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The Algorithm Design Manual - Steven S Skiena 2009-04-05
This newly expanded and updated second edition of the best-selling classic continues to take the "mystery" out of designing algorithms, and

analyzing their efficacy and efficiency. Expanding on the first edition, the book now serves as the primary textbook of choice for algorithm design courses while maintaining its status as the premier practical reference guide

to algorithms for programmers, researchers, and students. The reader-friendly Algorithm Design Manual provides straightforward access to combinatorial algorithms technology, stressing design over analysis. The first part, Techniques, provides accessible instruction on methods for designing and analyzing computer algorithms. The second part, Resources, is intended for browsing and reference, and comprises the catalog of algorithmic resources, implementations and an extensive bibliography. NEW to the second edition: • Doubles the tutorial material and exercises over the first edition • Provides full online support for lecturers, and a completely updated and improved website component with lecture slides, audio and video • Contains a unique catalog identifying the 75 algorithmic problems that arise most often in practice, leading the reader down the right path to solve them • Includes several NEW "war stories" relating experiences from real-world applications • Provides up-to-

date links leading to the very best algorithm implementations available in C, C++, and Java
The Big Book of Conflict Resolution Games: Quick, Effective Activities to Improve Communication, Trust and Collaboration - Mary Scannell 2010-05-28
Make workplace conflict resolution a game that EVERYBODY wins! Recent studies show that typical managers devote more than a quarter of their time to resolving coworker disputes. The Big Book of Conflict-Resolution Games offers a wealth of activities and exercises for groups of any size that let you manage your business (instead of managing personalities). Part of the acclaimed, bestselling Big Books series, this guide offers step-by-step directions and customizable tools that empower you to heal rifts arising from ineffective communication, cultural/personality clashes, and other specific problem areas—before they affect your organization's bottom line. Let The Big Book of Conflict-Resolution Games help you to: Build

trust Foster morale Improve processes Overcome diversity issues And more Dozens of physical and verbal activities help create a safe environment for teams to explore several common forms of conflict—and their resolution. Inexpensive, easy-to-implement, and proved effective at Fortune 500 corporations and mom-and-pop businesses alike, the exercises in The Big Book of Conflict-Resolution Games delivers everything you need to make your workplace more efficient, effective, and engaged.
Model Rules of Professional Conduct - American Bar Association. House of Delegates 2007 The Model Rules of Professional Conduct provides an up-to-date resource for information on legal ethics. Federal, state and local courts in all jurisdictions look to the Rules for guidance in solving lawyer malpractice cases, disciplinary actions, disqualification issues, sanctions questions and much more. In this volume, black-letter Rules of Professional Conduct are followed by numbered Comments that explain each Rule's purpose and provide suggestions for its practical application. The Rules will help you identify proper conduct in a variety of given situations, review those instances where discretionary action is possible, and define the nature of the relationship between you and your clients, colleagues and the courts.

Introduction to Embedded Systems, Second Edition - Edward Ashford Lee 2016-12-30 An introduction to the engineering principles of embedded systems, with a focus on modeling, design, and analysis of cyber-physical systems. The most visible use of computers and software is processing information for human consumption. The vast majority of computers in use, however, are much less visible. They run the engine, brakes, seatbelts, airbag, and audio system in your car. They digitally encode your voice and construct a radio signal to send it from your cell phone to a base station. They command robots on a factory floor, power generation in a power plant, processes in a chemical plant, and

traffic lights in a city. These less visible computers are called embedded systems, and the software they run is called embedded software. The principal challenges in designing and analyzing embedded systems stem from their interaction with physical processes. This book takes a cyber-physical approach to embedded systems, introducing the engineering concepts underlying embedded systems as a technology and as a subject of study. The focus is on modeling, design, and analysis of cyber-physical systems, which integrate computation, networking, and physical processes. The second edition offers two new chapters, several new exercises, and other improvements. The book can be used as a textbook at the advanced undergraduate or introductory graduate level and as a professional reference for practicing engineers and computer scientists. Readers should have some familiarity with machine structures, computer programming, basic discrete mathematics and algorithms, and signals and systems.

Linear Algebra - Jim Hefferon 2015
"This text covers a standard first course : Gauss's method, vector spaces, linear maps and matrices, determinants, and eigenvalues and eigenvectors. In addition, each chapter ends with some topics such as brief applications. What sets it apart is careful motivation, many examples, and extensive exercise sets. Together these help each student master the material of this course, and also help an instructor develop that student's level of mathematical maturity. This book has been available online for many years and is widely used, both in classrooms and for self-study. It is supported by worked answers for all exercises, beamer slides for classroom use, and a lab manual of computer work"--Page 4 of cover.

Principles of Cyber-Physical Systems - Rajeev Alur 2015-04-24
A foundational text that offers a rigorous introduction to the principles of design,

specification, modeling, and analysis of cyber-physical systems. A cyber-physical system consists of a collection of computing devices communicating with one another and interacting with the physical world via sensors and actuators in a feedback loop. Increasingly, such systems are everywhere, from smart buildings to medical devices to automobiles. This textbook offers a rigorous and comprehensive introduction to the principles of design, specification, modeling, and analysis of cyber-physical systems. The book draws on a diverse set of subdisciplines, including model-based design, concurrency theory, distributed algorithms, formal methods of specification and verification, control theory, real-time systems, and hybrid systems, explaining the core ideas from each that are relevant to system design and analysis. The book explains how formal models provide mathematical abstractions to manage the complexity of a system design. It covers both synchronous and asynchronous models for concurrent computation, continuous-time models for dynamical systems, and hybrid systems for integrating discrete and continuous evolution. The role of correctness requirements in the design of reliable systems is illustrated with a range of specification formalisms and the associated techniques for formal verification. The topics include safety and liveness requirements, temporal logic, model checking, deductive verification, stability analysis of linear systems, and real-time scheduling algorithms. Principles of modeling, specification, and analysis are illustrated by constructing solutions to representative design problems from distributed algorithms, network protocols, control design, and robotics. This book provides the rapidly expanding field of cyber-physical systems with a long-needed foundational text by an established authority. It is suitable for classroom use or as a reference for professionals.

Bayesian Data Analysis, Third Edition -

Andrew Gelman 2013-11-01
Now in its third edition, this classic book is widely considered the leading text on Bayesian methods, lauded for its accessible, practical approach to analyzing data and solving research problems. Bayesian Data Analysis, Third Edition continues to take an applied approach to analysis using up-to-date Bayesian methods. The authors—all leaders in the statistics community—introduce basic concepts from a data-analytic perspective before presenting advanced methods. Throughout the text, numerous worked examples drawn from real applications and research emphasize the use of Bayesian inference in practice. New to the Third Edition Four new chapters on nonparametric modeling Coverage of weakly informative priors and boundary-avoiding priors Updated discussion of cross-validation and predictive information criteria Improved convergence monitoring and effective sample size calculations for iterative simulation Presentations of Hamiltonian Monte Carlo, variational Bayes, and expectation propagation New and revised software code The book can be used in three different ways. For undergraduate students, it introduces Bayesian inference starting from first principles. For graduate students, the text presents effective current approaches to Bayesian modeling and computation in statistics and related fields. For researchers, it provides an assortment of Bayesian methods in applied statistics. Additional materials, including data sets used in the examples, solutions to selected exercises, and software instructions, are available on the book's web page.

Catalog of Copyright Entries. Third Series - Library of Congress. Copyright Office 1976

Mathematical Statistics - Jun Shao 2008-02-03
This graduate textbook covers topics in statistical theory essential for graduate students preparing for work on a Ph.D. degree in

statistics. This new edition has been revised and updated and in this fourth printing, errors have been ironed out. The first chapter provides a quick overview of concepts and results in measure-theoretic probability theory that are useful in statistics. The second chapter introduces some fundamental concepts in statistical decision theory and inference. Subsequent chapters contain detailed studies on some important topics: unbiased estimation, parametric estimation, nonparametric estimation, hypothesis testing, and confidence sets. A large number of exercises in each chapter provide not only practice problems for students, but also many additional results.

Principles of Program Analysis - Flemming Nielson 2015-02-27
Program analysis utilizes static techniques for computing reliable information about the dynamic behavior of programs. Applications include compilers (for code improvement), software validation (for detecting errors) and transformations between data representation (for solving problems such as Y2K). This book is unique in providing an overview of the four major approaches to program analysis: data flow analysis, constraint-based analysis, abstract interpretation, and type and effect systems. The presentation illustrates the extensive similarities between the approaches, helping readers to choose the best one to utilize.

Mathematics for Machine Learning - Marc Peter Deisenroth 2020-04-23
The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry, matrix decompositions, vector calculus, optimization, probability and statistics. These topics are traditionally taught in disparate courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the

mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every chapter includes worked examples and exercises to test understanding. Programming tutorials are offered on the book's web site.

BIM Handbook - Rafael Sacks 2018-07-03 Discover BIM: A better way to build better buildings Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working, national and major construction clients, BIM standards and guides A discussion on how various professional roles have expanded through the widespread use and the new avenues of BIM practices and services A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions Painting a colorful and thorough picture of the state of the art in building

information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require less time, labor, and capital resources.

Principles of Model Checking - Christel Baier 2008-04-25
A comprehensive introduction to the foundations of model checking, a fully automated technique for finding flaws in hardware and software; with extensive examples and both practical and theoretical exercises. Our growing dependence on increasingly complex computer and software systems necessitates the development of formalisms, techniques, and tools for assessing functional properties of these systems. One such technique that has emerged in the last twenty years is model checking, which systematically (and automatically) checks whether a model of a given system satisfies a desired property such as deadlock freedom, invariants, and request-response properties. This automated technique for verification and debugging has developed into a mature and widely used approach with many applications. Principles of Model Checking offers a comprehensive introduction to model checking that is not only a text suitable for classroom use but also a valuable reference for researchers and practitioners in the field. The book begins with the basic principles for modeling concurrent and communicating systems, introduces different classes of properties (including safety and liveness), presents the notion of fairness, and provides automata-based algorithms for these properties. It introduces the temporal logics LTL and CTL, compares them, and covers algorithms for verifying these logics, discussing real-time systems as well as systems subject to random phenomena. Separate chapters treat such efficiency-improving techniques as abstraction

and symbolic manipulation. The book includes an extensive set of examples (most of which run through several chapters) and a complete set of basic results accompanied by detailed proofs. Each chapter concludes with a summary, bibliographic notes, and an extensive list of exercises of both practical and theoretical nature.

Understanding Petri Nets - Wolfgang Reisig 2013-07-03
With their intuitive graphical approach and expressive analysis techniques, Petri nets are suitable for a wide range of applications and teaching scenarios, and they have gained wide acceptance as a modeling technique in areas such as software design and control engineering. The core theoretical principles have been studied for many decades and there is now a comprehensive research literature that complements the extensive implementation experience. In this book the author presents a clear, thorough introduction to the essentials of Petri nets. He explains the core modeling techniques and analysis methods and he illustrates their usefulness with examples and case studies. Part I describes how to use Petri nets for modeling; all concepts are explained with the help of examples, starting with a generic, powerful model which is also intuitive and realistic. Part II covers the essential analysis methods that are specific to Petri nets, introducing techniques used to formulate key properties of system nets and algorithms for proving their validity. Part III presents case studies, each introducing new concepts, properties and analysis techniques required for very different modeling tasks. The author offers different paths among the chapters and sections: the elementary strand for readers who wish to study only elementary nets; the modeling strand for those who wish to study the modeling but not the analysis of systems; and finally the elementary models of the modeling strand for those interested in technically simple, but

challenging examples and case studies. The author achieves an excellent balance between consistency, comprehensibility and correctness in a book of distinctive design. Among its characteristics, formal arguments are reduced to a minimum in the main text with many of the theoretical formalisms moved to an appendix, the explanations are supported throughout with fully integrated graphical illustrations, and each chapter ends with exercises and recommendations for further reading. The book is suitable for students of computer science and related subjects such as engineering, and for a broad range of researchers and practitioners.

Feedback Systems - Karl Johan Åström
2021-02-02
The essential introduction to the principles and applications of feedback systems—now fully revised and expanded This textbook covers the mathematics needed to model, analyze, and design feedback systems. Now more user-friendly than ever, this revised and expanded edition of Feedback Systems is a one-volume resource for students and researchers in mathematics and engineering. It has applications across a range of disciplines that utilize feedback in physical, biological, information, and economic systems. Karl Åström and Richard Murray use techniques from physics, computer science, and operations research to introduce control-oriented modeling. They begin with state space tools for analysis and design, including stability of solutions, Lyapunov functions, reachability, state feedback observability, and estimators. The matrix exponential plays a central role in the analysis of linear control systems, allowing a concise development of many of the key concepts for this class of models. Åström and Murray then develop and explain tools in the frequency domain, including transfer functions, Nyquist analysis, PID control, frequency domain design, and robustness. Features a new chapter on design principles and tools, illustrating the types

of problems that can be solved using feedback Includes a new chapter on fundamental limits and new material on the Routh-Hurwitz criterion and root locus plots Provides exercises at the end of every chapter Comes with an electronic solutions manual An ideal textbook for undergraduate and graduate students Indispensable for researchers seeking a self-contained resource on control theory

Operating Systems - William Stallings 2009 For a one-semester undergraduate course in operating systems for computer science, computer engineering, and electrical engineering majors. Winner of the 2009 Textbook Excellence Award from the Text and Academic Authors Association (TAA)! Operating Systems: Internals and Design Principles is a comprehensive and unified introduction to operating systems. By using several innovative tools, Stallings makes it possible to understand critical core concepts that can be fundamentally challenging. The new edition includes the implementation of web based animations to aid visual learners. At key points in the book, students are directed to view an animation and then are provided with assignments to alter the animation input and analyze the results. The concepts are then enhanced and supported by end-of-chapter case studies of UNIX, Linux and Windows Vista. These provide students with a solid understanding of the key mechanisms of modern operating systems and the types of design tradeoffs and decisions involved in OS design. Because they are embedded into the text as end of chapter material, students are able to apply them right at the point of discussion. This approach is equally useful as a basic reference and as an up-to-date survey of the state of the art.

Signals and Systems Using MATLAB - Luis Chaparro 2019-01-15 Signals and Systems Using MATLAB, Third Edition features a pedagogically rich and accessible approach to what can commonly be a

mathematically dry subject. Historical notes and common mistakes combined with applications in controls, communications and signal processing help students understand and appreciate the usefulness of the techniques described in the text. This new edition features more end-of-chapter problems, new content on two-dimensional signal processing, and discussions on the state-of-the-art in signal processing. Introduces both continuous and discrete systems early, then studies each (separately) in-depth Contains an extensive set of worked examples and homework assignments, with applications for controls, communications, and signal processing Begins with a review on all the background math necessary to study the subject Includes MATLAB(R) applications in every chapter

Model Checking, second edition - Edmund M. Clarke, Jr. 2018-12-04
An expanded and updated edition of a comprehensive presentation of the theory and practice of model checking, a technology that automates the analysis of complex systems. Model checking is a verification technology that provides an algorithmic means of determining whether an abstract model—representing, for example, a hardware or software design—satisfies a formal specification expressed as a temporal logic formula. If the specification is not satisfied, the method identifies a counterexample execution that shows the source of the problem. Today, many major hardware and software companies use model checking in practice, for verification of VLSI circuits, communication protocols, software device drivers, real-time embedded systems, and security algorithms. This book offers a comprehensive presentation of the theory and practice of model checking, covering the foundations of the key algorithms in depth. The field of model checking has grown dramatically since the publication of the first edition in 1999, and this second edition reflects

the advances in the field. Reorganized, expanded, and updated, the new edition retains the focus on the foundations of temporal logic model while offering new chapters that cover topics that did not exist in 1999: propositional satisfiability, SAT-based model checking, counterexample-guided abstraction refinement, and software model checking. The book serves as an introduction to the field suitable for classroom use and as an essential guide for researchers.

Linear Models in Statistics - Alvin C. Rencher 2008-01-18

The essential introduction to the theory and application of linear models—now in a valuable new edition Since most advanced statistical tools are generalizations of the linear model, it is neces-sary to first master the linear model in order to move forward to more advanced concepts. The linear model remains the main tool of the applied statistician and is central to the training of any statistician regardless of whether the focus is applied or theoretical. This completely revised and updated new edition successfully develops the basic theory of linear models for regression, analysis of variance, analysis of covariance, and linear mixed models. Recent advances in the methodology related to linear mixed models, generalized linear models, and the Bayesian linear model are also addressed. Linear Models in Statistics, Second Edition includes full coverage of advanced topics, such as mixed and generalized linear models, Bayesian linear models, two-way models with empty cells, geometry of least squares, vector-matrix calculus, simultaneous inference, and logistic and nonlinear regression. Algebraic, geometrical, frequentist, and Bayesian approaches to both the inference of linear models and the analysis of variance are also illustrated. Through the expansion of relevant material and the inclusion of the latest technological developments in the field, this book provides readers with the theoretical

foundation to correctly interpret computer software output as well as effectively use, customize, and understand linear models. This modern Second Edition features: New chapters on Bayesian linear models as well as random and mixed linear models Expanded discussion of two-way models with empty cells Additional sections on the geometry of least squares Updated coverage of simultaneous inference The book is complemented with easy-to-read proofs, real data sets, and an extensive bibliography. A thorough review of the requisite matrix algebra has been addedfor transitional purposes, and numerous theoretical and applied problems have been incorporated with selected answers provided at the end of the book. A related Web site includes additional data sets and SAS® code for all numerical examples. Linear Model in Statistics, Second Edition is a must-have book for courses in statistics, biostatistics, and mathematics at the upper-undergraduate and graduate levels. It is also an invaluable reference for researchers who need to gain a better understanding of regression and analysis of variance.

Principles of Econometrics - R. Carter Hill 2018-02-21
Principles of Econometrics, Fifth Edition, is an introductory book for undergraduate students in economics and finance, as well as first-year graduate students in a variety of fields that include economics, finance, accounting, marketing, public policy, sociology, law, and political science. Students will gain a working knowledge of basic econometrics so they can apply modeling, estimation, inference, and forecasting techniques when working with real-world economic problems. Readers will also gain an understanding of econometrics that allows them to critically evaluate the results of others' economic research and modeling, and that will serve as a foundation for further study of the field. This new edition of the highly-regarded econometrics text includes major revisions that

both reorganize the content and present students with plentiful opportunities to practice what they have read in the form of chapter-end exercises.

Social Science Research - Anol Bhattacherjee 2012-04-01
This book is designed to introduce doctoral and graduate students to the process of conducting scientific research in the social sciences, business, education, public health, and related disciplines. It is a one-stop, comprehensive, and compact source for foundational concepts in behavioral research, and can serve as a stand-alone text or as a supplement to research readings in any doctoral seminar or research methods class. This book is currently used as a research text at universities on six continents and will shortly be available in nine different languages.

How to Solve It - G. Polya 2014-10-26
A perennial bestseller by eminent mathematician G. Polya, How to Solve It will show anyone in any field how to think straight. In lucid and appealing prose, Polya reveals how the mathematical method of demonstrating a proof or finding an unknown can be of help in attacking any problem that can be "reasoned" out—from building a bridge to winning a game of anagrams. Generations of readers have relished Polya's deft—indeed, brilliant—instructions on stripping away irrelevancies and going straight to the heart of the problem.

Model Checking, second edition - Edmund M. Clarke, Jr. 2018-12-04
An expanded and updated edition of a comprehensive presentation of the theory and practice of model checking, a technology that automates the analysis of complex systems. Model checking is a verification technology that provides an algorithmic means of determining whether an abstract model—representing, for example, a hardware or software design—satisfies a formal specification

expressed as a temporal logic formula. If the specification is not satisfied, the method identifies a counterexample execution that shows the source of the problem. Today, many major hardware and software companies use model checking in practice, for verification of VLSI circuits, communication protocols, software device drivers, real-time embedded systems, and security algorithms. This book offers a comprehensive presentation of the theory and practice of model checking, covering the foundations of the key algorithms in depth. The field of model checking has grown dramatically since the publication of the first edition in 1999, and this second edition reflects the advances in the field. Reorganized, expanded, and updated, the new edition retains the focus on the foundations of temporal logic model while offering new chapters that cover topics that did not exist in 1999: propositional satisfiability, SAT-based model checking, counterexample-guided abstraction refinement, and software model checking. The book serves as an introduction to the field suitable for classroom use and as an essential guide for researchers.

Handbook of Model Checking - Edmund M. Clarke 2018-05-18
Model checking is a computer-assisted method for the analysis of dynamical systems that can be modeled by state-transition systems. Drawing from research traditions in mathematical logic, programming languages, hardware design, and theoretical computer science, model checking is now widely used for the verification of hardware and software in industry. The editors and authors of this handbook are among the world's leading researchers in this domain, and the 32 contributed chapters present a thorough view of the origin, theory, and application of model checking. In particular, the editors classify the advances in this domain and the chapters of the handbook in terms of two recurrent themes that have driven much of the research agenda: the

algorithmic challenge, that is, designing model-checking algorithms that scale to real-life problems; and the modeling challenge, that is, extending the formalism beyond Kripke structures and temporal logic. The book will be valuable for researchers and graduate students engaged with the development of formal methods and verification tools.

Software Quality Assurance - Daniel Galin 2004
This book comprehensively covers the ISO 9000-3 requirements. IT also provides a substantial portion of the body of knowledge required for the CSQE (Certified Software Quality Engineer) as outlined by the ASQ (American Quality Engineer) as outlined by the ASQ (American Society for Quality).

Driven by Data - Paul Bambrick-Santoyo 2010-04-12
Offers a practical guide for improving schools dramatically that will enable all students from all backgrounds to achieve at high levels. Includes assessment forms, an index, and a DVD.

Principles of Model Checking - Christel Baier 2008-04-25
A comprehensive introduction to the foundations of model checking, a fully automated technique for finding flaws in hardware and software; with extensive examples and both practical and theoretical exercises. Our growing dependence on increasingly complex computer and software systems necessitates the development of formalisms, techniques, and tools for assessing functional properties of these systems. One such technique that has emerged in the last twenty years is model checking, which systematically (and automatically) checks whether a model of a given system satisfies a desired property such as deadlock freedom, invariants, and request-response properties. This automated technique for verification and debugging has developed into a mature and widely used approach with many applications. Principles of Model Checking offers a comprehensive introduction to model checking that is not only a text suitable for

classroom use but also a valuable reference for researchers and practitioners in the field. The book begins with the basic principles for modeling concurrent and communicating systems, introduces different classes of properties (including safety and liveness), presents the notion of fairness, and provides automata-based algorithms for these properties. It introduces the temporal logics LTL and CTL, compares them, and covers algorithms for verifying these logics, discussing real-time systems as well as systems subject to random phenomena. Separate chapters treat such efficiency-improving techniques as abstraction and symbolic manipulation. The book includes an extensive set of examples (most of which run through several chapters) and a complete set of basic results accompanied by detailed proofs. Each chapter concludes with a summary, bibliographic notes, and an extensive list of exercises of both practical and theoretical nature.

Data Mining: Concepts and Techniques - Jiawei Han 2011-06-09
Data Mining: Concepts and Techniques provides the concepts and techniques in processing gathered data or information, which will be used in various applications. Specifically, it explains data mining and the tools used in discovering knowledge from the collected data. This book is referred as the knowledge discovery from data (KDD). It focuses on the feasibility, usefulness, effectiveness, and scalability of techniques of large data sets. After describing data mining, this edition explains the methods of knowing, preprocessing, processing, and warehousing data. It then presents information about data warehouses, online analytical processing (OLAP), and data cube technology. Then, the methods involved in mining frequent patterns, associations, and correlations for large data sets are described. The book details the methods for data classification and introduces the concepts and methods for data clustering. The remaining

chapters discuss the outlier detection and the trends, applications, and research frontiers in data mining. This book is intended for Computer Science students, application developers, business professionals, and researchers who seek information on data mining. Presents dozens of algorithms and implementation examples, all in pseudo-code and suitable for use in real-world, large-scale data mining projects Addresses advanced topics such as mining object-relational databases, spatial databases, multimedia databases, time-series databases, text databases, the World Wide Web, and applications in several fields Provides a comprehensive, practical look at the concepts and techniques you need to get the most out of your data

Generalized Additive Models - Simon Wood 2006-02-27
Now in widespread use, generalized additive models (GAMs) have evolved into a standard statistical methodology of considerable flexibility. While Hastie and Tibshirani's outstanding 1990 research monograph on GAMs is largely responsible for this, there has been a long-standing need for an accessible introductory treatment of the subject that also emphasizes recent penalized regression spline approaches to GAMs and the mixed model extensions of these models. Generalized Additive Models: An Introduction with R imparts a thorough understanding of the theory and practical applications of GAMs and related advanced models, enabling informed use of these very flexible tools. The author bases his approach on a framework of penalized regression splines, and builds a well-grounded foundation through motivating chapters on linear and generalized linear models. While firmly focused on the practical aspects of GAMs, discussions include fairly full explanations of the theory underlying the methods. Use of the freely available R software helps explain the theory and illustrates the practicalities of linear,

generalized linear, and generalized additive models, as well as their mixed effect extensions. The treatment is rich with practical examples, and it includes an entire chapter on the analysis of real data sets using R and the author's add-on package mgcv. Each chapter includes exercises, for which complete solutions are provided in an appendix. Concise, comprehensive, and essentially self-contained, Generalized Additive Models: An Introduction with R prepares readers with the practical skills and the theoretical background needed to use and understand GAMs and to move on to other GAM-related methods and models, such as SS-ANOVA, P-splines, backfitting and Bayesian approaches to smoothing and additive modelling.
Book of Proof - Richard H. Hammack 2016-01-01 This book is an introduction to the language and standard proof methods of mathematics. It is a bridge from the computational courses (such as calculus or differential equations) that students typically encounter in their first year of college to a more abstract outlook. It lays a foundation for more theoretical courses such as topology, analysis and abstract algebra. Although it may be more meaningful to the student who has had some calculus, there is really no prerequisite other than a measure of mathematical maturity.
Graphics and Visualization - T. Theoharis 2008-05-30
This book is a comprehensive introduction to visual computing, dealing with the modeling and synthesis of visual data by means of computers. What sets this book apart from other computer graphics texts is the integrated coverage of computer graphics and visualization topics, including important techniques such as subdivision and multi-resolution modeling, scene graphs, shadow generation, ambient occlusion, and scalar and vector data visualization. Students and practitioners will benefit from the comprehensive coverage of the principles that are the basic tools of their trade, from fundamental computer graphics and classic

visualization techniques to advanced topics.

Essentials of Electronic Testing for Digital, Memory and Mixed-Signal VLSI Circuits - M. Bushnell 2006-04-11

The modern electronic testing has a forty year history. Test professionals hold some fairly large conferences and numerous workshops, have a journal, and there are over one hundred books on testing. Still, a full course on testing is offered only at a few universities, mostly by professors who have a research interest in this area. Apparently, most professors would not have taken a course on electronic testing when they were students. Other than the computer engineering curriculum being too crowded, the major reason cited for the absence of a course on electronic testing is the lack of a suitable textbook. For VLSI the foundation was provided by semiconductor device techn- ogy, circuit design, and electronic testing. In a computer engineering curriculum, therefore, it is necessary that foundations should be taught before applications. The field of VLSI has expanded to systems-on-a-chip, which include digital, memory, and mixed-signalsubsystems. To our knowledge this is the first textbook to cover all three types of electronic circuits. We have written this textbook for an undergraduate "foundations" course on electronic testing. Obviously, it is too voluminous for a one-semester course and a teacher will have to select from the topics. We did not restrict such freedom because the selection may depend upon the individual expertise and interests. Besides, there is merit in having a larger book that will retain its usefulness for the owner even after the completion of the course. With equal tenacity, we address the needs of three other groups of readers.

IBM IMS Solutions for Automating Database Management - Paolo Bruni 2014-12-09

Over the last few years, IBM® IMSTM and IMS tools have been modernizing the interfaces to IMS and the IMS tools to bring them more in

line with the current interface designs. As the mainframe software products are becoming more integrated with the Windows and mobile environments, a common approach to interfaces is becoming more relevant. The traditional 3270 interface with ISPF as the main interface is no longer the only way to do some of these processes. There is also a need to provide more of a common looking interface so the tools do not have a product-specific interface. This allows more cross product integration. Eclipse and web-based interfaces being used in a development environment, tooling using those environments provides productivity improvements in that the interfaces are common and familiar. IMS and IMS tools developers are making use of those environments to provide tooling that will perform some of the standard DBA functions. This book will take some selected processes and show how this new tooling can be used. This will provide some productivity improvements and also provide a more familiar environment for new generations DBAs. Some of the functions normally done by DBA or console operators can now be done in this eclipse-based environment by the application developers. This means that the need to request these services from others can be eliminated. This IBM Redbooks® publication examines specific IMS DBA processes and highlights the new IMS and IMS tools features, which show an alternative way to accomplish those processes. Each chapter highlights a different area of the DBA processes like: PSB creation Starting/stopping a database in an IMS system Recovering a database Cloning a set of databases
Automata on Infinite Words - M. Nivat 1985-06

The Elements of Computing Systems - Noam Nisan 2008
This title gives students an integrated and rigorous picture of applied computer science, as it comes to play in the construction of a simple yet powerful computer system.

Software Testing and Analysis - Mauro Pezze 2008
Teaches readers how to test and analyze software to achieve an acceptable level of quality at an acceptable cost Readers will be able to minimize software failures, increase quality, and effectively manage costs Covers techniques that are suitable for near-term application, with sufficient technical background to indicate how and when to apply them Provides balanced coverage of software testing & analysis approaches By incorporating modern topics and strategies, this book will be the standard software-testing textbook

Mathematical Methods for Physics and Engineering - K. F. Riley 2006-03-13
The third edition of this highly acclaimed undergraduate textbook is suitable for teaching all the mathematics for an undergraduate course in any of the physical sciences. As well as lucid descriptions of all the topics and many worked examples, it contains over 800 exercises. New stand-alone chapters give a systematic account of the 'special functions' of physical science, cover an extended range of practical applications of complex variables, and give an introduction to quantum operators. Further tabulations, of relevance in statistics and numerical integration, have been added. In this edition, half of the exercises are provided with hints and answers and, in a separate manual available to both students and their teachers, complete worked solutions. The remaining exercises have no hints, answers or worked solutions and can be used for unaided homework; full solutions are available to instructors on a password-protected web site, www.cambridge.org/9780521679718.

Microservice Architecture - Irakli Nadareishvili 2016-07-18
Have you heard about the tremendous success Amazon and Netflix have had by switching to a microservice architecture? Are you wondering how this can benefit your company? Or are you

skeptical about how it might work? If you've answered yes to any of these questions, this practical book will benefit you. You'll learn how to take advantage of the microservice architectural style for building systems, and learn from the experiences of others to adopt and execute this approach most successfully.

Logic in Computer Science - Michael Huth 2004-08-26

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 both 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.

Modern Analytical Chemistry - David Harvey 2000

Modern Analytical Chemistry is a one-semester introductory text that meets the needs of all instructors. With coverage in both traditional topics and modern-day topics, instructors will have the flexibilty to customize their course into what they feel is necessary for their students to comprehend the concepts of analytical chemistry.