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Computer Organization and Design

The Hardware/software Interface, ARM Edition

Computer Organization and Design RISC-V Edition

The Hardware Software Interface

Morgan Kaufmann The new RISC-V Edition of Computer Organization and Design features the RISC-V open source instruction set architecture, the first open source architecture designed to be used in modern computing environments such as cloud computing, mobile devices, and other embedded systems. With the post-PC era now upon us, Computer Organization and Design moves forward to explore this generational change with examples, exercises, and material highlighting the emergence of mobile computing and the Cloud. Updated content featuring tablet computers, Cloud infrastructure, and the x86 (cloud computing) and ARM (mobile computing devices) architectures is included. An online companion Web site provides advanced content for further study, appendices, glossary, references, and recommended reading. Features RISC-V, the first such architecture designed to be used in modern computing environments, such as cloud computing, mobile devices, and other embedded systems Includes relevant examples, exercises, and material highlighting the emergence of mobile computing and the cloud

Testbeds and Research Infrastructure: Development of Networks and Communities

7th International ICST Conference, TridentCom 2011, Shanghai, China, April 17-19, 2011, Revised Selected Papers

Springer This book constitutes the proceedings of the 7th International ICST Conference, TridentCom 2011, held in Shanghai, China, in April 2011. Out of numerous submissions the Program Committee finally selected 26 full papers and 2 invited papers. They focus on topics as future Internet testbeds, future wireless testbeds, federated and large scale testbeds, network and resource virtualization, overlay network testbeds, management provisioning and tools for networking research, and experimentally driven research and user experience evaluation.

Testbeds and Research Infrastructures, Development of Networks and Communities

6th International ICST Conference, TridentCom 2010, Berlin, Germany, May 18-20, 2010, Revised Selected Papers

Springer Science & Business Media This book constitutes the proceedings of the 6th International ICST Conference, TridentCom 2010, held in Berlin, Germany, in May 2010. Out of more than 100 submitted contributions the Program Committee finally selected 15 full papers, 26 practices papers, and 22 posters. They focus on topics as Internet testbeds, future Internet research, wireless sensors, media and mobility, and monitoring in large scale testbeds.

Field-Programmable Gate Array Technology

Springer Science & Business Media Many different kinds of FPGAs exist, with different programming technologies, different architectures and different software. Field-Programmable Gate Array Technology describes the major FPGA architectures available today, covering the three programming technologies that are in use and the major architectures built on those programming technologies. The reader is introduced to concepts relevant to the entire field of FPGAs using popular devices as examples. Field-Programmable Gate Array Technology includes discussions of FPGA integrated circuit manufacturing, circuit design and logic design. It describes the way logic and interconnect are implemented in various kinds of FPGAs. It covers particular problems with design for FPGAs and future possibilities for new architectures and software. This book compares CAD for FPGAs with CAD for traditional gate arrays. It describes algorithms for placement, routing and optimization of FPGAs. Field-Programmable Gate Array Technology describes all aspects of FPGA design and development. For this reason, it covers a significant amount of material. Each section is clearly explained to readers who are assumed to have general technical expertise in digital design and design tools. Potential developers of FPGAs will benefit primarily from the FPGA architecture and software discussion. Electronics systems designers and ASIC users will find a background to different types of FPGAs and applications of their use.

Software Defined Networks

A Comprehensive Approach

Morgan Kaufmann Software Defined Networks: A Comprehensive Approach, Second Edition provides in-depth coverage of the technologies collectively known as Software Defined Networking (SDN). The book shows how to explain to business decision-makers the benefits and risks in shifting parts of a network to the SDN model, when to integrate SDN technologies in a network, and how to develop or acquire SDN applications. In addition, the book emphasizes the parts of the technology that encourage opening up the network, providing treatment for alternative approaches to SDN that expand the definition of SDN as networking vendors adopt traits of SDN to their existing solutions. Since the first edition was published, the SDN market has matured, and is being gradually integrated and morphed into something more compatible with mainstream networking vendors. This book reflects these

changes, with coverage of the OpenDaylight controller and its support for multiple southbound protocols, the Inclusion of NETCONF in discussions on controllers and devices, expanded coverage of NFV, and updated coverage of the latest approved version (1.5.1) of the OpenFlow specification. Contains expanded coverage of controllers Includes a new chapter on NETCONF and SDN Presents expanded coverage of SDN in optical networks Provides support materials for use in computer networking courses

Applied Reconfigurable Computing

13th International Symposium, ARC 2017, Delft, The Netherlands, April 3-7, 2017, Proceedings

Springer This book constitutes the refereed proceedings of the 13th International Symposium on Applied Reconfigurable Computing, ARC 2017, held in Delft, The Netherlands, in April 2017. The 17 full papers and 11 short papers presented in this volume were carefully reviewed and selected from 49 submissions. They are organized in topical sections on adaptive architectures, embedded computing and security, simulation and synthesis, design space exploration, fault tolerance, FGPA-based designs, neural neworks, and languages and estimation techniques.

Data Traffic Monitoring and Analysis

From Measurement, Classification, and Anomaly Detection to Quality of Experience

Springer This book was prepared as the Final Publication of COST Action IC0703 "Data Traffic Monitoring and Analysis: theory, techniques, tools and applications for the future networks". It contains 14 chapters which demonstrate the results, quality,and the impact of European research in the field of TMA in line with the scientific objective of the Action. The book is structured into three parts: network and topology measurement and modelling, traffic classification and anomaly detection, quality of experience.

Trustworthy Internet

Springer Science & Business Media This book collects a selection of the papers presented at the 21st International Tyrrhenian Workshop on Digital Communications, organized by CNIT and dedicated this year to the theme "Trustworthy Internet". The workshop provided a lively discussion on the challenges involved in reshaping the Internet into a trustworthy reality, articulated around the Internet by and for People, the Internet of Contents, the Internet of Services and the Internet of Things, supported by the Network Infrastructure foundation. The papers have been revised after the workshop to take account of feedbacks received by the audience. The book also includes: i) an introduction by the Editors, setting the scene and presenting evolution scenarios; ii) five papers written by the session chairmen, reputed scientists, and each dedicated to a facet of the trustworthy Internet vision; iii) a concluding paper, reporting the outcomes of a panel held at the conclusion of the workshop, written by the two keynote speakers.

Data Processing on FPGAs

Morgan & Claypool Publishers Roughly a decade ago, power consumption and heat dissipation concerns forced the semiconductor industry to radically change its course, shifting from sequential to parallel computing. Unfortunately, improving performance of applications has now become much more difficult than in the good old days of frequency scaling. This is also affecting databases and data processing applications in general, and has led to the popularity of so-called data appliances—specialized data processing engines, where software and hardware are sold together in a closed box. Field-programmable gate arrays (FPGAs) increasingly play an important role in such systems. FPGAs are attractive because the performance gains of specialized hardware can be significant, while power consumption is much less than that of commodity processors. On the other hand, FPGAs are way more flexible than hard-wired circuits (ASICs) and can be integrated into complex systems in many different ways, e.g., directly in the network for a high-frequency trading application. This book gives an introduction to FPGA technology targeted at a database audience. In the first few chapters, we explain in detail the inner workings of FPGAs. Then we discuss techniques and design patterns that help mapping algorithms to FPGA hardware so that the inherent parallelism of these devices can be leveraged in an optimal way. Finally, the book will illustrate a number of concrete examples that exploit different advantages of FPGAs for data processing. Table of Contents: Preface / Introduction / A Primer in Hardware Design / FPGAs / FPGA Programming Models / Data Stream Processing / Accelerated DB Operators / Secure Data Processing / Conclusions / Bibliography / Authors' Biographies / Index

Internet of Things for Industry 4.0

Design, Challenges and Solutions

Springer Nature This book covers challenges and solutions in establishing Industry 4.0 standards for Internet of Things. It proposes a clear view about the role of Internet of Things in establishing standards. The sensor design for industrial problem, challenges faced, and solutions are all addressed. The concept of digital twin and complexity in data analytics for predictive maintenance and fault prediction is also covered. The book is aimed at existing problems faced by the industry at present, with the goal of cost-efficiency and unmanned automation. It also concentrates on predictive maintenance and predictive failures. In addition, it includes design challenges and a survey of literature.

Real-Time Multi-Chip Neural Network for Cognitive Systems

River Publishers Simulation of brain neurons in real-time using biophysically-meaningful models is a pre-requisite for comprehensive understanding of how neurons process information and communicate with each other, in effect efficiently complementing in-vivo experiments. In spiking neural networks (SNNs), propagated information is not just encoded by the firing rate of each neuron in the network, as in artificial neural networks (ANNs), but, in addition, by amplitude, spike-train patterns, and the transfer rate. The high level of realism of SNNs and more significant computational and analytic capabilities in comparison with ANNs, however, limit the size of the realized networks. Consequently, the main challenge in building complex and biophysically-accurate SNNs is largely posed by the high computational and data transfer demands. Real-Time Multi-Chip Neural Network for Cognitive Systems presents novel real-time, reconfigurable, multi-chip SNN system architecture based on localized communication, which effectively reduces the communication cost to a linear growth. The system use double floating-point arithmetic for the most biologically accurate cell behavior simulation, and is flexible enough to offer an easy implementation of various neuron network topologies, cell communication schemes, as well as models and kinds of cells. The system offers a high run-time configurability, which reduces the need for resynthesizing the system. In addition, the simulator features configurable on- and off-chip communication latencies as well as neuron calculation latencies. All parts of the system are generated automatically based on the neuron interconnection scheme in use. The simulator allows exploration of different system configurations, e.g. the interconnection scheme between the neurons, the intracellular concentration of different chemical compounds (ions), which affect how action potentials are initiated and propagate.

The SPARC Architecture Manual

Version 9

Prentice Hall SPARC (Scalable Processor Architecture) is the industry's only openly defined and evolved RISC architecture. Version 9 is the new 64-bit incarnation of SPARC - the most significant change since SPARC's introduction in 1987! Unlike other RISC (Reduced Instruction Set Computer) designs, SPARC specifies not a hardware implementation ("chip"), but an open, standard architecture belonging to the community of SPARC vendors and users. The SPARC specification is defined by the SPARC Architecture Committee, a technical arm of the computer-maker consortium, SPARC International. Version 9 provides 64-bit data and addressing, support for fault tolerance, fast context switching, support for advanced compiler optimizations, efficient design for Superscalar processors, and a clean structure for modern operating systems. The V9 architecture supplements, rather than replaces, the 32-bit Version 8 architecture. The non-privileged features of Version 9 are upward-compatible from Version 8, so 32-bit application software can execute natively, without modification, on Version 9 systems - no special "compatibility mode" is required. Publication of the Version 9 architecture marks a three-year development effort by SPARC International member companies from a broad cross-section of disciplines.

Wireless Sensor Networks

Concepts, Applications, Experimentation and Analysis

Springer This book focuses on the principles of wireless sensor networks (WSNs), their applications, and their analysis tools, with meticulous attention paid to definitions and terminology. This book presents the adopted technologies and their manufacturers in detail, making WSNs tangible for the reader. In introductory computer networking books, chapter sequencing follows the bottom-up or top-down architecture of the 7-layer protocol. This book addresses subsequent steps in this process, both horizontally and vertically, thus fostering a clearer and deeper understanding through chapters that elaborate on WSN concepts and issues. With such depth, this book is intended for a wide audience; it is meant to be a helper and motivator for senior undergraduates, postgraduates, researchers, and practitioners. It lays out important concepts and WSN-relate applications; uses appropriate literature to back research and practical issues; and focuses on new trends. Senior undergraduate students can use it to familiarize themselves with conceptual foundations and practical project implementations. For graduate students and researchers, test beds and simulators provide vital insights into analysis methods and tools for WSNs. Lastly, in addition to applications and deployment, practitioners will be able to learn more about WSN manufacturers and components within several platforms and test beds.

Introduction to Reconfigurable Computing

Architectures, Algorithms, and Applications

Springer Science & Business Media This work is a comprehensive study of the field. It provides an entry point to the novice willing to move in the research field reconfigurable computing, FPGA and system on programmable chip design. The book can also be used as teaching reference for a graduate course in computer engineering, or as reference to advance electrical and computer engineers. It provides a very strong theoretical and practical background to the field, from the early Estrin's machine to the very modern architecture such as embedded logic devices.

Optical Switching in Next Generation Data Centers

Springer This book introduces the reader to the optical switching technology for its application to data centers. In addition, it takes a picture of the status of the technology and system architecture evolution and of the research in the area of optical switching in data center. The book is organized in four parts: the first part is focused on the system aspects of optical switching in intra-data center networking, the second part is dedicated to describing the recently demonstrated optical switching networks, the third part deals with the latest technologies developed to enable optical switching and, finally, the fourth part of the book outlines the future prospects and trends.

Handbook of Computer Networks and Cyber Security

Principles and Paradigms

Springer Nature This handbook introduces the basic principles and fundamentals of cyber security towards establishing an understanding of how to protect computers from hackers and adversaries. The highly informative subject matter of this handbook, includes various concepts, models, and terminologies along with examples and illustrations to demonstrate substantial technical details of the field. It motivates the readers to exercise better protection and defense mechanisms to deal with attackers and mitigate the situation. This handbook also outlines some of the exciting areas of future research where the existing approaches can be implemented. Exponential increase in the use of computers as a means of storing and retrieving security-intensive information, requires placement of adequate security measures to safeguard the entire computing and communication scenario. With the advent of Internet and its underlying technologies, information security aspects are becoming a prime concern towards protecting the networks and the cyber ecosystem from variety of threats, which is illustrated in this handbook. This handbook primarily targets professionals in security, privacy and trust to use and improve the reliability of businesses in a distributed manner, as well as computer scientists and software developers, who are seeking to carry out research and develop software in information and cyber security. Researchers and advanced-level students in computer science will also benefit from this reference.

Handbook of e-Business Security

CRC Press There are a lot of e-business security concerns. Knowing about e-business security issues will likely help overcome them. Keep in mind, companies that have control over their e-business are likely to prosper most. In other words, setting up and maintaining a secure e-business is essential and important to business growth. This book covers state-of-the art practices in e-business security, including privacy, trust, security of transactions, big data, cloud computing, social network, and distributed systems.

Enterprise Networking: Multilayer Switching and Applications

Multilayer Switching and Applications

IGI Global Enterprise Networking: Multilayer Switching and Applications offers up to date information relevant for the design of modem corporate networks and for the evaluation of new networking equipment. The book describes the architectures, standards high-availability and network policies that are requirements of modern switched networks.

RESTful Web Services

"O'Reilly Media, Inc." "Every developer working with the Web needs to read this book." -- David Heinemeier Hansson, creator of the Rails framework "RESTful Web Services finally provides a practical roadmap for constructing services that embrace the Web, instead of trying to route around it." -- Adam Trachtenberg, PHP author and EBay Web Services Evangelist You've built web sites that can be used by humans. But can you also build web sites that are usable by machines? That's where the future lies, and that's what RESTful Web Services shows you how to do. The World Wide Web is the most popular distributed application in history, and Web services and mashups have turned it into a powerful distributed computing platform. But today's web service technologies have lost sight of the simplicity that made the Web successful. They don't work like the Web, and they're missing out on its advantages. This book puts the "Web" back into web services. It shows how you can connect to the programmable web with the technologies you already use every day. The key is REST, the architectural style that drives the Web. This book: Emphasizes the power of basic Web technologies -- the HTTP application protocol, the URI naming standard, and the XML markup language Introduces the Resource-Oriented Architecture (ROA), a common-sense set of rules for designing RESTful web services Shows how a RESTful design is simpler, more versatile, and more scalable than a design based on Remote Procedure Calls (RPC) Includes real-world examples of RESTful web services, like Amazon's Simple Storage Service and the Atom Publishing Protocol Discusses web service clients for popular programming languages Shows how to implement RESTful services in three popular frameworks -- Ruby on Rails, Restlet (for Java), and Django (for Python) Focuses on practical issues: how to design and implement RESTful web services and clients This is the first book that applies the REST design philosophy to real web services. It sets down the best practices you need to make your design a success, and the techniques you need to turn your design into working code. You can harness the power of the Web for programmable applications: you just have to work with the Web instead of against it. This book shows you how.

Proceedings of the Third International Conference on Computational Intelligence and Informatics

ICCII 2018

Springer Nature This book features high-quality papers presented at the International Conference on Computational Intelligence and Informatics (ICCII 2018), which was held on 28–29 December 2018 at the Department of Computer Science and Engineering, JNTUH College of Engineering, Hyderabad, India. The papers focus on topics such as data mining, wireless sensor networks, parallel computing, image processing, network security, MANETS, natural language processing and Internet of things.

Bulletin, Volume 37

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Next-Generation Networks

Proceedings of CSI-2015

Springer This book comprises select proceedings of the 2015 annual conference of the Computer Society of India. The books focuses on next generation networks (NGN). An NGN is a packet-based network which can provide services including telecommunication services. NGNs make use of multiple broadband, quality-of-service-enabled transport technologies in which service-related functions are independent from underlying transport-related technologies. This volume includes contributions from experts on various aspects of NGNs. The papers included cover theory, methodology and applications of ad-hoc networks, sensor networks, and the internet. The contents also delve into how the new enterprise IT landscape of cloud services, mobility, social media usage and big data analytics creates different types of network traffic to the traditional mix of in-house client-server enterprise workloads. The contents of this book will be useful to researchers and professionals alike.

Applied Reconfigurable Computing

15th International Symposium, ARC 2019, Darmstadt, Germany, April 9–11, 2019, Proceedings

Springer This book constitutes the proceedings of the 15th International Symposium on Applied Reconfigurable Computing, ARC 2019, held in Darmstadt, Germany, in April 2019. The 20 full papers and 7 short papers presented in this volume were carefully reviewed and selected from 52 submissions. In addition, the volume contains 1 invited paper. The papers were organized in topical sections named: Applications; partial reconfiguration and security; image/video processing; high-level synthesis; CGRAs and vector processing; architectures; design frameworks and methodology; convolutional neural networks.

Interconnections

Bridges, Routers, Switches, and Internetworking Protocols

Addison-Wesley Professional Perlman, a bestselling author and senior consulting engineer for Sun Microsystems, provides insight for building more robust, reliable, secure and manageable networks. Coverage also includes routing and addressing strategies, VLANs, multicasting, IPv6, and more.

Intelligent Systems Applications in Software Engineering

Proceedings of 3rd Computational Methods in Systems and Software 2019. Vol. 1

This book presents real-world problems and exploratory research that describes novel approaches in software engineering, cybernetics and algorithms in the context of intelligent systems. It constitutes the refereed proceedings of the 3rd Computational Methods in Systems and Software 2019 (CoMeSySo 2019) conference, a groundbreaking online conference that provides an international forum for discussing the latest high-quality research results.

Solaris Application Programming

Pearson Education Solaris™ Application Programming is a comprehensive guide to optimizing the performance of applications running in your Solaris environment. From the fundamentals of system performance to using analysis and optimization tools to their fullest, this wide-ranging resource shows developers and software architects how to get the most from Solaris systems and applications. Whether you're new to performance analysis and optimization or an experienced developer searching for the most efficient ways to solve performance issues, this practical guide gives you the background information, tips, and techniques for developing, optimizing, and debugging applications on Solaris. The text begins with a detailed overview of the components that affect system performance. This is followed by explanations of the many developer tools included with Solaris OS and the Sun Studio compiler, and then it takes you beyond the basics with practical, real-world examples. In addition, you will learn how to use the rich set of developer tools to identify performance problems, accurately interpret output from the tools, and choose the smartest, most efficient approach to correcting specific problems and achieving maximum system performance. Coverage includes A discussion of the chip multithreading (CMT) processors from Sun and how they change the way that developers need to think about performance A detailed introduction to the performance analysis and optimization tools included with the Solaris OS and Sun Studio compiler Practical examples for using the developer tools to their fullest, including informational tools, compilers, floating point optimizations, libraries and linking, performance profilers, and debuggers Guidelines for interpreting tool analysis output Optimization, including hardware performance counter metrics and source code optimizations Techniques for improving application performance using multiple processes, or multiple threads An overview of hardware and software components that affect system performance, including coverage of SPARC and x64 processors

Measurement, Modelling and Evaluation of Computing Systems

19th International GI/ITG Conference, MMB 2018, Erlangen, Germany, February 26-28, 2018, Proceedings

Springer This book constitutes the proceedings of the 19th International GI/ITG Conference on Measurement, Modelling and Evaluation of Computing Systems, MMB 2018, held in Erlangen, Germany, in February 2018. The 16 full papers, 4 PhD track papers, and 9 tool papers presented in this volume were carefully reviewed and selected from 42 submissions. They are dealing with performance and dependability evaluation techniques for computer and communication systems and its related fields.

Internet of Things, Smart Spaces, and Next Generation Networking

12th International Conference, NEW2AN 2012, and 5th Conference, ruSMART 2012, St. Petersburg, Russia, August 27-29, 2012, Proceedings

Springer This book constitutes the joint refereed proceedings of the 12 International Conference on Next Generation Teletraffic and Wired/Wireless Advanced Networking, NEW2AN, and the 5th Conference on Internet of Things and Smart Spaces, ruSMART 2012, held in St. Petersburg, Russia, in August 2012. The total of 42 papers was carefully reviewed and selected for inclusion in this book. The 14 papers selected from ruSMART are organized in topical sections named: defining an internet-of-things ecosystem; future services; and smart space governing through service mashups. The 28 papers from NEW2AN deal with the following topics: wireless cellular networks; ad-hoc, mesh, and delay-tolerant networks; scalability, cognition, and self-organization; traffic and internet applications; and wireless sensor networks. They also contain 4 selected papers from the NEW2AN 2012 winter session.

Applied Reconfigurable Computing. Architectures, Tools, and Applications

16th International Symposium, ARC 2020, Toledo, Spain, April 1–3, 2020, Proceedings

Springer This book constitutes the proceedings of the 16th International Symposium on Applied Reconfigurable Computing, ARC 2020, held in Toledo, Spain, in April 2020. The 18 full papers and 11 poster presentations presented in this volume were carefully reviewed and selected from 40 submissions. The papers are organized in the following topical sections: design methods & tools; design space exploration & estimation techniques; high-level synthesis; architectures; applications.

Real World OCaml

Functional programming for the masses

"O'Reilly Media, Inc." This fast-moving tutorial introduces you to OCaml, an industrial-strength programming language designed for expressiveness, safety, and speed. Through the book's many examples, you'll quickly learn how OCaml stands out as a tool for writing fast, succinct, and readable systems code. Real World OCaml takes you through the concepts of the language at a brisk pace, and then helps you explore the tools and techniques that make OCaml an effective and practical tool. In the book's third section, you'll delve deep into the details of the compiler toolchain and OCaml's simple and efficient runtime system. Learn the foundations of the language, such as higher-order functions, algebraic data types, and modules Explore advanced features such as functors, first-class modules, and objects Leverage Core, a comprehensive general-purpose standard library for OCaml Design effective and reusable libraries, making the most of OCaml's approach to abstraction and modularity Tackle practical programming problems from command-line parsing to asynchronous network programming Examine profiling and interactive debugging techniques with tools such as GNU gdb

Machine-to-machine (M2M) Communications

Architecture, Performance and Applications

Elsevier Part one of Machine-to-Machine (M2M) Communications covers machine-to-machine systems, architecture and components. Part two assesses performance management techniques for M2M communications. Part three looks at M2M applications, services, and standardization. Machine-to-machine communications refers to autonomous communication between devices or machines. This book serves as a key resource in M2M, which is set to grow significantly and is expected to generate a huge amount of additional data traffic and new revenue streams, underpinning key areas of the economy such as the smart grid, networked homes, healthcare and transportation. Examines the opportunities in M2M for businesses Analyses the optimisation and development of M2M communications Chapters cover aspects of access, scheduling, mobility and security protocols within M2M communications

Cambridge Computing

The First 75 Years

Third Millenium Pub This is a portrait of a computer laboratory in the 21st century, to coincide with its 75th Anniversary and with 200 years of Cambridge computing.

The Buffet Principle

In her debut memoir The Buffet Principle, Samantha Jones Darling shares her most impactful moments and what happens when you learn to stand up for yourself, start listening to your own heart, and make truth your main ingredient. As she copes with a life peppered with physical and emotional traumas, Samantha finds comfort and camaraderie in the restaurant industry but like many others, falls into substance abuse and codependent relationships that mirror her home life. When she hits rock bottom, Samantha checks herself into treatment and begins a journey of food, spirituality, and writing that redefines her life. The Buffet Principle helps readers discover that by filling your spiritual and physical plate with things that are nourishing to you, you heal yourself and ultimately, the world.

LTE Signaling

Troubleshooting and Performance Measurement

John Wiley & Sons This extensively updated second edition of LTE Signaling, Troubleshooting and Performance Measurement describes the LTE signaling protocols and procedures for the third generation of mobile communications and beyond. It is one of the few books available that explain the LTE signaling messages, procedures and measurements down to the bit & byte level, and all trace examples are taken for a real lab and field trial traces. This book covers the crucial key performance indicators (KPI) to be measured during field trials and deployment phase of new LTE networks. It describes how statistic values can be aggregated and evaluated, and how the network can be optimized during the first stages of deployment, using dedicated examples to enhance understanding. Written by experts in the field of mobile communications, this book systematically describes the most recent LTE signaling procedures, explaining how to identify and troubleshoot abnormal network behavior and common failure causes, as well as describing the normal signaling procedures. This is a unique feature of the book, allowing readers to understand the root cause analysis of problems related to signaling procedures. This book will be especially useful for network operators and equipment manufacturers; engineers; technicians; network planners; developers; researchers; designers; testing personnel and project managers; consulting and training companies; standardization bodies.

Computer Organization and Design

The Hardware/Software Interface

Elsevier "Presents the fundamentals of hardware technologies, assembly language, computer arithmetic, pipelining, memory hierarchies and I/O"--

Systems Modeling: Methodologies and Tools

Springer This book covers ideas, methods, algorithms, and tools for the in-depth study of the performance and reliability of dependable fault-tolerant systems. The chapters identify the current challenges that designers and practitioners must confront to ensure the reliability, availability, and performance of systems, with special focus on their dynamic behaviors and dependencies. Topics include network calculus, workload and scheduling; simulation, sensitivity analysis and applications; queuing networks analysis; clouds, federations and big data; and tools. This collection of recent research exposes system researchers, performance analysts, and practitioners to a spectrum of issues so that they can address these challenges in their work.

Field-Programmable Logic and Applications: Reconfigurable Computing Is Going Mainstream

Reconfigurable Computing Is Going Mainstream

Springer This book constitutes the refereed proceedings of the 12th International Conference on Field-Programmable Logic and Applications, FPL 2002, held in Montpellier, France, in September 2002. The 104 revised regular papers and 27 poster papers presented together with three invited contributions were carefully reviewed and selected from 214 submissions. The papers are organized in topical sections on rapid prototyping, FPGA synthesis, custom computing engines, DSP applications, reconfigurable fabrics, dynamic reconfiguration, routing and placement, power estimation, synthesis issues, communication applications, new technologies, reconfigurable architectures, multimedia applications, FPGA-based arithmetic, reconfigurable processors, testing and fault-tolerance, crypto applications, multitasking, compilation techniques, etc.

New Frontiers in Astronomy

Astronomy is the natural science that involves the observation and explanation of various events occurring outside Earth and its atmosphere. It applies chemistry, mathematics and physics to study the origin, phenomena and evolution of celestial bodies. The celestial objects studied under this discipline include nebulae, planets, stars, moons, galaxies and comets. It also studies phenomena like quasars, cosmic microwave background radiation, supernova, pulsars and gamma-ray bursts. Astronomy can be further classified into solar astronomy, astrophysics, stellar astronomy, astrochemistry, galactic astronomy, astrobiology and cosmology. This book attempts to understand the multiple branches that fall under the discipline of astronomy and how such concepts have practical applications. It strives to provide a fair idea about this field and to help develop a better understanding of the latest advances within this area of study. Scientists and students actively engaged in this field will find it full of crucial and unexplored concepts.

Machine Learning for Decision Makers

Cognitive Computing Fundamentals for Better Decision Making

Apress Take a deep dive into the concepts of machine learning as they apply to contemporary business and management. You will learn how machine learning techniques are used to solve fundamental and complex problems in society and industry. Machine Learning for Decision Makers serves as an excellent resource for establishing the relationship of machine learning with IoT, big data, and cognitive and cloud computing to give you an overview of how these modern areas of computing relate to each other. This book introduces a collection of the most important concepts of machine learning and

sets them in context with other vital technologies that decision makers need to know about. These concepts span the process from envisioning the problem to applying machine-learning techniques to your particular situation. This discussion also provides an insight to help deploy the results to improve decision-making. The book uses case studies and jargon busting to help you grasp the theory of machine learning quickly. You'll soon gain the big picture of machine learning and how it fits with other cutting-edge IT services. This knowledge will give you confidence in your decisions for the future of your business. What You Will Learn Discover the machine learning, big data, and cloud and cognitive computing technology stack Gain insights into machine learning concepts and practices Understand business and enterprise decision-making using machine learning Absorb machine-learning best practices Who This Book Is For Managers tasked with making key decisions who want to learn how and when machine learning and related technologies can help them.