

Computer Science 2008/9

New and Forthcoming Titles from Cambridge www.cambridge.org/computerscience

Textbook

Introduction to Information Retrieval

Christopher D. Manning

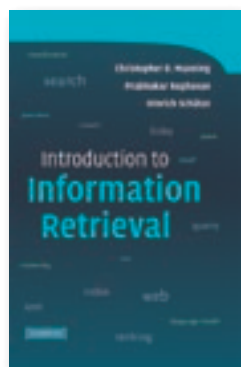
Stanford University, California

Prabhakar Raghavan

Yahoo, Inc.

and Hinrich Schütze

Universität Stuttgart



'This is the first book that gives you a complete picture of the complications that arise in building a modern web-scale search engine. You'll learn about ranking SVMs, XML, DNS, and LSI. You'll discover the seedy underworld of spam, cloaking, and doorway pages. You'll see how MapReduce and other approaches to parallelism allow us to go beyond megabytes and to efficiently manage petabytes.'

PETER NORVIG, DIRECTOR OF RESEARCH, GOOGLE INC.

A coherent and up-to-date picture of all aspects of the design and implementation of systems for gathering, indexing, and searching documents; methods for evaluating systems; and an introduction to the use of machine learning methods on text collections. A complete set of lecture slides and exercises for courses based on the book are available on the web.

1. Information retrieval using the Boolean model; 2. The dictionary and postings lists; 3. Tolerant retrieval; 4. Index construction; 5. Index compression; 6. Scoring and term weighting; 7. Vector space retrieval; 8. Evaluation in information retrieval; 9. Relevance feedback and query expansion; 10. XML retrieval; 11. Probabilistic information retrieval; 12. Language models for information retrieval; 13. Text classification and Naive Bayes; 14. Vector space classification; 15. Support vector machines and kernel functions; 16. Flat clustering; 17. Hierarchical clustering; 18. Dimensionality reduction and latent semantic indexing; 19. Web search basics; 20. Web crawling and indexes; 21. Link analysis.

2008 253 x 177 mm 496pp 5 halftones 47 tables 263 exercises
978-0-521-86571-5 Hardback £32.99

New in paperback

Finding Out About

A Cognitive Perspective on Search Engine Technology and the WWW

Richard K. Belew

University of California, San Diego

'A comprehensive resource for teaching a programming-based information retrieval class. The text provides an integrated introduction to many topics in information retrieval with a strong emphasis on mathematical and machine learning models, as well as giving a clear account of implementation details for the programming assignments.'

INFORMATION RETRIEVAL

1. Overview; 2. Extracting lexical features; 3. Weighting and matching against indices; 4. Assessing the retrieval; 5. Mathematical foundations; 6. Inference beyond the index; 7. Adaptive information retrieval; 8. Conclusions and future directions.

2008 235 x 187 mm 384pp 10 halftones 5 plates 20 tables 60 exercises
978-0-521-73446-2 Paperback £24.99

Forthcoming

Statistical Machine Translation

Philipp Koehn

University of Edinburgh

This classroom-tested text gives background in NLP and statistics, then develops the basics through to current research. By the end, readers will be able to build their own translation systems. For advanced undergraduates in computer science, graduate students in computer science and computational linguistics, and researchers in natural language processing.

- The first introductory guide to this burgeoning field – takes readers step by step through theory and methods
- Author is an active researcher, widely known for Pharaoh, his open-source decoder, and for his tutorials and workshops
- Material is classroom tested, in the US and Europe

Preface; 1. Introduction; 2. Words, sentences and corpora; 3. Basic statistics; 4. Word-based models; 5. Phrase-based models; 6. Decoding; 7. Language models; 8. Evaluation; 9. Discriminative training; 10. Integrating syntax; 11. Syntax-based models; 12. Applications; References; Index.

2009 247 x 174 mm 300 pages 70 exercises
978-0-521-87415-1 Hardback c.£30.00

Graduate Textbook

Genomes, Browsers and Databases

Data-Mining Tools for Integrated Genomic Databases

Peter Schattner

University of California, Santa Cruz

Focusing on the databases and tools from the University of California, Santa Cruz (UCSC), Ensembl, and the National Centre for Biotechnology Information (NCBI), this book provides an overview of the key tools currently available for large-scale comparisons of gene sequences and annotations.

2008 253 x 177 mm 344pp 51 halftones 4 tables 46 exercises
 978-0-521-88443-3 Hardback £65.00
 978-0-521-71132-6 Paperback £27.99

Textbook

Introduction to Software Testing

Paul Ammann

George Mason University

and Jeff Offutt

George Mason University

'I read it, used the material in it, and found it very useful, insightful, and precise.'

LIONEL BRIAND, SIMULA RESEARCH LABORATORY,
OSLO, NORWAY

'This is a great book for learning software testing.'

LING LIU, RESEARCH PROFESSOR, ETH ZURICH

This textbook teaches students an innovative and successful approach to software testing. Lots of examples are used to give students a better understanding of the material. Instructor's solution manual, PowerPoint slides, testing tools for students, and example software programs in Java available from <http://ise.gmu.edu/~offutt/softwaretest/>

Part I. Overview: 1. Introduction; **Part II. Coverage Criteria:** 2. Graph testing; 3. Logic coverage; 4. Input space partitioning; 5. Syntax-based testing; **Part III. Applying Criteria in Practice:** 6. Practical considerations; 7. Engineering criteria for technologies; 8. Building testing tools; 9. Challenges in testing software.

2008 253 x 177 mm 344pp 51 tables 101 exercises
 978-0-521-88038-1 Hardback £32.99

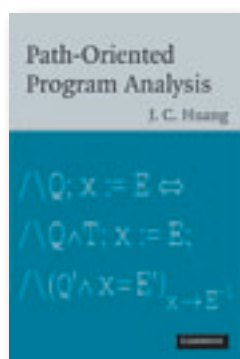
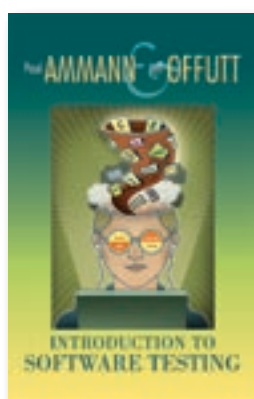
Path-Oriented Program Analysis

J. C. Huang

University of Houston

Presents a method for deconstructing a computer program along its execution paths, for simplifying the resulting subprograms, and for reconstructing a program from its subprograms. The resulting simplified subprograms are generally easier to follow than the original program as a whole. So, the method enables us to better understand the complexity involved in a program.

2008 228 x 152 mm 208pp 1 table
 978-0-521-88286-6 Hardback £45.00



Textbook

Practical Formal Methods in Software Engineering

How to Get the Software you Want

Bruce Ian Mills

United Arab Emirates University

An unusual, engineering-inspired approach to the creation and verification of large software systems. Where other textbooks discuss business practices through generic project management techniques or detailed rigid logic systems, this book examines the interaction between code in a physical machine and the logic applied in creating the software.

Part I. Fundamentals: 1. Arithmetic; 2. Logic; 3. Algebra; 4. Diagrams; **Part II. Language:** 5. UML; 6. OCL; 7. Z; 8. Logic; 9. Java; **Part III. Practice:** 11. Implementation; 12. State transformation; 13. Plain text; 14. Natural language; 15. Digital geometry; 16. Building dungeons; 17. Multiple threads; 18. Security.

2008 7 3/8 x 9 3/4 368pp 6 tables 197 exercises
 978-0-521-87903-3 Hardback c. £35.00

Model-Based Software Testing and Analysis with C#

Jonathan Jacky

University of Washington

Margus Veanes

Microsoft Research, Redmond, Washington

Colin Campbell

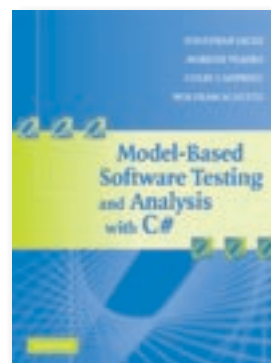
Modeled Computation LLC, Seattle, Washington

and Wolfram Schulte

Microsoft Research, Redmond, Washington

Explains new methods for specifying, analyzing, and testing software, essentials for creating high-quality software. Using a toolkit built on the C# language and the .NET framework, the authors work through several realistic case studies in depth and detail, making the methods easy for programmers and testers to learn and use.

2008 234 x 177 mm 366pp 2 tables 43 exercises
 978-0-521-88655-0 Hardback £55.00
 978-0-521-68761-4 Paperback £27.99



Calendrical Calculations

Third edition

Nachum Dershowitz

Tel-Aviv University

and Edward M. Reingold

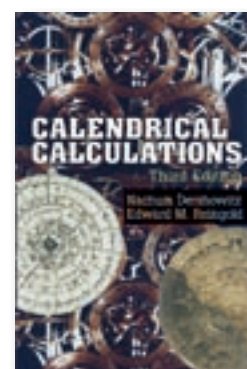
Illinois Institute of Technology

'One of the most fascinating books I've read all year. Takes chronology into the computer age with impressive erudition and elan.'

IAN STEWART

Expands the algorithmic treatment of the previous edition to new calendar variants: generic cyclical calendars and astronomical lunar calendars as well as the Korean, Vietnamese, Aztec, and Tibetan calendars. LISP and Java code for all the algorithms are available on the Web.

2008 234 x 156 mm 512pp 20 tables
 978-0-521-88540-9 Hardback £45.00
 978-0-521-70238-6 Paperback £17.99



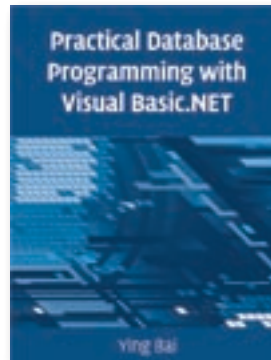
Textbook

Practical Database Programming with Visual Basic.NET

Ying Bai

Johnson C. Smith University, North Carolina

Explains how to develop professional and practical database programs in Visual Basic 2005 by using two methods: Visual Basic.NET 2005 Design Tools and Wizards, and runtime object methods.



1. Introduction; 2. Introduction to databases; 3. Introduction to ADO.NET; 4. Data selection query with Visual Basic.NET; 5. Data inserting with Visual Basic.NET; 6. Data updating and deleting with Visual Basic.NET; 7. Accessing data in ASP.NET; 8. ASP.NET web services.

2009 253 x 177 mm 800pp 599 line figures 24 halftones 88 tables
194 exercises
978-0-521-88518-8 Hardback £80.00
978-0-521-71235-4 Paperback £38.00

Textbook

The Student's Introduction to MATHEMATICA®

Second edition

Bruce F. Torrence

Randolph-Macon College, Virginia

and Eve A. Torrence

Randolph-Macon College, Virginia

Fully revised for **Mathematica 6**, and includes coverage of the new dynamic interface elements, a new chapter on programming, and several hundred exercises.

Preface; 1. Getting started; 2. Working with *Mathematica*; 3. Functions and their graphs; 4. Algebra; 5. Calculus; 6. Multivariable calculus; 7. Linear algebra; 8. Programming; Solutions to exercises; Index.

2008 246 x 189 mm 488pp 50 halftones 5 tables 220 exercises
978-0-521-71789-2 Paperback c. £25.99

Textbook

How to Think About Algorithms

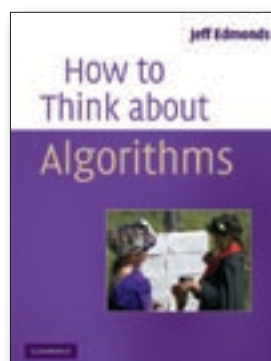
Jeff Edmonds

York University, Toronto

Unlike most algorithm texts, which put off many students with daunting lists of dry code, and little information on where it came from, this book teaches students to **think** about algorithms and learn to **build** their own. Explains how algorithms work, teaching students a valuable, practical skill

- Carefully laid out to so that students can look at the big picture or the fine details in any section
- Plenty of exercises, with hints and selected solutions, lots of worked examples, and slides for instructors on the web

Part I. Iterative Algorithms and Loop Invariants: 1. Measures of progress and loop invariants; 2. Examples using more of the input loop invariant; 3. Abstract data types; 4. Narrowing the search space: binary search; 5. Iterative sorting algorithms;



6. Euclid's GCD algorithm; 7. The loop invariant for lower bounds; **Part II. Recursion:** 8. Abstractions, techniques, and theory; 9. Some simple examples of recursive algorithms; 10. Recursion on trees; 11. Recursive images; 12. Parsing with context-free grammars; **Part III. Optimization Problems:** 13. Definition of optimization problems; 14. Graph search algorithms; 15. Network flows and linear programming; 16. Greedy algorithms; 17. Recursive backtracking; 18. Dynamic programming algorithms; 19. Examples of dynamic programming; 20. Reductions and NP-completeness; 21. Randomized algorithms; **Part IV. Appendix:** 22. Existential and universal quantifiers; 23. Time complexity; 24. Logarithms and exponentials; 25. Asymptotic growth; 26. Adding made easy approximations; 27. Recurrence relations; 28. A formal proof of correctness; **Part V. Exercise Solutions.**

2008 253 x 177 mm 472pp 126 line figures 30 halftones 24 tables
203 exercises
978-0-521-84931-9 Hardback £55.00
978-0-521-61410-8 Paperback £19.99

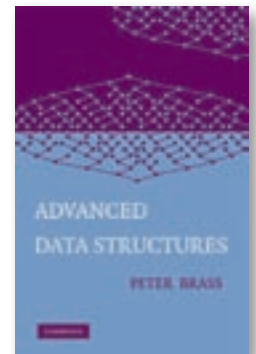
Advanced Data Structures

Peter Brass

City College, City University of New York

This graduate-level text explains the implementation and analysis of data structures as a specialised topic in applied algorithms. It examines efficient ways to realise query operations and the history of various structures as they are related to basic concepts of data storage.

2008 228 x 152 mm 424pp
978-0-521-88037-4 Hardback c. £40.00



New in Paperback

Geometric Folding Algorithms

Linkages, Origami, Polyhedra

Erik D. Demaine

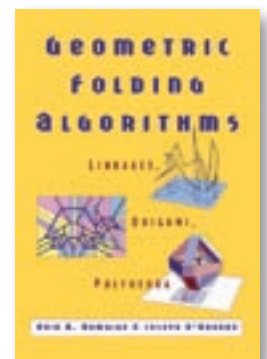
Massachusetts Institute of Technology

and Joseph O'Rourke

Smith College, Massachusetts

How can you fold a straight-line drawing on paper so that the complete drawing can be cut out with a straight scissors cut? Did you know that there is a planar linkage that can trace out any algebraic curve, or even 'sign your name'? Or that a 'Latin cross' unfolding of a cube can be refolded to 23 different convex polyhedra? With an emphasis on algorithmic or computational aspects, this text gives hundreds of results and over 60 unsolved 'open problems' to inspire further research.

2008 253 x 177 mm 496pp 330 plates 16 tables
978-0-521-71522-5 Paperback £29.99



Graduate Textbook

Real-Time Systems

Formal Specification and Automatic Verification

E.-R. Olderog

Carl V. Ossietzky Universität Oldenburg, Germany

and H. Dierks

OFFIS, Research Institute, Oldenburg

An airbag in a car has to unfold within 300 milliseconds in a crash. Many embedded safety-critical applications like this, rely on real-time software specification techniques. This graduate textbook introduces

three of these methods: duration calculus, timed automata, and PLC-automata.

2008 247 x 174 mm 344pp 26 halftones 26 tables 50 exercises
45 worked examples
978-0-521-88333-7 Hardback c. £40.00

Textbook

Quantum Computing for Computer Scientists

Noson S. Yanofsky

Brooklyn College, City University of New York

and Mirco A. Mannucci

HoloMathics, LLC, Virginia

If you want to understand (or teach) quantum computing without really advanced maths, this textbook is for you. Written especially for computer scientists, it slices through the layers of mathematics that often surround the topic, and explains the quirks of quantum mechanics using step-by-step examples, exercises and heaps of illustrations.

- Quantum mechanics explained for computer scientists by computer scientists
- Includes more than 200 hands-on exercises to build confidence and understanding
- Features quantum computing experiments using MATLAB, to bring the ideas alive

1. Complex numbers; 2. Complex vector spaces; 3. The leap from classical to quantum; 4. Basic quantum theory; 5. Architecture; 6. Algorithms; 7. Programming languages; 8. Theoretical computer science; 9. Cryptography; 10. Information theory; 11. Hardware.

2008 253 x 177 mm 368pp 4 halftones 245 exercises
978-0-521-87996-5 Hardback £38.00

Classical and Quantum Information Theory

An Introduction for the Telecom Scientist

Emmanuel Desurvire

Alcatel, France

For the first time, this book presents a complete overview of both classical and quantum information theory, covering key topics such as coding, compression, error-correction, cryptography, and channel capacity. Highly illustrated, with numerous practical examples and end-of-chapter exercises, this is ideal for graduate students, researchers and practitioners in industry.

2009 247 x 174 mm 648pp 1 halftone 59 tables 139 exercises
978-0-521-88171-5 Hardback c. £40.00

Graduate Textbook

Computational Complexity

A Conceptual Perspective

Oded Goldreich

Weizmann Institute of Science, Israel

A conceptual introduction to the study of the intrinsic complexity of computational tasks. It provides explanations of the various sub-areas of complexity theory such as hardness amplification, pseudorandomness, and probabilistic proof systems.

2008 253 x 177 mm 632pp
978-0-521-88473-0 Hardback £40.00



New Edition Textbook

Probability and Information

An Integrated Approach

Second edition

David Applebaum

University of Sheffield

'The innovative blend of probability theory and information theory make this text a good choice for teachers wanting to present both a traditional background and modern ideas to their students.'

JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION



Preface to the first edition; Preface to the second edition; 1. Introduction; 2. Combinatorics; 3. Sets and measures; 4. Probability; 5. Discrete random variables; 6. Information and entropy; 7. Communication; 8. Random variables with probability density functions; 9. Random vectors; 10. Markov chains and their entropy; Exploring further; Appendix 1. Proof by mathematical induction; Appendix 2. Lagrange multipliers; Appendix 3. Integration of $\exp(-\frac{1}{2}x^2)$; Appendix 4. Table of probabilities associated with the standard normal distribution; Appendix 5. A rapid review of Matrix algebra; Selected solutions; Index.

2008 246 x 189 mm 250pp 65 line figures 3 tables 240 exercises 105 worked examples
978-0-521-89904-8 Hardback c. £65.00
978-0-521-72788-4 Paperback c. £25.99

Graduate Textbook

Lambda-Calculus and Combinators

An Introduction

Second edition

J. Roger Hindley

University of Wales, Swansea

and Jonathan P. Seldin

University of Lethbridge, Alberta

From reviews of the 1st edition:

'In conclusion, this book is very interesting and well written, and is highly recommended to everyone who wants to approach combinatory logic and lambda-calculus (logicians or computer scientists).'

J. SYMBOLIC LOGIC

This long-awaited and thoroughly revised new version gives a modern account of combinatory logic and lambda-calculus.

2008 222 x 152 mm 360pp 10 line figures 1 table 55 exercises
50 worked examples
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Graduate Textbook

Analytic Combinatorics

Philippe Flajolet

Institut National de Recherche en Informatique et en Automatique (INRIA), Rocquencourt

and Robert Sedgewick

Princeton University, New Jersey

This definitive text covers the mathematics underlying the analysis of discrete structures, with thorough treatment of a large number of applications. Exercises, examples, appendices and notes aid understanding: ideal for individual self-study or for advanced undergraduate or graduate courses.

2008 247 x 174 mm 821pp 74 halftones 50 tables 200 worked examples
978-0-521-89806-5 Hardback c. £45.00

Algorithmic Aspects of Graph Connectivities

Hiroshi Nagamochi

Kyoto University, Japan

and Toshihide Ibaraki

Kwansei Gakuin University, Japan

This is the first in-depth description of this central notion in graph and network theory. Covers new concepts and algorithms for quicker and more efficient computing.

Encyclopedia of Mathematics and its Applications, 123
 2008 234 x 156 mm 392pp 1 table
 978-0-521-87864-7 Hardback £50.00

Algebraic Geometry and Statistical Learning Theory

Sumio Watanabe

Tokyo Institute of Technology

Sure to be influential, Watanabe's book lays the foundations for the use of algebraic geometry in statistical learning theory. Many learning machines are singular: mixture models, neural networks, HMMs, Bayesian networks, stochastic context-free grammars are major examples. The theory explained here underpins accurate estimation techniques in the presence of singularities.

2009 228 x 152 mm 272 pages 26 line figures 2 tables
 978-0-521-86467-1 Hardback c. £40.00

Graduate Textbook

A Second Course in Formal Languages and Automata Theory

Jeffrey Shallit

University of Waterloo, Ontario

A textbook for a graduate course on formal languages and automata theory, building on prior knowledge of theoretical computer models.

1. Review of formal languages and automata theory; 2. Combinatorics on words; 3. Finite automata and regular languages; 4. Context-free grammars and languages; 5. Parsing and recognition; 6. Turing machines; 7. Other language classes.

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 978-0-521-86572-2 Hardback c. £30.00

Fundamentals of Digital Imaging

Joel Trussell

North Carolina State University

and Michael Vrhel

Artifex Software Inc., Washington

Covers core techniques of image capture and the display of monochrome and colour images. Instructor-only solutions, MATLAB scripts, and reference data for problems are available online at www.cambridge.org/9780521868532

2008 247 x 174 mm 592pp 165 line figures 75 halftones 35 plates
 978-0-521-86853-2 Hardback £65.00

Practical Algorithms for Image Analysis with CD-ROM

Second edition

Lawrence O'Gorman

Avaya Labs, New Jersey

Michael J. Sammon

Avaya Labs, New Jersey

and Michael Seul

BioArray Solutions



In classic 'cookbook style', this book offers guided access to a collection of algorithms for the digital manipulation and analysis of images, from the simplest steps to advanced functions. In this new edition, the accompanying CD-ROM contains C programs for carrying out the book's procedures not only as source code but also as executables for Windows and Linux.

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Graduate Textbook

Digital Image Processing for Medical Applications

Geoff Dougherty

California State University, Channel Islands

This practical book explains the concepts and the effective use of image processing tools for medical applications. Real medical images and hands-on activities are used to develop the reader's skill and confidence. All images, public-domain software and solutions available from www.cambridge.org/books/dougherty.

- Combines intuition with problem-solving, and emphasizes useful information rather than unnecessary background
- End-of-chapter problems reinforce and consolidate understanding; overviews summarize essential material covered in each chapter
- Practical computer-based activities build intuition, skills and confidence

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 13 worked examples
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New in Paperback

Pattern Recognition and Neural Networks

Brian D. Ripley

University of Oxford

'I can warmly recommend this book. Every researcher will benefit by the broadness of Ripley's view and the comprehensive bibliography.'

DEE DENTENER, ITW NIEUWS

Now in paperback: the most reliable account of the statistical framework for pattern recognition and machine learning. Valuable advice is included on both theory and applications. All data sets are available from www.stats.ox.ac.uk/~ripley/PRbook/

2008 246 x 189 mm 416pp 30 line figures 11 halftones
 978-0-521-71770-0 Paperback £23.99

Graduate Textbook

Multiagent Systems

Algorithmic, Game-Theoretic, and Logical Foundations

Yoav Shoham

Stanford University, California

and Kevin Leyton-Brown

University of British Columbia, Vancouver

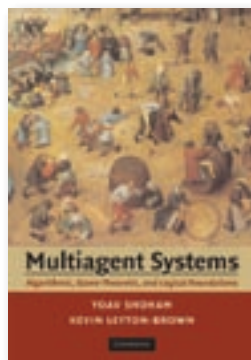
Multiagent systems combine multiple autonomous entities, each having diverging interests or different information.

This thorough introduction to the area is written from a computer science perspective, while bringing together ideas from operations research, game theory, economics, logic, and even philosophy and linguistics.

- First rigorous introduction covering multiagent systems
- Covers broad area including computer science, game theory, and logic
- Includes background material for probability theory, classical logic, and mathematical programming

1. Distributed constraint satisfaction; 2. Distributed optimization; 3. Introduction to non-cooperative game theory; 4. Computing solution concepts of normal-form games; 5. Games with sequential actions; 6. Richer representations; 7. Learning and teaching; 8. Communication; 9. Aggregating preferences; 10. Protocols for strategic agents; 11. Protocols for multiagent resource allocation; 12. Teams of selfish agents; 13. Logics of knowledge and belief; 14. Beyond belief.

2008 253 x 177 mm 480pp 14 tables
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**Design, Measurement and Management of Large-Scale IP Networks**

Bridging the Gap Between Theory and Practice

Antonio Nucci

Narus Inc., Mountain View, California

and Konstantina Papagiannaki

Intel, Pittsburgh, Pennsylvania

Weaving together theory and practice, this text sets out the design and management principles of large-scale IP networks, and the need for these tasks to be underpinned by actual measurements.

2008 247 x 174 mm 432pp 3 halftones 27 tables
978-0-521-88069-5 Hardback c. £40.00

Wireless Internet Security

Architecture and Protocols

James Kempf

DoCoMo Labs USA, Palo Alto, California

Approaching wireless Internet security from the position of system architecture, this text describes the cryptographic and protocol-based tools for Internet security, highlighting their application in wireless networks. Rather than dealing with specific standards or products, the focus throughout is on the architectural and practical design aspects of wireless security systems.

2008 247 x 174 mm 216pp
978-0-521-88783-0 Hardback c. £35.00

Textbook

Computer Ethics

A Case-based Approach

Robert N. Barger

University of Notre Dame, Indiana

Rather than taking a legalistic approach to the topic, this textbook examines the principles of Idealism, Realism, Pragmatism, Existentialism, and Philosophical Analysis, explaining how each of them might be used as a basis for solving computing dilemmas.

- Explains the steps of the ethical decision making process in handy worksheet form
- Appendix with suggested topics for presentations, discussion, and papers
- End of chapter summaries and questions foster better understanding of the material

1. Introduction; 2. The computer as a humanizing agent; 3. Philosophic belief systems; 4. A philosophic inventory; 5. The possibility of a unified ethical theory; 6. The ethical decision making process; 7. Psychology and computer ethics; 8. The computing field as a profession; 9. Computer-related codes of ethics; 10. Computer ethics and international development; 11. Robotics and ethics; 12. Theft and piracy concerns; 13. Cases concerning theft and piracy; 14. Privacy concerns; 15. Cases concerning privacy; 16. Power concerns; 17. Cases concerning power; 18. A miscellaneous collection of cases; 19. Parasitic computing case; Appendix: Topics for presentations, discussions, and papers.

2008 228 x 152 mm 264pp 2 line figures 9 halftones
978-0-521-88251-4 Hardback £45.00
978-0-521-70914-9 Paperback £21.99



Textbook

Distributed Computing

Principles, Algorithms, and Systems

Ajay D. Kshemkalyani

University of Illinois, Chicago

and Mukesh Singhal

University of Kentucky

This comprehensive textbook covers the principles and models underlying the theory, algorithms and systems aspects of distributed computing. Contains worked examples and homework problems, with instructor solutions and lecture slides available online at www.cambridge.org/9780521876346

1. Introduction; 2. A model of distributed computations; 3. Logical time; 4. Global state and snapshot recording algorithms; 5. Terminology and basic algorithms; 6. Message ordering and group communication; 7. Termination detection; 8. Reasoning with knowledge; 9. Distributed mutual exclusion algorithms; 10. Deadlock detection in distributed systems; 11. Global predicate detection; 12. Distributed shared memory; 13. Checkpointing and rollback recovery; 14. Consensus and agreement algorithms; 15. Failure detectors; 16. Authentication in distributed system; 17. Self-stabilization; 18. Peer-to-peer computing and overlay graphs; Index.

2008 246 x 189 mm 754pp 284 line figures 163 exercises
978-0-521-87634-6 Hardback £45.00

Textbook

Research Methods for Human-Computer Interaction

Edited by Paul Cairns

University of York

and Anna L. Cox

University College London

'Research Methods for Human-Computer Interaction is a wonderful resource for both students and practitioners who need to take a scientific approach to the design of user interfaces.'

DR ALAN BLACKWELL, READER IN INTERDISCIPLINARY DESIGN,
UNIVERSITY OF CAMBRIDGE COMPUTER LABORATORY

2008 247 x 174 mm 280pp 15 tables
978-0-521-87012-2 Hardback £60.00
978-0-521-69031-7 Paperback £21.99

Open Source

Technology and Policy

Fadi P. Deek

New Jersey Institute of Technology

and James A. M. McHugh

New Jersey Institute of Technology

Addresses prominent projects in the open source movement, along with its enabling technologies, social characteristics, legal issues, business venues, and public and educational roles.

1. Introduction; Part I. Open Source - Internet Infrastructure, Platforms, and Technologies; 2. Open source Internet application projects; 3. The open source platform; 4. Technologies underlying open source development; Part II. Social, Psychological, Legal, and Economic Aspects of Open Source: 5. Demographics, sociology, and psychology of open source development; 6. Legal issues in open source; 7. The economics of open source; Part III. Free Software: The Movement, the Public Sector, and the Future: 8. The GNU project and the free software foundation; 9. Open source in the public sector; 10. The future of the open source movement.

2008 228 x 152 mm 382pp
978-0-521-88103-6 Hardback £50.00
978-0-521-70741-1 Paperback £18.99

**Bluetooth Essentials for Programmers**

Albert S. Huang

Massachusetts Institute of Technology

and Larry Rudolph

Massachusetts Institute of Technology

- No Bluetooth background needed
- Written especially for programmers and software engineers
- Introduces Bluetooth for Python, C, Java, GNU/Linux, Windows XP, Symbian Series 60, and Mac OS X, and more

2007 208pp 22 tables
978-0-521-70375-8 Paperback £21.99

**Future Imperfect**

Technology and Freedom in an Uncertain World

David D. Friedman

Santa Clara University, California

'What a delightful and absorbing book! Friedman looks to the future with a science fiction writer's sense of the possible combined with a social scientists understanding of what it all might mean.'

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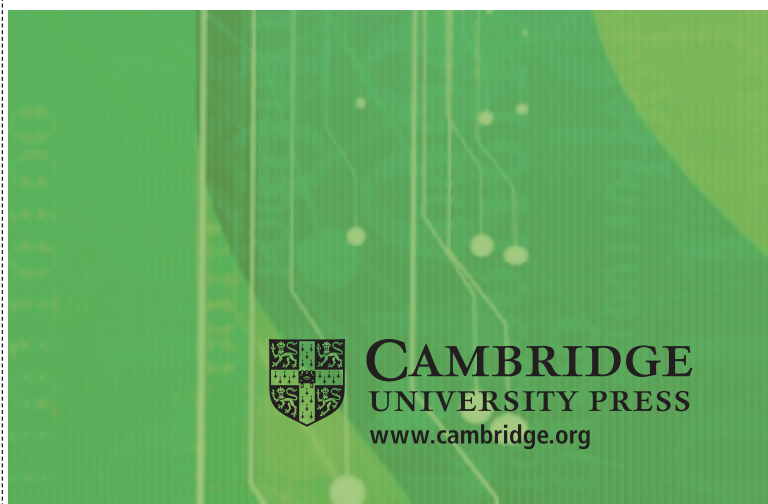
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