Computer Engineering Ebooks

When people should go to the books stores, search launch by shop, shelf by shelf, it is truly problematic. This is why we present the book compilations in this website. It will no question ease you to look guide **Computer Engineering Ebooks** as you such as.

By searching the title, publisher, or authors of guide you in reality want, you can discover them rapidly. In the house, workplace, or perhaps in your method can be all best area within net connections. If you set sights on to download and install the Computer Engineering Ebooks, it is no question simple then, since currently we extend the link to purchase and create bargains to download and install Computer Engineering Ebooks as a result simple!

The Computer Engineering Handbook Vojin G. Oklobdzija 2001-12-26 There is arguably no field in greater need of a comprehensive handbook than computer engineering. The unparalleled rate of technological advancement, the explosion of computer applications, and the now-in-progress migration to a wireless world have made it difficult for engineers to keep up with all the developments in specialties outside their own

Digital Systems and Applications Vojin G. Oklobdzija 2017-12-19 New design architectures in computer systems have surpassed industry expectations. Limits, which were once thought of as fundamental, have now been broken. Digital Systems and Applications details these innovations in systems design as well as cutting-edge applications that are emerging to take advantage of the fields increasingly sophisticated capabilities. This book features new chapters on parallelizing iterative heuristics, stream and wireless processors, and lightweight embedded systems. This fundamental text— Provides a clear focus on computer systems, architecture, and applications Takes a top-level view of system organization before moving on to architectural and organizational concepts such as superscalar and vector processor, VLIW architecture, as well as new trends in multithreading and multiprocessing. includes an entire section dedicated to embedded systems and their applications Discusses topics such as digital signal processing applications, circuit implementation aspects, parallel I/O algorithms, and operating systems Concludes with a look at new and future directions in computing Features articles that describe diverse aspects of computer usage and potentials for use Details implementation and performance-enhancing techniques such as branch prediction, register renaming, and virtual memory Includes a section on new directions in computing and their penetration into many new fields and aspects of our daily lives

Sports Engineering and Computer Science Qi Luo 2015-05-18 Sports Engineering and Computer Science contains papers presented at the 2014 International Conference on Sport Science and Computer Science (SSCS 2014), held September 16-17, 2014 in Singapore and at the 2014 International Conference on Biomechanics and Sports Engineering (BSE 2014), held October 24-25, 2014, in Riga, Latvia. The contributions hav

Computer, Network, Software, and Hardware Engineering with Applications Norman F. Schneidewind 2012-03-27 There are many books on computers, networks, and software engineering but none that integrate the three with applications. Integration is important because, increasingly, software dominates the performance, reliability, maintainability, and availability of complex computer and systems. Books on software engineering typically portray software as if it exists in a vacuum with no relationship to the wider system. This is wrong because a system is more than software. It is comprised of people, organizations, processes, hardware, and software. All of these components must be considered in an integrative fashion when designing systems. On the other hand, books on computers and networks do not demonstrate a deep understanding of the intricacies of developing software. In this book you will learn, for example, how to quantitatively analyze the performance, reliability, maintainability, and availability of computers, networks, and software in relation to the total system. Furthermore, you will learn how to evaluate and mitigate the risk of deploying integrated systems. You will learn how to apply many models dealing with the optimization of systems. Numerous quantitative examples are provided to help you understand and

interpret model results. This book can be used as a first year graduate course in computer, network, and software engineering; as an on-the-job reference for computer, network, and software engineers; and as a reference for these disciplines.

A First Course in Electrical and Computer Engineering Louis L. Scharf 1990

Computer Systems and Software Engineering: Concepts, Methodologies, Tools, and Applications Management Association, Information Resources 2017-12-01 Professionals in the interdisciplinary field of computer science focus on the design, operation, and maintenance of computational systems and software. Methodologies and tools of engineering are utilized alongside computer applications to develop efficient and precise information databases. Computer Systems and Software Engineering: Concepts, Methodologies, Tools, and Applications is a comprehensive reference source for the latest scholarly material on trends, techniques, and uses of various technology applications and examines the benefits and challenges of these computational developments. Highlighting a range of pertinent topics such as utility computing, computer security, and information systems applications, this multi-volume book is ideally designed for academicians, researchers, students, web designers, software developers, and practitioners interested in computer systems and software engineering.

How Things Work Charles F. Bowman 2021-08-26 It's axiomatic to state that people fear what they do not understand, and this is especially true when it comes to technology. However, despite their prevalence, computers remain shrouded in mystery, and many users feel apprehensive when interacting with them. Smartphones have only exacerbated the issue. Indeed, most users of these devices leverage only a small fraction of the power they hold in their hands. How Things Work: The Computer Science Edition is a roadmap for readers who want to overcome their technophobia and harness the full power of everyday technology. Beginning with the basics, the book demystifies the mysterious world of computer science, explains its fundamental concepts in simple terms, and answers the questions many users feel too intimidated to ask. By the end of the book, readers will understand how computers and smart devices function and, more important, how they can make these devices work for them. To complete the picture, the book also introduces readers to the darker side of modern technology: security and privacy concerns, identity theft, and threats from the Dark Web.

Chemical Engineering Primer with Computer Applications Hussein K. Abdel-Aal 2016-10-14 Taking a highly pragmatic approach to presenting the principles and applications of chemical engineering, this companion text for students and working professionals offers an easily accessible guide to solving problems using computers. The primer covers the core concepts of chemical engineering, from conservation laws all the way up to chemical kinetics, without heavy stress on theory and is designed to accompany traditional larger core texts. The book presents the basic principles and techniques of chemical engineering processes and helps readers identify typical problems and how to solve them. Focus is on the use of systematic algorithms that employ numerical methods to solve different chemical engineering problems by describing and transforming the information. Problems are assigned for each chapter, ranging from simple to difficult, allowing readers to gradually build their skills and tackle a broad range of problems. MATLAB and Excel® are used to solve many examples and the more than 70 real examples throughout the book include computer or hand

solutions, or in many cases both. The book also includes a variety of case studies to illustrate the concepts and a downloadable file containing fully worked solutions to the book's problems on the publisher's website. Introduces the reader to chemical engineering computation without the distractions caused by the contents found in many texts. Provides the principles underlying all of the major processes a chemical engineer may encounter as well as offers insight into their analysis, which is essential for design calculations. Shows how to solve chemical engineering problems using computers that require numerical methods using standard algorithms, such as MATLAB® and Excel®. Contains selective solved examples of many problems within the chemical process industry to demonstrate how to solve them using the techniques presented in the text. Includes a variety of case studies to illustrate the concepts and a downloadable file containing fully worked solutions to problems on the publisher's website. Offers non-chemical engineers who are expected to work with chemical engineers on projects, scale-ups and process evaluations a solid understanding of basic concepts of chemical engineering analysis, design, and calculations.

Computer Electronics J. F. B. Bourdillon 2014-05-21 Computer Electronics: Made Simple Computerbooks presents the basics of computer electronics and explains how a microprocessor works. Various types of PROMs, static RAMs, dynamic RAMs, floppy disks, and hard disks are considered, along with microprocessor support devices made by Intel, Motorola and Zilog. Bit slice logic and some AMD bit slice products are also described. Comprised of 14 chapters, this book begins with an introduction to the fundamentals of hardware design, followed by a discussion on the basic building blocks of hardware (NAND, NOR, AND, OR, NOT, XOR); tools and equipment that are required by a hardware engineer; and sequential logic. Subsequent chapters focus on analog components such as transistors, resistors, capacitors, diodes, crystals, and power supplies; data sheets and data books; timing diagrams; arithmetic using integrated circuits, with emphasis on full adders, arithmetic logic units, and arithmetic processing units. The final chapter describes how a project operates, how the computer-aided design process works, and how printed circuit boards are manufactured. This monograph will be of interest to students, engineers, and other practitioners in computer electronics.

Software Engineering Pfleeger 2008-09

E-Systems for the 21st Century Seifedine Kadry 2019-07-10 E-based systems and computer networks are becoming standard practice across all sectors, including health, engineering, business, education, security, and citizen interaction with local and national government. With contributions from researchers and practitioners from around the world, this two-volume book discusses and reports on new and important developments in the field of e-systems, covering a wide range of current issues in the design, engineering, and adoption of e-systems.

Real-world Software Projects for Computer Science and Engineering Students Varun Gupta 2021 Developing projects outside of a classroom setting can be intimidating for students and is not always a seamless process. Real-World Software Projects for Computer Science and Engineering Students is a quick, easy source for tackling such issues. Filling a critical gap in the research literature, the book: Is ideal for academic project supervisors. Helps researchers conduct interdisciplinary research. Guides computer science students on undertaking and implementing research-based projects This book explains how to develop highly complex, industry-specific projects, touching on real-world complexities of software developments. It shows how to develop projects for students who have not yet had the chance to gain real-world experience, providing opportunity to become familiar with the skills needed to implement projects using standard development methodologies. The book is also a great source for teachers of undergraduate students in software engineering and computer science as it can help students prepare for risk and uncertainty that is typical of software development in industrial settings

Computer Systems Engineering Management Robert S. Alford 2018-01-18 Computer Systems Engineering Management provides a superb guide to the overall effort of computer systems bridge building. It explains what to do before you get to the river,

how to organise your work force, how to manage the construction, and what do when you finally reach the opposite shore. It delineates practical approaches to real-world development issues and problems presents many examples and case histories and explains techniques that apply to everything from microprocessors to mainframes and from person computer applications to extremely sophisticated systems

Emerging Artificial Intelligence Applications in Computer Engineering Ilias G. Maglogiannis 2007 "The ever expanding abundance of information and computing power enables researchers and users to tackle highly interesting issues for the first time, such as applications providing personalized access and interactivity to multimodal information based on user preferences and semantic concepts or human-machine interface systems utilizing information on the affective state of the user. The purpose of this book is to provide insights on how todays computer engineers can implement AI in real world applications. Overall, the field of artificial intelligence is extremely broad. In essence, AI has found applications, in one way or another, in every aspect of computing and in most aspects of modern life. Consequently, it is not possible to provide a complete review of the field in the framework of a single book, unless if the review is broad rather than deep. In this book we have chosen to present selected current and emerging practical applications of AI, thus allowing for a more detailed presentation of topics. The book is organized in four parts; General Purpose Applications of AI; Intelligent Human-Computer Interaction; Intelligent Applications in Signal Processing and eHealth; and Real world AI applications in Computer Engineering."

Petroleum Production Engineering Boyun Guo, 2017-02-10 Petroleum Production Engineering, Second Edition, updates both the new and veteran engineer on how to employ day-to-day production fundamentals to solve real-world challenges with modern technology. Enhanced to include equations and references with today's more complex systems, such as working with horizontal wells, workovers, and an entire new section of chapters dedicated to flow assurance, this go-to reference remains the most all-inclusive source for answering all upstream and midstream production issues. Completely updated with five sections covering the entire production spectrum, including well productivity, equipment and facilities, well stimulation and workover, artificial lift methods, and flow assurance, this updated edition continues to deliver the most practical applied production techniques, answers, and methods for today's production engineer and manager. In addition, updated Excel spreadsheets that cover the most critical production equations from the book are included for download. Updated to cover today's critical production challenges, such as flow assurance, horizontal and multi-lateral wells, and workovers Guides users from theory to practical application with the help of over 50 online Excel spreadsheets that contain basic production equations, such as gas lift potential, multilateral gas well deliverability, and production forecasting Delivers an all-inclusive product with real-world answers for training or quick look up solutions for the entire petroleum production spectrum

Software Quality Engineering Jeff Tian 2005-05-20 The one resource needed to create reliable software This text offers a comprehensive and integrated approach tosoftware quality engineering. By following the author's clearguidance, readers learn how to master the techniques to producehigh-quality, reliable software, regardless of the softwaresystem's level of complexity. The first part of the publication introduces major topics insoftware quality engineering and presents quality planning as anintegral part of the process. Providing readers with a solidfoundation in key concepts and practices, the book moves on tooffer in-depth coverage of software testing as a primary means toensure software quality; alternatives for quality assurance,including defect prevention, process improvement, inspection,formal verification, fault tolerance, safety assurance, and damagecontrol; and measurement and analysis to close the feedback loopfor quality assessment and quantifiable improvement. The text's approach and style evolved from the author's hands-onexperience in the classroom. All the pedagogical tools needed tofacilitate quick learning are provided:
* Figures and tables that clarify concepts and provide quick

topicsummaries * Examples that illustrate how theory is applied in real-worldsituations * Comprehensive bibliography that leads to in-depth discussion ofspecialized topics * Problem sets at the end of each chapter that test readers'knowledge This is a superior textbook for software engineering, computerscience, information systems, and electrical engineering students,and a dependable reference for software and computer professionalsand engineers.

Encyclopedia of Computer Science and Technology Phillip A. Laplante 2017-10-02 With breadth and depth of coverage, the Encyclopedia of Computer Science and Technology, Second Edition has a multi-disciplinary scope, drawing together comprehensive coverage of the inter-related aspects of computer science and technology. The topics covered in this encyclopedia include: General and reference Hardware Computer systems organization Networks Software and its engineering Theory of computation Mathematics of computing Information systems Security and privacy Human-centered computing Computing methodologies Applied computing Professional issues Leading figures in the history of computer science The encyclopedia is structured according to the ACM Computing Classification System (CCS), first published in 1988 but subsequently revised in 2012. This classification system is the most comprehensive and is considered the de facto ontological framework for the computing field. The encyclopedia brings together the information and historical context that students, practicing professionals, researchers, and academicians need to have a strong and solid foundation in all aspects of computer science and technology.

Electromagnetic Modeling by Finite Element Methods João Pedro A. Bastos 2003-04-01 Unlike any other source in the field, this valuable reference clearly examines key aspects of the finite element method (FEM) for electromagnetic analysis of low-frequency electrical devices. The authors examine phenomena such as nonlinearity, mechanical force, electrical circuit coupling, vibration, heat, and movement for applications in the elect

Theory and Design of Broadband Matching Networks Wai-Kai Chen 2013-10-22 Theory and Design of Broadband Matching Networks centers on the network theory and its applications to the design of broadband matching networks and amplifiers. Organized into five chapters, this book begins with a description of the foundation of network theory. Chapter 2 gives a fairly complete exposition of the scattering matrix associated with an n-port network. Chapter 3 considers the approximation problem along with a discussion of the approximating functions. Chapter 4 explains the Youla's theory of broadband matching by illustrating every phase of the theory with fully worked out examples. The extension of Youla's theory to active load impedance is taken up in Chapter 5. This book will be useful as a reference for practicing engineers who wish to learn how the modern network theory can be applied to the design of many practical circuits.

Information Technology and Computer Application Engineering Hsiang-Chuan Liu 2013-10-11 This proceedings volume brings together some 189 peer-reviewed papers presented at the International Conference on Information Technology and Computer Application Engineering, held 27-28 August 2013, in Hong Kong, China. Specific topics under consideration include Control, Robotics, and Automation, Information Technology, Intelligent Computing and Telecommunication, Computer Science and Engineering, Computer Education and Application and other related topics. This book provides readers a state-of-the-art survey of recent innovations and research worldwide in Information Technology and Computer Application Engineering, in so-doing furthering the development and growth of these research fields, strengthening international academic cooperation and communication, and promoting the fruitful exchange of research ideas. This volume will be of interest to professionals and academics alike, serving as a broad overview of the latest advances in the dynamic field of Information Technology and Computer Application Engineering.

Electrical, Control Engineering and Computer Science Liu Jian 2015-12-30 Electrical, Control Engineering and Computer Science includes the papers from ECECS2015 (Hong Kong, 30-31 May 2015), which was organized by the American Society of Science and Engineering (ASEE), a non-profit society for engineers and scientists. Presenting new theories, ideas,

techniques and experiences related to all aspects of electrical enginee

Engineering the Computer Science and IT Safeeullah Soomro 2009-10-01 It has been many decades, since Computer Science has been able to achieve tremendous recognition and has been applied in various fields, mainly computer programming and software engineering. Many efforts have been taken to improve knowledge of researchers, educationists and others in the field of computer science and engineering. This book provides a further insight in this direction. It provides innovative ideas in the field of computer science and engineering with a view to face new challenges of the current and future centuries. This book comprises of 25 chapters focusing on the basic and applied research in the field of computer science and information technology. It increases knowledge in the topics such as web programming, logic programming, software debugging, real-time systems, statistical modeling, networking, program analysis, mathematical models and natural language processing.

What Every Engineer Should Know about Computer Modeling and Simulation Don M. Ingels 2021-06-30 This book presents a brief description of what constitutes computer modeling and simulation with techniques given to get a feel for how some of the simulation software packages involving hundreds of thousands of lines of code were developed.

Java How to Program Paul J. Deitel 2011-11-21 This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. The Deitels' groundbreaking How to Program series offers unparalleled breadth and depth of object-oriented programming concepts and intermediate-level topics for further study. This survey of Java programming contains an optional extensive OOD/UML 2 case study on developing and implementing the software for an automated teller machine. The Eighth Edition of this acclaimed text is now current with the Java SE 6 updates that have occurred since the book was last published. The Late Objects Version delays coverage of class development until Chapter 8, presenting the control structures, methods and arrays material in a non-object-oriented, procedural programming context.

Computer Engineering C. Gordon Bell 2014-05-12 Computer Engineering: A DEC View of Hardware Systems Design focuses on the principles, progress, and concepts in the design of hardware systems. The selection first elaborates on the seven views of computer systems, technology progress in logic and memories, and packaging and manufacturing. Concerns cover power supplies, DEC computer packaging generations, general packaging, semiconductor logic technology, memory technology, measuring (and creating) technology progress, structural levels of a computer system, and packaging levels-of -integration. The manuscript then examines transistor circuitry in the Lincoln TX-2, digital modules, PDP-1 and other 18-bit computers, PDP-8 and other 12-bit computers, and structural levels of the PDP-8. The text takes a look at cache memories for PDP-11 family computers, buses, DEC LSI-11, and design decisions for the PDP-11/60 mid-range minicomputer. Topics include reliability and maintainability, price/performance balance, advances in memory technology, synchronization of data transfers, error control strategies, PDP-11/45, PDP-11/20, and cache organization. The selection is a fine reference for practicing computer designers, users, programmers, designers of peripherals and memories, and students of computer engineering and computer science.

Computer Games and Software Engineering Kendra M. L. Cooper 2015-05-08 Computer games represent a significant software application domain for innovative research in software engineering techniques and technologies. Game developers, whether focusing on entertainment-market opportunities or game-based applications in non-entertainment domains, thus share a common interest with software engineers and developers on how to best engineer game software. Featuring contributions from leading experts in software engineering, the book provides a comprehensive introduction to computer game software development that includes its history as well as emerging research on the interaction between these two traditionally distinct fields. An ideal reference for software engineers, developers, and researchers, this book explores game

programming and development from a software engineering perspective. It introduces the latest research in computer game software engineering (CGSE) and covers topics such as HALO (Highly Addictive, sociaLly Optimized) software engineering, multi-player outdoor smartphone games, gamifying sports software, and artificial intelligence in games. The book explores the use of games in software engineering education extensively. It also covers game software requirements engineering, game software architecture and design approaches, game software testing and usability assessment, game development frameworks and reusability techniques, and game scalability infrastructure, including support for mobile devices and web-based services.

Programming for Electrical Engineers James C. Squire 2020-07-08 Programming for Electrical Engineers: MATLAB and Spice introduces beginning engineering students to programming in Matlab and Spice through engaged, problem-based learning and dedicated electrical and computer engineering content. The book draws its problems and examples specifically from electrical and computer engineering, covering such topics as circuit analysis, signal processing, and filter design. It teaches relevant computational techniques in the context of solving common problems in electrical and computer engineering, including mesh and nodal analysis, Fourier transforms, and phasor analysis. Programming for Electrical Engineers: MATLAB and Spice is unique among MATLAB textbooks for its dual focus on introductory-level learning and discipline-specific content in electrical and computer engineering. No other textbook on the market currently targets this audience with the same attention to discipline-specific content and engaged learning practices. Although it is primarily an introduction to programming in MATLAB, the book also has a chapter on circuit simulation using Spice, and it includes materials required by ABET Accreditation reviews, such as information on ethics, professional development, and lifelong learning. Discipline-specific: Introduces Electrical and Computer Engineering-specific topics, such as phasor analysis and complex exponentials, that are not covered in generic engineering Matlab texts Accessible: Pedagogically appropriate for freshmen and sophomores with little or no prior programming experience Scaffolded content: Addresses both script and functions but emphasizes the use of functions since scripts with non-scoped variables are less-commonly encountered after introductory courses Problem-centric: Introduces MATLAB commands as needed to solve progressively more complex EE/ECE-specific problems, and includes over 100 embedded, in-chapter questions to check comprehension in stages and support active learning exercises in the classroom Enrichment callouts: "Pro Tip" callouts cover common ABET topics, such as ethics and professional development, and "Digging Deeper" callouts provide optional, more detailed material for interested students

Intelligent Systems for Engineers and Scientists Adrian A. Hopgood 2016-04-19 The third edition of this bestseller examines the principles of artificial intelligence and their application to engineering and science, as well as techniques for developing intelligent systems to solve practical problems. Covering the full spectrum of intelligent systems techniques, it incorporates knowledge-based systems, computational intellige

Computer Applications in Engineering and Management Parveen Berwal 2022-04-08 The book Computer Applications in Engineering and Management is about computer applications in management, electrical engineering, electronics engineering, and civil engineering. It covers the software tools for office automation, introduces the basic concepts of database management, and provides an overview about the concepts of data communication, internet, and e-commerce. Additionally, the book explains the principles of computing management used in construction of buildings in civil engineering and the role of computers in power grid automation in electronics engineering. Features Provides an insight to prospective research and application areas related to industry and technology Includes industry-based inputs Provides a hands-on approach for readers of the book to practice and assimilate learning This book is primarily aimed at undergraduates and graduates in computer science, information technology, civil engineering, electronics and electrical engineering, management, academicians, and research scholars.

Digital Circuits Ronald C. Emery 2020-11-25 This textbook is intended to introduce the student of electronics to the fundamentals of digital circuits, both combinational and sequential, in a reasonable and systematic manner. It proceeds from basic logic concepts to circuits and designs.

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.

Basic Computer Engineering Precise WILEY. 2012-10

Computer Systems Performance Evaluation and Prediction Paul Fortier 2003-06-25 Table of contents

Computational Methodologies for Electrical and Electronics Engineers Singh, Rajiv 2021-03-18 Artificial intelligence has been applied to many areas of science and technology, including the power and energy sector. Renewable energy in particular has experienced the tremendous positive impact of these developments. With the recent evolution of smart energy technologies, engineers and scientists working in this sector need an exhaustive source of current knowledge to effectively cater to the energy needs of citizens of developing countries. Computational Methodologies for Electrical and Electronics Engineers is a collection of innovative research that provides a complete insight and overview of the application of intelligent computational techniques in power and energy. Featuring research on a wide range of topics such as artificial neural networks, smart grids, and soft computing, this book is ideally designed for programmers, engineers, technicians, ecologists, entrepreneurs, researchers, academicians, and students.

Computing Handbook, Third Edition Teofilo Gonzalez 2014-05-07 Computing Handbook, Third Edition: Computer Science and Software Engineering mirrors the modern taxonomy of computer science and software engineering as described by the Association for Computing Machinery (ACM) and the IEEE Computer Society (IEEE-CS). Written by established leading experts and influential young researchers, the first volume of this popular handbook examines the elements involved in designing and implementing software, new areas in which computers are being used, and ways to solve computing problems. The book also explores our current understanding of software engineering and its effect on the practice of software development and the education of software professionals. Like the second volume, this first volume describes what occurs in research laboratories, educational institutions, and public and private organizations to

advance the effective development and use of computers and computing in today's world. Research-level survey articles provide deep insights into the computing discipline, enabling readers to understand the principles and practices that drive computing education, research, and development in the twenty-first century.

Formal Methods in Computer Science Jiacun Wang 2019-06-21 This textbook gives students a comprehensive introduction to formal methods and their application in software and hardware specification and verification. It has three parts: The first part introduces some fundamentals in formal methods, including set theory, functions, finite state machines, and regular expressions. The second part focuses on logi

Digital Design and Fabrication Vojin G. Oklobdzija 2017-12-19 In response to tremendous growth and new technologies in the semiconductor industry, this volume is organized into five, information-rich sections. Digital Design and Fabrication surveys the latest advances in computer architecture and design as well as the technologies used to manufacture and test them. Featuring contributions from leading experts, the book also includes a new section on memory and storage in addition to a new chapter on nonvolatile memory technologies. Developing advanced concepts, this sharply focused book— Describes new technologies that have become driving factors for the electronic industry Includes new information on semiconductor memory circuits, whose development best illustrates the phenomenal progress encountered by the fabrication and technology sector Contains a section dedicated to issues related to system power consumption Describes reliability and testability of computer systems Pinpoints trends and state-of-the-art advances in fabrication and CMOS technologies Describes performance evaluation measures, which are the bottom line from the user's point of view Discusses design techniques used to create modern computer systems, including high-speed computer arithmetic and high-frequency design, timing and clocking, and PLL and DLL design

Computational Trust Models and Machine Learning Xin Liu 2014-10-29 Computational Trust Models and Machine Learning provides a detailed introduction to the concept of trust and its application in various computer science areas, including multi-agent systems, online social networks, and communication systems. Identifying trust modeling challenges that cannot be addressed by traditional approaches, this book: Explains how reputation-based systems are used to determine trust in diverse online communities Describes how machine learning techniques are employed to build robust reputation systems Explores two distinctive approaches to determining credibility of resources—one where the human role is implicit, and one that leverages human input explicitly Shows how decision support can be facilitated by computational trust models Discusses collaborative filtering-based trust aware recommendation systems Defines a framework for translating a trust modeling problem into a learning problem Investigates the objectivity of human feedback, emphasizing the need to filter out outlying opinions Computational Trust Models and Machine Learning

effectively demonstrates how novel machine learning techniques can improve the accuracy of trust assessment.

Applications and Approaches to Object-Oriented Software Design: Emerging Research and Opportunities Altan, Zeynep 2019-11-29 In today's modernized environment, a growing number of software companies are changing their traditional engineering approaches in response to the rapid development of computing technologies. As these businesses adopt modern software engineering practices, they face various challenges including the integration of current methodologies and contemporary design models and the refactoring of existing systems using advanced approaches. Applications and Approaches to Object-Oriented Software Design: Emerging Research and Opportunities is a pivotal reference source that provides vital research on the development of modern software practices that impact maintenance, design, and developer productivity. While highlighting topics such as augmented reality, distributed computing, and big data processing, this publication explores the current infrastructure of software systems as well as future advancements. This book is ideally designed for software engineers, IT specialists, data scientists, business professionals, developers, researchers, students, and academicians seeking current research on contemporary software engineering methods.

Applied Computing in Medicine and Health Dhiya Al-Jumeily 2015-08-21 Applied Computing in Medicine and Health is a comprehensive presentation of on-going investigations into current applied computing challenges and advances, with a focus on a particular class of applications, primarily artificial intelligence methods and techniques in medicine and health. Applied computing is the use of practical computer science knowledge to enable use of the latest technology and techniques in a variety of different fields ranging from business to scientific research. One of the most important and relevant areas in applied computing is the use of artificial intelligence (AI) in health and medicine. Artificial intelligence in health and medicine (AIHM) is assuming the challenge of creating and distributing tools that can support medical doctors and specialists in new endeavors. The material included covers a wide variety of interdisciplinary perspectives concerning the theory and practice of applied computing in medicine, human biology, and health care. Particular attention is given to AI-based clinical decision-making, medical knowledge engineering, knowledge-based systems in medical education and research, intelligent medical information systems, intelligent databases, intelligent devices and instruments, medical AI tools, reasoning and metareasoning in medicine, and methodological, philosophical, ethical, and intelligent medical data analysis. Discusses applications of artificial intelligence in medical data analysis and classifications Provides an overview of mobile health and telemedicine with specific examples and case studies Explains how behavioral intervention technologies use smart phones to support a patient centered approach Covers the design and implementation of medical decision support systems in clinical practice using an applied case study approach