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## KEY=COMPUTER - MORA WELLS

## INTRODUCTION TO COMPUTER THEORY

## SOLUTIONS MANUAL

## INTRODUCTION TO COMPUTER THEORY

*John Wiley & Sons* Designed for undergraduate courses in computer theory, this textbook covers three areas: formal languages, automata theory and Turing machines. The author substitutes graphic representation for symbolic proofs, making it accessible even to students with little mathematical background.

## INTRODUCTION TO COMPUTER THEORY

An easy-to-comprehend text for required undergraduate courses in computer theory, this work thoroughly covers the three fundamental areas of computer theory--formal languages, automata theory, and Turing machines. It is an imaginative and pedagogically strong attempt to remove the unnecessary mathematical complications associated with the study of these subjects. The author substitutes graphic representation for symbolic proofs, allowing students with poor mathematical background to easily follow each step. Includes a large selection of well thought out problems at the end of each chapter.

## INTRODUCTION TO COMPUTER THEORY, 2ND ED

*John Wiley & Sons* Market_Desc: · Computer Scientists· Students · Professors Special Features: · Easy to read and the coverage of mathematics is fairly simple so readers do not have to worry about proving theorems· Contains new coverage of Context Sensitive Language About The Book: This text strikes a good balance between rigor and an intuitive approach to computer theory. Covers all the topics needed by computer scientists with a sometimes humorous approach that reviewers found refreshing . The goal of the book is to provide a firm understanding of the principles and the big picture of where computer theory fits into the field.

## SOLUTIONS MANUAL TO ACCOMPANY INTRODUCTION TO COMPUTER THEORY, SECOND EDITION, DANIEL I. A. COHEN

## INTRODUCTION TO GRAPH THEORY

## SOLUTIONS MANUAL

*World Scientific* This is a companion to the book Introduction to Graph Theory (World Scientific, 2006). The student who has worked on the problems will find the solutions presented useful as a check and also as a model for rigorous mathematical writing. For ease of reference, each chapter recaps some of the important concepts and/or formulae from the earlier book.

## INTRODUCTION TO THE THEORY OF COMPUTATION

*Cengage Learning* Now you can clearly present even the most complex computational theory topics to your students with Sipser's distinct, market-leading INTRODUCTION TO THE THEORY OF COMPUTATION, 3E. The number one choice for today's computational theory course, this highly anticipated revision retains the unmatched clarity and thorough coverage that make it a leading text for upper-level undergraduate and introductory graduate students. This edition continues author Michael Sipser's well-known, approachable style with timely revisions, additional exercises, and more memorable examples in key areas. A new first-of-its-kind theoretical treatment of deterministic context-free languages is ideal for a better understanding of parsing and LR(k) grammars. This edition's refined presentation ensures a trusted accuracy and clarity that make the challenging study of computational theory accessible and intuitive to students while maintaining the subject's rigor and formalism. Readers gain a solid understanding of the fundamental mathematical properties of computer hardware, software, and applications with a blend of practical and philosophical coverage and mathematical treatments, including advanced theorems and proofs. INTRODUCTION TO THE THEORY OF COMPUTATION, 3E's comprehensive coverage makes this an ideal ongoing reference tool for those studying theoretical computing. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

## MATHEMATICAL PROGRAMMING FOR OPERATIONS RESEARCHERS AND COMPUTER SCIENTISTS

*CRC Press* This book covers the fundamentals of linear programming, extension of linear programming to discrete optimization methods, multi-objective functions, quadratic programming, geometric programming, and classical calculus methods for solving nonlinear programming problems.

## NONCOOPERATIVE GAME THEORY

## AN INTRODUCTION FOR ENGINEERS AND COMPUTER SCIENTISTS

*Princeton University Press* Noncooperative Game Theory is aimed at students interested in using game theory as a design methodology for solving problems in engineering and computer science. João Hespanha shows that such design challenges can be analyzed through game theoretical perspectives that help to pinpoint each problem's essence: Who are the players? What are their goals? Will the solution to "the game" solve the original design problem? Using the fundamentals of game theory, Hespanha explores these issues and more. The use of game theory in technology design is a recent development arising from the intrinsic limitations of classical optimization-based designs. In optimization, one attempts to find values for parameters that minimize suitably defined criteria—such as monetary cost, energy consumption, or heat generated. However, in most engineering applications, there is always some uncertainty as to how the selected parameters will affect the final objective. Through a sequential and easy-to-understand discussion, Hespanha examines how to make sure that the selection leads to acceptable performance, even in the presence of uncertainty—the unforgiving variable that can wreck engineering designs. Hespanha looks at such standard topics as zero-sum, non-zero-sum, and dynamics games and includes a MATLAB guide to coding. Noncooperative Game Theory offers students a fresh way of approaching engineering and computer science applications. An introduction to game theory applications for students of engineering and computer science Materials presented sequentially and in an easy-to-understand fashion Topics explore zero-sum, non-zero-sum, and dynamics games MATLAB commands are included

## STUDENT'S SOLUTIONS MANUAL TO ACCOMPANY LANGUAGES AND MACHINES

## AN INTRODUCTION TO THE THEORY OF COMPUTER SCIENCE

## INTRODUCTION TO THE THEORY OF COMPUTATION

*Thomson/Course Technology* "Intended as an upper-level undergraduate or introductory graduate text in computer science theory," this book lucidly covers the key concepts and theorems of the theory of computation. The presentation is remarkably clear; for example, the "proof idea," which offers the reader an intuitive feel for how the proof was constructed, accompanies many of the theorems and a proof. Introduction to the Theory of Computation covers the usual topics for this type of text plus it features a solid section on complexity theory--including an entire chapter on space complexity. The final chapter introduces more advanced topics, such as the discussion of complexity classes associated with probabilistic algorithms.

## FLUCTUATION THEORY OF SOLUTIONS

## APPLICATIONS IN CHEMISTRY, CHEMICAL ENGINEERING, AND BIOPHYSICS

*CRC Press* There are essentially two theories of solutions that can be considered exact: the McMillan–Mayer theory and Fluctuation Solution Theory (FST). The first is mostly limited to solutes at low concentrations, while FST has no such issue. It is an exact theory that can be applied to any stable solution regardless of the number of components and their concentrations, and the types of molecules and their sizes. Fluctuation Theory of Solutions: Applications in Chemistry, Chemical Engineering, and Biophysics outlines the general concepts and theoretical basis of FST and provides a range of applications described by experts in chemistry, chemical engineering, and biophysics. The book, which begins with a historical perspective and an introductory chapter, includes a basic derivation for more casual readers. It is then devoted to providing new and very recent applications of FST. The first application chapters focus on simple model, binary, and ternary systems, using FST to explain their thermodynamic properties and the concept of preferential solvation. Later chapters illustrate the use of FST to develop more accurate potential functions for simulation, describe new approaches to elucidate microheterogeneities in solutions, and present an overview of solvation in new and model systems, including those under critical conditions. Expert contributors also discuss the use of FST to model solute solubility in a variety of systems. The final chapters present a series of biological applications that illustrate the use of FST to study cosolvent effects on proteins and their implications for protein folding. With the application of FST to study biological systems now well established, and given the continuing developments in computer hardware and software increasing the range of potential applications, FST provides a rigorous and useful approach for understanding a wide array of solution properties. This book outlines those approaches, and their advantages, across a range of disciplines, elucidating this robust, practical theory.

## LANGUAGES AND MACHINES: AN INTRODUCTION TO THE THEORY OF COMPUTER SCIENCE, 3/E

*Pearson Education India*

## INTRODUCTION TO MATHEMATICAL MODELING AND COMPUTER SIMULATIONS

*CRC Press* Introduction to Mathematical Modeling and Computer Simulations is written as a textbook for readers who want to understand the main principles of Modeling and Simulations in settings that are important for the applications, without using the profound mathematical tools required by most advanced texts. It can be particularly useful for applied mathematicians and engineers who are just beginning their careers. The goal of this book is to outline Mathematical Modeling using simple mathematical descriptions, making it accessible for first- and second-year students.

## CONCISE COMPUTER VISION

## AN INTRODUCTION INTO THEORY AND ALGORITHMS

*Springer Science & Business Media* This textbook provides an accessible general introduction to the essential topics in computer vision. Classroom-tested programming exercises and review questions are also supplied at the end of each chapter. Features: provides an introduction to the basic notation and mathematical concepts for describing an image and the key concepts for mapping an image into an image; explains the topologic and geometric basics for analysing image regions and distributions of image values and discusses identifying patterns in an image; introduces optic flow for representing dense motion and various topics in sparse motion analysis; describes special approaches for image binarization and segmentation of still images or video frames; examines the basic components of a computer vision system; reviews different techniques for vision-based 3D shape reconstruction; includes a discussion of stereo matchers and the phase-congruency model for image features; presents an introduction into classification and learning.

## WHAT CAN BE COMPUTED?

## A PRACTICAL GUIDE TO THE THEORY OF COMPUTATION

*Princeton University Press* An accessible and rigorous textbook for introducing undergraduates to computer science theory What Can Be Computed? is a uniquely accessible yet rigorous introduction to the most profound ideas at the heart of computer science. Crafted specifically for undergraduates who are studying the subject for the first time, and requiring minimal prerequisites, the book focuses on the essential fundamentals of computer science theory and features a practical approach that uses real computer programs (Python and Java) and encourages active experimentation. It is also ideal for self-study and reference. The book covers the standard topics in the theory of computation, including Turing machines and finite automata, universal computation, nondeterminism, Turing and Karp reductions, undecidability, time-complexity classes such as P and NP, and NP-completeness, including the Cook-Levin Theorem. But the book also provides a broader view of computer science and its historical development, with discussions of Turing's original 1936 computing machines, the connections between undecidability and Gödel's incompleteness theorem, and Karp's famous set of twenty-one NP-complete problems. Throughout, the book recasts traditional computer science concepts by considering how computer programs are used to solve real problems. Standard theorems are stated and proven with full mathematical rigor, but motivation and understanding are enhanced by considering concrete implementations. The book's examples and other content allow readers to view demonstrations of—and to experiment with—a wide selection of the topics it covers. The result is an ideal text for an introduction to the theory of computation. An accessible and rigorous introduction to the essential fundamentals of computer science theory, written specifically for undergraduates taking introduction to the theory of computation Features a practical, interactive approach using real computer programs (Python in the text, with forthcoming Java alternatives online) to enhance motivation and understanding Gives equal emphasis to computability and complexity Includes special topics that demonstrate the profound nature of key ideas in the theory of computation Lecture slides and Python programs are available at whatcanbecomputed.com

## FOUNDATIONS OF COMPUTER SCIENCE

## C EDITION

*W. H. Freeman*

## SEMANTIC WEB SERVICES: THEORY, TOOLS AND APPLICATIONS

## THEORY, TOOLS AND APPLICATIONS

*IGI Global* "This book brings together researchers, scientists, and representatives from different communities to study, understand, and explore the theory, tools, and applications of the semantic Web. It joins the semantic Web, ontologies, knowledge management, Web services, and Web processes into one fully comprehensive resource, serving as the platform for exchange of both practical technologies and research"--Provided by publisher.

## QUANTUM COMPUTATION AND QUANTUM INFORMATION

*Cambridge University Press* First-ever comprehensive introduction to the major new subject of quantum computing and quantum information.

## AN INTRODUCTION TO COMPUTATIONAL LEARNING THEORY

*MIT Press* Emphasizing issues of computational efficiency, Michael Kearns and Umesh Vazirani introduce a number of central topics in computational learning theory for researchers and students in artificial intelligence, neural networks, theoretical computer science, and statistics. Emphasizing issues of computational efficiency, Michael Kearns and Umesh Vazirani introduce a number of central topics in computational learning theory for researchers and students in artificial intelligence, neural networks, theoretical computer science, and statistics. Computational learning theory is a new and rapidly expanding area of research that examines formal models of induction with the goals of discovering the common methods underlying efficient learning algorithms and identifying the computational impediments to learning. Each topic in the book has been chosen to elucidate a general principle, which is explored in a precise formal setting. Intuition has been emphasized in the presentation to make the material accessible to the nontheoretician while still providing precise arguments for the specialist. This balance is the result of new proofs of established theorems, and new presentations of the standard proofs. The topics covered include the motivation, definitions, and fundamental results, both positive and negative, for the widely studied L. G. Valiant model of Probably Approximately Correct Learning; Occam's Razor, which formalizes a relationship between learning and data compression; the Vapnik-Chervonenkis dimension; the equivalence of weak and strong learning; efficient learning in the presence of noise by the method of statistical queries; relationships between learning and cryptography, and the resulting computational limitations on efficient learning; reducibility between learning problems; and algorithms for learning finite automata from active experimentation.

## LINEAR ELASTIC THEORY OF THIN SHELLS

## THE COMMONWEALTH AND INTERNATIONAL LIBRARY: STRUCTURES AND SOLID BODY MECHANICS DIVISION

*Elsevier* Linear Elastic Theory of Thin Shells presents membrane and bending theories for open and closed cylindrical shells and shells of arbitrary shape. This book aims to develop the analysis through membrane theory to bending theory for shells and to limit the type of mathematics used. Organized into eight chapters, this book begins with an overview of the solid material enclosed between two closely spaced doubly curved surfaces. This text then examines the five stress resultants for closed cylindrical shell. Other chapters consider the theoretical stresses that are closely related to the actual stresses determined experimentally in practice. This book discusses as well the numerical analysis of more complicated shell structures. The final chapter deals with the correlation between experimental and theoretical stresses in shells. This book is intended to be suitable for final year engineering and post-graduate students. Design and consulting engineers will also find this book extremely useful.

## INTRODUCTION TO ALGORITHMS

*MIT Press* The first edition won the award for Best 1990 Professional and Scholarly Book in Computer Science and Data Processing by the Association of American Publishers. There are books on algorithms that are rigorous but incomplete and others that cover masses of material but lack rigor. Introduction to Algorithms combines rigor and comprehensiveness. The book covers a broad range of algorithms in depth, yet makes their design and analysis accessible to all levels of readers. Each chapter is relatively self-contained and can be used as a unit of study. The algorithms are described in English and in a pseudocode designed to be readable by anyone who has done a little programming. The explanations have been kept elementary without sacrificing depth of coverage or mathematical rigor. The first edition became the standard reference for professionals and a widely used text in universities worldwide. The second edition features new chapters on the role of algorithms, probabilistic analysis and randomized algorithms, and linear programming, as well as extensive revisions to virtually every section of the book. In a subtle but important change, loop invariants are introduced early and used throughout the text to prove algorithm correctness. Without changing the mathematical and analytic focus, the authors have moved much of the mathematical foundations material from Part I to an appendix and have included additional motivational material at the beginning.

## ASPECTS OF THE COMPUTATIONAL THEORY FOR CERTAIN ITERATIVE METHODS

*Polimetrica s.a.s.*

## MATHEMATICAL ASPECTS OF COMPUTER AND INFORMATION SCIENCES

## 7TH INTERNATIONAL CONFERENCE, MACIS 2017, VIENNA, AUSTRIA, NOVEMBER 15-17, 2017, PROCEEDINGS

*Springer* This book constitutes the refereed proceedings of the 7th International Conference on Mathematical Aspects of Computer and Information Sciences, MACIS 2017, held in Vienna, Austria, in November 2017. The 28 revised papers and 8 short papers presented were carefully reviewed and selected from 67 submissions. The papers are organized in the following topical sections: foundation of algorithms in mathematics, engineering and scientific computation; combinatorics and codes in computer science; data modeling and analysis; and mathematical aspects of information security and cryptography.

## ADVANCES IN DESIGN, SIMULATION AND MANUFACTURING IV

## PROCEEDINGS OF THE 4TH INTERNATIONAL CONFERENCE ON DESIGN, SIMULATION, MANUFACTURING: THE INNOVATION EXCHANGE, DSMIE-2021, JUNE 8–11, 2021, LVIV, UKRAINE – VOLUME 1: MANUFACTURING AND MATERIALS ENGINEERING

*Springer Nature* This book reports on topics at the interface between manufacturing and materials engineering, with a special emphasis on product design and advanced manufacturing processes, intelligent solutions for Industry 4.0, covers topics in ICT for engineering education, describes the numerical simulation and experimental studies of milling, honing, burnishing, grinding, boring, and turning, as well as the development and implementation of advanced materials. Based on the 4th International Conference on Design, Simulation, Manufacturing: The Innovation Exchange (DSMIE-2021), held on June 8-11, 2021, in Lviv, Ukraine, this first volume of a 2-volume set provides academics and professionals with extensive information on trends, technologies, challenges and practice-oriented experience in the above-mentioned areas.

## COMPUTATIONAL THEORY OF ITERATIVE METHODS

*Elsevier* The book is designed for researchers, students and practitioners interested in using fast and efficient iterative methods to approximate solutions of nonlinear equations. The following four major problems are addressed. Problem 1: Show that the iterates are well defined. Problem 2: concerns the convergence of the sequences generated by a process and the question of whether the limit points are, in fact solutions of the equation. Problem 3: concerns the economy of the entire operations. Problem 4: concerns with how to best choose a method, algorithm or software program to solve a specific type of problem and its description of when a given algorithm succeeds or fails. The book contains applications in several areas of applied sciences including mathematical programming and mathematical economics. There is also a huge number of exercises complementing the theory. - Latest convergence results for the iterative methods - Iterative methods with the least computational cost - Iterative methods with the weakest convergence conditions - Open problems on iterative methods

## REINFORCEMENT LEARNING, SECOND EDITION

## AN INTRODUCTION

*MIT Press* The significantly expanded and updated new edition of a widely used text on reinforcement learning, one of the most active research areas in artificial intelligence. Reinforcement learning, one of the most active research areas in artificial intelligence, is a computational approach to learning whereby an agent tries to maximize the total amount of reward it receives while interacting with a complex, uncertain environment. In Reinforcement Learning, Richard Sutton and Andrew Barto provide a clear and simple account of the field's key ideas and algorithms. This second edition has been significantly expanded and updated, presenting new topics and updating coverage of other topics. Like the first edition, this second edition focuses on core online learning algorithms, with the more mathematical material set off in shaded boxes. Part I covers as much of reinforcement learning as possible without going beyond the tabular case for which exact solutions can be found. Many algorithms presented in this part are new to the second edition, including UCB, Expected Sarsa, and Double Learning. Part II extends these ideas to function approximation, with new sections on such topics as artificial neural networks and the Fourier basis, and offers expanded treatment of off-policy learning and policy-gradient methods. Part III has new chapters on reinforcement learning's relationships to psychology and neuroscience, as well as an updated case-studies chapter including AlphaGo and AlphaGo Zero, Atari game playing, and IBM Watson's wagering strategy. The final chapter discusses the future societal impacts of reinforcement learning.

## GENERAL REGISTER

Announcements for the following year included in some vols.

## ADVANCED CONTROL SYSTEMS - THEORY AND APPLICATIONS

*Stylus Publishing, LLC* Advanced Control Systems: Theory and Applications provides an overview of advanced research lines in control systems as well as in design, development and implementation methodologies for perspective control systems and their components in different areas of industrial and special applications. It consists of extended versions of the selected papers presented at the XXV International Conference on Automatic Control “Automatics 2018” (September 18-19, 2018, Lviv, Ukraine) which is the main Ukrainian Control Conference organized by Ukrainian Association on Automatic Control (National member organization of IFAC) and Lviv National University “Lvivska Politechnica.” More than 100 papers were presented at the conference with topics including: mathematical problems of control, optimization and game theory; control and identification under uncertainty; automated control of technical, technological and biotechnical objects; controlling the aerospace craft, marine vessels and other moving objects; intelligent control and information processing; mechatronics and robotics; information measuring technologies in automation; automation and IT training of personnel; the Internet of things and the latest technologies. The book is divided into two main parts, the first concerning theory (7 chapters) and the second concerning applications (7 chapters) of advanced control systems. The first part “Advances in Theoretical Research on Automatic Control” consists of theoretical research results which deal with descriptor control impulsive delay systems, motion control in condition of conflict, inverse dynamic models, invariant relations in optimal control, robust adaptive control, bio-inspired algorithms, optimization of fuzzy control systems, and extremal routing problem with constraints and complicated cost functions. The second part “Advances in Control Systems Applications” is based on the chapters which consider different aspects of practical implementation of advanced control systems, in particular, special cases in determining the spacecraft position and attitude using computer vision system, the spacecraft orientation by information from a system of stellar sensors, control synthesis of rotational and spatial spacecraft motion at approaching stage of docking, intelligent algorithms for the automation of complex biotechnical objects, an automatic control system for the slow pyrolysis of organic substances with variable composition, simulation complex of hierarchical systems based on the foresight and cognitive modelling, and advanced identification of impulse processes in cognitive maps. The chapters have been structured to provide an easy-to-follow introduction to the topics that are addressed, including the most relevant references, so that anyone interested in this field can get started in the area. This book may be useful for researchers and students who are interested in advanced control systems.

## INTRODUCTION TO AUTOMATA THEORY, LANGUAGES, AND COMPUTATION

## PEARSON NEW INTERNATIONAL EDITION

This classic book on formal languages, automata theory, and computational complexity has been updated to present theoretical concepts in a concise and straightforward manner with the increase of hands-on, practical applications. This new edition comes with Gradiance, an online assessment tool developed for computer science. Please note, Gradiance is no longer available with this book, as we no longer support this product.

## SPIN GLASS THEORY AND BEYOND

## AN INTRODUCTION TO THE REPLICA METHOD AND ITS APPLICATIONS

*World Scientific Publishing Company* This book contains a detailed and self-contained presentation of the replica theory of infinite range spin glasses. The authors also explain recent theoretical developments, paying particular attention to new applications in the study of optimization theory and neural networks. About two-thirds of the book are a collection of the most interesting and pedagogical articles on the subject.

## IONIC SOFT MATTER: MODERN TRENDS IN THEORY AND APPLICATIONS

## PROCEEDINGS OF THE NATO ADVANCED RESEARCH WORKSHOP ON IONIC SOFT MATTER: MODERN TRENDS IN THEORY AND APPLICATION LVIV, UKRAINE, 14-17 APRIL, 2004

*Springer Science & Business Media* Recently there have been profound developments in the understanding and interpretation of liquids and soft matter centered on constituents with sho- range interactions. Ionic soft matter is a class of conventional condensed soft matter with prevailing contribution from electrostatics and, therefore, can be subject to possible long-range correlations among the components of the - terial and in many cases crucially affecting its physical properties. Among the most popular representatives of such a class of materials are natural and synthetic saline environments, like aqueous and non-aqueous electrolyte - lutions and molten salts as well as variety of polyelectrolytes and colloidal suspensions. Equally well known are biological systems of proteins. All these systems are examples of soft matter strongly in?uenced, if not dominated, by long-range forces. For more than half of century the classical theories by Debye and Hückel as well as by Derjaguin, Landau, Verwey and Owerbeek (DLVO) have been at the basis of theoretical physical chemistry and chemical engineering. The substantial progress in material science during last few decades as well as the advent of new instrumentation and computational techniques made it apparent that in many cases the classical theories break down. New types of interactions (e.g. hydrodynamic, entropic) have been discovered and a number of questions have arisen from theoretical and experimental studies. Many of these questions still do not have de?nite answers.

## AN INTRODUCTION TO TENSORS AND GROUP THEORY FOR PHYSICISTS

*Birkhäuser* The second edition of this highly praised textbook provides an introduction to tensors, group theory, and their applications in classical and quantum physics. Both intuitive and rigorous, it aims to demystify tensors by giving the slightly more abstract but conceptually much clearer definition found in the math literature, and then connects this formulation to the component formalism of physics calculations. New pedagogical features, such as new illustrations, tables, and boxed sections, as well as additional “invitation” sections that provide accessible introductions to new material, offer increased visual engagement, clarity, and motivation for students. Part I begins with linear algebraic foundations, follows with the modern component-free definition of tensors, and concludes with applications to physics through the use of tensor products. Part II introduces group theory, including abstract groups and Lie groups and their associated Lie algebras, then intertwines this material with that of Part I by introducing representation theory. Examples and exercises are provided in each chapter for good practice in applying the presented material and techniques. Prerequisites for this text include the standard lower-division mathematics and physics courses, though extensive references are provided for the motivated student who has not yet had these. Advanced undergraduate and beginning graduate students in physics and applied mathematics will find this textbook to be a clear, concise, and engaging introduction to tensors and groups. Reviews of the First Edition “[P]hysicist Nadir Jeevanjee has produced a masterly book that will help other physicists understand those subjects [tensors and groups] as mathematicians understand them... From the first pages, Jeevanjee shows amazing skill in finding fresh, compelling words to bring forward the insight that animates the modern mathematical view...[W]ith compelling force and clarity, he provides many carefully worked-out examples and well-chosen specific problems... Jeevanjee’s clear and forceful writing presents familiar cases with a freshness that will draw in and reassure even a fearful student. [This] is a masterpiece of

exposition and explanation that would win credit for even a seasoned author." —Physics Today "Jeevanjee's [text] is a valuable piece of work on several counts, including its express pedagogical service rendered to fledgling physicists and the fact that it does indeed give pure mathematicians a way to come to terms with what physicists are saying with the same words we use, but with an ostensibly different meaning. The book is very easy to read, very user-friendly, full of examples...and exercises, and will do the job the author wants it to do with style." —MAA Reviews

## COMPUTATIONAL METHODS IN REACTOR SHIELDING

*Elsevier* Computational Methods in Reactor Shielding deals with the mathematical processes involved in how to effectively control the dangerous effect of nuclear radiation. Reactor shielding is considered an important aspect in the operation of reactor systems to ensure the safety of personnel and others that can be directly or indirectly affected. Composed of seven chapters, the book discusses ionizing radiation and how it aids in the control and containment of radioactive substances that are considered harmful to all living things. The text also outlines the necessary radiation quantities and units that are needed for a systemic control of shielding and presents an examination of the main sources of nuclear radiation. A discussion of the gamma photon cross sections and an introduction to BMIX, a computer program used in illustrating a technique in identifying the gamma ray build-up factor for a reactor shield, are added. The selection also discusses various mathematical representations and areas of shielding theory that are being used in radiation shielding. The book is of great value to those involved in the development and implementation of systems to minimize and control the dangerous and lethal effect of radiation.

## NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS ON PARALLEL COMPUTERS

*Springer Science & Business Media* Since the dawn of computing, the quest for a better understanding of Nature has been a driving force for technological development. Groundbreaking achievements by great scientists have paved the way from the abacus to the supercomputing power of today. When trying to replicate Nature in the computer's silicon test tube, there is need for precise and computable process descriptions. The scienti?c ?elds of Ma- ematics and Physics provide a powerful vehicle for such descriptions in terms of Partial Differential Equations (PDEs). Formulated as such equations, physical laws can become subject to computational and analytical studies. In the computational setting, the equations can be discreti ed for ef?cient solution on a computer, leading to valuable tools for simulation of natural and man-made processes. Numerical so- tion of PDE-based mathematical models has been an important research topic over centuries, and will remain so for centuries to come. In the context of computer-based simulations, the quality of the computed results is directly connected to the model's complexity and the number of data points used for the computations. Therefore, computational scientists tend to ?ll even the largest and most powerful computers they can get access to, either by increasing the si e of the data sets, or by introducing new model terms that make the simulations more realistic, or a combination of both. Today, many important simulation problems can not be solved by one single computer, but calls for parallel computing.

## COMPUTER LITERATURE BIBLIOGRAPHY: 1964-1967

## INTRODUCTION TO COMPUTER GRAPHICS

## USING JAVA 2D AND 3D

*Springer Science & Business Media* This book provides an introduction to the most important basic concepts of computer graphics. It couples the technical background and theory immediately with practical examples and applications. The reader can follow up the theory and then literally see the theory at work in numerous example programs. With only elementary knowledge of the programming language Java, the reader will be able to create his or her own images and animations immediately using Java 2D and Java 3D. A website for this book includes programs with source code, exercises with solutions and slides as teaching material.

## UNDERSTANDING MACHINE LEARNING

## FROM THEORY TO ALGORITHMS

*Cambridge University Press* Introduces machine learning and its algorithmic paradigms, explaining the principles behind automated learning approaches and the considerations underlying their usage.

## HANDBOOK OF RESEARCH ON DEMAND-DRIVEN WEB SERVICES: THEORY, TECHNOLOGIES, AND APPLICATIONS

## THEORY, TECHNOLOGIES, AND APPLICATIONS

*IGI Global* In the current technological world, Web services play an integral role in service computing and social networking services. This is also the case in the traditional FREG (foods, resources, energy, and goods) services because almost all traditional services are replaced fully or partially by Web services. Handbook of Research on Demand-Driven Web Services: Theory, Technologies, and Applications presents comprehensive and in-depth studies that reveal the cutting-edge theories, technologies, methodologies, and applications of demand-driven Web, mobile, and e-business services. This book provides critical perspectives for researchers and practitioners, lecturers and undergraduate/graduate students, and professionals in the fields of computing, business, service, management, and government, as well as a variety of readers from all the social strata.

## ELEMENTS OF INFORMATION THEORY

*John Wiley & Sons* The latest edition of this classic is updated with new problem sets and material The Second Edition of this fundamental textbook maintains the book's tradition of clear, thought-provoking instruction. Readers are provided once again with an instructive mix of mathematics, physics, statistics, and information theory. All the essential topics in information theory are covered in detail, including entropy, data compression, channel capacity, rate distortion, network information theory, and hypothesis testing. The authors provide readers with a solid understanding of the underlying theory and applications. Problem sets and a telegraphic summary at the end of each chapter further assist readers. The historical notes that follow each chapter recap the main points. The Second Edition features: * Chapters reorganized to improve teaching * 200 new problems * New material on source coding, portfolio theory, and feedback capacity * Updated references Now current and enhanced, the Second Edition of Elements of Information Theory remains the ideal textbook for upper-level undergraduate and graduate courses in electrical engineering, statistics, and telecommunications.