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Introduction to Linear Algebra Gilbert Strang 2016-08-11 Linear algebra is something all mathematics undergraduates and many other students, in subjects ranging from engineering to economics, have to learn. The fifth edition of this hugely successful textbook retains all the qualities of earlier editions while at the same time seeing numerous minor improvements and major additions. The latter include: • A new chapter on singular values and singular vectors, including ways to analyze a matrix of data • A revised chapter on computing in linear algebra, with professional-level algorithms and code that can be downloaded for a variety of languages • A new section on linear algebra and cryptography • A new chapter on linear algebra in probability and statistics. A dedicated and active website also offers solutions to exercises as well as new exercises from many different sources (e.g. practice problems, exams, development of textbook examples), plus codes in MATLAB, Julia, and Python.

Quantum Mechanics of One- and Two-Electron Atoms Hans A. Bethe 2013-06-29 Nearly all of this book is taken from an article prepared for a volume of the Encyclopedia of Physics. This article, in turn, is partly based on Dr. Norbert Rosenzweig's translation of an older article on the same subject, written by one of us (H.A.B.) about 25 years ago for the Geiger-Scheel Handbuch der Physik. To the article written last year we have added some Addenda and Errata. These Addenda and Errata refer back to some of the 79 sections of the main text and contain some misprint corrections, additional references and some notes. The aim of this book is two-fold. First, to act as a reference work on calcu lations pertaining to hydrogen-like and helium-like atoms and their comparison with experiments. However, these calculations involve a vast array of approximation methods, mathematical tricks and physical pictures, which are also useful in the application of quantum mechanics to other fields. In many sections we have given more general discussions of the methods and physical ideas than is necessary for the study of the H- and He-atom alone. We hope that this book will thus at least partly fulfill its second aim, namely to be of some use to graduate students who wish to learn "applied quantum mechanics". A basic knowledge of the principles of quantum mechanics, such as given in the early chapters of Schiff's or Bohm's book, is presupposed.

Discrete Mathematics László Lovász 2006-05-11 Aimed at undergraduate mathematics and computer science students, this book is an excellent introduction to a lot of problems of discrete mathematics. It discusses a number of selected results and methods, mostly from areas of combinatorics and graph theory, and it uses proofs and problem solving to help students understand the solutions to problems. Numerous examples, figures, and exercises are spread throughout the book.

Abstract Algebra I. N. Herstein 1990

Vibrations and Waves A.P. French 2017-12-21 The M.I.T. Introductory Physics Series is the result of a program of careful study, planning, and development that began in 1960. The Education Research Center at the Massachusetts Institute of Technology (formerly the Science Teaching Center) was established to study the process of instruction, aids thereto, and the learning process itself, with special reference to science teaching at the university level. Generous support from a number of foundations provided the means for assembling and maintaining an experienced staff to co-operate with members of the Institute's Physics Department in the examination, improvement, and development of physics curriculum materials for students planning careers in the sciences. After careful analysis of objectives and the problems involved, preliminary versions of textbooks were prepared, tested through classroom use at M.I.T. and other institutions, re-evaluated, rewritten, and tried again. Only then were the final manuscripts undertaken.

Reinforcement Learning and Optimal Control Dimitri Bertsekas 2019-07-01 This book considers large and challenging multistage decision problems, which can be solved in principle by dynamic programming (DP), but their exact solution is computationally intractable. We discuss solution methods that rely on approximations to produce suboptimal policies with adequate performance. These methods are collectively known by several essentially equivalent names: reinforcement learning, approximate dynamic programming, neuro-dynamic programming. They have been at the forefront of research for the last 25 years, and they underlie, among others, the recent impressive successes of self-learning in the context of games such as chess and Go. Our subject has benefited greatly from the interplay of ideas from optimal control and from artificial intelligence, as it relates to reinforcement learning and simulation-based neural network methods. One of the aims of the book is to explore the common boundary between these two fields and to form a bridge that is accessible by workers with background in either field. Another aim is to organize coherently the broad mosaic of methods that have proved successful in practice while having a solid theoretical and/or logical foundation. This may help researchers and practitioners to find their way through the maze of competing ideas that constitute the current state of the art. This book relates to several of our other books: Neuro-Dynamic Programming (Athena Scientific, 1996), Dynamic Programming and Optimal Control (4th edition, Athena Scientific, 2017), Abstract Dynamic Programming (2nd edition, Athena Scientific, 2018), and Nonlinear Programming (Athena Scientific, 2016). However, the mathematical style of this book is somewhat different. While we provide a rigorous, albeit short, mathematical account of the theory of finite and infinite horizon dynamic programming, and some fundamental approximation methods, we rely more on intuitive explanations and less on proof-based insights. Moreover, our mathematical requirements are quite modest: calculus, a minimal use of matrix-vector algebra, and elementary probability (mathematically complicated arguments involving laws of large numbers and stochastic convergence are bypassed in favor of intuitive explanations). The book illustrates the methodology with many examples and illustrations, and uses a gradual expository approach, which proceeds along four directions: (a) From exact DP to approximate DP: We first discuss exact DP algorithms, explain why they may be difficult to implement, and then use them as the basis for approximations. (b) From finite horizon to infinite horizon problems: We first discuss finite horizon exact and approximate DP methodologies, which are intuitive and mathematically simple, and then progress to infinite horizon problems. (c) From deterministic to stochastic models: We often discuss separately deterministic and stochastic problems, since deterministic problems are simpler and offer special advantages for some of our methods. (d) From model-based to model-free implementations: We first discuss model-based implementations, and then we identify schemes that can be appropriately modified to work with a simulator. The book is related and supplemented by the companion research monograph Rollout, Policy Iteration, and Distributed Reinforcement Learning (Athena Scientific, 2020), which focuses more closely on several topics related to rollout, approximate policy iteration, multiagent problems, discrete and Bayesian optimization, and distributed computation, which are

either discussed in less detail or not covered at all in the present book. The author's website contains class notes, and a series of videolectures and slides from a 2021 course at ASU, which address a selection of topics from both books.

Mathematical Statistics and Data Analysis John A. Rice 2006-04-28 This is the first text in a generation to re-examine the purpose of the mathematical statistics course. The book's approach interweaves traditional topics with data analysis and reflects the use of the computer with close ties to the practice of statistics. The author stresses analysis of data, examines real problems with real data, and motivates the theory. The book's descriptive statistics, graphical displays, and realistic applications stand in strong contrast to traditional texts that are set in abstract settings. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Global Business Nader H. Asgary 2021-01-01 The arrival of the COVID-19 pandemic throughout the globe at the end of 2019 turned global business upside down. It forced the closure of many businesses, disrupted global supply chains, reduced travel across borders, and created fear about face-to-face interactions. As the lockdowns in many countries created uncertainty about the future business activities, global business leaders were scrambling to find new strategies to safely re-establish their business relationships with their stakeholders. The existing historical economic, social, and racial injustice in the American society toward Black, Indigenous, and People of Color was compounded by the COVID-19. This led the movements of the Black Lives Matter to reenergize and become a global phenomenon. The horrific and sad death of George Floyd and many others triggered huge global movements to demand respect for human rights and dignity for all. Additionally, climate change and environmental degradation have caused unprecedented forests fires, more frequent and damaging hurricanes, and migration demand a revived global business book. This third edition of Global Business: An Economic, Social, and Environmental Perspective incorporates global business issues related to COVID-19, the economic and social injustice of BIPOC, and environmental degradation where it is appropriate. The reader will understand the impact of these critical global business issues discussed in the book through examples, case studies and thought-provoking discussions. These challenges require businesses, governments, and the active engagement of citizens to succeed. The aim of this book is to bring these issues for discussion and action by these stakeholders. Each chapter includes supplementary PowerPoint slides, Test-Bank, and Teaching notes that are available for instructors only.

Cross-Cultural Management Communication Richard Mead 1992-09-22 Good communication creates good relationships, high morale, and an increase in productivity and profits. Cultural differences can create tremendous problems in communication, and in today's international business world, this can have dramatic effects. Explains not only how to handle such problems, but also how cultural differences can be turned to advantage. Author Richard Mead shows how management priorities are communicated in different cultures, examining the various communication problems facing the manager dealing with people from other cultures. In particular, the author shows how managers can develop skills to recognize the differences, analyze them, and identify and apply appropriate solutions--before the differences become headaches.

Principles of Computer System Design Jerome H. Saltzer 2009-05-21 Principles of Computer System Design is the first textbook to take a principles-based approach to the computer system design. It identifies, examines, and illustrates fundamental concepts in computer system design that are common across operating systems, networks, database systems, distributed systems, programming languages, software engineering, security, fault tolerance, and architecture. Through carefully analyzed case studies from each of these disciplines, it demonstrates how to apply these concepts to tackle practical system design problems. To support the focus on design, the text identifies and explains abstractions that have proven successful in practice such as remote procedure call, client/service organization, file systems, data integrity, consistency, and authenticated messages. Most computer systems are built using a handful of such abstractions. The text describes how these abstractions are implemented, demonstrates how they are used in different systems, and prepares the reader to apply them in future designs. The book is recommended for junior and senior undergraduate students in Operating Systems, Distributed Systems, Distributed Operating Systems and/or Computer Systems Design courses; and professional computer systems designers. Features: Concepts of computer system design guided by fundamental principles. Cross-cutting approach that identifies abstractions common to networking, operating systems, transaction systems, distributed systems, architecture, and software engineering. Case studies that make the abstractions real: naming (DNS and the URL); file systems (the UNIX file system); clients and services (NFS); virtualization (virtual machines); scheduling (disk arms); security (TLS). Numerous pseudocode fragments that provide concrete examples of abstract concepts. Extensive support. The authors and MIT OpenCourseWare provide on-line, free of charge, open educational resources, including additional chapters, course syllabi, board layouts and slides, lecture videos, and an archive of lecture schedules, class assignments, and design projects.

The Analytics Edge Dimitris Bertsimas 2016 "Provides a unified, insightful, modern, and entertaining treatment of analytics. The book covers the science of using data to build models, improve decisions, and ultimately add value to institutions and individuals"--Back cover.

A Primer of Visual Literacy Donis A Dondis 1974-09-15 This primer is designed to teach students the interconnected arts of visual communication. The subject is presented, not as a foreign language, but as a native one that the student "knows" but cannot yet "read." Responding to the need she so clearly perceives, Ms. Dondis, a designer and teacher of broad experience, has provided a beginning text for art and design students and a basic text for all other students; those who do not intend to become artists or designers but who need to acquire the essential skills of understanding visual communication at a time when so much information is being studied and transmitted in non-verbal modes, especially through photography and film. Understanding through seeing only seems to be an obviously intuitive process. Actually, developing the visual sense is something like learning a language, with its own special alphabet, lexicon, and syntax. People find it necessary to be verbally literate whether they are "writers": or not; they should find it equally necessary to be visually literate, "artists" or not. This primer is designed to teach students the interconnected arts of visual communication. The subject is presented, not as a foreign language, but as a native one that the student "knows" but cannot yet "read." The analogy provides a useful teaching method, in part because it is not overworked or too rigorously applied. This method of learning to see and read visual data has already been proved in practice, in settings ranging from Harlem to suburbia. Appropriately, the book makes some of its most telling points through visual means. Numerous illustrated examples are employed to clarify the basic elements of design (teach an alphabet), to show how they are used in simple syntactic combinations ("See Jane run."), and finally, to present the meaningful synthesis of visual information that is a finished work of art (the apprehension of poetry...).

Assessing Student Learning Linda Suskie 2010-07-30 The first edition of Assessing Student Learning has become the standard reference for college faculty and administrators who are charged with the task of assessing student learning within their institutions. The second edition of this landmark book offers the same practical guidance and is designed to meet ever-increasing demands for improvement and accountability. This edition includes expanded coverage of vital assessment topics such as promoting an assessment culture, characteristics of good assessment, audiences for assessment, organizing and coordinating assessment, assessing attitudes and values, setting benchmarks and standards, and using results to inform and improve teaching, learning, planning, and decision making.

Training Cognition Alice F. Healy 2012-08-21 Training is both a teaching and a learning experience, and just about everyone has had that experience. Training involves acquiring knowledge and skills. This newly acquired training information is meant to be applicable to specific activities, tasks, and jobs. In modern times, where jobs are increasingly more complex, training workers to

perform successfully is of more importance than ever. The range of contexts in which training is required includes industrial, corporate, military, artistic, and sporting, at all levels from assembly line to executive function. The required training can take place in a variety of ways and settings, including the classroom, the laboratory, the studio, the playing field, and the work environment itself. The general goal of this book is to describe the current state of research on training using cognitive psychology to build a complete empirical and theoretical picture of the training process. The book focuses on training cognition, as opposed to physical or fitness training. It attempts to show how to optimize training efficiency, durability, and generalizability. The book includes a review of relevant cognitive psychological literature, a summary of recent laboratory experiments, a presentation of original theoretical ideas, and a discussion of possible applications to real-world training settings.

Global Marketing Management System Basil Janavaras 2017-04-25 This is the second edition of the Global Marketing Management System (GMMS). The GMMS approach (GMMS book + GMMSO4 software) provides a rigorous theoretical base and a comprehensive, systematic and integrative planning process designed to guide students and managers alike through the decision-making process of a company seeking global market opportunities. The book aims to provide a structure, platform, tools and a systematic step-by-step process designed to support the creation of a strategic and applied oriented methodology to global business planning and strategy formulation. It introduces the GMMS process as a demonstration of a successful application of using web-based tools in teaching international business. The book also facilitates the ability of students to enhance their understanding of decision making in international management and bridge the gap between theory and practice. More about GMMSO GMMSO4 Student User Guide (2 MB) What is GMMS? For Professors (2 MB) What is GMMS? For Consultants and SMEs (2 MB) Contents:The Global Marketing Management System:Introduction:Globalization and the Need for a Global Business EducationProject-based Learning and GMMSOUnderstanding the Firm's Strategic Position:Information ScanningPerforming a Firm Level Strategic AnalysisSummaryThe Search for Global Markets:The Decision Making ProcessPreliminary Screening of MarketsThe Process of Screening Countries Using Three Separate Screening Matrices Performing an in-Depth Market Analysis of the Two Best MarketsMarket and Company Sales PotentialAnalyzing Market/Country Specific Competitive AnalysisIdentification of Country-entry Conditions for the FirmAnalysis of Financial and Market Entry ConditionsCreating an Entry Strategy into a Selected Market:Selecting an Entry Mode into the Target MarketThe Business Environment of the Selected MarketCreating a Marketing Plan with Its Firm Specific Goals and ObjectivesDeveloping a Product StrategyDeveloping a Pricing StrategyCreation of a Promotional StrategyDeveloping of a Distribution StrategyCreation of a Financial StrategyCreating the Organizational Structure for the New MarketUnderstanding Exit Strategy and ScenariosSummaryThe GMMSO4 Software System:GMMSO4:What Is GMMSO?Bridge the GapBenefitsBackground to the Development of the Online Version of the GMMS MethodLearning OutcomesCase Study:Lafkiotis Winery Entry into United States: A Report Created by Using the GMMSO4 SystemLafkiotis Winery's Strategic AnalysisThe Search for Global MarketEntry Strategy into the US Market Readership: Students, instructors, researchers and professionals working in the fields of marketing management, global strategy and international business.

How the Mind Works Steven Pinker 2009-06-22 An assessment of human thought and behavior explores conundrums from the mind's ability to perceive three dimensions to the nature of consciousness, in an account that draws on beliefs in cognitive science and evolutionary biology.

Introduction to Computation and Programming Using Python, second edition John V. Guttag 2016-08-12 The new edition of an introductory text that teaches students the art of computational problem solving, covering topics ranging from simple algorithms to information visualization. This book introduces students with little or no prior programming experience to the art of computational problem solving using Python and various Python libraries, including PyLab. It provides students with skills that will enable them to make productive use of computational techniques, including some of the tools and techniques of data science for using computation to model and interpret data. The book is based on an MIT course (which became the most popular course offered through MIT's OpenCourseWare) and was developed for use not only in a conventional classroom but in in a massive open online course (MOOC). This new edition has been updated for Python 3, reorganized to make it easier to use for courses that cover only a subset of the material, and offers additional material including five new chapters. Students are introduced to Python and the basics of programming in the context of such computational concepts and techniques as exhaustive enumeration, bisection search, and efficient approximation algorithms. Although it covers such traditional topics as computational complexity and simple algorithms, the book focuses on a wide range of topics not found in most introductory texts, including information visualization, simulations to model randomness, computational techniques to understand data, and statistical techniques that inform (and misinform) as well as two related but relatively advanced topics: optimization problems and dynamic programming. This edition offers expanded material on statistics and machine learning and new chapters on Frequentist and Bayesian statistics.

Evaluation of Ocean-Energy Conversion Based on Linear Generator Concepts Michael A. Stelzer Ph. D. 2012-06 It is shown theoretically that the buoy can be designed to have a greater heave response than that of the height of a passing wave resulting in an increase in generated power from the linear generator.

Real Analysis N. L. Carothers 2000-08-15 A text for a first graduate course in real analysis for students in pure and applied mathematics, statistics, education, engineering, and economics.

Linear Algebra and Learning from Data Gilbert Strang 2019-01-31 Linear algebra and the foundations of deep learning, together at last! From Professor Gilbert Strang, acclaimed author of Introduction to Linear Algebra, comes Linear Algebra and Learning from Data, the first textbook that teaches linear algebra together with deep learning and neural nets. This readable yet rigorous textbook contains a complete course in the linear algebra and related mathematics that students need to know to get to grips with learning from data. Included are: the four fundamental subspaces, singular value decompositions, special matrices, large matrix computation techniques, compressed sensing, probability and statistics, optimization, the architecture of neural nets, stochastic gradient descent and backpropagation.

Python for Software Design Allen B. Downey 2009-03-09 A no-nonsense introduction to software design using the Python programming language. Written for people with no programming experience, this book starts with the most basic concepts and gradually adds new material. Some of the ideas students find most challenging, like recursion and object-oriented programming, are divided into a sequence of smaller steps and introduced over the course of several chapters. The focus is on the programming process, with special emphasis on debugging. The book includes a wide range of exercises, from short examples to substantial projects, so that students have ample opportunity to practise each new concept. Exercise solutions and code examples are available from thinkpython.com, along with Swampy, a suite of Python programs that is used in some of the exercises.

Introduction to the Theory of Computation Michael Sipser 2012-06-27 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.

Introduction to Probability Joseph K. Blitzstein 2014-07-24 Developed from celebrated Harvard statistics lectures, Introduction to Probability provides essential language and tools for understanding statistics, randomness, and uncertainty. The book explores a wide variety of applications and examples, ranging from coincidences and paradoxes to Google PageRank and Markov chain Monte Carlo (MCMC). Additional

Structure and Interpretation of Computer Programs Harold Abelson 1985 Designed for the introductory computer science subject at MIT, this book presents a unique conceptual introduction to programming that should make it required reading for every computer scientist. The authors' main concern is to give their readers command of the major techniques used to control the complexity of large software systems: building abstractions, establishing conventional interfaces, and establishing new descriptive languages. Structure and Interpretation of Computer Programs covers a wide range of material, from simple numerical programs, through symbol manipulation, logic programming, interpretation, and compilation. Main sections of the book are: Building Abstractions with Procedures; Building Abstractions with Data; Modularity, Objects, and State, Meta-Linguistic Abstraction; and Computing with Register Machines. Each chapter includes numerous exercises and programming projects. As a programming language, the book uses Scheme, a modern dialect of LISP, which incorporates block structure and lexical scoping. This book inaugurates the MIT Electrical Engineering and Computer Science series, copublished with McGraw Hill.

The Accidental Asian Eric Liu 2007-12-18 Beyond black and white, native and alien, lies a vast and fertile field of human experience. It is here that Eric Liu, former speechwriter for President Clinton and noted political commentator, invites us to explore. In these compellingly candid essays, Liu reflects on his life as a second-generation Chinese American and reveals the shifting frames of ethnic identity. Finding himself unable to read a Chinese memorial book about his father's life, he looks critically at the cost of his own assimilation. But he casts an equally questioning eye on the effort to sustain vast racial categories like “Asian American.” And as he surveys the rising anxiety about China's influence, Liu illuminates the space that Asians have always occupied in the American imagination. Reminiscent of the work of James Baldwin and its unwavering honesty, The Accidental Asian introduces a powerful and elegant voice into the discussion of what it means to be an American.

Morality Matters Roger Trigg 2008-04-15 Morality still matters, argues philosopher Roger Trigg, in this accessible introduction to moral thinking. Written for general readers with no background in philosophy. Argues that we need a shared moral vision in order to live together, both nationally and internationally. Considers the need for a shared morality in relation to subjects of vital importance such as human rights. Stresses that private behaviour cannot be kept separate from public choices. Discusses matters of topical debate on both sides of the Atlantic.

Probabilistic Graphical Models Daphne Koller 2009-07-31 A general framework for constructing and using probabilistic models of complex systems that would enable a computer to use available information for making decisions. Most tasks require a person or an automated system to reason—to reach conclusions based on available information. The framework of probabilistic graphical models, presented in this book, provides a general approach for this task. The approach is model-based, allowing interpretable models to be constructed and then manipulated by reasoning algorithms. These models can also be learned automatically from data, allowing the approach to be used in cases where manually constructing a model is difficult or even impossible. Because uncertainty is an inescapable aspect of most real-world applications, the book focuses on probabilistic models, which make the uncertainty explicit and provide models that are more faithful to reality. Probabilistic Graphical Models discusses a variety of models, spanning Bayesian networks, undirected Markov networks, discrete and continuous models, and extensions to deal with dynamical systems and relational data. For each class of models, the text describes the three fundamental cornerstones: representation, inference, and learning, presenting both basic concepts and advanced techniques. Finally, the book considers the use of the proposed framework for causal reasoning and decision making under uncertainty. The main text in each chapter provides the detailed technical development of the key ideas. Most chapters also include boxes with additional material: skill boxes, which describe techniques; case study boxes, which discuss empirical cases related to the approach described in the text, including applications in computer vision, robotics, natural language understanding, and computational biology; and concept boxes, which present significant concepts drawn from the material in the chapter. Instructors (and readers) can group chapters in various combinations, from core topics to more technically advanced material, to suit their particular needs.

An introduction to the theory of numbers Ivan Niven 1993

Japan Prepares for Total War Michael A. Barnhart 2013-03-22 The roots of Japan's aggressive, expansionist foreign policy have often been traced to its concern over acute economic vulnerability. Historian Michael Barnhart tests this assumption by examining the events leading up to World War II in the context of Japan's quest for economic security. Drawing on a wide array of Japanese and American sources, this is the first English-language book on the war's origins to be based on research in archives on both sides of the Pacific. Barnhart focuses on the critical years from 1938 to 1941 as he investigates the development of Japan's drive for national economic self-sufficiency and independence and the way in which this drive shaped its internal and external policies. He also explores American economic pressure on Tokyo and assesses its impact on Japan's foreign policy and domestic economy. He concludes that Japan's internal political dynamics, especially the bitter rivalry between its army and navy, played a far greater role in propelling the nation into war with the United States than did its economic condition or even pressure from Washington. Japan Prepares for Total War sheds new light on prewar Japan and confirms the opinions of those in Washington who advocated economic pressure against Japan. At a time of growing interest in U.S.-Japanese economic relations, this book will be stimulating and provocative reading for scholars and students of international relations and American and Asian history.

Ultralearning Scott Young 2019-08-06 Now a Wall Street Journal bestseller. Learn a new talent, stay relevant, reinvent yourself, and adapt to whatever the workplace throws your way. Ultralearning offers nine principles to master hard skills quickly. This is the essential guide to future-proof your career and maximize your competitive advantage through self-education. In these tumultuous times of economic and technological change, staying ahead depends on continual self-education—a lifelong mastery of fresh ideas, subjects, and skills. If you want to accomplish more and stand apart from everyone else, you need to become an ultralearner. The challenge of learning new skills is that you think you already know how best to learn, as you did as a student, so you rerun old routines and old ways of solving problems. To counter that, Ultralearning offers powerful strategies to break you out of those mental ruts and introduces new training methods to help you push through to higher levels of retention. Scott H. Young incorporates the latest research about the most effective learning methods and the stories of other ultralearners like himself—among them Benjamin Franklin, chess grandmaster Judit Polgár, and Nobel laureate physicist Richard Feynman, as well as a host of others, such as little-known modern polymath Nigel Richards, who won the French World Scrabble Championship—without knowing French. Young documents the methods he and others have used to acquire knowledge and shows that, far from being an obscure skill limited to aggressive autodidacts, ultralearning is a powerful tool anyone can use to improve their career, studies, and life. Ultralearning explores this fascinating subculture, shares a proven framework for a successful ultralearning project, and offers insights into how you can organize

and exe - cute a plan to learn anything deeply and quickly, without teachers or budget-busting tuition costs. Whether the goal is to be fluent in a language (or ten languages), earn the equivalent of a college degree in a fraction of the time, or master multiple tools to build a product or business from the ground up, the principles in Ultralearning will guide you to success.

Signals & Systems Alan V. Oppenheim 1997 New edition of a text intended primarily for the undergraduate courses on the subject which are frequently found in electrical engineering curricula--but the concepts and techniques it covers are also of fundamental importance in other engineering disciplines. The book is structured to develop in parallel the methods of analysis for continuous-time and discrete-time signals and systems, thus allowing exploration of their similarities and differences. Discussion of applications is emphasized, and numerous worked examples are included. Annotation copyrighted by Book News, Inc., Portland, OR

Recent Advances in Computational Sciences 2008 This book presents state-of-the-art lectures delivered by international academic and industrial experts in the field of computational science and its education, covering a wide spectrum from theory to practice. Topics include new developments in finite element method (FEM), finite volume method and Spline theory, such as Moving Mesh Methods, Galerkin and Discontinuous Galerkin Schemes, Shape Gradient Methods, Mixed FEMs, Superconvergence techniques and Fourier spectral approximations with applications in multidimensional fluid dynamics; Maxwell equations in discrepancy media; and phase-field equations. It also discusses some interesting topics related to Stokes equations, Schrodinger equations, wavelet analysis and approximation theory. Contemporary teaching issues in curriculum reform also form an integral part of the book. This book will therefore be of significant interest and value to all graduates, research scientists and practitioners facing complex computational problems. Administrators and policymakers will find it is an addition to their mathematics curriculum reform libraries.

Machine, Platform, Crowd: Harnessing Our Digital Future Andrew McAfee 2017-06-27 “A clear and crisply written account of machine intelligence, big data and the sharing economy. But McAfee and Brynjolfsson also wisely acknowledge the limitations of their futurology and avoid over-simplification.” —Financial Times In The Second Machine Age, Andrew McAfee and Erik Brynjolfsson predicted some of the far-reaching effects of digital technologies on our lives and businesses. Now they’ve written a guide to help readers make the most of our collective future. Machine | Platform | Crowd outlines the opportunities and challenges inherent in the science fiction technologies that have come to life in recent years, like self-driving cars and 3D printers, online platforms for renting outfits and scheduling workouts, or crowd-sourced medical research and financial instruments.

Phantasmal Media D. Fox Harrell 2013-11-08 An argument that great expressive power of computational media arises from the construction of phantasms—blends of cultural ideas and sensory imagination. In Phantasmal Media, D. Fox Harrell considers the expressive power of computational media. He argues, forcefully and persuasively, that the great expressive potential of computational media comes from the ability to construct and reveal phantasms—blends of cultural ideas and sensory imagination. These ubiquitous and often-unseen phantasms—cognitive phenomena that include sense of self, metaphors, social categories, narrative, and poetic thinking—influence almost all our everyday experiences. Harrell offers an approach for understanding and designing computational systems that have the power to evoke these phantasms, paying special attention to the exposure of oppressive phantasms and the creation of empowering ones. He argues for the importance of cultural content, diverse worldviews, and social values in computing. The expressive power of phantasms is not purely aesthetic, he contends; phantasmal media can express and construct the types of meaning central to the human condition. Harrell discusses, among other topics, the phantasm as an orienting perspective for developers; expressive epistemologies, or data structures based on subjective human worldviews; morphic semiotics (building on the computer scientist Joseph Goguen's theory of algebraic semiotics); cultural phantasms that influence consensus and reveal other perspectives; computing systems based on cultural models; interaction and expression; and the ways that real-world information is mapped onto, and instantiated by, computational data structures. The concept of phantasmal media, Harrell argues, offers new possibilities for using the computer to understand and improve the human condition through the human capacity to imagine.

Engineering a Safer World Nancy G. Leveson 2012-01-13 A new approach to safety, based on systems thinking, that is more effective, less costly, and easier to use than current techniques. Engineering has experienced a technological revolution, but the basic engineering techniques applied in safety and reliability engineering, created in a simpler, analog world, have changed very little over the years. In this groundbreaking book, Nancy Leveson proposes a new approach to safety—more suited to today's complex, sociotechnical, software-intensive world—based on modern systems thinking and systems theory. Revisiting and updating ideas pioneered by 1950s aerospace engineers in their System Safety concept, and testing her new model extensively on real-world examples, Leveson has created a new approach to safety that is more effective, less expensive, and easier to use than current techniques. Arguing that traditional models of causality are inadequate, Leveson presents a new, extended model of causation (Systems-Theoretic Accident Model and Processes, or STAMP), then shows how the new model can be used to create techniques for system safety engineering, including accident analysis, hazard analysis, system design, safety in operations, and management of safety-critical systems. She applies the new techniques to real-world events including the friendly-fire loss of a U.S. Blackhawk helicopter in the first Gulf War; the Vioxx recall; the U.S. Navy SUBSAFE program; and the bacterial contamination of a public water supply in a Canadian town. Leveson's approach is relevant even beyond safety engineering, offering techniques for “reengineering” any large sociotechnical system to improve safety and manage risk.

Computer Graphics Donald Hearn 1994 A complete update of a bestselling introduction to computer graphics, this volume explores current computer graphics hardware and software systems, current graphics techniques, and current graphics applications. Includes expanded coverage of algorithms, applications, 3-D modeling and rendering, and new topics such as distributed ray tracing, radiosity, physically based modeling, and visualization techniques.

The Digital Scholar Martin Weller 2011-09-01 While industries such as music, newspapers, film and publishing have seen radical changes in their business models and practices as a direct result of new technologies, higher education has so far resisted the wholesale changes we have seen elsewhere. However, a gradual and fundamental shift in the practice of academics is taking place. Every aspect of scholarly practice is seeing changes effected by the adoption and possibilities of new technologies. This book will explore these changes, their implications for higher education, the possibilities for new forms of scholarly practice and what lessons can be drawn from other sectors.

Mathematics for Computer Science Eric Lehman 2017-03-08 This book covers elementary discrete mathematics for computer science and engineering. It emphasizes mathematical definitions and proofs as well as applicable methods. Topics include formal logic notation, proof methods; induction, well-ordering; sets, relations; elementary graph theory; integer congruences; asymptotic notation and growth of functions; permutations and combinations, counting principles; discrete probability. Further selected topics may also be covered, such as recursive definition and structural induction; state machines and invariants; recurrences; generating functions.

Mining of Massive Datasets Jure Leskovec 2014-11-13 Now in its second edition, this book focuses on practical algorithms for mining data from even the largest datasets.

Introduction to Information Retrieval Christopher D. Manning 2008-07-07 Class-tested and coherent, this textbook teaches classical and web information retrieval, including web search and the related areas of text classification and text clustering from basic concepts. It gives an up-to-date treatment of all aspects of the design and implementation of systems for gathering, indexing, and searching documents; methods for evaluating systems; and an introduction to the use of machine learning methods on text

collections. All the important ideas are explained using examples and figures, making it perfect for introductory courses in information retrieval for advanced undergraduates and graduate students in computer science. Based on feedback from extensive classroom experience, the book has been carefully structured in order to make teaching more natural and effective. Slides and additional exercises (with solutions for lecturers) are also available through the book's supporting website to help course instructors prepare their lectures.