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Applications in Ubiquitous Computing - Raman Kumar 2020-06-12

This book takes a deep dive into ubiquitous computing for applications in health, business, education, tourism, and transportation. The rich interdisciplinary contents of the book appeal to readers from diverse disciplines who aspire to create new and innovative research initiatives and applications in ubiquitous computing. Topics include condition monitoring and diagnostics; multi-objective optimization in design, multi-objective optimization of machining parameters, and more. The book benefits researchers, advanced students, as well as practitioners interested in applications of ubiquitous computing. Features practical, tested applications in ubiquitous computing Includes applications such as health, business, education, electronics, tourism, and transportation Applicable to researchers, academics, students, and professionals

Cloud Computing and Services Science - Donald Ferguson 2023-01-01

This book constitutes the refereed proceedings of the 11th International Conference on Cloud Computing and Services Science, CLOSER 2021, Virtual Event, during April 28-30, 2021. The 5 full papers included in this book were carefully reviewed and selected from 51 submissions. The proceedings deal with the topics of data processing, cloud computing environments, and services science.

An Introduction to Numerical Methods and Analysis - James F.

Epperson 2013-06-06

Praise for the First Edition ". . . outstandingly appealing with regard to its style, contents, considerations of requirements of practice, choice of examples, and exercises." —Zentrablatt Math ". . . carefully structured with many detailed worked examples . . ." —The Mathematical Gazette ". . . an up-to-date and user-friendly account . . ." —Mathematika An Introduction to Numerical Methods and Analysis addresses the mathematics underlying approximation and scientific computing and successfully explains where approximation methods come from, why they sometimes work (or don't work), and when to use one of the many techniques that are available. Written in a style that emphasizes readability and usefulness for the numerical methods novice, the book begins with basic, elementary material and gradually builds up to more advanced topics. A selection of concepts required for the study of computational mathematics is introduced, and simple approximations using Taylor's Theorem are also treated in some depth. The text includes exercises that run the gamut from simple hand computations, to challenging derivations and minor proofs, to programming exercises. A greater emphasis on applied exercises as well as the cause and effect associated with numerical mathematics is featured throughout the book. An Introduction to Numerical Methods and Analysis is the ideal text for

students in advanced undergraduate mathematics and engineering courses who are interested in gaining an understanding of numerical methods and numerical analysis.

Service-Oriented Computing - Alistair Barros 2015-11-25

This book constitutes the proceedings of the 13th International Conference on Service-Oriented Computing, ICSOC 2015, held in Goa, India, in November 2015. The 23 full, 9 short, and 5 demo track papers presented in this volume were carefully reviewed and selected from 132 submissions. The research track papers are organized in topical sections named: internet of services/things; data services and cloud platform management; cloud services management; service composition; business process management; cloud services; QoS and trust; service composition.

Cloud Computing with Security and Scalability. - Naresh Kumar Sehgal 2022-09-03

This book provides readers with an overview of Cloud Computing, starting with historical background on mainframe computers and early networking protocols, leading to current concerns such as hardware and systems security, performance, emerging areas of IoT, Edge Computing, and healthcare etc. Readers will benefit from the in-depth discussion of cloud computing usage and the underlying architectures. The authors explain carefully the “why’s and how’s” of Cloud Computing, so engineers will find this book an invaluable source of information to the topic. This third edition includes new material on Cloud Computing Scalability, as well as best practices for using dynamic cloud infrastructure, and cloud operations management with cost optimizations. Several new examples and analysis of cloud security have been added, including ARM architecture and https protocol. Provides practical guidance for software developers engaged in migrating in-house applications to Public Cloud; Describes for IT managers how to improve their Cloud Computing infrastructures; Includes coverage of security concerns with Cloud operating models; Uses several case studies to illustrate the “why’s and how’s” of using the Cloud; Examples and options to improve Cloud Computing Scalability.

Advances in Service-Oriented and Cloud Computing - Carlos Canal

2013-12-13

This book contains the proceedings of the five high-quality workshops organized at the Second European Conference on Service-Oriented and Cloud Computing, ESOC 2013, held in Malaga, Spain, in September 2013. The workshops are: Cloud for IoT (CLIoT 2013), CLOUD Storage Optimization (CLOUSO 2013), 12th International Workshop on Foundations of Coordination Languages and Self-Adaptive Systems (FOCLASA 2013), First Workshop on Mobile Cloud and Social Perspectives (MoCSOP 2013), and the 3rd International Workshop on Adaptive Services for the Future Internet (WAS4FI 2013). The 29 papers presented were carefully reviewed and selected from 51 submissions. They focus on specific topics in service-oriented and cloud computing domains: cloud environments, smart connectivity, context-aware computation, cloud for IoT, storage clouds, coordination languages, formal approaches to modeling and reasoning, self-systems, services for mobile devices, wireless sensor networks.

Advances in Security in Computing and Communications - Jaydip Sen 2017-07-19

In the era of Internet of Things (IoT) and with the explosive worldwide growth of electronic data volume, and associated need of processing, analysis, and storage of such humongous volume of data, several new challenges are faced in protecting privacy of sensitive data and securing systems by designing novel schemes for secure authentication, integrity protection, encryption, and non-repudiation. Lightweight symmetric key cryptography and adaptive network security algorithms are in demand for mitigating these challenges. This book presents some of the state-of-the-art research work in the field of cryptography and security in computing and communications. It is a valuable source of knowledge for researchers, engineers, practitioners, graduates, and doctoral students who are working in the field of cryptography, network security, and security and privacy issues in the Internet of Things (IoT). It will also be useful for faculty members of graduate schools and universities.

Proceedings of Third International Conference on Communication, Computing and Electronics Systems - V. Bindhu 2022-03-19

This book includes high quality research papers presented at the International Conference on Communication, Computing and Electronics Systems 2021, held at the PPG Institute of Technology, Coimbatore, India, on 28-29 October 2021. The volume focuses mainly on the research trends in cloud computing, mobile computing, artificial intelligence and advanced electronics systems. The topics covered are automation, VLSI, embedded systems, optical communication, RF communication, microwave engineering, artificial intelligence, deep learning, pattern recognition, communication networks, Internet of Things, cyber-physical systems, and healthcare informatics.

Learner-Centered Design of Computing Education - MARK GUZDIAL
2022-05-31

Computing education is in enormous demand. Many students (both children and adult) are realizing that they will need programming in the future. This book presents the argument that they are not all going to use programming in the same way and for the same purposes. What do we mean when we talk about teaching everyone to program? When we target a broad audience, should we have the same goals as computer science education for professional software developers? How do we design computing education that works for everyone? This book proposes use of a learner-centered design approach to create computing education for a broad audience. It considers several reasons for teaching computing to everyone and how the different reasons lead to different choices about learning goals and teaching methods. The book reviews the history of the idea that programming isn't just for the professional software developer. It uses research studies on teaching computing in liberal arts programs, to graphic designers, to high school teachers, in order to explore the idea that computer science for everyone requires us to re-think how we teach and what we teach. The conclusion describes how we might create computing education for everyone.

Cloud Computing Bible - Barrie Sosinsky 2010-12-10

The complete reference guide to the hot technology of cloud computing. Its potential for lowering IT costs makes cloud computing a major force for both IT vendors and users; it is expected to gain momentum rapidly with

the launch of Office Web Apps later this year. Because cloud computing involves various technologies, protocols, platforms, and infrastructure elements, this comprehensive reference is just what you need if you'll be using or implementing cloud computing. Cloud computing offers significant cost savings by eliminating upfront expenses for hardware and software; its growing popularity is expected to skyrocket when Microsoft introduces Office Web Apps. This comprehensive guide helps define what cloud computing is and thoroughly explores the technologies, protocols, platforms and infrastructure that make it so desirable. Covers mobile cloud computing, a significant area due to ever-increasing cell phone and smartphone use. Focuses on the platforms and technologies essential to cloud computing. Anyone involved with planning, implementing, using, or maintaining a cloud computing project will rely on the information in *Cloud Computing Bible*.

Computing and Network Sustainability - H.R . Vishwakarma
2017-07-05

The book is compilation of technical papers presented at International Research Symposium on Computing and Network Sustainability (IRSCNS 2016) held in Goa, India on 1st and 2nd July 2016. The areas covered in the book are sustainable computing and security, sustainable systems and technologies, sustainable methodologies and applications, sustainable networks applications and solutions, user-centered services and systems and mobile data management. The novel and recent technologies presented in the book are going to be helpful for researchers and industries in their advanced works.

WordPress 24-Hour Trainer - George Plumley 2011-10-13

The eagerly anticipated second edition, completely updated for WordPress 3.1. As an open source content management system, WordPress allows users to easily build feature-rich web sites with no programming experience. This unique book-and-video package is a friendly, self-paced beginners guide to the latest release of WordPress. Lessons are focused on practical, everyday tasks that users will need to create and maintain their sites: entering new content, creating new pages, managing menus, making content search-engine friendly. Plus you'll find lots of tips based

on years of experience teaching people to use WordPress. You'll also learn how to extend the functionality of WordPress by using the thousands of plugins available. Connecting to social media, creating membership and e-commerce sites, setting up events calendars, making your site mobile-friendly—these are just some of the plugins you'll be introduced to. Each lesson in the book is supplemented by an instructional video intended to enhance your learning experience. Plus, a trouble-shooting appendix addresses various issues to help you solve any challenges you may face. Note: As part of the print version of this title, video lessons are included on DVD. For e-book versions, video lessons can be accessed at wrox.com using a link provided in the interior of the e-book.

Cognitive Computing and Information Processing - T.N. Nagabhushan
2018-04-06

This book constitutes the refereed proceedings of the Third International Conference on Cognitive Computing and Information Processing, CCIP 2017, held in Bengaluru, India, in December 2017. The 43 revised full papers presented were carefully reviewed and selected from 130 submissions. The papers are organized in topical sections on cognitive computing in medical information processing; cognitive computing and its applications; cognitive computing in video analytics.

Philosophy of Computer Science - William J. Rapaport
2023-01-16

A unique resource exploring the nature of computers and computing, and their relationships to the world. *Philosophy of Computer Science* is a university-level textbook designed to guide readers through an array of topics at the intersection of philosophy and computer science. Accessible to students from either discipline, or complete beginners to both, the text brings readers up to speed on a conversation about these issues, so that they can read the literature for themselves, form their own reasoned opinions, and become part of the conversation by contributing their own views. Written by a highly qualified author in the field, the book looks at some of the central questions in the philosophy of computer science, including: What is philosophy? (for readers who might be unfamiliar with it) What is computer science and its relationship to science and to engineering? What are computers, computing, algorithms, and

programs?(Includes a line-by-line reading of portions of Turing's classic 1936 paper that introduced Turing Machines, as well as discussion of the Church-Turing Computability Thesis and hypercomputation challenges to it) How do computers and computation relate to the physical world? What is artificial intelligence, and should we build AIs? Should we trust decisions made by computers? A companion website contains annotated suggestions for further reading and an instructor's manual. *Philosophy of Computer Science* is a must-have for philosophy students, computer scientists, and general readers who want to think philosophically about computer science.

Proceeding of First Doctoral Symposium on Natural Computing Research -
Varsha H. Patil 2021-03-18

The book is a collection of papers presented at First Doctoral Symposium on Natural Computing Research (DSNCR 2020), held during 8 August 2020 in Pune, India. The book covers different topics of applied and natural computing methods having applications in physical sciences and engineering. The book focuses on computer vision and applications, soft computing, security for Internet of Things, security in heterogeneous networks, signal processing, intelligent transportation system, VLSI design and embedded systems, privacy and confidentiality, big data and cloud computing, bioinformatics and systems biology, remote healthcare, software security, mobile and pervasive computing, biometrics-based authentication, natural language processing, analysis and verification techniques, large scale networking, distributed systems, digital forensics, and human-computer interaction.

Introduction to Computer Theory - D. I. A. Cohen 2003

Automata theory. Background. Languages. Recursive definitions. Regular expressions. Finite automata. Transition graphs. Kleene's theorem. Nondeterminism. Finite automata with output. Regular languages. Nonregular languages. Decidability. Pushdown automata Theory. Context-free grammars. Trees. Regular grammars. Chomsky normal form. Pushdown automata. CFG=PDA. Context-free languages. Non-context-free languages. Intersection and complement. Parsing. Decidability. Turing theory. Turing machines. Post machines. Minsky's theorem. Variations on

the TM. Recursively enumerable languages. The encoding of Turing machines. The Chomsky hierarchy. Computers. Bibliography. Table of theorems.

The Nature of Human Creativity - Robert J. Sternberg 2018-04-19

This book provides an overview of the approaches of leading scholars to understanding the nature of creativity, its measurement, its investigation, its development, and its importance to society. The authors are the twenty-four psychological scientists who are most frequently cited in the four major textbooks on creativity, and they can thus be considered among the most eminent living scholars in the field. Authors discuss how they define creativity, the kinds of questions they have addressed, theories they have proposed, and a description of their research and the most interesting empirical results it has produced. The chapters represent a wide range of substantive and methodological emphases, including psychometric, cognitive, expertise-based, developmental, neuropsychological, cultural, systems, and group-difference approaches. *The Nature of Human Creativity* brings together an incredible diversity of viewpoints, helping students and researchers to see the points of consensus as well as the differences in contemporary perspectives.

Advances in Intelligent Systems and Computing V - Natalya Shakhovska 2020-12-22

This book reports on new theories and applications in the field of intelligent systems and computing. It covers cutting-edge computational and artificial intelligence methods, advances in computer vision, big data, cloud computing, and computation linguistics, as well as cyber-physical and intelligent information management systems. The respective chapters are based on selected papers presented at the workshop on intelligent systems and computing, held during the International Conference on Computer Science and Information Technologies, CSIT 2020, which was jointly organized on September 23-26, 2020, by the Lviv Polytechnic National University, Ukraine, the Kharkiv National University of Radio Electronics, Ukraine, and the Technical University of Lodz, Poland, under patronage of Ministry of Education and Science of Ukraine. Given its breadth of coverage, the book provides academics and

professionals with extensive information and a timely snapshot of the field of intelligent systems, and is sure to foster new discussions and collaborations among different groups.

Numerical Heat Transfer and Fluid Flow - Suhas Patankar 2018-10-08

This book focuses on heat and mass transfer, fluid flow, chemical reaction, and other related processes that occur in engineering equipment, the natural environment, and living organisms. Using simple algebra and elementary calculus, the author develops numerical methods for predicting these processes mainly based on physical considerations. Through this approach, readers will develop a deeper understanding of the underlying physical aspects of heat transfer and fluid flow as well as improve their ability to analyze and interpret computed results.

The Semantic Sphere 1 - Pierre Lévy 2013-01-22

The new digital media offers us an unprecedented memory capacity, an ubiquitous communication channel and a growing computing power. How can we exploit this medium to augment our personal and social cognitive processes at the service of human development? Combining a deep knowledge of humanities and social sciences as well as a familiarity with computer science issues, this book explains the collaborative construction of a global hypercortex coordinated by a computable metalanguage. By recognizing fully the symbolic and social nature of human cognition, we could transform our current opaque global brain into a reflexive collective intelligence.

Computational Thinking Education - Siu-Cheung Kong 2019-07-04

This book is open access under a CC BY 4.0 license. This book offers a comprehensive guide, covering every important aspect of computational thinking education. It provides an in-depth discussion of computational thinking, including the notion of perceiving computational thinking practices as ways of mapping models from the abstraction of data and process structures to natural phenomena. Further, it explores how computational thinking education is implemented in different regions, and how computational thinking is being integrated into subject learning in K-12 education. In closing, it discusses computational thinking from the perspective of STEM education, the use of video games to teach

computational thinking, and how computational thinking is helping to transform the quality of the workforce in the textile and apparel industry. [Distributed Computing and Artificial Intelligence, 14th International Conference](#) - Sigeru Omatu 2017-06-19

The 14th International Symposium on Distributed Computing and Artificial Intelligence 2017 (DCAI 2017) provided a forum for presenting the application of innovative techniques to study and solve complex problems. The exchange of ideas between scientists and technicians from both the academic and industrial sector is essential to advancing the development of systems that can meet the ever-growing demands of today's society. The book brings together past experience, current work and promising future trends in distributed computing, artificial intelligence and their applications to efficiently solve real-world problems. It combines contributions in well-established and evolving areas of research, including the content of the DCAI 17 Special Sessions, which focused on multi-disciplinary and transversal aspects, such as AI-driven methods for multimodal networks and processes modeling, and secure management towards smart buildings and smart grids. The symposium was jointly organized by the Polytechnic of Porto, the Osaka Institute of Technology and the University of Salamanca. The latest event was held in Porto, Portugal, from 21st to 23rd June 2017.

[Shadows of the Mind](#) - Roger Penrose 1994

Presents the author's thesis that consciousness, in its manifestation in the human quality of understanding, is doing something that mere computation cannot; and attempts to understand how such non-computational action might arise within scientifically comprehensive physical laws.

[Advances in Computing, Communication, and Control](#) - Srija Unnikrishnan 2013-01-11

This book constitutes the refereed proceedings of the Third International Conference on Advances in Computing, Communication and Control, ICAC3 2013, held in Mumbai, India, in January 2013. The 69 papers presented in this volume were carefully reviewed and selected for inclusion in the book. They deal with topics such as image processing,

artificial intelligence, robotics, wireless communications; data warehousing and mining, and are organized in topical sections named: computing; communication; control; and others.

Cambridge IGCSE Computer Science - David Watson 2015-01-30
Endorsed by Cambridge International Examinations. Develop your students computational thinking and programming skills with complete coverage of the latest syllabus from experienced examiners and teachers. - Follows the order of the syllabus exactly, ensuring complete coverage - Introduces students to self-learning exercises, helping them learn how to use their knowledge in new scenarios Accompanying animation files of the key concepts are available to download for free online. See the Quick Links to the left to access. This book covers the IGCSE (0478), O Level (2210) and US IGCSE entry (0473) syllabuses, which are for first examination 2015. It may also be a useful reference for students taking the new Computer Science AS level course (9608).

[Being as Communion](#) - William A. Dembski 2016-04-15

For a thing to be real, it must be able to communicate with other things. If this is so, then the problem of being receives a straightforward resolution: to be is to be in communion. So the fundamental science, indeed the science that needs to underwrite all other sciences, is a theory of communication. Within such a theory of communication the proper object of study becomes not isolated particles but the information that passes between entities. In *Being as Communion* philosopher and mathematician William Dembski provides a non-technical overview of his work on information. Dembski attempts to make good on the promise of John Wheeler, Paul Davies, and others that information is poised to replace matter as the primary stuff of reality. With profound implications for theology and metaphysics, *Being as Communion* develops a relational ontology that is at once congenial to science and open to teleology in nature. All those interested in the intersections of theology, philosophy and science should read this book.

[Handbook of Nature-Inspired and Innovative Computing](#) - Albert Y. Zomaya 2006-01-10

As computing devices proliferate, demand increases for an understanding

of emerging computing paradigms and models based on natural phenomena. Neural networks, evolution-based models, quantum computing, and DNA-based computing and simulations are all a necessary part of modern computing analysis and systems development. Vast literature exists on these new paradigms and their implications for a wide array of applications. This comprehensive handbook, the first of its kind to address the connection between nature-inspired and traditional computational paradigms, is a repository of case studies dealing with different problems in computing and solutions to these problems based on nature-inspired paradigms. The "Handbook of Nature-Inspired and Innovative Computing: Integrating Classical Models with Emerging Technologies" is an essential compilation of models, methods, and algorithms for researchers, professionals, and advanced-level students working in all areas of computer science, IT, biocomputing, and network engineering.

An Introduction to Formal Languages and Automata - Peter Linz
1997

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.

Unconventional Computation and Natural Computation - Matthew J. Patitz
2017-05-26

This book constitutes the proceedings of the 16th International Conference on Unconventional Computation and Natural Computation, UCNC 2017, held in Fayetteville, AR, USA in June 2017. The 14 papers

presented in this volume were carefully reviewed and selected from 21 submissions. The UCNC series of international conferences is genuinely interdisciplinary and it covers theory as well as experiments and applications. It is concerned with various proposals for computation that go beyond the Turing model, human designed computation inspired by nature, and with the computational nature of processes taking place in nature. Typical, but not exclusive, topics are: hypercomputation; chaos and dynamical systems based computing; granular, fuzzy and rough computing; mechanical computing; cellular, evolutionary, molecular, neural, and quantum computing; membrane computing; amorphous computing, swarm intelligence; artificial immune systems; physics of computation; chemical computation; evolving hardware; the computational nature of self-assembly, developmental processes, bacterial communication, and brain processes.

Introduction to Machine Learning - Ethem Alpaydin 2014-08-22

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.

Open Problems in Mathematics - John Forbes Nash, Jr. 2016-07-05

The goal in putting together this unique compilation was to present the current status of the solutions to some of the most essential open problems in pure and applied mathematics. Emphasis is also given to problems in interdisciplinary research for which mathematics plays a key role. This volume comprises highly selected contributions by some of the most eminent mathematicians in the international mathematical community on longstanding problems in very active domains of mathematical research. A joint preface by the two volume editors is followed by a personal farewell to John F. Nash, Jr. written by Michael Th. Rassias. An introduction by Mikhail Gromov highlights some of Nash's legendary mathematical achievements. The treatment in this book

includes open problems in the following fields: algebraic geometry, number theory, analysis, discrete mathematics, PDEs, differential geometry, topology, K-theory, game theory, fluid mechanics, dynamical systems and ergodic theory, cryptography, theoretical computer science, and more. Extensive discussions surrounding the progress made for each problem are designed to reach a wide community of readers, from graduate students and established research mathematicians to physicists, computer scientists, economists, and research scientists who are looking to develop essential and modern new methods and theories to solve a variety of open problems.

WordPress: The Missing Manual - Matthew MacDonald 2020-09-18

Whether you're a budding blogger or seasoned web designer, WordPress is a brilliant tool for creating websites—once you know how to tap into its impressive features. The latest edition of this jargon-free Missing Manual shows you how to use WordPress's themes, widgets, and plug-ins to build just about any kind of site. The important stuff you need to know: Set up WordPress. Configure WordPress on your web host or get it running on your home computer. Create your site. Get hands-on instructions for building all types of websites, from blogs to business sites with ecommerce features. Jazz it up. Add picture galleries, slideshows, video clips, music players, and podcasts. Add features. Select from thousands of plug-ins to enhance your site's capabilities, from contact forms to a basic shopping cart. Build a truly unique site. Customize a WordPress theme to create a site that looks exactly the way you want. Attract an audience. Use SEO, site statistics, and social sharing to reach more people. Stay safe. Use backup and staging tools to protect your content and avoid catastrophe.

Intelligent Computing - Kohei Arai 2018-11-01

This book, gathering the Proceedings of the 2018 Computing Conference, offers a remarkable collection of chapters covering a wide range of topics in intelligent systems, computing and their real-world applications. The Conference attracted a total of 568 submissions from pioneering researchers, scientists, industrial engineers, and students from all around the world. These submissions underwent a double-blind peer review

process. Of those 568 submissions, 192 submissions (including 14 poster papers) were selected for inclusion in these proceedings. Despite computer science's comparatively brief history as a formal academic discipline, it has made a number of fundamental contributions to science and society—in fact, along with electronics, it is a founding science of the current epoch of human history ('the Information Age') and a main driver of the Information Revolution. The goal of this conference is to provide a platform for researchers to present fundamental contributions, and to be a premier venue for academic and industry practitioners to share new ideas and development experiences. This book collects state of the art chapters on all aspects of Computer Science, from classical to intelligent. It covers both the theory and applications of the latest computer technologies and methodologies. Providing the state of the art in intelligent methods and techniques for solving real-world problems, along with a vision of future research, the book will be interesting and valuable for a broad readership.

[An Introduction to Measure Theory](#) - Terence Tao 2021-09-03

This is a graduate text introducing the fundamentals of measure theory and integration theory, which is the foundation of modern real analysis. The text focuses first on the concrete setting of Lebesgue measure and the Lebesgue integral (which in turn is motivated by the more classical concepts of Jordan measure and the Riemann integral), before moving on to abstract measure and integration theory, including the standard convergence theorems, Fubini's theorem, and the Carathéodory extension theorem. Classical differentiation theorems, such as the Lebesgue and Rademacher differentiation theorems, are also covered, as are connections with probability theory. The material is intended to cover a quarter or semester's worth of material for a first graduate course in real analysis. There is an emphasis in the text on tying together the abstract and the concrete sides of the subject, using the latter to illustrate and motivate the former. The central role of key principles (such as Littlewood's three principles) as providing guiding intuition to the subject is also emphasized. There are a large number of exercises throughout that develop key aspects of the theory, and are thus an integral

component of the text. As a supplementary section, a discussion of general problem-solving strategies in analysis is also given. The last three sections discuss optional topics related to the main matter of the book.

Mathematics and Computation - Avi Wigderson 2019-10-29

An introduction to computational complexity theory, its connections and interactions with mathematics, and its central role in the natural and social sciences, technology, and philosophy Mathematics and Computation provides a broad, conceptual overview of computational complexity theory—the mathematical study of efficient computation. With important practical applications to computer science and industry, computational complexity theory has evolved into a highly interdisciplinary field, with strong links to most mathematical areas and to a growing number of scientific endeavors. Avi Wigderson takes a sweeping survey of complexity theory, emphasizing the field’s insights and challenges. He explains the ideas and motivations leading to key models, notions, and results. In particular, he looks at algorithms and complexity, computations and proofs, randomness and interaction, quantum and arithmetic computation, and cryptography and learning, all as parts of a cohesive whole with numerous cross-influences. Wigderson illustrates the immense breadth of the field, its beauty and richness, and its diverse and growing interactions with other areas of mathematics. He ends with a comprehensive look at the theory of computation, its methodology and aspirations, and the unique and fundamental ways in which it has shaped and will further shape science, technology, and society. For further reading, an extensive bibliography is provided for all topics covered. Mathematics and Computation is useful for undergraduate and graduate students in mathematics, computer science, and related fields, as well as researchers and teachers in these fields. Many parts require little background, and serve as an invitation to newcomers seeking an introduction to the theory of computation. Comprehensive coverage of computational complexity theory, and beyond High-level, intuitive exposition, which brings conceptual clarity to this central and dynamic scientific discipline Historical accounts of the evolution and motivations of central concepts and models A broad view of the theory of

computation's influence on science, technology, and society Extensive bibliography

Advances in Natural Computation, Fuzzy Systems and Knowledge Discovery - Yong Liu 2019-11-06

This book discusses the recent advances in natural computation, fuzzy systems and knowledge discovery. Presenting selected, peer-reviewed papers from the 15th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD 2019), held in Kunming, China, from 20 to 22 July 2019, it is a useful resource for researchers, including professors and graduate students, as well as R&D staff in industry.

Primary Computing and Digital Technologies: Knowledge, Understanding and Practice - Keith Turvey 2016-09-14

What do you need to know to teach computing in primary schools? How do you teach it? This book offers practical guidance on how to teach the computing curriculum in primary schools, coupled with the subject knowledge needed to teach it. This Seventh Edition is a guide to teaching the computing content of the new Primary National Curriculum. It includes many more case studies and practical examples to help you see what good practice in teaching computing looks like. It also explores the use of ICT in the primary classroom for teaching all curriculum subjects and for supporting learning in every day teaching. New chapters have been added on physical computing and coding and the importance of web literacy, bringing the text up-to-date. Computing is both a subject and a powerful teaching and learning tool throughout the school curriculum and beyond into many areas of children’s learning lives. This book highlights the importance of supporting children to become discerning and creative users of digital technologies as opposed to passive consumers.

Theory of Computer Science - K. L. P. Mishra 2006-01-01

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.

Proceedings of the International Conference on Cognitive and Intelligent Computing - Amit Kumar 2022-10-31

This book presents original, peer-reviewed select articles from the International Conference on Cognitive & Intelligent Computing (ICCIC – 2021), held on December 11–12, 2021, at Hyderabad, India. The proceedings has cutting edge Research outcome related to Machine learning in control applications, Soft computing, Pattern Recognition, Decision Support Systems, Text analytics and NLP, Statistical Learning, Neural Network Learning, Learning Through Fuzzy Logic, Learning Through Evolution (Evolutionary Algorithms), Reinforcement Learning, Multi-Strategy Learning, Cooperative Learning, Planning And Learning, Multi-Agent Learning, Online And Incremental Learning, Scalability Of Learning Algorithms, Inductive Learning, Inductive Logic Programming,

Bayesian Networks, Support Vector Machines, Case-Based Reasoning, Multi-Agent Systems, Human-Computer Interaction, Data Mining and Knowledge Discovery, Knowledge Management and Networks, Data Intensive Computing Architecture, Medicine, Health, Bioinformatics, and Systems Biology, Industrial and Engineering Applications, Security Applications, Smart Cities, Game Playing and Problem Solving, Intelligent Virtual Environments, Economics, Business, And Forecasting Applications. Articles in the book are carefully selected on the basis of their application orientation. The content is expected to be especially useful for Professionals, Researchers, Research students working in the area of cognitive and intelligent computing.

Emerging Social Computing Techniques - Matthew N. O. Sadiku
2022-07-26

We are in the era of computing. Computing is experiencing its most exciting moments in history, permeating nearly all areas of human activities. Computing is any activity that involves using computers. It includes designing and building hardware and software systems for a wide range of purposes. It has resulted in deep changes in infrastructures and development practices of computing. It is a critically important, integral component of modern life. Advancement in technology has led to several computing schemes such as cloud computing, grid computing, green computing, DNA computing, soft computing, organic computing, etc. This book covers the most important 70 computing techniques. It is divided into three volumes to cover all the topics. This is the third volume and it has 21 chapters. The book is a friendly introduction to various computing techniques. The presentation is clear, succinct, and informal, without proofs or rigorous definitions. The book provides researchers, students, and professionals a comprehensive introduction, applications, benefits, and challenges for each computing technology.