

COMPUTER SCIENCE 2004

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PROGRAMMING AND SOFTWARE DEVELOPMENT

Object-Oriented Programming with Visual Basic .NET

Michael McMillan, *Pulaski
Technical College, Arkansas*

Michael McMillan provides a complete presentation of the object-oriented features of the Visual Basic .NET language for advanced Visual Basic programmers. Beginning with an introduction to abstract data types and their initial implementation using structures, he explains standard OOP topics including class design, inheritance, access modifiers and scoping issues, abstract classes, design and implementation of interfaces and design patterns, and refactoring in VB.NET. More advanced OOP topics are included as well, such as reflection, object persistence, and serialization. To tie everything together, McMillan demonstrates sound OOP design and implementation principles through practical examples of standard Windows applications, database applications using ADO.NET, Web-based applications using ASP.NET, and Windows service applications.

2004 228 x 152 mm 320pp
0 521 53983 8 Paperback £ 24.99



TEXTBOOK

UML by Example

Ghinwa Jalloul, *American
University of Beirut*

This step-by-step introduction is suitable for teaching and for self study by practising software engineers seeking to add rigour to their techniques. Seven complete case studies are included along with several smaller examples derived from small software projects developed for and delivered to real users. These examples make use of a bridge process, which presents a systematic approach for developing analysis models and unfolding these incrementally and iteratively through to design models and implementation. The process could be viewed as one example of unified software development and has the potential of being scalable to large software problems. The case studies provide a medium for experimental use and act as templates that can be tailored by readers to fit their specific needs and circumstances.

Contents

1. Modeling artifacts and relations; 2. Bridge: A systematic process model; 3. Reservations online; 4. Web page maker; 5. Simulating a robot arm; 6. Math tutor; 7. Distribution view.

2004 228 x 152 mm 276pp 200 line diagrams 25 exercises
0 521 81051 5 Hardback £ 50.00
0 521 00881 6 Paperback £ 24.99



Data Structures and Algorithms Using Visual Basic.NET

Michael McMillan, *Pulaski Technical College, Arkansas*

This is the first Visual Basic.NET book to provide a comprehensive discussion of the major data structures and algorithms. Here, instead of having to translate material on C++ or Java, the professional or student VB.NET programmer will find a tutorial on how to use data structures and algorithms and a reference for implementation using VB.NET for data structures and algorithms from the .NET Framework Class Library as well as those which must be developed by the programmer. In an object-oriented fashion, the author presents arrays and arraylists, linked lists, hash tables, dictionaries, trees, graphs, sorting and searching as well as more advanced algorithms, such as probabilistic algorithms and dynamic programming. His approach is very practical, for example using timing tests rather than Big O analysis to compare the performance of data structures and algorithms. They will prove of great value for both beginning and advanced programming courses that use the VB.NET language and, will be an essential reference for the professional developer.

2004 235 x 177 mm 400 pages 75 line diagrams
0 521 54765 2 Paperback £ 30.00

TEXTBOOK

The Object Primer Agile Model-Driven Development with UML 2.0

Third edition

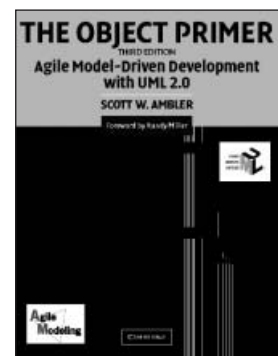
Scott W. Ambler, *Ronin
International*

Scott Ambler, award-winning author of *Building Object Applications that Work*, *Process Patterns*, and *More Process Patterns*, has revised his acclaimed first book, *The Object Primer*. Long prized in its original edition by both students and professionals as the best introduction to object-oriented technology, this book is now completely up-to-date, with all modeling notation rewritten in the just-released UML 2.0. All chapters have been revised to take advantage of Agile Modeling (AM), which is presented in the new chapter 2 along with other important new modeling techniques. Review questions at the end of each chapter allow readers to test their newly acquired knowledge. In addition, the author takes time to reflect on the lessons learned over the past few years by discussing the proven benefits and drawbacks of the technology. The perfect book for any software development professional or student seeking an introduction to the concepts and terminology of object technology.

Contents

1. Introduction; 2. Full lifecycle object-oriented testing (FLOOT); 3. Agile modeling driven development (AMDD); 4. Agile requirements; 5. Object-oriented concepts; 6. Agile object analysis; 7. Agile object architecture; 8. Agile object design; 9. Agile object programming techniques; 10. Agile database development techniques; 11. Where to go from here.

2004 234 x 177 mm 572pp
0 521 54018 6 Paperback £ 30.00



PROGRAMMING AND SOFTWARE DEVELOPMENT

The Elements of C++ Style

Trevor Misfeldt, *Centerspace Software*

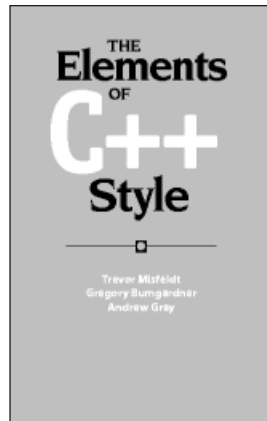
Gregory Bumgardner, *IntelliChem Inc*
Andrew Gray, *IntelliChem Inc*

The Elements of C++ Style is for all C++ practitioners, especially for those working in teams where consistency is critical. The authors offer a collection of standards and guidelines for creating solid C++ code that will be easy to understand, enhance and maintain. Provides conventions of formatting, naming, documentation, programming and packaging for the latest ANSI standard of C++. Also includes a helpful summary, a glossary of terms and an index.

Contents

1. General principles; 2. Formatting conventions; 3. Naming conventions;
4. Documentation conventions; 5. Programming Principles; 6. Programming conventions;
7. Packaging conventions; Summary; Glossary; Bibliography; Index

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ALSO AVAILABLE

The Elements of UML™ Style

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The Elements of Java™ Style

'The Elements of Java Style is perfect in what it tries to achieve. Each rule is sensible, hardly any are debatable, and there is no excuse for ignoring any of them.'
JavaZone

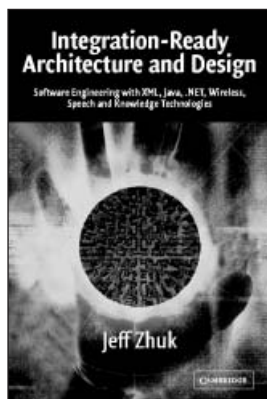
2000 115 x 177 mm 142pp
0 521 77768 2 Paperback £ 9.99

Integration-Ready Architecture and Design Software Engineering with XML, Java, .NET, Wireless, Speech, and Knowledge Technologies

Jeff Zhuk,
Internet Technology School, Inc.

The book offers examples of technologies providing access to corporate data and services not only from corporate workstations but also from multiple types of wired and wireless devices and Personal Digital Assistants. The author shares experiences of transforming business for e-business and extending services to the wireless world. Internet and wireless service developers will find unique recipes for creating 'integration ready' J2EE based components. Architects, designers, coders, and even management will find innovative ideas and detailed examples of building multi-dimensional enterprise applications. A 'unified service' approach is demonstrated while creating a core of business frameworks, and then building presentation factories of VoiceXML, WAP, and Web technologies providing access to corporate data and services for wired and wireless clients, devices, and PDAs.

2004 234 x 177 mm 640pp 50 line diagrams
0 521 52583 7 Paperback £ 45.00



Memory as a Programming Concept in C and C++

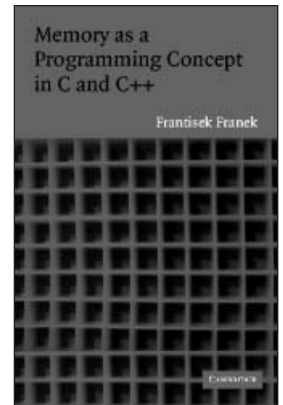
Frantisek Franek, *McMaster University, Ontario*

The overwhelming majority of bugs and crashes in computer programming stem from problems of memory access, allocation, or deallocation. Such memory related errors are also notoriously difficult to debug. But the role that memory plays in C and C++ programming is a subject often overlooked in courses and in books because it requires specialised knowledge of operating systems, compilers, computer architecture in addition to a familiarity with the languages themselves. Most professional programmers learn entirely through experience of the trouble it causes. This book provides students and professional programmers with a concise yet comprehensive view of the role memory plays in all aspects of programming and program behaviour. Assuming only a basic familiarity with C or C++, the author describes the techniques, methods, and tools available to deal with the problems related to memory and its effective use.

Contents

1. Introduction; 2. From source file to executable file; 3. Variables and objects, pointers and addresses; 4. Dynamic allocation and deallocation of memory; 5. Functions and function calls;
6. One-dimensional arrays and strings; 7. Multi-dimensional arrays; 8. Classes and objects; 9. Linked data structures; 10. Memory leaks and their debugging; 11. Programs in execution - processes and threads.

2004 228 x 152 mm 272pp
0 521 81720 X Hardback £ 60.00
0 521 52043 6 Paperback £ 22.99



The Standard ML Basis Library

Emden R. Gansner, *AT&T Laboratories, New Jersey*
and John H. Reppy, *University of Chicago*

Provides a description of the Standard ML (SML) Basis Library, the standard library for the SML language. For programmers using SML, it provides a complete description of the modules, types and functions composing the library, which is supported by all conforming implementations of the language. The book serves as a programmer's reference, providing manual pages with concise descriptions. In addition, it presents the principles and rationales used in designing the library, and relates these to idioms and examples for using the library. A particular emphasis of the library is to encourage the use of SML in serious system programming. Major features of the library include I/O, a large collection of primitive types, support for internationalization, and a portable operating system interface. This manual will be an indispensable reference for students, professional programmers, and language designers.

2004 253 x 177 mm 456pp 37 tables
0 521 79142 1 Hardback £ 50.00
0 521 79478 1 Paperback £ 19.99

COBOL Programmers Swing with Java

E. Reed Doke, *University of Arkansas*
Bill C. Hardgrave, *University of Arkansas*
Richard A. Johnson, *Southwest Missouri State University*

In the fast moving world of information technology, Java is now the number-one programming language for traditional and web-based application development. This book provides COBOL programmers a clear, easy transition to Java programming by drawing on the numerous similarities between COBOL and Java. The authors introduce the COBOL programmer to the history of Java and object-oriented programming and then dive into the details of the Java syntax, always contrasting them with their parallels in COBOL. A running case study gives the reader an overall view of application development with Java. This new edition features the development of graphical user interfaces (GUI's) using the latest in Java Swing components.

2005 228 x 152 mm 450 pages 78 line diagrams 60 tables
0 521 54684 2 Paperback c. £ 30.00

Mobile Computing Principles**Designing and Developing Mobile Applications with UML and XML**Reza B'far, *Cienecs Inc*

Written to address technical concerns that mobile developers face regardless of the platform (J2ME, WAP, Windows CE, etc.), this book explores the differences between mobile and stationary applications and the architectural and software development concepts needed to build a mobile application. Using UML as a tool, Reza B'far guides the developer through the development process, showing how to document the design and implementation of the application. He focuses on general concepts, while using platforms as examples or as possible tools. After introducing UML, XML, and derivative tools necessary for developing mobile software applications, B'far shows how to build user interfaces for mobile applications. He covers location sensitivity, wireless connectivity, mobile agents, data synchronization, security, and push-based technologies, and finally homes in on the practical issues of mobile application development including the development cycle for mobile applications, testing mobile applications, architectural concerns, and a case study.

2004 253 x 177 mm 840pp 150 line diagrams
0 521 81733 1 Hardback c. £ 50.00

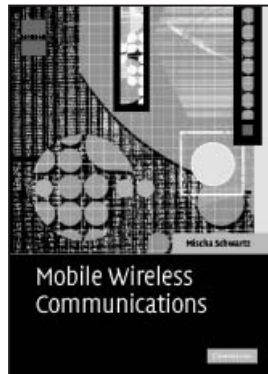
TEXTBOOK**Mobile Wireless Communications**Mischa Schwartz, *Columbia University, New York*

Wireless communication has become a ubiquitous part of modern life, from mobile telephone systems to local and even personal-area networks. This book provides a tutorial introduction to digital mobile wireless networks, illustrating theoretical underpinnings with a wide range of real-world examples. The book begins with a review of propagation phenomena, and goes on to examine channel allocation, modulation techniques, multiple access schemes, and coding techniques. GSM and IS-95 systems are reviewed and 2.5G and 3G packet-switched systems are discussed in detail. Performance analysis and accessing and scheduling techniques are covered, and the book closes with a chapter on wireless LANs and personal-area networks. Many worked examples and homework exercises are provided and a solutions manual is available for instructors. The book is an ideal text for electrical engineering and computer science students taking courses in wireless communications. It will also be an invaluable reference for practising engineers.

Contents

1. Introduction and overview; 2. Characteristics of the mobile radio environment - propagation phenomena; 3. Cellular concept and channel allocation; 4. Dynamic channel allocation and power control; 5. Modulation techniques; 6. Multiple access techniques: FDMA, TDMA, CDMA - system capacity comparisons; 7. Coding for error detection and correction; 8. Second-generation, digital, wireless systems; 9. Performance analysis: admission control and handoffs; 10. 2.5G/3G mobile wireless systems: packet-switched data; 11. Access and scheduling techniques in cellular systems; 12. Wireless LANs and personal-area networks.

2005 247 x 174 mm 580pp 26 tables 147 exercises 136 figures
0 521 84347 2 Hardback c. £ 40.00

**TEXTBOOK****TCP/IP Essentials****A Lab-Based Approach**

Shivendra Panwar, *Polytechnic University, New York*
Shiwen Mao, *Polytechnic University, New York*
Jeong-dong Ryoo, *Lucent Technologies, Holmdel, New Jersey*
and Yihan Li, *Polytechnic University, New York*

The TCP/IP family of protocols have become the de facto standard in the world of networking, are found in virtually all computer communication systems, and form the basis of today's Internet. *TCP/IP Essentials* is a hands-on guide to TCP/IP technologies, and shows how the protocols are implemented in practice. The book contains a series of extensively tested laboratory experiments that span the various elements of protocol definition and behaviour. Topics covered include bridges, routers, LANs, static and dynamic routing, multicast and realtime service, and network management and security. The experiments are described in a Linux environment, with parallel notes on Solaris implementation. The book includes many homework exercises, and supplementary material for instructors is available. The book is aimed at students of electrical and computer engineering and students of computer science taking courses in networking. It is also an ideal guide for engineers studying for networking certifications.

Contents

Preface; Note to instructors; Acknowledgements; General conventions; 1. TCP/IP overview; 2. Linux and TCP/IP networking; 3. A single segment network; 4. Bridges, LANs and the Cisco IOS; 5. Static and dynamics routing; 6. UDP and its applications; 7. TCP study; 8. Multicast and realtime service; 9. The web, DHCP, NTP and NAT; 10. Network management and security; Bibliography; A. Instructor's guide; B. Initial configurations of the routers; C. Source code; D. List of Key RFCs; E. Acronyms.

2004 247 x 174 mm 200pp 30 tables 103 exercises 86 figures
0 521 84144 5 Hardback c. £ 48.00
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Mobile Web Services

Ariel Pashtan

Mobile web services are designed to provide access to web content anywhere, any time. This book describes the key network elements, software components, and software protocols that are needed to realize these services, including the concept of user context and its potential to create personalized services. Major functions needed to implement the wireless mobile Web are explained in detail and cover location representation and tracking security schemes, content personalization approaches, privacy mechanisms, and XSLT processing for browser content generation. WAP and i-mode mobile network architectures are examined. The author reviews the latest model phones and describes the browser mark-up languages WML, cHTML, and XHTML MP. A mobile network architecture is presented, with in-depth explanation of each function, software infrastructure, and communication protocols and an elaborated case-study with code samples in XML and Java is included. For wireless web architects, network managers, and graduate students in electrical engineering and computer science.

2005 247 x 174 mm 300pp 5 half-tones 91 figures
0 521 83049 4 Hardback c. £ 35.00



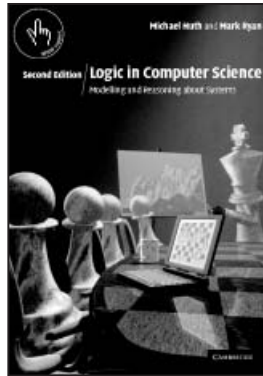
TEXTBOOK

New Edition
Logic in Computer Science
Modelling and Reasoning about Systems

Second edition

Michael Huth, *Imperial College of Science, Technology and Medicine, London*
 and **Mark Ryan**, *University of Birmingham*

Recent years have seen the development of powerful tools for verifying hardware and software systems, as companies worldwide realise the need for improved means of validating their products. There is increasing demand for training in basic methods in formal reasoning so that students can gain proficiency in logic-based verification methods. The second edition of this successful textbook addresses both those requirements, by continuing to provide a clear introduction to formal reasoning which is relevant to the needs of modern computer science and rigorous enough for practical application. Improvements to the first edition have been made throughout, with extra and expanded sections on SAT solvers, existential/universal second-order logic, micro-models, programming by contract and total correctness. The coverage of model-checking has been substantially updated. Further exercises have been added. Internet support for the book includes worked solutions for all exercises for teachers, and model solutions to some exercises for students.



> First edition was a worldwide success on undergraduate courses, on industry courses and for self-study

> New edition completely up-to-date and related to new software tools

> Model solutions for instructors available from www.cambridge.org

Contents

Foreword; 1. Propositional logic; 2. Predicate logic; 3. Verification by model checking; 4. Program verification; 5. Modal logics and agents; 6. Binary decision diagrams; Bibliography; Index.

2004 247 x 174 mm 450pp 10 tables
400 exercises 120 figures
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From reviews of the first edition:

'This is an excellent textbook on logic and formal methods which is very suitable for computer science students... discusses the whole range from logic to applications: propositional and predicate logic, temporal logic and more generally model logic, program verification, model checking, and symbolic model checking using binary decision diagrams ... As any good textbook, this book is not only to be recommended for students but for anyone who is interested in applications of logic in computer science.'

Theory and Practice of Logic Programming

'... an unusual, inspiring and remarkable book.'
Marat M. Arslanov, Zentralblatt MATH

For more information, please visit:
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Foundations of Cryptography

Volume 2: Basic Applications

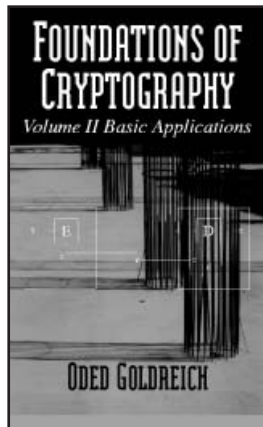
Oded Goldreich, *Weizmann Institute of Science, Israel*

The design of cryptographic systems must be based on firm foundations. *Foundations of Cryptography* presents a rigorous and systematic treatment of foundational issues, defining cryptographic tasks and solving new cryptographic problems using existing tools. The emphasis is on the clarification of fundamental concepts and on demonstrating the feasibility of solving several central cryptographic problems, as opposed to describing ad-hoc approaches. This second volume builds on the previous volume which provided a treatment of one-way functions, pseudorandomness and zero-knowledge proofs. It is suitable for use in a graduate course on cryptography and as a reference book for experts. The author assumes basic familiarity with the design and analysis of algorithms; some knowledge of complexity theory and probability is also useful.

Contents

Volume II: Basic Applications: 5. Encryption schemes; 6. Signatures and message authentication; 7. General cryptographic protocols; C. Correction and additions to Volume I.

2004 253 x 177 mm 448pp 13 line diagrams 90 exercises
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Elliptic Curves in Cryptography II

Ian F. Blake, *University of Toronto*
Gadiel Seroussi, *Hewlett-Packard*
Nigel P. Smart, *University of Bristol*

Since the appearance of the authors' first volume on elliptic curve cryptography in 1999 there has been tremendous progress in the field. In some topics, particularly point counting, the progress has been spectacular. This second volume addresses these advances and brings the reader up to date. Prominent contributors to the research literature in these areas have provided articles that reflect the current state of these important topics. They are divided into the areas of protocols, implementation techniques, mathematical foundations and pairing based cryptography.

London Mathematical Society Lecture Note Series, 317

2005 228 x 152 mm 296 pages
7 line diagrams 11 tables
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ALSO AVAILABLE

Volume 1: Basic Tools

Preface; 1. Introduction; 2. Computational difficulty; 3. Pseudorandom generators; 4. Zero-knowledge proof systems.

2001 228 x 152 mm 392pp
0 521 79172 3 Hardback £ 45.00

TEXTBOOK

Probability and Computing**An Introduction to Randomized Algorithms and Probabilistic Analysis****Michael Mitzenmacher, Harvard University**
Eli Upfal, Brown University, Rhode Island

Randomization and probabilistic techniques play an important role in modern computer science, with applications ranging from combinatorial optimization and machine learning to communication networks and secure protocols. Assuming only an elementary background in discrete mathematics, this textbook is designed to accompany a one- or two-semester course for advanced undergraduates or beginning graduate students in computer science and applied mathematics. It gives an excellent introduction to the probabilistic techniques and paradigms used in the development of probabilistic algorithms and analyses.

Preface; 1. Events and Probability; 2. Discrete Random Variables and Expectation; 3. Moments and Deviations; 4. Chernoff bounds; 5. Balls, Bins and Random Graphs; 6. The Probabilistic Method; 7. Markov Chains and Random Walks; 8. Continuous Distributions and the Poisson Process; 9. Entropy, Randomness, and Information; 10. The Monte Carlo Method; 11. Coupling of Markov Chains; 12. Martingales; 13. Pairwise Independence and Universal Hash Functions; 14. Balanced Allocations; References

2005 253 x 177 mm 320 pages 50 line diagrams 80 exercises
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Rippling: Meta-level Guidance for Mathematical Reasoning**Alan Bundy, University of Edinburgh**
David Basin, ETH Zentrum**Dieter Hutter, German Research Centre for Artificial Intelligence**
and Andrew Ireland, Heriot-Watt University, Edinburgh

Rippling is a radically new technique for the automation of mathematical reasoning. It is widely applicable whenever a goal is to be proved from one or more syntactically similar givens. It was originally developed for inductive proofs, where the goal was the induction conclusion and the givens were the induction hypotheses. It has proved to be applicable to a much wider class of tasks, from summing series via analysis to general equational reasoning. The application to induction has especially important practical implications in the building of dependable IT systems, and provides solutions to issues such as the problem of combinatorial explosion. Rippling is the first of many new search control techniques based on formula annotation; some additional annotated reasoning techniques are also described here. This systematic and comprehensive introduction will be welcomed by researchers and graduate students alike.

Cambridge Tracts in Theoretical Computer Science, 56

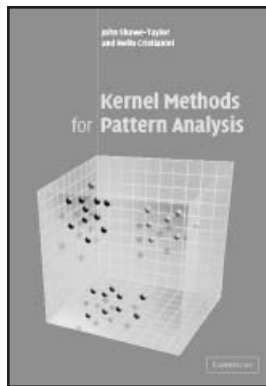
2004 228 x 152 mm 220pp 1 line diagram 10 colour figures
0 521 83449 X Hardback c. £ 50.00

INFORMATION PROCESSING AND GRAPHICS

GRADUATE TEXTBOOK

Kernel Methods for Pattern Analysis**John Shawe-Taylor, Royal Holloway, University of London**
and Nello Cristianini University of California, Davis

Kernel methods provide a powerful and unified framework for pattern discovery, motivating algorithms that can act on general types of data (e.g. strings, vectors or text) and look for general types of relations (e.g. rankings, classifications, regressions, clusters). The application areas range from neural networks and pattern recognition to machine learning and data mining. This book, developed from lectures and tutorials, fulfils two major roles: firstly it provides practitioners with a large toolkit of algorithms, kernels and solutions ready to use for standard pattern discovery problems in fields such as bioinformatics, text analysis, image analysis. Secondly it provides an easy introduction for students and researchers to the growing field of kernel-based pattern analysis, demonstrating with examples how to handcraft an algorithm or a kernel for a new specific application, and covering all the necessary conceptual and mathematical tools to do so.



2004 247 x 174 mm 476pp 6 tables 33 figures
0 521 81397 2 Hardback £ 40.00

New Edition

Multiple View Geometry in Computer Vision

Second edition

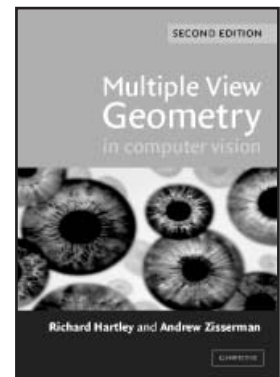
Richard Hartley, Australian National University, Canberra
and Andrew Zisserman, University of Oxford

A basic problem in computer vision is to understand the structure of a real world scene given several images of it. Techniques for solving this problem are taken from projective geometry and photogrammetry. Here, the authors cover the geometric principles and their algebraic representation in terms of camera projection matrices, the fundamental matrix and the trifocal tensor. The theory and methods of computation of these entities are discussed with real examples, as is their use in the reconstruction of scenes from multiple images. The new edition features an extended introduction covering the key ideas in the book (which itself has been updated with additional examples and appendices) and significant new results which have appeared since the first edition. Comprehensive background material is provided, so readers familiar with linear algebra and basic numerical methods can understand the projective geometry and estimation algorithms presented, and implement the algorithms directly from the book.

'I am very positive about this book. The authors have succeeded very well in describing the main techniques in mainstream multiple view geometry, both classical and modern, in a clear and consistent way.'

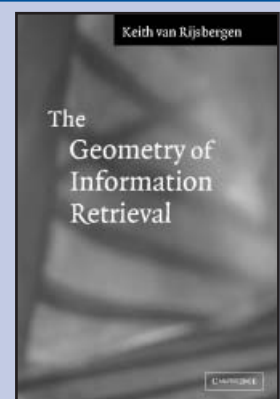
Computing Reviews

2004 247 x 174 mm 672pp 35 tables 124 exercises 210 figures
36 colour figures
0 521 54051 8 Paperback £ 45.00

**The Geometry of Information Retrieval****C. J. van Rijsbergen, University of Glasgow**

Information retrieval, IR, the science of extracting information from any potential source, can be viewed in a number of ways: logical, probabilistic and vector space models are some of the most important. In this book, the author, one of the leading researchers in the area, shows how these views can be reforged in the same framework used to formulate the general principles of quantum mechanics. All the usual quantum-mechanical notions have their IR-theoretic analogues, and the standard results can be applied to address problems in IR, such as pseudo-relevance feedback, relevance feedback and ostensive retrieval. The relation with quantum computing is also examined. To keep the book self-contained appendices with background material on physics and mathematics are included. Each chapter ends with bibliographic remarks that point to further reading. This is an important, ground-breaking book, with much new material, for all those working in IR, AI and natural language processing.

2004 228 x 152 mm 156pp 20 figures
0 521 83805 3 Hardback £ 30.00



GRAPHICS AND INFORMATION PROCESSING

GRADUATE TEXTBOOK

Theory of Remote Image Formation

Richard E. Blahut, *University of Illinois, Urbana-Champaign*

In many applications, images, such as ultrasonic or X-ray signals, are recorded and then analyzed with digital or optical processors in order to extract information. Such processing requires the development of algorithms of great precision and sophistication. This book presents a unified treatment of the mathematical methods that underpin the various algorithms used in remote image formation. The author begins with a review of transform and filter theory. He then discusses two- and three-dimensional Fourier transform theory, the ambiguity function, image construction and reconstruction, tomography, baseband surveillance systems, and passive systems (where the signal source might be an earthquake or a galaxy). Information-theoretic methods in image formation are also covered, as are phase errors and phase noise. Throughout the book, practical applications illustrate theoretical concepts, and there are many homework problems. The book is aimed at graduate students of electrical engineering and computer science, and practitioners in industry.

2004 247 x 174 mm 600pp 5 tables 227 exercises 181 figures
0 521 55373 3 Hardback c. £ 60.00

Bootstrap Techniques for Signal Processing

Abdelhak Zoubir, *Technische Universität, Darmstadt, Germany*

D. Robert Iskander, *Queensland University of Technology*

The statistical bootstrap is a powerful tool in signal processing. This book covers the foundations of the bootstrap, its properties, its strengths, and its limitations. The authors focus on bootstrap signal detection in Gaussian and non-Gaussian interference as well as bootstrap model selection. The theory developed in the book is supported by a number of useful practical examples written in MATLAB. The book is aimed at graduate students and engineers, and includes applications to real-world problems in areas such as radar and sonar, biomedical engineering, and automotive engineering.

2004 247 x 174 mm 228 pages 41 line diagrams 34 tables
0 521 83127 X Hardback £ 45.00

ALSO OF INTEREST

TEXTBOOK

Talking with Computers

Explorations in the Science and Technology of Computing

Thomas Dean, *Brown University, Rhode Island*

In this lively series of essays, Tom Dean explores interesting fundamental topics in computer science with the aim of showing how computers and computer programs work and how the various subfields of computer science are connected. The essays touch on a wide range of topics, from digital logic and machine language to artificial intelligence and searching the World Wide Web, considering such questions as

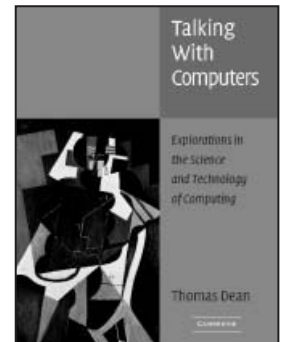
- How can a computer learn to recognize junk email? - What happens when you click on a link in a browser?
- How can you program a robot to do two things at once? - Are there limits on what computers can do?

The accompanying web site <http://www.cs.brown.edu/~tld/talk/> provides easy access to code fragments from the book, tips on finding and installing software, links to online resources, exercises and sample lectures.

Contents

1. Talking with computers; 2. The shell game; 3. Keeping track of your stuff; 4. Don't sweat the syntax; 5. Computational muddles; 6. Getting oriented;
7. Thanks for sharing; 8. You've got (junk) mail; 9. Modern architecture; 10. Do robots sleep; 11. Under the hood; 12. Analyze this; 13. Forest for the trees;
14. Searching the wild web; 15. Darwin's dangerous algorithm; 16. Ain't nobody here but us machines.

2004 246 x 189 mm 314pp 30 line diagrams 1 half-tone 4 tables
0 521 83425 2 Hardback £ 55.00
0 521 54204 9 Paperback £ 19.99



Alfred Tarski

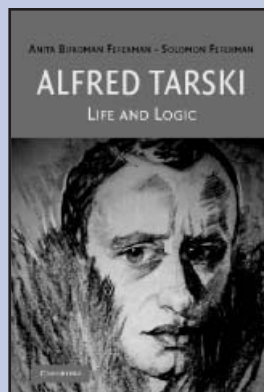
Life and Logic

Anita Burdman Feferman

and Solomon Feferman, *Stanford University, California*

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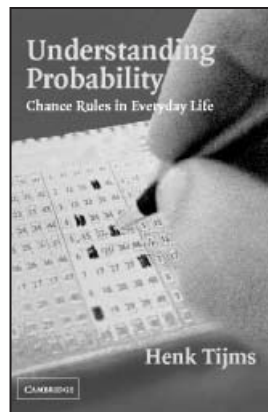
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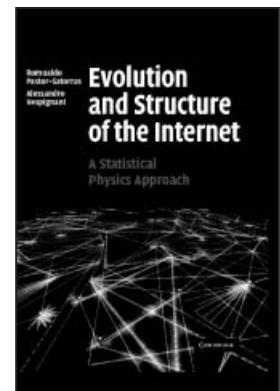


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