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Introduction to computer modeling of the brain, to understand how people think. Networks of interacting neurons produce complex emergent behavior including perception, attention, motor control, learning, memory, language, and executive functions (motivation, decision making, planning, etc). Flow of ions through voltage gated channels can be represented theoretically using stochastic differential equations where the gating mechanism is represented by a Markov model. The flow through a channel can be manipulated using various drugs, and the effect of a given drug can be reflected by changing the Markov model. These lecture notes provide an accessible introduction to the mathematical methods needed to deal with these models. They emphasize the use of numerical methods and provide sufficient details for the reader to implement the models and thereby study the effect of various drugs. Examples in the text include stochastic calcium release from internal storage systems in cells, as well as stochastic models of the transmembrane potential. Well known Markov models are studied and a systematic approach to including the effect of mutations is presented. Lastly, the book shows how to derive the optimal properties of a theoretical model of a drug for a given mutation defined in terms of a Markov model. Aerodynamic design of aircraft presented with realistic applications, using CFD software. Tutorials, exercises, and mini-projects provided involve design of real aircraft. Using online resources and supplements, this text prepares last-year undergraduates and first-year graduate students for industrial aerospace design and analysis tasks. For introductory courses in Differential Equations. This best-selling text by these well-known authors blends the traditional algebra problem solving skills with the conceptual development and geometric visualisation of a modern differential equations course that is essential to science and engineering students. It reflects the new qualitative approach that is altering the learning of elementary differential equations, including the wide availability of scientific computing environments like Maple, Mathematica, and MATLAB. Its focus balances the traditional manual methods with the new computer-based methods that illuminate qualitative phenomena and make accessible a wider range of more realistic applications. Seldom-used topics have been trimmed and new topics added: it starts and ends with discussions of mathematical modeling of real-

world phenomena, evident in figures, examples, problems, and applications throughout the text. The full text downloaded to your computer With eBooks you can: search for key concepts, words and phrases make highlights and notes as you study share your notes with friends eBooks are downloaded to your computer and accessible either offline through the Bookshelf (available as a free download), available online and also via the iPad and Android apps. Upon purchase, you'll gain instant access to this eBook. Time limit The eBooks products do not have an expiry date. You will continue to access your digital ebook products whilst you have your Bookshelf installed. The International Conference on Computational Fluid Dynamics (ICCFD) is the merger of the International Conference on Numerical Methods in Fluid Dynamics, ICNMF (since 1969) and International Symposium on Computational Fluid Dynamics, ISCFD (since 1985). It is held every two years and brings together physicists, mathematicians and engineers to review and share recent advances in mathematical and computational techniques for modeling fluid dynamics. The proceedings of the 2006 conference (ICCFD4) held in Gent, Belgium, contain a selection of refereed contributions and are meant to serve as a source of reference for all those interested in the state of the art in computational fluid mechanics. Molecular Forensics offers a comprehensive coverage of the increasingly important role that molecular analysis plays within forensic science. Starting with a broad introduction of modern forensic molecular technologies, the text covers key issues from the initial scenes of crime sampling to the use of evidential material in the prosecution of legal cases. The book also explores the questions raised by the growing debate on the applications of national DNA databases and the resulting challenges of developing, maintaining and curating such vast data structures. The broader range of applications to non-human cases is also discussed, as are the statistical pitfalls of using so-called unique data such as DNA profiles, and the ethical considerations of national DNA databases. An invaluable reference for students taking courses within the Forensic and Biomedical sciences, and also useful for practitioners in the field looking for a broad overview of the subject. Provides a comprehensive overview of modern forensic molecular technologies. Explores the growing debate on the applications of national DNA databases. Discusses the initial phases of investigation to the conclusion of cases involving molecular forensic analysis. 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. This text provides a very simple, initial introduction to the complete scientific computing pipeline: models, discretization, algorithms, programming, verification, and visualization. The pedagogical strategy is to use one case study – an ordinary differential equation describing exponential decay processes – to illustrate fundamental concepts in mathematics and computer science. The book is easy to read and only requires a command of one-variable calculus and some very basic knowledge about computer programming. Contrary to similar texts on numerical methods and programming, this text has a much stronger focus on implementation and teaches testing and software engineering in particular. Gift of Fire is ideal for courses in Computer Ethics and Computers and Society. In this revision of a best-seller, Baase explores the social, legal, philosophical, ethical, political, constitutional, and economic implications of computing and the controversies they raise. With a computer scientist's perspective, and with historical context for many issues, she covers the issues readers will face both as members of a technological society and as professionals in computer-related fields. A primary goal is to develop computer professionals who understand the implications of what they create and how it fits into society at large. Introduction -- Supervised learning -- Bayesian decision theory -- Parametric methods -- Multivariate methods -- Dimensionality

reduction -- Clustering -- Nonparametric methods -- Decision trees -- Linear discrimination -- Multilayer perceptrons -- Local models -- Kernel machines -- Graphical models -- Brief contents -- Hidden markov models -- Bayesian estimation -- Combining multiple learners -- Reinforcement learning -- Design and analysis of machine learning experiments. The Encyclopedia of Computer Science is the definitive reference in computer science and technology. First published in 1976, it is still the only single volume to cover every major aspect of the field. Now in its Fourth Edition, this influential work provides an historical timeline highlighting the key breakthroughs in computer science and technology, as well as clear and concise explanations of the latest technology and its practical applications. Its unique blend of historical perspective, current knowledge and predicted future trends has earned it its richly deserved reputation as an unrivalled reference classic. What sets the Encyclopedia apart from other reference sources is the comprehensiveness of each of its entries. Encompassing far more than mere definitions, each article elaborates on a topic giving a remarkable breadth and depth of coverage. The visual impact of the volume is enhanced with a 16 page colour insert spotlighting advanced computer applications and computer-generated graphics technology. In addition, the text is enlivened with figures, tables, diagrams, illustrations and photographs. With contributions from over 300 international experts, the 4th Edition contains over 100 completely new articles ranging from artificial life to computer ethics, data mining to Java, mobile computing to quantum computing and software safety to the World Wide Web. In addition, each of the more than 600 articles have been extensively revised, expanded and updated to reflect the latest developments in computer science and technology. Intelligently and thoughtfully organised, all the articles are classified around 9 main themes Hardware Software Computer Systems Information and Data Mathematics of Computing Theory of Computation Methodologies Applications Computing Milieux Within each of these major headings are a wealth of articles that provide the reader with concise yet thorough coverage of the topic. In addition, cross-references are included at the beginning of each article, directing the reader immediately to related material. In addition the Encyclopedia contains useful appendices including: An expanded glossary of major terms in English, German, Spanish and Russian A revised list of abbreviations and acronyms An updated list of computer science and engineering research journals A list of articles from previous editions not included in the 4th edition A Name Index listing almost 3500 individuals cited in the text A comprehensive General Index with 7000 entries A chronology of significant milestones Computer Society & Academic Computer Science Department Listings Numerical Tables, Mathematical Notation and Units of Measure Highly-regarded as an essential resource for computer professionals, engineers, mathematicians, students and scientists, the Encyclopedia of Computer Science is a must-have reference for every college, university, business and high-school library. Revised and updated with the latest information in the field, the Fourth Edition of Computer Science Illuminated continues to engage and enlighten students on the fundamental concepts and diverse capabilities of computing. Written by two of today's most respected computer science educators, Nell Dale and John Lewis, the text provides a broad overview of the many aspects of the discipline from a generic view point. Separate program language chapters are available as bundle items for those instructors who would like to explore a particular programming language with their students. The many layers of computing are thoroughly explained beginning with the information layer, working through the hardware, programming, operating systems, application, and communication layers, and ending with a discussion on the limitations of computing. Perfect for introductory computing and computer science courses, the fourth edition's thorough presentation of computing systems provides computer science majors with a solid foundation for further study, and offers non-majors a comprehensive and complete introduction to computing. Insider Threats in Cyber Security is a cutting edge text presenting IT and non-IT facets of insider threats together. This volume brings together a critical mass of well-established worldwide researchers, and provides a unique multidisciplinary overview. Monica van Huystee, Senior Policy Advisor at MCI, Ontario, Canada comments "The book will be a must read, so of course I'll need a copy." Insider Threats in Cyber Security covers all aspects of insider threats, from motivation to mitigation. It includes how to monitor insider threats (and what to monitor for), how to mitigate insider threats, and related topics and case studies. Insider Threats in Cyber Security is intended for a professional audience composed of the military, government policy makers and banking; financing companies focusing on the Secure Cyberspace industry. This book is also suitable for advanced-level students and researchers in computer science as a secondary text or reference book. For courses in Computer Programming with Python. Social Computing and Programming with Python Introduction to Computing and Programming in Python is a uniquely researched and up-to-date volume that is widely recognised for its successful introduction

to the subject of Media Computation. Emphasising creativity, classroom interaction, and in-class programming examples, Introduction to Computing and Programming in Python takes a bold and unique approach to computation that engages students and applies the subject matter to the relevancy of digital media. The 4th Edition teaches students to program in an effort to communicate via social computing outlets, providing a unique approach that serves the interests of a broad range of students. The full text downloaded to your computer With eBooks you can: search for key concepts, words and phrases make highlights and notes as you study share your notes with friends eBooks are downloaded to your computer and accessible either offline through the Bookshelf (available as a free download), available online and also via the iPad and Android apps. Upon purchase, you'll gain instant access to this eBook. Time limit The eBooks products do not have an expiry date. You will continue to access your digital ebook products whilst you have your Bookshelf installed. A substantially revised fourth edition of a comprehensive textbook, including new coverage of recent advances in deep learning and neural networks. The goal of machine learning is to program computers to use example data or past experience to solve a given problem. Machine learning underlies such exciting new technologies as self-driving cars, speech recognition, and translation applications. This substantially revised fourth edition of a comprehensive, widely used machine learning textbook offers new coverage of recent advances in the field in both theory and practice, including developments in deep learning and neural networks. The book covers a broad array of topics not usually included in introductory machine learning texts, including supervised learning, Bayesian decision theory, parametric methods, semiparametric methods, nonparametric methods, multivariate analysis, hidden Markov models, reinforcement learning, kernel machines, graphical models, Bayesian estimation, and statistical testing. The fourth edition offers a new chapter on deep learning that discusses training, regularizing, and structuring deep neural networks such as convolutional and generative adversarial networks; new material in the chapter on reinforcement learning that covers the use of deep networks, the policy gradient methods, and deep reinforcement learning; new material in the chapter on multilayer perceptrons on autoencoders and the word2vec network; and discussion of a popular method of dimensionality reduction, t-SNE. New appendixes offer background material on linear algebra and optimization. End-of-chapter exercises help readers to apply concepts learned. Introduction to Machine Learning can be used in courses for advanced undergraduate and graduate students and as a reference for professionals. The Fourth Edition of the industry-acclaimed OpenStack Cloud Computing Cookbook, from four recognized experts, updated to the latest OpenStack build including Cinder, Nova, and Neutron. Key Features Over 100 recipes created by a team of OpenStack experts Updated to work with the latest OpenStack builds, with recipes covering the installation and use of OpenStack with Ansible It covers topics such as Keystone, Glance, Neutron, Nova, Cinder, and more, plus recipes for OpenStack storage, networking, and orchestrating workloads Test drive OpenStack using the accompanying Vagrant environment Book Description This is the fourth edition of the industry-acclaimed OpenStack Cloud Computing Cookbook, created by four recognized OpenStack experts. It has now been updated to work with the latest OpenStack builds, using tools and processes based on their collective and vast OpenStack experience. OpenStack Open Source Cloud software is one of the most used cloud infrastructures to support a wide variety of use cases, from software development to big data analysis. It is developed by a thriving community of individual developers from around the globe and backed by most of the leading players in the cloud space today. We make it simple to implement, massively scalable, and able to store a large pool of data and networking resources. OpenStack has a strong ecosystem that helps you provision your cloud storage needs. Add OpenStack's enterprise features to reduce the cost of your business. This book will begin by showing you the steps to build up an OpenStack private cloud environment using Ansible. You'll then discover the uses of cloud services such as the identity service, image service, and compute service. You'll dive into Neutron, the OpenStack Networking service, and get your hands dirty with configuring networks, routers, load balancers, and more. You'll then gather more expert knowledge on OpenStack cloud computing by managing your cloud's security and migration. After that, we delve into OpenStack Object storage and you'll see how to manage servers and work with objects, cluster, and storage functionalities. Finally, you will learn about OpenStack dashboard, Ansible, Keystone, and other interesting topics. What you will learn Understand, install, configure, and manage a complete OpenStack Cloud platform using OpenStack-Ansible Configure networks, routers, load balancers, and more with Neutron Use Keystone to setup domains, roles, groups and user access Learn how to use Swift and setup container access control lists Gain hands-on experience and familiarity with Horizon, the OpenStack Dashboard user interface Automate complete solutions with our recipes on Heat, the OpenStack Orchestration

service as well as using Ansible to orchestrate application workloads Follow practical advice and examples to run OpenStack in production Who this book is for This book is written for cloud system engineers, system administrators, and technical architects who are moving from a virtualized environment to cloud environments. This book assumes that you are familiar with cloud computing platforms, and have knowledge of virtualization, networking, and managing Linux environments. This book is published open access under a CC BY 4.0 license. This book presents computer programming as a key method for solving mathematical problems. This second edition of the well-received book has been extensively revised: All code is now written in Python version 3.6 (no longer version 2.7). In addition, the two first chapters of the previous edition have been extended and split up into five new chapters, thus expanding the introduction to programming from 50 to 150 pages. Throughout the book, the explanations provided are now more detailed, previous examples have been modified, and new sections, examples and exercises have been added. Also, a number of small errors have been corrected. The book was inspired by the Springer book TCSE 6: A Primer on Scientific Programming with Python (by Langtangen), but the style employed is more accessible and concise, in keeping with the needs of engineering students. The book outlines the shortest possible path from no previous experience with programming to a set of skills that allows students to write simple programs for solving common mathematical problems with numerical methods in the context of engineering and science courses. The emphasis is on generic algorithms, clean program design, the use of functions, and automatic tests for verification. Data Structures & Theory of Computation Professional testing of software is an essential task that requires a profound knowledge of testing techniques. The International Software Testing Qualifications Board (ISTQB) has developed a universally accepted, international qualification scheme aimed at software and system testing professionals, and has created the Syllabi and Tests for the "Certified Tester." Today about 300,000 people have taken the ISTQB certification exams. The authors of Software Testing Foundations, 4th Edition, are among the creators of the Certified Tester Syllabus and are currently active in the ISTQB. This thoroughly revised and updated fourth edition covers the "Foundations Level" (entry level) and teaches the most important methods of software testing. It is designed for self-study and provides the information necessary to pass the Certified Tester-Foundations Level exam, version 2011, as defined by the ISTQB. Also in this new edition, technical terms have been precisely stated according to the recently revised and updated ISTQB glossary. Topics covered: Fundamentals of Testing Testing and the Software Lifecycle Static and Dynamic Testing Techniques Test Management Test Tools Also mentioned are some updates to the syllabus that are due in 2015. CONTENIDO: Finite-dimensional Hilbert Spaces - Qubits - Kronecker product and tensor product - Matrix properties - Density operators - Partial trace - Unitary transforms and quantum gates - Entropy - Measurement - Entanglement - Bell inequality - Teleportation - Cloning - Quantum algorithms - Quantum error correction - Quantum cryptography - Infinite-dimensional Hilbert Spaces - Harmonic oscillator and Bose operators - Coherent states - Squeezed states - Entanglement - Swapping and cloning - Hamilton operators. Quantum computing and quantum information are two of the fastest growing and most exciting research fields in physics. Entanglement, teleportation and the possibility of using the non-local behavior of quantum mechanics to factor integers in random polynomial time have also added to this new interest. This book presents a huge collection of problems in quantum computing and quantum information together with their detailed solutions, which will prove to be invaluable to students as well as researchers in these fields. Each chapter gives a comprehensive introduction to the topics. All the important concepts and areas such as quantum gates and quantum circuits, product Hilbert spaces, entanglement and entanglement measures, teleportation, Bell states, Bell measurement, Bell inequality, Schmidt decomposition, quantum Fourier transform, magic gate, von Neumann entropy, quantum cryptography, quantum error corrections, quantum games, number states and Bose operators, coherent states, squeezed states, Gaussian states, coherent Bell states, POVM measurement, quantum optics networks, beam splitter, phase shifter and Kerr Hamilton operator are included. A chapter on quantum channels has also been added. Furthermore a chapter on boolean functions and quantum gates with mapping bits to qubits is included. The topics range in difficulty from elementary to advanced. Almost all problems are solved in detail and most of the problems are self-contained. Each chapter also contains supplementary problems to challenge the reader. Programming problems with Maxima and SymbolicC++ implementations are also provided. This Third Edition, in response to the enthusiastic reception given by academia and students to the previous edition, offers a cohesive presentation of all aspects of theoretical computer science, namely automata, formal languages, computability, and complexity. Besides, it includes coverage of mathematical preliminaries. NEW TO THIS EDITION •

Expanded sections on pigeonhole principle and the principle of induction (both in Chapter 2) • A rigorous proof of Kleene's theorem (Chapter 5) • Major changes in the chapter on Turing machines (TMs) – A new section on high-level description of TMs – Techniques for the construction of TMs – Multitape TM and nondeterministic TM • A new chapter (Chapter 10) on decidability and recursively enumerable languages • A new chapter (Chapter 12) on complexity theory and NP-complete problems • A section on quantum computation in Chapter 12. • KEY FEATURES • Objective-type questions in each chapter—with answers provided at the end of the book. • Eighty-three additional solved examples—added as Supplementary Examples in each chapter. • Detailed solutions at the end of the book to chapter-end exercises. The book is designed to meet the needs of the undergraduate and postgraduate students of computer science and engineering as well as those of the students offering courses in computer applications. This book explores the most significant computational methods and the history of their development. It begins with the earliest mathematical / numerical achievements made by the Babylonians and the Greeks, followed by the period beginning in the 16th century. For several centuries the main scientific challenge concerned the mechanics of planetary dynamics, and the book describes the basic numerical methods of that time. In turn, at the end of the Second World War scientific computing took a giant step forward with the advent of electronic computers, which greatly accelerated the development of numerical methods. As a result, scientific computing became established as a third scientific method in addition to the two traditional branches: theory and experimentation. The book traces numerical methods' journey back to their origins and to the people who invented them, while also briefly examining the development of electronic computers over the years. Featuring 163 references and more than 100 figures, many of them portraits or photos of key historical figures, the book provides a unique historical perspective on the general field of scientific computing – making it a valuable resource for all students and professionals interested in the history of numerical analysis and computing, and for a broader readership alike. Provides an introduction to the theory of computation that emphasizes formal languages, automata and abstract models of computation, and computability. This book also includes an introduction to computational complexity and NP-completeness. An Introduction to Formal Languages & Automata provides an excellent presentation of the material that is essential to an introductory theory of computation course. The text was designed to familiarize students with the foundations & principles of computer science & to strengthen the students' ability to carry out formal & rigorous mathematical argument. Employing a problem-solving approach, the text provides students insight into the course material by stressing intuitive motivation & illustration of ideas through straightforward explanations & solid mathematical proofs. By emphasizing learning through problem solving, students learn the material primarily through problem-type illustrative examples that show the motivation behind the concepts, as well as their connection to the theorems & definitions. A guide to using the power of S-PLUS to perform statistical analyses, providing both an introduction to the program and a course in modern statistical methods. Readers are assumed to have a basic grounding in statistics, thus the book is intended for would-be users, as well as students and researchers using statistics. Throughout, the emphasis is on presenting practical problems and full analyses of real data sets, with many of the methods discussed being modern approaches to topics such as linear and non-linear regression models, robust and smooth regression methods, survival analysis, multivariate analysis, tree-based methods, time series, spatial statistics, and classification. This second edition is intended for users of S-PLUS 3.3, or later, and covers both Windows and UNIX. It treats the recent developments in graphics and new statistical functionality, including bootstrapping, mixed effects linear and non-linear models, factor analysis, and regression with autocorrelated errors. The authors have written several software libraries which enhance S-PLUS, and these, plus all the datasets used, are available on the Internet. This fourth edition of the text reflects the continuing increase in awareness and use of computational electromagnetics and incorporates advances and refinements made in recent years. Most notable among these are the improvements made to the standard algorithm for the finite-difference time-domain (FDTD) method and treatment of absorbing boundary conditions in FDTD, finite element, and transmission-line-matrix methods. It teaches the readers how to pose, numerically analyze, and solve EM problems, to give them the ability to expand their problem-solving skills using a variety of methods, and to prepare them for research in electromagnetism. Includes new homework problems in each chapter. Each chapter is updated with the current trends in CEM. Adds a new appendix on CEM codes, which covers commercial and free codes. Provides updated MATLAB code. "This companion CD-ROM contains: The software ADJUST, MATRIX, and STATS (This software is windows only), Mathcad and HTML worksheets"--CD-ROM. A substantially revised fourth edition of a comprehensive textbook,

including new coverage of recent advances in deep learning and neural networks. The goal of machine learning is to program computers to use example data or past experience to solve a given problem. Machine learning underlies such exciting new technologies as self-driving cars, speech recognition, and translation applications. This substantially revised fourth edition of a comprehensive, widely used machine learning textbook offers new coverage of recent advances in the field in both theory and practice, including developments in deep learning and neural networks. The book covers a broad array of topics not usually included in introductory machine learning texts, including supervised learning, Bayesian decision theory, parametric methods, semiparametric methods, nonparametric methods, multivariate analysis, hidden Markov models, reinforcement learning, kernel machines, graphical models, Bayesian estimation, and statistical testing. The fourth edition offers a new chapter on deep learning that discusses training, regularizing, and structuring deep neural networks such as convolutional and generative adversarial networks; new material in the chapter on reinforcement learning that covers the use of deep networks, the policy gradient methods, and deep reinforcement learning; new material in the chapter on multilayer perceptrons on autoencoders and the word2vec network; and discussion of a popular method of dimensionality reduction, t-SNE. New appendixes offer background material on linear algebra and optimization. End-of-chapter exercises help readers to apply concepts learned. Introduction to Machine Learning can be used in courses for advanced undergraduate and graduate students and as a reference for professionals. In recent years, our world has experienced a profound shift and progression in available computing and knowledge sharing innovations. These emerging advancements have developed at a rapid pace, disseminating into and affecting numerous aspects of contemporary society. This has created a pivotal need for an innovative compendium encompassing the latest trends, concepts, and issues surrounding this relevant discipline area. During the past 15 years, the Encyclopedia of Information Science and Technology has become recognized as one of the landmark sources of the latest knowledge and discoveries in this discipline. The Encyclopedia of Information Science and Technology, Fourth Edition is a 10-volume set which includes 705 original and previously unpublished research articles covering a full range of perspectives, applications, and techniques contributed by thousands of experts and researchers from around the globe. This authoritative encyclopedia is an all-encompassing, well-established reference source that is ideally designed to disseminate the most forward-thinking and diverse research findings. With critical perspectives on the impact of information science management and new technologies in modern settings, including but not limited to computer science, education, healthcare, government, engineering, business, and natural and physical sciences, it is a pivotal and relevant source of knowledge that will benefit every professional within the field of information science and technology and is an invaluable addition to every academic and corporate library. This is the second of three volumes providing a comprehensive presentation of the fundamentals of scientific computing. This volume discusses more advanced topics than volume one, and is largely not a prerequisite for volume three. This book and its companions show how to determine the quality of computational results, and how to measure the relative efficiency of competing methods. Readers learn how to determine the maximum attainable accuracy of algorithms, and how to select the best method for computing problems. This book also discusses programming in several languages, including C++, Fortran and MATLAB. There are 49 examples, 110 exercises, 66 algorithms, 24 interactive JavaScript programs, 77 references to software programs and 1 case study. Topics are introduced with goals, literature references and links to public software. There are descriptions of the current algorithms in LAPACK, GSLIB and MATLAB. This book could be used for a second course in numerical methods, for either upper level undergraduates or first year graduate students. Parts of the text could be used for specialized courses, such as nonlinear optimization or iterative linear algebra. The notion that "thinking about computing is one of the most exciting things the human mind can do" sets both *The Little Schemer* (formerly known as *The Little LISPer*) and its new companion volume, *The Seasoned Schemer*, apart from other books on LISP. The authors' enthusiasm for their subject is compelling as they present abstract concepts in a humorous and easy-to-grasp fashion. Together, these books will open new doors of thought to anyone who wants to find out what computing is really about. *The Little Schemer* introduces computing as an extension of arithmetic and algebra; things that everyone studies in grade school and high school. It introduces programs as recursive functions and briefly discusses the limits of what computers can do. The authors use the programming language Scheme, and interesting foods to illustrate these abstract ideas. *The Seasoned Schemer* informs the reader about additional dimensions of computing: functions as values, change of state, and exceptional cases. *The Little LISPer* has been a popular introduction to LISP for many years. It had appeared in French and Japanese. *The Little Schemer* and

The Seasoned Schemer are worthy successors and will prove equally popular as textbooks for Scheme courses as well as companion texts for any complete introductory course in Computer Science. The Fourth Edition of Ethics and Technology introduces students to issues and controversies that comprise the relatively new field of cyberethics. This textbook examines a wide range of cyberethics issues--from specific issues of moral responsibility to broader social and ethical concerns that affect each of us in our day-to-day lives. Recent developments in machine ethics should also cause students to consider questions about conventional conceptions of autonomy and trust. Such topics and many other engaging ethical controversies--both hypothetical and actual cases--are discussed in this widely used and respected text. Updates to the 4th Edition include New or updated scenarios in each chapter New sample arguments in many chapters, which enable students to apply the tools for argument analysis covered in Chapter 3 Newly designed set of study/exercise questions call Unalyzed Scenarios in each chapter, which can be used for either in-class group projects or outside class assignments Additional review, discussion, and essay/presentation questions at the end of many chapters New Issues Examined and Analyzed include Ethical and social aspects of Cloud Computing, including concerns about the privacy and security of users' data that is increasingly being stored in "the Cloud" Concerns about the increasing "personalization" of search results based on queries entered by users on search engines such as Google Controversies surrounding Wikileaks and the tension it creates between free speech and responsible journalism Concerns affecting "net neutrality" and whether Internet regulation may be required to ensure that service providers on the Internet do not also unduly control the content delivered via their services Recent controversies affecting "machine ethics" and the development of "moral machines" or autonomous systems that will be embedded with software designed for making moral decisions Questions about our conventional notions of autonomy and trust--can machines be autonomous? Can we trust machines to act in ways that will always be in the best interest of humans? Explores current issues in the field of cyberethics, including questions about onlinepersonal privacy, sharing music, and unreliable software, and analyzes the practical, moral, and legal implications of each issue.

Ethics and Technology, 5th Edition, by Herman Tavani introduces students to issues and controversies that comprise the relatively new field of cyberethics. This text examines a wide range of cyberethics issues--from specific issues of moral responsibility that directly affect computer and information technology (IT) professionals to broader social and ethical concerns that affect each of us in our day-to-day lives. The 5th edition shows how modern day controversies created by emerging technologies can be analyzed from the perspective of standard ethical concepts and theories. Get your head—and your business—into the Cloud Cloud computing is no longer just a clever new toy in the world of IT infrastructure. Despite the nebulous name, it's become a real and important part of our information architecture—and tech professionals who ignore it or try to skim their way through risk falling behind rapidly. The new edition of Cloud Computing For Dummies gets you up to speed fast, clarifying your Cloud options, showing you where can save you time and money, giving you ways to frame your decisions, and helping you avoid weeks of research. In a friendly, easy-to-follow style, Cloud Computing For Dummies, 2nd Edition demystifies the Cloud's virtual landscape, breaking up a complex and multi-layered topic into simple explanations that will make the various benefits clear and ultimately guide you toward making the most appropriate choices for your organization. Know the business case for the Cloud Understand hybrid and multi-cloud options Develop your Cloud strategy Get tips on best practices The Cloud is everywhere, and it can deliver amazing benefits to our lives and businesses. Get a much clearer vision of exactly how with Cloud Computing For Dummies—and you'll begin to see that the sky really is the limit! The only book to provide a unified view of the interplay between computational number theory and cryptography Computational number theory and modern cryptography are two of the most important and fundamental research fields in information security. In this book, Song Y. Yang combines knowledge of these two critical fields, providing a unified view of the relationships between computational number theory and cryptography. The author takes an innovative approach, presenting mathematical ideas first, thereupon treating cryptography as an immediate application of the mathematical concepts. The book also presents topics from number theory, which are relevant for applications in public-key cryptography, as well as modern topics, such as coding and lattice based cryptography for post-quantum cryptography. The author further covers the current research and applications for common cryptographic algorithms, describing the mathematical problems behind these applications in a manner accessible to computer scientists and engineers. Makes mathematical problems accessible to computer scientists and engineers by showing their immediate application Presents topics from number theory relevant for public-key cryptography applications Covers modern topics such as coding



and lattice based cryptography for post-quantum cryptography Starts with the basics, then goes into applications and areas of active research Geared at a global audience; classroom tested in North America, Europe, and Asia Includes exercises in every chapter Instructor resources available on the book's Companion Website Computational Number Theory and Modern Cryptography is ideal for graduate and advanced undergraduate students in computer science, communications engineering, cryptography and mathematics. Computer scientists, practicing cryptographers, and other professionals involved in various security schemes will also find this book to be a helpful reference. This revised edition provides the mathematical background and algorithmic skills required for the production of numerical software. It includes rewritten and clarified proofs and derivations, as well as new topics such as Arnoldi iteration, and domain decomposition methods.

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