matroids and Oriented Matroids.- Appendix C Gröbner Bases.- Bibliography.- Index

### Fields of interest

Algebraic Geometry; Convex and Discrete Geometry; Field Theory and Polynomials; Operations Research, Mathematical Programming

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-1-4419-8365-7](http://www.springer.com/978-1-4419-8365-7)

### Hardcover

2014. XX, 180 p. 50 illus.  
ISBN 978-1-4419-8365-7

Due: March 31, 2014

R. Kress, Georg-August-Universität Göttingen, Göttingen, Germany

## Linear Integral Equations

This book combines theory, applications, and numerical methods, and covers each of these fields with the same weight. In order to make the book accessible to mathematicians, physicists, and engineers alike, the author has made it as self-contained as possible, requiring only a solid foundation in differential and integral calculus. The functional analysis which is necessary for an adequate treatment of the theory and the numerical solution of integral equations is developed within the book itself. Problems are included at the end of each chapter. For this third edition in order to make the introduction to the basic functional analytic tools more complete the Hahn-Banach extension[...]

### Features

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### Contents

Normed Spaces.- Bounded and Compact Operators.- Riesz Theory.- Dual Systems and Fredholm Alternative.- Regularization in Dual Systems.- Potential Theory.- Singular Integral Equations.- Sobolev Spaces.- The Heat Equation.- Operator Approximations.- Degenerate Kernel Approximation.- Quadrature Methods.- Projection Methods.- Iterative Solution and Stability.- Equations of the First Kind.- Tikhonov Regularization.- Regularization by Discretization.- Inverse Boundary Value Problems.- References.- Index.

### Fields of interest

Analysis; Numerical Analysis; Measure and Integration; Signal, Image and Speech Processing

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-1-4614-9592-5](http://www.springer.com/978-1-4614-9592-5)

### Hardcover

2014. XVI, 412 p. 1 illus. (Applied Mathematical Sciences, Vol. 82)  
ISBN 978-1-4614-9592-5

usually dispatched within 3 to 5 business days  
December 31, 2013

W.E. Langlois, San Jose City College, San Jose, USA; M. Deville, EPFL STI DO, Lausanne, Switzerland

## Slow Viscous Flow

Leonardo wrote, 'Mechanics is the paradise of the mathematical sciences, because by means of it one comes to the fruits of mathematics'; replace 'Mechanics' by 'Fluid mechanics' and here we are." - from the Preface to the Second Edition Although the exponential growth of computer power has advanced the importance of simulations and visualization tools for elaborating new models, designs and technologies, the discipline of fluid mechanics is still large, and turbulence in flows remains a challenging problem in classical physics. Like its predecessor, the revised and expanded Second Edition of this book addresses the basic principles of fluid mechanics and solves fluid flow problems[...]

### Features

Leonardo wrote, 'Mechanics is the paradise of the mathematical sciences, because by means of it one comes to the fruits of mathematics'; replace 'Mechanics' by 'Fluid mechanics' and here we are." - from the Preface to the Second Edition Although the exponential growth of computer power has advanced the importance of simulations and visualization tools for elaborating new models, designs and [...]

### Contents

Cartesian Tensors.- The Equations of Viscous Flow.- Curvilinear Coordinates.- Exact Solutions to the Equations of Viscous Flow.- Pipe Flow.- Flow Past a Sphere.- Plane Flow.- Rotary Flow.- Lubrication Theory.- Introduction to the Finite Element Method.- Variational Principle, Weak Formulation and Finite Elements.- Stokes Ow and Corner Eddies.- References.- Index.

### Fields of interest

Approximations and Expansions; Applications of Mathematics; Computational Mathematics and Numerical Analysis; Computational Science and Engineering; Theoretical, Mathematical and Computational Physics

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-319-03834-6](http://www.springer.com/978-3-319-03834-6)

### Hardcover

2014. Approx. 320 p. 70 illus., 10 illus. in color.

ISBN 978-3-319-03834-6

**Due: February 28, 2014**

R. Lupacchini, University of Bologna, Bologna, Italy; A. Angelini, University of Bologna, Bologna, Italy (Eds.)

## The Art of Science

### From Perspective Drawing to Quantum Randomness

In addition to linear perspective, complex numbers and probability were notable discoveries of the Renaissance. While the power of perspective, which transformed Renaissance art, was quickly recognized, the scientific establishment treated both complex numbers and probability with much suspicion. It was only in the twentieth century that quantum theory showed how probability might be molded from complex numbers and defined the notion of "complex probability amplitude". From a theoretical point of view, however, the space opened to painting by linear perspective and that opened to science by complex numbers share significant characteristics. The Art of Science explores this shared[...]

### Features

In addition to linear perspective, complex numbers and probability were notable discoveries of the Renaissance. While the power of perspective, which transformed Renaissance art, was quickly recognized, the scientific establishment treated both complex numbers and probability with much suspicion. It was only in the twentieth century that quantum theory showed how probability might be molded from complex [...]

### Contents

From Perspective Drawing to the Eighth Dimension.- Seeing Reality in Perspective. The 'Art of Optics' and the 'Science of Painting.- The Role of Perspective in the Transformation of European Culture.- All Done by Mirrors. Symmetries, Quaternions, Spinors, and Clifford Algebras.- Artists & Gamblers on the Way to Quantum Physics.- Radices sophisticae, racines imaginaires: the Origins of Complex Numbers in the Late Renaissance.

### Fields of interest

Mathematics in Art and Architecture; History and Philosophical Foundations of Physics; History of Mathematics; Cultural Heritage; Philosophy of Science; Quantum Physics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-02110-2](http://www.springer.com/978-3-319-02110-2)

### Hardcover

2014. X, 190 p. 80 illus.

ISBN 978-3-319-02110-2

**Due: April 11, 2014**

Y. Orlov, L.T. Aguilar

## Advanced H $\infty$ Control

### Towards Nonsmooth Theory and Applications

This compact monograph is focused on disturbance attenuation in nonsmooth dynamic systems, developing an H $\infty$  approach in the nonsmooth setting. Similar to the standard nonlinear H $\infty$  approach, the proposed nonsmooth design guarantees both the internal asymptotic stability of a nominal closed-loop system and the dissipativity inequality, which states that the size of an error signal is uniformly bounded with respect to the worst-case size of an external disturbance signal. This guarantee is achieved by constructing an energy or storage function that satisfies the dissipativity inequality and is then utilized as a Lyapunov function to ensure the internal stability requirements. Advanced H $\infty$ [...]

### Features

This compact monograph is focused on disturbance attenuation in nonsmooth dynamic systems, developing an H $\infty$  approach in the nonsmooth setting. Similar to the standard nonlinear H $\infty$  approach, the proposed nonsmooth design guarantees both the internal asymptotic stability of a nominal closed-loop system and the dissipativity inequality, which states that the [...]

### Contents

Part I Introduction.- 1 Linear H1 control of autonomous systems.- 2 LMI approach in infinite dimensional setting.- 3 Linear H1 control of time-varying systems.- 4 Nonlinear H1 control.- Part II Nonsmooth H1 Control.- 5 Elements of nonsmooth analysis.- 6 Synthesis of nonsmooth systems.- 7 LMI-based H1 boundary control of nonsmooth parabolic and hyperbolic systems.- Part III Benchmark Applications.- 8 Advanced H1 synthesis of fully actuated robot manipulators with frictional joints.- 9 Nonsmooth H1 synthesis in the presence of backlash.- 10 H1 generation of periodic motion.- 11 LMI-based[...]

### Fields of interest

Systems Theory, Control; Vibration, Dynamical Systems, Control; Dynamical Systems and Ergodic Theory; Partial Differential Equations; Appl. Mathematics / Computational Methods of Engineering; Applications of Mathematics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4939-0291-0](http://www.springer.com/978-1-4939-0291-0)

### Hardcover

2014. XI, 231 p. 39 illus., 12 illus. in color. (Systems & Control: Foundations & Applications)

ISBN 978-1-4939-0291-0

**Due: February 28, 2014**

M.A. Pons

## Real Analysis for the Undergraduate

With an Invitation to Functional Analysis

This undergraduate textbook introduces students to the basics of real analysis, provides an introduction to more advanced topics including measure theory and Lebesgue integration, and offers an invitation to functional analysis. While these advanced topics are not typically encountered until graduate study, the text is designed for the beginner. The author's engaging style makes advanced topics approachable without sacrificing rigor. The text also consistently encourages the reader to pick up a pencil and take an active part in the learning process. Key features include: - examples to reinforce theory; - thorough explanations preceding definitions, theorems and formal proofs; - [...]

### Features

This undergraduate textbook introduces students to the basics of real analysis, provides an introduction to more advanced topics including measure theory and Lebesgue integration, and offers an invitation to functional analysis. While these advanced topics are not typically encountered until graduate study, the text is designed for the beginner. The author's engaging style makes advanced topics approachable [...]

### Contents

The Real Numbers.- Sequences in  $\mathbb{R}$ .- Numerical Series.- Continuity.- The Derivative.- Sequence and Series of Functions.- The Riemann Integral.- Lebesgue Measure on  $\mathbb{R}$ .- Lebesgue Integration.

### Fields of interest

Analysis; Real Functions; Functional Analysis

### Target groups

Upper undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-1-4614-9637-3](http://www.springer.com/978-1-4614-9637-3)

### Hardcover

2014. XX, 398 p. 43 illus.  
ISBN 978-1-4614-9637-3

**Due: February 28, 2014**

H.J. Prömel, TU Darmstadt, Darmstadt, Germany

## Ramsey Theory for Discrete Structures

This monograph covers some of the most important developments in Ramsey theory from its beginnings in the early 20th century via its many breakthroughs to recent important developments in the early 21st century. The book first presents a detailed discussion of the roots of Ramsey theory before offering a thorough discussion of the role of parameter sets. It presents several examples of structures that can be interpreted in terms of parameter sets and features the most fundamental Ramsey-type results for parameter sets: Hales-Jewett's theorem and Graham-Rothschild's Ramsey theorem as well as their canonical versions and several applications. Next, the book steps back to the most basic [...]

### Features

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### Contents

Foreword by Angelika Steger.- Preface.- Conventions.- Part I Roots of Ramsey Theory: 1.1 Ramsey's theorem.- 1.2 From Hilbert's cube lemma to Rado's thesis.- Part II A Starting Point of Ramsey Theory: Parameter Sets: 2.1 Definitions and basic examples.- 2.2 Hales-Jewett's theorem.- 2.3 Graham-Rothschild's theorem.- 2.4 Canonical partitions.- Part III Back to the Roots: Sets: 3.1 Ramsey numbers.- 3.2 Rapidly growing Ramsey functions.- 3.3 Product theorems.- 3.4 A quasi Ramsey theorem.- 3.5 Partition relations for cardinal numbers.- Part IV Graphs and Hypergraphs: 4.1 Finite graphs.- 4.2 [...]

### Fields of interest

Combinatorics; Discrete Mathematics; Discrete Mathematics in Computer Science

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-01314-5](http://www.springer.com/978-3-319-01314-5)

### Hardcover

2013. XVI, 232 p. 13 illus.  
ISBN 978-3-319-01314-5

**usually dispatched within 3 to 5 business days**  
**December 27, 2013**

F. Pukelsheim, Universität Augsburg, Augsburg, Germany

## Proportional Representation

Apportionment Methods and Their Applications

The book offers a rigorous description of the procedures that proportional representation systems use to translate vote counts into seat numbers. Since the methodological analysis is guided by practical needs, plenty of empirical instances are provided and reviewed to motivate the development, and to illustrate the results. Concrete examples, like the 2009 elections to the European Parliament in each of the 27 Member States and the 2013 election to the German Bundestag, are analyzed in full detail. The level of mathematical exposition, as well as the relation to political sciences and constitutional jurisprudence makes this book suitable for special graduate courses and seminars.

### Features

The book offers a rigorous description of the procedures that proportional representation systems use to translate vote counts into seat numbers. Since the methodological analysis is guided by practical needs, plenty of empirical instances are provided and reviewed to motivate the development, and to illustrate the results. Concrete examples, like the 2009 elections to the European Parliament in each of the 27 [...]

### Contents

Exposing Methods: The 2009 European Parliament Elections.- Imposing Constitutionality: The 2009 Bundestag Election.- From Reals to Integers: Rounding Functions, Rounding Rules.- Divisor Methods of Apportionment: Divide and Round.- Quota Methods of Apportionment: Divide and Rank.- Targeting the House Size: Discrepancy Distribution.- Favoring Some at the Expense of Others: Seat Biases.- Preferring Stronger Parties to Weaker Parties: Majorization.- Securing System Consistency: Coherence and Paradoxes.- Appraising Electoral Equality: Goodness-of-Fit Criteria.- Tracing Peculiarities: Vote [...]

### Fields of interest

Game Theory, Economics, Social and Behavioral Sciences; Statistics for Social Science, Behavioral Science, Education, Public Policy, and Law; Political Science, general

### Target groups

Graduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-319-03855-1](http://www.springer.com/978-3-319-03855-1)

### Softcover

2014. X, 250 p.  
ISBN 978-3-319-03855-1

**Due: January 31, 2014**

A. Quarteroni, École Polytechnique Fédérale, Lausanne, Switzerland

S. Reich, Technion-Israel Institute of Technology, Haifa, Israel; A.J. Zaslavski, Technion- Israel Institute of Technology, Haifa, Israel

E. Salinelli, Università degli Studi del, Novara, Italy; F. Tomarelli, Politecnico di Milano, Milano, Italy

## Numerical Models for Differential Problems

In this text, we introduce the basic concepts for the numerical modelling of partial differential equations. We consider the classical elliptic, parabolic and hyperbolic linear equations, but also the diffusion, transport, and Navier-Stokes equations, as well as equations representing conservation laws, saddle-point problems and optimal control problems. Furthermore, we provide numerous physical examples which underline such equations. We then analyze numerical solution methods based on finite elements, finite differences, finite volumes, spectral methods and domain decomposition methods, and reduced basis methods. In particular, we discuss the algorithmic and computer implementation[...]

### Features

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### Contents

1 A brief survey of partial differential equations.- 2 Elements of functional analysis.- 3 Elliptic equations.- 4 The Galerkin finite element method for elliptic problems.- 5 Parabolic equations.- 6 Generation of 1D and 2D grids.- 7 Algorithms for the solution of linear systems.- 8 Elements of finite element programming.- 9 The finite volume method.- 10 Spectral methods.- 11 Discontinuous element methods (DG and mortar).- 12 Diffusion-transport-reaction equations.- 13 Finite differences for hyperbolic equations.- 14 Finite elements and spectral methods for hyperbolic equations.- 15[...]

### Fields of interest

Mathematics (general); Analysis; Numerical Analysis; Mathematical Modeling and Industrial Mathematics; Applications of Mathematics; Computational Mathematics and Numerical Analysis

### Target groups

Lower undergraduate

### Type of publication

Undergraduate textbook

More on [www.springer.com/978-88-470-5521-6](http://www.springer.com/978-88-470-5521-6)

### Hardcover

2014. XVIII, 656 p. (MS&A, Vol. 8)  
ISBN 978-88-470-5521-6

**Due: January 28, 2014**

## Genericity in Nonlinear Analysis

This book presents an extensive collection of state-of-the-art results and references in nonlinear functional analysis demonstrating how the generic approach proves to be very useful in solving many interesting and important problems. Nonlinear analysis plays an ever-increasing role in theoretical and applied mathematics, as well as in many other areas of science such as engineering, statistics, computer science, economics, finance, and medicine. The text may be used as supplementary material for graduate courses in nonlinear functional analysis, optimization theory and approximation theory, and is a treasure trove for instructors, researchers, and practitioners in mathematics and in[...]

### Features

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### Contents

Preface.- 1. Introduction.- 2. Fixed Point Results and Convergence of Powers of Operators.- 3. Contractive Mappings.- 4. Dynamical Systems with Convex Lyapunov Functions.- 5. Relatively Nonexpansive Operators with Respect to Bregman Distances.- 6. Infinite Products.- 7. Best Approximation.- 8. Descent Methods.- 9. Set-Valued Mappings.- 10. Minimal Configurations in the Aubry–Mather Theory.- References.- Index.

### Fields of interest

Functional Analysis; Operator Theory; Calculus of Variations and Optimal Control; Optimization

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9532-1](http://www.springer.com/978-1-4614-9532-1)

### Hardcover

2014. XIII, 520 p. (Developments in Mathematics, Vol. 34)  
ISBN 978-1-4614-9532-1

**usually dispatched within 3 to 5 business days**

## Discrete Dynamical Models

This book provides an introduction to the analysis of discrete dynamical systems. The content is presented by an unitary approach that blends the perspective of mathematical modeling together with the ones of several discipline as Mathematical Analysis, Linear Algebra, Numerical Analysis, Systems Theory and Probability. After a preliminary discussion of several models, the main tools for the study of linear and non-linear scalar dynamical systems are presented, paying particular attention to the stability analysis. Linear difference equations are studied in detail and an elementary introduction of Z and Discrete Fourier Transform is presented. A whole chapter is devoted to the study[...]

### Features

This book provides an introduction to the analysis of discrete dynamical systems. The content is presented by an unitary approach that blends the perspective of mathematical modeling together with the ones of several discipline as Mathematical Analysis, Linear Algebra, Numerical Analysis, Systems Theory and Probability. After a preliminary discussion of several models, the main tools for the study of linear [...]

### Contents

1 Recursive phenomena and difference equations.- 2 Linear difference equations.- 3 Discrete dynamical systems: one-step scalar equations.- 4 Complex behavior of nonlinear dynamical systems: bifurcations and chaos.- 5 Discrete dynamical systems: vector equations.- 6 Markov chains.- 7 Matrix.- 8 Solutions.

### Fields of interest

Dynamical Systems and Ergodic Theory; Difference and Functional Equations; Linear and Multilinear Algebras, Matrix Theory; Applications of Mathematics; Discrete Mathematics

### Target groups

Upper undergraduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-319-02290-1](http://www.springer.com/978-3-319-02290-1)

### Softcover

2014. XVI, 388 p. (La Matematica per il 3+2, Vol. 76)  
ISBN 978-3-319-02290-1

**Due: December 31, 2013**

M.E. Schmidt

## Integrating Routing Decisions in Public Transportation Problems

This book treats three planning problems arising in public railway transportation planning: line planning, timetabling, and delay management, with the objective to minimize passengers' travel time. While many optimization approaches simplify these problems by assuming that passengers' route choice is independent of the solution, this book focuses on models which take into account that passengers will adapt their travel route to the implemented planning solution. That is, a planning solution and passengers' routes are determined and evaluated simultaneously. This work is technically deep, with insightful findings regarding complexity and algorithmic approaches to public transportation [...]

### Features

This book treats three planning problems arising in public railway transportation planning: line planning, timetabling, and delay management, with the objective to minimize passengers' travel time. While many optimization approaches simplify these problems by assuming that passengers' route choice is independent of the solution, this book focuses on models which take into account that passengers will adapt [...]

### Contents

1. Introduction.- 2. Line Planning.- 3. Timetabling.- 4. Delay Management.- 5. An Iterative Solution Approach for General Network Problems with Routing.- 6. Conclusions and Outlook.- Frequently Used Notation.- References.- Index.

### Fields of interest

Operations Research, Mathematical Programming; Civil Engineering; Algorithm Analysis and Problem Complexity

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9565-9](http://www.springer.com/978-1-4614-9565-9)

### Hardcover

2014. IX, 227 p. 23 illus. (Springer Optimization and Its Applications, Vol. 89)  
ISBN 978-1-4614-9565-9

**Due: January 31, 2014**

R. Sentis, Université Pierre-et-Marie-Curie, Paris, France

## Mathematical Models and Methods for Plasma Physics, Volume 1

### Fluid Models

This monograph is dedicated to the derivation and analysis of fluid models occurring in plasma physics. It focuses on models involving quasi-neutrality approximation, problems related to laser propagation in a plasma, and coupling plasma waves and electromagnetic waves. Applied mathematicians will find a stimulating introduction to the world of plasma physics and a few open problems that are mathematically rich. Physicists who may be overwhelmed by the abundance of models and uncertainty of their underlying assumptions will find basic mathematical properties of the related systems of partial differential equations. A planned second volume will be devoted to kinetic models. First and [...]

### Features

This monograph is dedicated to the derivation and analysis of fluid models occurring in plasma physics. It focuses on models involving quasi-neutrality approximation, problems related to laser propagation in a plasma, and coupling plasma waves and electromagnetic waves. Applied mathematicians will find a stimulating introduction to the world of plasma physics and a few open problems that are mathematically [...]

### Contents

Chapter 1. Introduction. Some Plasma characteristic quantities.- Chapter 2. Quasi-neutrality. Magneto-hydrodynamics.- Chapter 3. Laser propagation. Coupling with ion acoustic waves.- Chapter 4. Langmuir waves and Zakharov equations.- Chapter 5. Coupling electron waves and laser waves.- Chapter 6. Models with several species.- Appendix.- Bibliography.- Index.

### Fields of interest

Mathematical Applications in the Physical Sciences; Plasma Physics; Mathematical Methods in Physics; Partial Differential Equations

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-03803-2](http://www.springer.com/978-3-319-03803-2)

### Hardcover

2014. X, 200 p. 15 illus., 10 illus. in color. (Modeling and Simulation in Science, Engineering and Technology)  
ISBN 978-3-319-03803-2

**Due: February 28, 2014**

J. Sesiano, Ecole polytechnique fédérale, Lausanne, Switzerland

## Liber Mahameleth

The Liber mahameleth is a work in Latin written in the mid-12th century based (mainly) on Arabic sources from Islamic Spain. It is now our principal source on mathematics in Islamic Spain at that time; There are few extant Arabic texts and no one is as complete as the LM. It is also the second largest mathematical work from the Latin Middle Ages (the other is by Fibonacci, some 50 years later). Since the three main manuscripts preserving it are incomplete and there are many scribal errors, a reliable Latin text has been established, which reports (in notes) the various readings of the manuscripts and the errors in them. This is how a so-called critical edition is made. This edition of [...]

### Features

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### Contents

Part I.- 1. The rebirth of mathematics in mediaeval Europe.- 2. The Liber mahameleth.- 3. Manuscripts of the Liber mahameleth.- 4. Transmission of the Liber mahameleth.- 5. Mathematics in the Liber mahameleth.- 6. The edited Latin text.- Part II.- Translation.- Beginning of the Book (on mahameleth.- A-I. on Numbers.- A-II. on the Premises necessary for practical arithmetic.- A-III. on Multiplication.- A-IV. on Division.- A-V. on the Multiplication of fractions.- A-VI. on the Addition of fractions to fractions.- A-VII. on Subtracting.- A-VIII. on the Division of fractions, with or [...]

### Fields of interest

History of Mathematics; Algebra; Sequences, Series, Summability; Geometry

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-03939-8](http://www.springer.com/978-3-319-03939-8)

### Hardcover

2014. XCVIII, 1738 p. 465 illus. (Sources and Studies in the History of Mathematics and Physical Sciences)  
ISBN 978-3-319-03939-8

**Due: January 29, 2014**

X. Tolsa, Universitat Autònoma de Barcelona, Bellaterra (Cerdanyola), Spain

## Analytic Capacity, the Cauchy Transform, and Non-homogeneous Calderón–Zygmund Theory

This book studies some of the groundbreaking advances that have been made regarding analytic capacity and its relationship to rectifiability in the decade 1995–2005. The Cauchy transform plays a fundamental role in this area and is accordingly one of the main subjects covered. Another important topic, which may be of independent interest for many analysts, is the so-called non-homogeneous Calderón–Zygmund theory, the development of which has been largely motivated by the problems arising in connection with analytic capacity. The Painlevé problem, which was first posed around 1900, consists in finding a description of the removable singularities for bounded analytic functions in metric[...]

### Features

This book studies some of the groundbreaking advances that have been made regarding analytic capacity and its relationship to rectifiability in the decade 1995–2005. The Cauchy transform plays a fundamental role in this area and is accordingly one of the main subjects covered. Another important topic, which may be of independent interest for many analysts, is the so-called non-homogeneous Calderón–Zygmund [...]

### Contents

Introduction.- Basic notation.- Chapter 1. Analytic capacity.- Chapter 2. Basic Calderón–Zygmund theory with non doubling measures.- Chapter 3. The Cauchy transform and Menger curvature.- Chapter 4. The capacity  $\gamma_+$ - Chapter 5. A Tb theorem of Nazarov, Treil and Volberg.- Chapter 6. The comparability between  $\gamma$  and  $\gamma_+$ , and the semiadditivity of analytic capacity.- Chapter 7. Curvature and rectifiability.- Chapter 8. Principal values for the Cauchy transform and rectifiability.- Chapter 9. RBMO( $\mu$ ) and H1 atb( $\mu$ )- Bibliography.- Index.

### Fields of interest

Functions of a Complex Variable; Potential Theory; Calculus of Variations and Optimal Control; Optimization

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-319-00595-9](http://www.springer.com/978-3-319-00595-9)

### Hardcover

2014. XIII, 396 p. 8 illus., 1 illus. in color. (Progress in Mathematics, Vol. 307)  
ISBN 978-3-319-00595-9

**Due: December 31, 2013**

T.M. Tonietti

## And Yet it is Heard

Musical, Multilingual and Multicultural History of Mathematical Sciences, Volume 2

We bring into full light some excerpts on musical subjects which were until now scattered throughout the most famous scientific texts. The main scientific and musical cultures outside of Europe are also taken into consideration. The first and most important property to underline in the scientific texts examined here is the language they are written in. This means that our multicultural history of the sciences necessarily also becomes a review of the various dominant languages used in the different historical contexts. In this volume, the history of the development of the sciences is told as it happened in real contexts, not in an alienated ideal world.

### Features

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### Contents

PART II: In the world of the scientific revolution.- 6. Not only in Latin, but also in Dutch, Chinese, Italian and German.- 7. Beyond Latin, French, English, German, Italian and Flemish: the invention of symbolism.- 8. Between Latin, French, English and German: the language of transcendence.- 9. Between Latin and French.- 10. From French to German.- PART III: It is not even heard.- 11. In the language of the Venusians.- 12. Come on, Apophis.- Bibliography.- Index of names and works.

### Fields of interest

Mathematics (general); Mathematics in Music; History of Mathematics; Music; Linguistics (general)

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-0348-0674-9](http://www.springer.com/978-3-0348-0674-9)

### Hardcover

2014. X, 620 p. 12 illus. (Science Networks. Historical Studies, Vol. 47)  
ISBN 978-3-0348-0674-9

**Due: December 31, 2013**

T.M. Tonietti

## And Yet It Is Heard

Musical, Multilingual and Multicultural History of Mathematical Sciences, Volume 1

We bring into full light some excerpts on musical subjects which were until now scattered throughout the most famous scientific texts. The main scientific and musical cultures outside of Europe are also taken into consideration. The first and most important property to underline in the scientific texts examined here is the language they are written in. This means that our multicultural history of the sciences necessarily also becomes a review of the various dominant languages used in the different historical contexts. In this volume, the history of the development of the sciences is told as it happened in real contexts, not in an alienated ideal world.

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### Contents

0. Introduction.- PART I: In the ancient world.- 1. Above all with the Greek alphabet.- 2. In Chinese characters.- 3. In the Sanskrit of sacred Indian texts.-4. Not only in Arabic.- 5. Above all in the Latin alphabet.- Appendices.

### Fields of interest

Mathematics (general); Mathematics in Music; History of Mathematics; Music; Linguistics (general)

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-0348-0671-8](http://www.springer.com/978-3-0348-0671-8)

### Hardcover

2014. X, 420 p. 46 illus. (Science Networks. Historical Studies, Vol. 46)  
ISBN 978-3-0348-0671-8

**Due: December 31, 2013**

T.M. Tonietti

## And yet it is heard

Musical, Multilingual and Polycultural History of Mathematics

We bring into full light some excerpts on musical subjects which were until now scattered throughout the most famous scientific texts. The main scientific and musical cultures outside of Europe are also taken into consideration. The first and most important property to underline in the scientific texts examined here is the language they are written in. This means that our multicultural history of the sciences necessarily also becomes a review of the various dominant languages used in the different historical contexts. In this volume, the history of the development of the sciences is told as it happened in real contexts, not in an alienated ideal world.

### Features

We bring into full light some excerpts on musical subjects which were until now scattered throughout the most famous scientific texts. The main scientific and musical cultures outside of Europe are also taken into consideration. The first and most important property to underline in the scientific texts examined here is the language they are written in. This means that our multicultural history of the sciences [...]

### Contents

Volume 1.- 0. Introduction.- PART I: In the ancient world.- 1. Above all with the Greek alphabet.- 2. In Chinese characters.- 3. In the Sanskrit of sacred Indian texts.-4. Not only in Arabic.- 5. Above all in the Latin alphabet.- Appendices.- Volume 2.- PART II: In the world of the scientific revolution.- 6. Not only in Latin, but also in Dutch, Chinese, Italian and German.- 7. Beyond Latin, French, English, German, Italian and Flemish: the invention of symbolism.- 8. Between Latin, French, English and German: the language of transcendence.- 9. Between Latin and French.- 10. From French[...]

### Fields of interest

Mathematics (general); Mathematics in Music; History of Mathematics

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-3-0348-0677-0](http://www.springer.com/978-3-0348-0677-0)

### Hardcover

2014. Approx. 1200 p. 2 volume-set. (Science Networks. Historical Studies, Vol. 46/47)  
ISBN 978-3-0348-0677-0

**Due: April 28, 2014**

J. Xin, University of California, Irvine, Irvine, USA; Y. Qi, University of California, Irvine, Irvine, USA

## Mathematical Modeling and Signal Processing in Speech and Hearing Sciences

The aim of the book is to give an accessible introduction of mathematical models and signal processing methods in speech and hearing sciences for senior undergraduate and beginning graduate students with basic knowledge of linear algebra, differential equations, numerical analysis, and probability. Speech and hearing sciences are fundamental to numerous technological advances of the digital world in the past decade, from music compression in MP3 to digital hearing aids, from network based voice enabled services to speech interaction with mobile phones. Mathematics and computation are intimately related to these leaps and bounds. On the other hand, speech and hearing are strongly[...]

### Features

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### Contents

1 Background Signal Processing, Statistical and Optimization Methods.- 2 Speech Modeling.- 3 Auditory Modeling.- 4 Speech Recognition.- 5 Blind Source Separation and Speech Enhancement.

### Fields of interest

Applications of Mathematics; Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences; Mathematical Applications in Computer Science; Simulation and Modeling

### Target groups

Upper undergraduate

### Type of publication

Monograph

More on [www.springer.com/978-3-319-03085-2](http://www.springer.com/978-3-319-03085-2)

### Hardcover

2014. XII, 208 p. (MS&A, Vol. 10)  
ISBN 978-3-319-03085-2

**Due: December 31, 2013**

## Statistics

M. Carpita, Università degli Studi di Brescia, Brescia, Italy; E. Brentari, University of Brescia, Brescia, Italy; E.M. Qannari, Oniris Nantes National College, Nantes, France (Eds.)

## Advances in Latent Variables

Methods, Models and Applications

The book, belonging to the series "Studies in Theoretical and Applied Statistics – Selected Papers from the Statistical Societies", presents a peer-reviewed selection of contributions on relevant topics organized by the editors on the occasion of the SIS 2013 Statistical Conference "Advances in Latent Variables. Methods, Models and Applications", held at the Department of Economics and Management of the University of Brescia from June 19 to 21, 2013. The focus of the book is on advances in statistical methods for analyses with latent variables. In fact, in recent years, there has been increasing interest in this broad research area from both a theoretical and an applied point of view,[...]

### Features

The book, belonging to the series "Studies in Theoretical and Applied Statistics – Selected Papers from the Statistical Societies", presents a peer-reviewed selection of contributions on relevant topics organized by the editors on the occasion of the SIS 2013 Statistical Conference "Advances in Latent Variables. Methods, Models and Applications", held at the Department of Economics and Management of the [...]

### Contents

Introduction.- Part I: Latent Variables.- Part II: Methods, Models and Applications

### Fields of interest

Statistics (general); Statistical Theory and Methods; Statistics for Business, Economics, Mathematical Finance, Insurance; Statistics for Life Sciences, Medicine, Health Sciences

### Target groups

Research

### Type of publication

Contributed volume

More on [www.springer.com/978-3-319-02966-5](http://www.springer.com/978-3-319-02966-5)

### Hardcover

2014. Approx. 250 p. (Selected Papers of the Statistical Societies)  
ISBN 978-3-319-02966-5

**Due: June 30, 2014**

T. Hibi, Osaka University, Toyonaka, Japan (Ed.)

## Gröbner Bases

Statistics and Software Systems

The idea of the Gröbner basis first appeared in a 1927 paper by F. S. Macaulay, who succeeded in creating a combinatorial characterization of the Hilbert functions of homogeneous ideals of the polynomial ring. Later, the modern definition of the Gröbner basis was independently introduced by Heisuke Hironaka in 1964 and Bruno Buchberger in 1965. However, after the discovery of the notion of the Gröbner basis by Hironaka and Buchberger, it was not actively pursued for 20 years. A breakthrough was made in the mid-1980s by David Bayer and Michael Stillman, who created the Macaulay computer algebra system with the help of the Gröbner basis. Since then, rapid development on the Gröbner[...]

### Features

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### Contents

A Quick Introduction to Gröbner Bases.- Warm-up Drills and Tips for Mathematical Software.- Computation of Gröbner Bases.- Markov Bases and Designed Experiments.- Convex Polytopes and Gröbner Bases.- Gröbner Basis for Rings of Differential Operators and Applications.- Examples and Exercises.

### Fields of interest

Statistical Theory and Methods; Statistics and Computing / Statistics Programs; Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-4-431-54573-6](http://www.springer.com/978-4-431-54573-6)

### Hardcover

Original Japanese edition published by Kyoritsu Shuppan Co., Ltd, Tokyo, 2011  
2014. XII, 460 p. 98 illus.  
ISBN 978-4-431-54573-6

**Due: January 31, 2014**

J.-H. Jeong

## Statistical Inference on Residual Life

This is a monograph on the concept of residual life, which is an alternative summary measure of time-to-event data, or survival data. The mean residual life has been used for many years under the name of life expectancy, so it is a natural concept for summarizing survival or reliability data. It is also more interpretable than the popular hazard function, especially for communications between patients and physicians regarding the efficacy of a new drug in the medical field. This book reviews existing statistical methods to infer the residual life distribution. The review and comparison includes existing inference methods for mean and median, or quantile, residual life analysis through [...]

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### Contents

Introduction.- Inference on Mean Residual Life.- Quantile Residual Life.- Quantile Residual Life under Competing Risks.- Other Methods for Inference on Quantiles.- Study Design based on Quantile (Residual) Life.- Appendix: R codes.- References.- Index.

### Fields of interest

Statistics for Life Sciences, Medicine, Health Sciences; Biostatistics; Epidemiology

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4939-0004-6](http://www.springer.com/978-1-4939-0004-6)

### Hardcover

2014. X, 212 p. 17 illus., 12 illus. in color. (Statistics for Biology and Health)  
ISBN 978-1-4939-0004-6

**Due: January 31, 2014**

R.E. Kass, Carnegie Mellon University, Pittsburgh, USA; U. Eden, Boston University, Boston, USA; E.N. Brown, Massachusetts Institute of Technology, Cambridge, USA

## Analysis of Neural Data

Continual improvements in data collection and processing have had a huge impact on brain research, producing data sets that are often large and complicated. By emphasizing a few fundamental principles, and a handful of ubiquitous techniques, Analysis of Neural Data provides a unified treatment of analytical methods that have become essential for contemporary researchers. Throughout the book ideas are illustrated with more than 100 examples drawn from the literature, ranging from electrophysiology, to neuroimaging, to behavior. By demonstrating the commonality among various statistical approaches the authors provide the crucial tools for gaining knowledge from diverse types of data. [...]

### Features

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### Contents

Introduction.- Exploring Data.- Probability and Random Variables.- Random Vectors.- Important Probability Distributions.- Sequences of Random Variables.- Estimation and Uncertainty.- Estimation in Theory and Practice.- Uncertainty and the Bootstrap.- Statistical Significance.- General Methods for Testing Hypotheses.- Linear Regression.- Analysis of Variance.- Generalized Regression.- Nonparametric Regression.- Bayesian Methods.- Multivariate Analysis.- Time Series.- Point Processes.- Appendix: Mathematical Background.- Example Index.- Index.- Bibliography.

### Fields of interest

Statistics for Life Sciences, Medicine, Health Sciences; Neurosciences; Statistical Theory and Methods

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9601-4](http://www.springer.com/978-1-4614-9601-4)

### Hardcover

2014. XXV, 647 p. 135 illus., 17 illus. in color. (Springer Series in Statistics)  
ISBN 978-1-4614-9601-4

**Due: January 31, 2014**

Th.J. Quirk

## Excel 2010 for Engineering Statistics

A Guide to Solving Practical Problems

This is the first book to show the capabilities of Microsoft Excel to teach engineering statistics effectively. It is a step-by-step exercise-driven guide for students and practitioners who need to master Excel to solve practical engineering problems. If understanding statistics isn't your strongest suit, you are not especially mathematically-inclined, or if you are wary of computers, this is the right book for you. Excel, a widely available computer program for students and managers, is also an effective teaching and learning tool for quantitative analyses in engineering courses. Its powerful computational ability and graphical functions make learning statistics much easier than in[...]

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### Contents

Introduction.- Sample size, mean, standard deviation, standard error of the mean.- Random number generator.- Confidence interval about the mean using the TINV function and hypothesis testing.- One-group t-test for the mean.- Two-group t-test of the difference of the means for independent groups.- Correlation and simple linear regression.- Multiple correlation and multiple regression.- One-way analysis of variance (ANOVA).- Appendix A.- Appendix B.- Appendix C.- Appendix D.- Appendix E.- Index.

### Fields of interest

Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences; Statistics and Computing / Statistics Programs; Statistics (general)

### Target groups

Upper undergraduate

### Type of publication

Graduate/advanced undergraduate textbook

More on [www.springer.com/978-3-319-02829-3](http://www.springer.com/978-3-319-02829-3)

### Softcover

2014. XV, 246 p. 159 illus., 158 illus. in color.

ISBN 978-3-319-02829-3

Due: January 28, 2014

D. Stram

## Design, Analysis, and Interpretation of Genome-Wide Association Scans

This book presents the statistical aspects of designing, analyzing and interpreting the results of genome-wide association scans (GWAS studies) for genetic causes of disease using unrelated subjects. Particular detail is given to the practical aspects of employing the bioinformatics and data handling methods necessary to prepare data for statistical analysis. The goal in writing this book is to give statisticians, epidemiologists, and students in these fields the tools to design a powerful genome-wide study based on current technology. The other part of this is showing readers how to conduct analysis of the created study. Design and Analysis of Genome-Wide Association Studies provides[...]

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### Contents

Introduction to Genome-Wide Association Studies.- Topics of Quantitative Genetics.- An Introduction to Association Studies.- Correcting for Hidden Population Structure in Single Marker Association Testing and Estimation.- Haplotype Imputation for Association Analysis.- SNP Imputation for Association Studies.- Design of Large-scale Genetic Association Studies, Sample Size and Power.- Post-GWAS Analyses.

### Fields of interest

Statistics for Life Sciences, Medicine, Health Sciences; Human Genetics; Statistical Theory and Methods

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9442-3](http://www.springer.com/978-1-4614-9442-3)

### Hardcover

2014. XV, 334 p. 39 illus. (Statistics for Biology and Health)

ISBN 978-1-4614-9442-3

usually dispatched within 3 to 5 business days

N.G. Swenson, Michigan State University, East Lansing, USA

## Functional and Phylogenetic Ecology in R

Phylogenetic and Functional Ecology in R is designed to teach readers to use R for phylogenetic and functional trait analyses. Over the past decade, a dizzying array of tools and methods were generated to incorporate phylogenetic and functional information into traditional ecological analyses. Increasingly these tools are implemented in R, thus greatly expanding their impact. Researchers getting started in R can use this volume as a step-by-step entryway into phylogenetic and functional analyses for ecology in R. More advanced users will be able to use this volume as a quick reference to understand particular analyses. The volume begins with an introduction to the R environment and[...]

### Features

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### Contents

Preface.- Introduction.- Phylogenetic Data in R.- Phylogenetic Diversity.- Functional Diversity.- Phylogenetic & Functional Beta Diversity.- Null Models.- Comparative Methods & Phylogenetic Signal.- Partitioning the Phylogenetic, Functional, Environmental and Spatial Components of Community Diversity.- Integrating R with Other Phylogenetic and Functional Trait Analytical Software.- References.- Index

### Fields of interest

Statistics and Computing / Statistics Programs; Ecology; Evolutionary Biology

### Target groups

Research

### Type of publication

Monograph

More on [www.springer.com/978-1-4614-9541-3](http://www.springer.com/978-1-4614-9541-3)

### Softcover

2014. X, 175 p. 30 illus., 5 illus. in color. (Use R!)

ISBN 978-1-4614-9541-3

Due: January 31, 2014

