

Risc Architectures

Building Evolutionary Architectures **Flow Architectures** *Computer Architectures* **Cybernetic Architectures** **Cloud Native Architectures** *Software Architecture: the Hard Parts* **Fundamentals of Software Architecture** **Building Digital Ecosystem Architectures** **Intelligent Agents V: Agents Theories, Architectures, and Languages** *Security for Service Oriented Architectures* **Disruptive Logic Architectures and Technologies** *Evaluation of Fault-tolerant Parallel-processor Architectures Over Long Space Missions* *High-Performance VLSI Signal Processing Innovative Architectures and Algorithms, Algorithms and Architectures* **Hadoop Application Architectures** *Book Architecture* **Designing Software Architectures** **Deep Learning Architectures** **Reduced Instruction Set Computer Architectures for VLSI** *Web 2.0 Architectures* **PARLE 93. Parallel Architectures and Languages Europe** **Parallel Hardware Architectures for the Life Sciences** *SQL & NoSQL Databases* *Wireless Receiver Architectures and Design* *Documenting Software Architectures* **Simple Architectures for Complex Enterprises** *Computer Architecture* *Beautiful Architecture* **Computer Systems Architecture** *5G Radio Access Network Architecture* **Automotive Software Architectures 500 Lines Or Less** **Computer Architecture: A Minimalist Perspective** *High Performance Embedded Architectures and Compilers* **Software and Systems Architecture in Action** *Architecture* **Software Fortresses Architecture in the Digital Age** **Precedents in Architecture** *The Architectures of Childhood* *Finland*

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Disruptive Logic Architectures and Technologies Dec 26 2021 This book discusses the opportunities offered by disruptive technologies to overcome the economical and physical limits currently faced by the electronics industry. It provides a new methodology for the fast evaluation of an emerging technology from an architectural prospective and discusses the implications from simple circuits to complex architectures. Several technologies are discussed, ranging from 3-D integration of devices (Phase Change Memories, Monolithic 3-D, Vertical NanoWires-based transistors) to dense 2-D arrangements (Double-Gate Carbon Nanotubes, Sublithographic Nanowires, Lithographic Crossbar arrangements). Novel architectural organizations, as well as the associated tools, are presented in order to explore this freshly opened design space. **High Performance Embedded Architectures and Compilers** Feb 02 2020 As Chairmen of HiPEAC 2005, we have the pleasure of welcoming you to the proceedings of the 7th international conference promoted by the HiPEAC N- work of Excellence. During the last year, HiPEAC has been building its clusters of researchers in computer architecture and advanced compiler techniques for embedded and high-performance computers. Recently, the Summer School has been the seed for a fruitful collaboration of renowned international faculty and young researchers from 23 countries with fresh new ideas. Now, the conference promises to be among the premier forums for discussion and debate on these research topics. The prestige of a symposium is mainly determined by the quality of its technical program. This 7th program lived up to our high expectations, thanks to the largenumber of strong submissions. The Program Committee received a total of 84 submissions; only 17 were selected for presentation as full-length papers and another one as an invited paper. Each paper was rigorously reviewed by three Program Committee members and at least one external referee. Many reviewers sent a great amount of effort to provide detailed feedback. In many cases, such feedback along with constructive shepherding resulted in dramatic improvement in the quality of accepted papers. The names of the Program Committee members and the referees are listed in the proceedings. The net result of this team effort is that the symposium proceedings include outstanding contributions by authors from nine countries in three continents. In addition to paper presentations, this 7th HiPEAC conference featured two keynotes delivered by prominent researchers from industry and academia.

Hadoop Application Architectures Sep 22 2021 Get expert guidance on architecting end-to-end data management solutions with Apache Hadoop. While many sources explain how to use various components in the Hadoop ecosystem, this practical book takes you through architectural considerations necessary to tie those components together into a complete tailored application, based on your particular use case. To reinforce those lessons, the book's second section provides detailed examples of architectures used in some of the most commonly found Hadoop applications. Whether you're designing a new Hadoop application, or planning to integrate Hadoop into your existing data infrastructure, Hadoop Application Architectures will skillfully guide you through the process. This book covers: Factors to consider when using Hadoop to store and model data Best practices for moving data in and out of the system Data processing frameworks, including MapReduce, Spark, and Hive Common Hadoop processing patterns, such as removing duplicate records and using windowing analytics Giraph, GraphX, and other tools for large graph processing on Hadoop Using workflow orchestration and scheduling tools such as Apache Oozie Near-real-time stream processing with Apache Storm, Apache Spark Streaming, and Apache Flume Architecture examples for clickstream analysis, fraud detection, and data warehousing

Reduced Instruction Set Computer Architectures for VLSI May 19 2021 This book demonstrates the practicality of the RISC approach.

Evaluation of Fault-tolerant Parallel-processor Architectures Over Long Space Missions Nov 24 2021

Deep Learning Architectures Jun 19 2021 This book describes how neural networks operate from the mathematical point of view. As a result, neural networks can be interpreted both as function universal approximators and information processors. The book bridges the gap between ideas and concepts of neural networks, which are used nowadays at an intuitive level, and the precise modern mathematical language, presenting the best practices of the former and enjoying the robustness and elegance of the latter. This book can be used in a graduate course in deep learning, with the first few parts being accessible to senior undergraduates. In addition, the book will be of wide interest to machine learning researchers who are interested in a theoretical understanding of the subject.

Computer Architecture Sep 10 2020 Not only does almost everyone in the civilized world use a personal computer, smartphone, and/or tablet on a daily basis to communicate with others and access information, but virtually every other modern appliance, vehicle, or other device has one or more computers embedded inside it. One cannot purchase a current-model automobile, for example, without several computers on board to do everything from monitoring exhaust emissions, to operating the anti-lock brakes, to telling the transmission when to shift, and so on. Appliances such as clothes washers and dryers, microwave ovens, refrigerators, etc. are almost all digitally controlled. Gaming consoles like Xbox, PlayStation, and Wii are powerful computer systems with enhanced capabilities for user interaction. Computers are everywhere, even when we don't see them as such, and it is more important than ever for students who will soon enter the workforce to understand how they work. This book is completely updated and revised for a one-semester upper level undergraduate course in Computer Architecture, and suitable for use in an undergraduate CS, EE, or CE curriculum at the junior or senior level. Students should have had a course(s) covering introductory topics in digital logic and computer organization. While this is not a text for a programming course, the reader should be familiar with computer programming concepts in at least one language such as C, C++, or Java. Previous courses in operating systems, assembly language, and/or systems programming would be helpful, but are not essential.

Designing Software Architectures Jul 21 2021 Designing Software Architectures will teach you how to design any software architecture in a systematic, predictable, repeatable, and cost-effective way. This book introduces a practical methodology for architecture design that any professional software engineer can use, provides structured methods supported by reusable chunks of design knowledge, and includes rich case studies that demonstrate how to use the methods. Using realistic examples, you'll master the powerful new version of the proven Attribute-Driven Design (ADD) 3.0 method and will learn how to use it to address key drivers, including quality attributes, such as modifiability, usability, and availability, along with functional requirements and architectural concerns. Drawing on their extensive experience, Humberto Cervantes and Rick Kazman guide you through crafting practical designs that support the full software life cycle, from requirements to maintenance and evolution. You'll learn how to successfully integrate design in your organizational context, and how to design systems that will be built with agile methods. Comprehensive coverage includes Understanding what architecture design involves, and where it fits in the full software development life cycle Mastering core design concepts, principles, and processes Understanding how to perform the steps of the ADD method Scaling design and analysis up or down, including design for pre-sale processes or lightweight architecture reviews Recognizing and optimizing critical relationships between analysis and design Utilizing proven, reusable design primitives and adapting them to specific problems and contexts Solving design problems in new domains, such as cloud, mobile, or big data

Software Architecture: the Hard Parts May 31 2022 Architects are often harried because they have no clean, easy decisions: everything is an awful tradeoff between two or more less than perfect alternatives. These are the difficult problems architects face, what this book's authors call "the hard parts." These topics have no best practices, forcing architects to understand various tradeoffs to succeed. This book discusses these hard parts by not only investigating what makes architecture so difficult, but also by providing proven ways to address these problems and make them easier. The book explores topics such as choosing an appropriate architecture, deciding on service granularity, managing workflows and orchestration, managing and decoupling contracts, managing distributed transactions, and optimizing operational characteristics such as scalability, elasticity, and performance. As practicing consultants, the authors focus on questions they commonly hear architects ask and provide techniques that enable them to discover the tradeoffs necessary to answer these questions.

Building Evolutionary Architectures Nov 05 2022 The software development ecosystem is constantly changing, providing a constant stream of new tools, frameworks, techniques, and paradigms. Over the past few years, incremental developments in core engineering practices for software development have created the foundations for rethinking how architecture changes over time, along with ways to protect important architectural characteristics as it evolves. This practical guide ties those parts together with a new way to think about architecture and time.

Software Fortresses Oct 31 2019 This book introduces a new approach for modeling large enterprise systems: the software fortress model. In the software fortress model, an enterprise architecture is viewed as a series of self-contained, mutually suspicious, marginally cooperating software fortresses interacting with each other through carefully crafted and meticulously managed treaty relationships. The software fortress model is an intuitive, simple, expressive approach that maps readily to existing technologies such as .NET and Java 2 Enterprise Edition (J2EE). This book is designed to meet an immediate need to define, clarify, and explain the basics of this new modeling methodology for large enterprise software architectures. "Software Fortresses is your essential roadmap to all aspects of software fortresses. Key topics include: The fundamental concepts and terminology of software fortresses Documentation techniques, including Fortress Ally Responsibility Cards (based on Class Responsibility Cards) and Sequence Ally Diagrams (based on UML's Class Sequence Diagrams) The proper use of drawbridges to provide fortress interoperability The innovative software fortress model for enterprise security Correct design approaches to fortress walls, which keep intruders out, and to guards, which let allies in. The role of loosely coupled and tightly coupled transactions in a software fortress architecture Design and technology issues associated with the six major software fortress types This book is a must-read for all enterprise software professionals, whether you are a manager seeking to rein in run-away enterprise system complexity, an architect seeking to design interoperable, scalable, and highly secure systems, a consultant expected to give advice on how .NET and J2EE fit into the enterprise space, an implementer wanting to understand how your system relates to a larger enterprise architecture, or a business analyst needing to know that your system requirements will be translated into a successful software implementation. 0321166086B1220202

Precedents in Architecture Aug 29 2019 PRECEDENTS IN ARCHITECTURE A TIMELY UPDATE OF THE ARCHITECTURAL CLASSIC ON DESIGN ANALYSIS Precedents in Architecture, Fourth Edition provides a vocabulary for architectural analysis that illuminates the works of leading architects and aids architects and designers in creating their own designs. Thirty-eight leading architects are represented in this updated edition through an analysis of more than 100 buildings that are assessed using a diagrammatic technique applicable to any building. This impressive collection includes fourteen new buildings and seven new, innovative architects distinguished by the strength, quality, and interest of their designs. It delivers valuable guidance in analyzing architectural history as an evolutionary process by exploring the commonality of design ideas reflected in a broad range of structures by internationally renowned architects. Both novices and seasoned professionals will find Precedents in Architecture, Fourth Edition to be a very useful tool for enriching their design vocabulary and for the ongoing assessment of buildings found in today's evolving landscape.

Finland Jun 27 2019 Buildings speak volumes, not just about their occupants or owners, but about the countries in which they exist. From colonnades to paving stones, the architecture of any building does more than simply date the structure—it celebrates the spirit of a people and a nation. Roger Connah's latest book, Finland, explores the culture and democratic spirit of a country whose buildings carry the indelible markings of Finland's political and physical climate. Nearly all of the country's buildings were constructed after 1917, when Finland gained its independence from Russia. The resulting architecture—often springing from hugely popular public competitions—is emphatically democratic in structure and usage. Finland's extreme northern latitudes, for their part, have given rise to buildings with an acute sensitivity to the physical environment and to the delicate interplay of light and shadow. From museums to schools to subsidized housing developments, Connah's Finland is an important survey of the country's architecture. Fully illustrated and with detailed examinations of many of the Finnish master architects—including Alvar Aalto—it is also a valuable contribution to the studies of modern architecture and Nordic history.

Simple Architectures for Complex Enterprises Oct 12 2020 Dismantle the overwhelming complexity in your IT projects with strategies and real-world examples from a leading expert on enterprise architecture. This guide describes best practices for creating an efficient IT organization that consistently delivers on time, on budget, and in line with business needs. IT systems have become too complex—and too expensive. Complexity can create delays, cost overruns, and outcomes that do not meet business requirements. The resulting losses can impact your entire company. This guide demonstrates that, contrary to popular belief, complex problems demand simple solutions. The author believes that 50 percent of the complexity of a typical IT project can and should be eliminated—and he shows you how to do it. You'll learn a model for understanding complexity, the three tenets of complexity control, and how to apply specific techniques such as checking architectures for validity. Find out how the author's methodology could have saved a real-world IT project that went off track, and ways to implement his solutions in a variety of situations.

Computer Architecture: A Minimalist Perspective Mar 05 2020 The one instruction set computer (OISC) is the ultimate reduced instruction set computer (RISC). In OISC, the instruction set consists of only one instruction, and then by composition, all other necessary instructions are synthesized. This is an approach completely opposite to that of a complex instruction set computer (CISC), which incorporates complex instructions as microprograms within the processor. Computer Architecture: A Minimalist Perspective examines computer architecture, computability theory, and the history of computers from the perspective of one instruction set computing - a novel approach in which the computer supports only one, simple instruction. This bold, new paradigm offers significant promise in biological, chemical, optical, and molecular scale computers. Features include: · Provides a comprehensive study of computer architecture using computability theory as a base. · Provides a fresh perspective on computer architecture not found in any other text. · Covers history, theory, and practice of computer architecture from a minimalist perspective. Includes a complete implementation of a one instruction computer. · Includes exercises and programming assignments. Computer Architecture: A Minimalist Perspective is designed to meet the needs of a professional audience composed of researchers, computer hardware engineers, software engineers computational theorists, and systems

engineers. The book is also intended for use in upper division undergraduate students and early graduate students studying computer architecture or embedded systems. It is an excellent text for use as a supplement or alternative in traditional Computer Architecture Courses, or in courses entitled "Special Topics in Computer Architecture."

Flow Architectures Oct 04 2022 Software development today is embracing events and streaming data, which optimizes not only how technology interacts but also how businesses integrate with one another to meet customer needs. This phenomenon, called flow, consists of patterns and standards that determine which activity and related data is communicated between parties over the internet. This book explores critical implications of that evolution: What happens when events and data streams help you discover new activity sources to enhance existing businesses or drive new markets? What technologies and architectural patterns can position your company for opportunities enabled by flow? James Urquhart, global field CTO at VMware, guides enterprise architects, software developers, and product managers through the process. Learn the benefits of flow dynamics when businesses, governments, and other institutions integrate via events and data streams Understand the value chain for flow integration through Wardley mapping visualization and promise theory modeling Walk through basic concepts behind today's event-driven systems marketplace Learn how today's integration patterns will influence the real-time events flow in the future Explore why companies should architect and build software today to take advantage of flow in coming years

Cloud Native Architectures Jul 01 2022 Learn and understand the need to architect cloud applications and migrate your business to cloud efficiently Key Features Understand the core design elements required to build scalable systems Plan resources and technology stacks effectively for high security and fault tolerance Explore core architectural principles using real-world examples Book Description Cloud computing has proven to be the most revolutionary IT development since virtualization. Cloud native architectures give you the benefit of more flexibility over legacy systems. To harness this, businesses need to refresh their development models and architectures when they find they don't port to the cloud. Cloud Native Architectures demonstrates three essential components of deploying modern cloud native architectures: organizational transformation, deployment modernization, and cloud native architecture patterns. This book starts with a quick introduction to cloud native architectures that are used as a base to define and explain what cloud native architecture is and is not. You will learn what a cloud adoption framework looks like and develop cloud native architectures using microservices and serverless computing as design principles. You'll then explore the major pillars of cloud native design including scalability, cost optimization, security, and ways to achieve operational excellence. In the concluding chapters, you will also learn about various public cloud architectures ranging from AWS and Azure to the Google Cloud Platform. By the end of this book, you will have learned the techniques to adopt cloud native architectures that meet your business requirements. You will also understand the future trends and expectations of cloud providers. What you will learn Learn the difference between cloud native and traditional architecture Explore the aspects of migration, when and why to use it Identify the elements to consider when selecting a technology for your architecture Automate security controls and configuration management Use infrastructure as code and CI/CD pipelines to run environments in a sustainable manner Understand the management and monitoring capabilities for AWS cloud native application architectures Who this book is for Cloud Native Architectures is for software architects who are keen on designing resilient, scalable, and highly available applications that are native to the cloud.

Beautiful Architecture Aug 10 2020 What are the ingredients of robust, elegant, flexible, and maintainable software architecture? Beautiful Architecture answers this question through a collection of intriguing essays from more than a dozen of today's leading software designers and architects. In each essay, contributors present a notable software architecture, and analyze what makes it innovative and ideal for its purpose. Some of the engineers in this book reveal how they developed a specific project, including decisions they faced and tradeoffs they made. Others take a step back to investigate how certain architectural aspects have influenced computing as a whole. With this book, you'll discover: How Facebook's architecture is the basis for a data-centric application ecosystem The effect of Xen's well-designed architecture on the way operating systems evolve How community processes within the KDE project help software architectures evolve from rough sketches to beautiful systems How creeping featurism has helped GNU Emacs gain unanticipated functionality The magic behind the Jikes RVM self-optimizable, self-hosting runtime Design choices and building blocks that made Tandem the choice platform in high-availability environments for over two decades Differences and similarities between object-oriented and functional architectural views How architectures can affect the software's evolution and the developers' engagement Go behind the scenes to learn what it takes to design elegant software architecture, and how it can shape the way you approach your own projects, with Beautiful Architecture.

Book Architecture Aug 22 2021 In Book Architecture: How to Plot and Outline Without Using a Formula, Stuart Horwitz returns with his trademark clarity to help writers craft a powerful plot and an effective outline for their works-in-progress. Along the way, Horwitz offers detailed, concrete examples that reveal how the Book Architecture Method works with everything from literary classics to blockbuster films.

Parallel Hardware Architectures for the Life Sciences Feb 13 2021 "This is a Ph.D. thesis. This thesis discusses instrumentation architectures for applications in the life sciences, mostly for data acquisition and real-time data processing. Contents include: General introduction, Parallel architectures, Multiprocessor system for a stem quadrant detector, Design of a parallel and pipelined DSP system for fast protein sequence homologies, Fast wire per wire x-ray data acquisition system for time-resolved small angle scattering experiments, A fast position encoding system for a delay line based gas filled area detector, A parallel systolic array ASIC for real time execution of the hough transform, A systolic array architecture for complex motif search applicants, Discussion."

Automotive Software Architectures May 07 2020 This book introduces the concept of software architecture as one of the cornerstones of software in modern cars. Following a historical overview of the evolution of software in modern cars and a discussion of the main challenges driving that evolution, Chapter 2 describes the main architectural styles of automotive software and their use in cars' software. Chapter 3 details this further by presenting two modern architectural styles, i.e. centralized and federated software architectures. In Chapter 4, readers will find a description of the software development processes used to develop software on the car manufacturers' side. Chapter 5 then introduces AUTOSAR - an important standard in automotive software. Chapter 6 goes beyond simple architecture and describes the detailed design process for automotive software using Simulink, helping readers to understand how detailed design links to high-level design. The new chapter 7 reports on how machine learning is exploited in automotive software e.g. for image recognition and how both on-board and off-board learning are applied. Next, Chapter 8 presents a method for assessing the quality of the architecture - ATAM (Architecture Trade-off Analysis Method) - and provides a sample assessment, while Chapter 9 presents an alternative way of assessing the architecture, namely by using quantitative measures and indicators. Subsequently Chapter 10 dives deeper into one of the specific properties discussed in Chapter 8 - safety - and details an important standard in that area, the ISO/IEC 26262 norm. Lastly, Chapter 11 presents a set of future trends that are currently emerging and have the potential to shape automotive software engineering in the coming years. This book explores the concept of software architecture for modern cars and is intended for both beginning and advanced software designers. It mainly aims at two different groups of audience - professionals working with automotive software who need to understand concepts related to automotive architectures, and students of software engineering or related fields who need to understand the specifics of automotive software to be able to construct cars or their components. Accordingly, the book also contains a wealth of real-world examples illustrating the concepts discussed and requires no prior background in the automotive domain. Compared to the first edition, besides the two new chapters 3 and 7 there are considerable updates in chapters 5 and 8 especially.

Architecture in the Digital Age Sep 30 2019 Architecture in the Digital Age addresses contemporary architectural practice in which digital technologies are radically changing how buildings are conceived, designed and produced. It discusses the digitally-driven changes, their origins, and their effects by grounding them in actual practices already taking place, while simultaneously speculating about their wider implications for the future. The book offers a diverse set of ideas as to what is relevant today and what will be relevant tomorrow for emerging architectural practices of the digital age.

Architecture Dec 02 2019 Dana Cuff delves into the architect's everyday world in "Architecture" to uncover an intricate social art of design, resulting in a new portrait of the profession that sheds light on what it means to become an architect.

5G Radio Access Network Architecture Jun 07 2020 Discover how the NG-RAN architecture is, and isn't, ready for the challenges introduced by 5G 5G Radio Access Network Architecture: The Dark Side of 5G explores foundational and advanced topics in Radio Access Network (RAN) architecture and why a re-thinking of that architecture is necessary to support new 5G requirements. The distinguished engineer and editor Sasha Sirotkin has included numerous works written by industry insiders with state of the art research at their disposal. The book explains the relevant standards and technologies from an academic perspective, but also explains why particular standards decisions were made and how a variety of NG-RAN architecture options could be deployed in real-life networks. All major standards and technologies associated with the NG-RAN architecture are discussed in this book, including 3GPP, O-RAN, Small Cell Forum, IEEE, and IETF. Readers will learn about how a re-design of the RAN architecture would ensure that 5G networks can deliver their promised throughput and low latency KPIs consistently and sustainably. The book is structured as follows: An overview of the market drivers of the NG-RAN architecture, like spectrum models, 5G-relevant regulatory considerations, and 5G radio interface technical requirements An overview of the 5G System, from the core network, to the RAN, to the radio interface protocols and physical layer, with emphasis on how these are different compared to 4G Release-15 RAN architectures defined in 3GPP, O-RAN, and Small Cell Forum RAN architecture evolution in Release-16 and Release-17 Enabling technologies, like virtualization, open source technologies, multi-access edge (MEC) computing, and operations, administration, and management (OAM) NG-RAN deployment considerations, objectives, and challenges, like costs, spectrum and radio propagation considerations, and coverage Perfect for network designers and operators who require a solid understanding of the NG-RAN architecture, 5G Radio Access Network Architecture also belongs on the bookshelves of network engineers who aim to increase their understanding of the standards and technologies relevant to the NG-RAN architecture.

Building Digital Ecosystem Architectures Mar 29 2022 The design of digital solutions has become a pressing concern for practitioners faced with a plethora of technology impacting their business. From cloud computing to social networks, mobile computing and big data, to the emerging of Internet of things, all of which are changing how enterprise products, services, rooms and buildings are connected to the wider ecosystem of networks and services. This book defines digital ecosystems with examples from real industry cases and explores how enterprise architecture is evolving to enable physical and virtual, social, and material object collaboration and experience. The key topics covered include: Concepts of digitization Types of technological ecosystems Architecting digital workspaces Principles of architecture design Examples architecting digital business models Examples of digital design patterns Methods of monetization Conclusions

Cybernetic Architectures Aug 02 2022 For the past 50 years, the advancements of technology have equipped architects with unique tools that have enabled the development of new computer-mediated design methods, fabrication techniques, and architectural expressions. Simultaneously, in contemporary architecture new frameworks emerged that have radically redefined the traditional conceptions of design, of the built environment, and of the role of architects. Cybernetic Architectures argues that such frameworks have been constructed in direct reference to cybernetic thinking, a thought model that emerged concurrently with the origins of informatics and that embodies the main assumptions, values, and ideals underlying the development of computer science. The book explains how the evolution of the computational perspective in architecture has been parallel to the construction of design issues in reference to the central ideas fostered by the cybernetic model. It unpacks and explains this crucial relationship, in the work of digital architects, between the use of information technology in design and the conception of architectural problems around an informational ontology. This book will appeal to architecture students and scholars interested in understanding the recent transformations in the architectural landscape related to the advent of computer-based design paradigms.

PARLE '93. Parallel Architectures and Languages Europe Mar 17 2021 "Parallel processing offers a solution to the problem of providing the processing power necessary to help understand and master the complexity of natural phenomena and engineering structures. By taking several basic processing devices and connecting them together the potential exists of achieving a performance many times that of an individual device. However, building parallel application programs is today recognized as a highly complex activity requiring specialist skills and in-depth knowledge. PARLE is an international, European based conference which focuses on the parallel processing subdomain of informatics and information technology. It is intended to become THE European forum for interchange between experts in the parallel processing domain and to attract both industrial and academic participants with a technical programme designed to provide a balance between theory and practice. This volume contains the proceedings of PARLE '93. The PARLE conference came into existence in 1987 as an initiative from the ESPRIT I programme and the format was revised in 1991/92. PARLE '93 is the second conference with the new format and was held in Munich."--PUBLISHER'S WEBSITE.

Wireless Receiver Architectures and Design Dec 14 2020 Wireless Receiver Architectures and Design presents the various designs and architectures of wireless receivers in the context of modern multi-mode and multi-standard devices. This one-stop reference and guide to designing low-cost low-power multi-mode, multi-standard receivers treats analog and digital signal processing simultaneously, with equal detail given to the chosen architecture and modulating waveform. It provides a complete understanding of the receiver's analog front end and the digital backend, and how each affects the other. The book explains the design process in great detail, starting from an analysis of requirements to the choice of architecture and finally to the design and algorithm development. The advantages and disadvantages of each wireless architecture and the suitability to a standard are given, enabling a better choice of design methodology, receiver lineup, analog block, and digital algorithm for a particular architecture. Whether you are a communications engineer working in system architecture and waveform design, an RF engineer working on noise and linearity budget and line-up analysis, a DSP engineer working on algorithm development, or an analog or digital design engineer designing circuits for wireless transceivers, this book is your one-stop reference and guide to designing low-cost low-power multi-mode multi-standard receivers. The material in this book is organized and presented to lead you from applied theory to practical design with plenty of examples and case studies drawn from modern wireless standards. Provides a complete description of receiver architectures together with their pros and cons, enabling a better choice of design methodology Covers the design trade-offs and algorithms between the analog front end and the digital modem - enabling an end-to-end design approach Addresses multi-mode multi-standard low-cost, low-power radio design - critical for producing the applications for Smart phones and portable internet devices

Web 2.0 Architectures Apr 17 2021 Describes what Web 2.0 is, looks at its core patterns and architecture, and offers information on developing applications and software for it.

Computer Systems Architecture Jul 09 2020 Computer Systems Architecture provides IT professionals and students with the necessary understanding of computer hardware. It addresses the ongoing issues related to computer hardware and discusses the solutions supplied by the industry. The book describes trends in computing solutions that led to the current available infrastructures, tracing the initial need for computers to recent concepts such as the Internet of Things. It covers computers' data representation, explains how computer architecture and its underlying meaning changed over the years, and examines the implementations and performance enhancements of the central processing unit (CPU). It then discusses the organization, hierarchy, and performance considerations of computer memory as applied by the operating system and illustrates how cache memory significantly improves performance. The author proceeds to explore the bus system, algorithms for ensuring data integrity, input and output (I/O) components, methods for performing I/O, various aspects relevant to software engineering, and nonvolatile storage devices, such as hard drives and technologies for enhancing performance and reliability. He also describes virtualization and cloud computing and the emergence of software-based systems' architectures. Accessible to software engineers and developers as well as students in IT disciplines, this book enhances readers' understanding of the hardware infrastructure used in software engineering projects. It enables readers to better optimize system usage by focusing on the principles used in hardware systems design and the methods for enhancing performance.

SQL & NoSQL Databases Jan 15 2021 This book offers a comprehensive introduction to relational (SQL) and non-relational (NoSQL) databases. The authors thoroughly review the current state of database tools and techniques, and examine coming innovations. The book opens with a broad look at data management, including an overview of information systems and databases, and an explanation of contemporary database types: SQL and NoSQL databases, and their respective management systems The nature and uses of Big Data A high-level view of the organization of data management Data Modeling and Consistency Chapter-length treatment is afforded Data Modeling in both relational and graph databases, including enterprise-wide data architecture, and formulas for database design. Coverage of languages extends from an overview of operators, to SQL and QBE (Query by Example), to integrity constraints and more. A full chapter probes the challenges of Ensuring Data Consistency, covering: Multi-User Operation Troubleshooting Consistency in Massive Distributed Data Comparison of the ACID and BASE consistency models, and more System Architecture also gets from its own chapter, which explores Processing of Homogeneous and Heterogeneous Data; Storage and Access Structures; Multi-dimensional Data Structures and Parallel Processing with MapReduce, among other topics. Post-Relational and NoSQL Databases The chapter on post-relational databases discusses the limits of SQL - and what lies beyond, including Multi-Dimensional Databases, Knowledge Bases and Fuzzy Databases. A final chapter covers NoSQL Databases, along with Development of Non-Relational Technologies, Key-Value, Column-Family and Document Stores XML Databases and Graph Databases, and more The book includes more than 100 tables, examples and illustrations, and each chapter offers a list of resources for further reading. SQL & NoSQL Databases conveys the strengths and weaknesses of relational and non-relational approaches, and shows how to undertake development for big data applications. The book benefits readers including students and practitioners working across the broad field of applied information technology. This textbook has been recommended and developed for university courses in Germany, Austria and Switzerland.

Fundamentals of Software Architecture Apr 29 2022 Salary surveys worldwide regularly place software architect in the top 10 best jobs, yet no real guide exists to help developers become architects. Until now. This book provides the first comprehensive overview of software architecture's many aspects. Aspiring and existing architects alike will examine architectural characteristics, architectural patterns, component determination, diagramming and presenting architecture, evolutionary architecture, and many other topics. Mark Richards and Neal Ford—hands-on practitioners who have taught software architecture classes professionally for years—focus on architecture principles that apply across all technology stacks. You'll explore software architecture in a modern light, taking into account all the innovations of the past decade. This book examines: Architecture patterns: The technical basis for many architectural decisions Components: Identification, coupling, cohesion, partitioning, and granularity Soft skills: Effective team management, meetings, negotiation, presentations, and more Modernity: Engineering practices and operational approaches that have changed radically in the past few years Architecture as an engineering discipline: Repeatable results, metrics, and concrete valuations that add rigor to software architecture

Computer Architectures Sep 03 2022 Computer Architectures is a collection of multidisciplinary historical works unearthing sites, concepts, and concerns that catalyzed the cross-contamination of computers and architecture in the mid-20th century. Weaving together intellectual, social, cultural, and material histories, this book paints the landscape that brought computing into the imagination, production, and management of the built environment, whilst foregrounding the impact of architecture in shaping technological development. The book is organized into sections corresponding to the classic von Neumann diagram for computer architecture: program (control unit), storage (memory), input/output and computation (arithmetic/logic unit), each acting as a quasi-material category for parsing debates among architects, engineers, mathematicians, and technologists. Collectively, authors bring forth the striking homologies between a computer program and an architectural program, a wall and an interface, computer memory and storage architectures, structures of mathematics and structures of things. The collection initiates new histories of knowledge and technology production that turn an eye toward disciplinary fusions and their institutional and intellectual drives. Constructing the common ground between design and computing, this collection addresses audiences working at the nexus of design, technology, and society, including historians and practitioners of design and architecture, science and technology scholars, and media studies scholars.

Documenting Software Architectures Nov 12 2020 Architecture is crucial to the success of any large software system -- but even a superb architecture will fail if it isn't communicated well. Now, there's a language- and notation-independent guide to capturing architecture so it can be used successfully by every analyst, software designer, and developer. The authors review the diverse goals and uses of software architecture documentation, providing documentation strategies for several common scenarios. They identify the basic unit of software architecture documentation: the viewpoint, which specifies the type of information to be provided in an architectural view. For each viewpoint -- Modules, Component-and-Connectors, and Allocation -- they offer detailed guidance on documenting what really matters. Next, they demonstrate how to package architecture documentation in coherent, usable form: augmenting architectural views with documentation of interfaces and behavior; accounting for architectural variability and dynamic systems; and more.

The Architectures of Childhood Jul 29 1919 Between 1935 and 1959, the architecture of childhood was at the centre of architectural discourse in a way that is unique in architectural history. Some of the seminal projects of the period, such as the Secondary Modern School at Hunstanton by Peter and Alison Smithson, Le Corbusier's Unité d'Habitation at Marseilles, or Aldo van Eyck's playgrounds and orphanage, were designed for children. At CIAM, architects utilized photographs of children to present their visions for reconstruction. The unprecedented visibility of the child to architectural discourse during the period of reconstruction is the starting point for this interdisciplinary study of modern architecture under welfare state patronage. Focusing mainly on England, this book examines a series of innovative buildings and environments developed for children, such as the adventure playground, the Hertfordshire school, the reformed children hospital, Brutalist housing estates, and New Towns. It studies the methods employed by architects, child experts and policy makers to survey, assess and administer the physiological, emotional and developmental needs of the 'user', the child. It identifies the new aesthetic and spatial order permeating the environments of childhood, based on endowing children with the agency and autonomy to create a self-regulating social order out of their own free will, while rendering their interiority and sociability observable and governable. By inserting the architectural object within a broader social and political context, The Architectures of Childhood situates post-war architecture within the welfare state's project of governing the self, which most intensively targeted the citizen in the making, the children. Yet the emphasis on the utilization of architecture as an instrument of power does not reduce it into a mere document of social policy, as the author uncovers the surplus of meaning and richness of experience invested in these environments at the historical moment when children represented values and ideas about life, community, happiness, human potentiality, and perhaps even the very prospect of imagining a more humane and secure future at the aftermath of the Second World War.

High-Performance VLSI Signal Processing Innovative Architectures and Algorithms, Algorithms and Architectures Oct 24 2021 Electrical Engineering/Signal Processing High—Performance VLSI Signal Processing Innovative Architectures and Algorithms Volume 1 Algorithms and Architectures The first volume in a two-volume set, High-Performance VLSI Signal Processing: Innovative Architectures and Algorithms brings together the most innovative papers in the field, focused introductory material, and extensive references. The editors present timely coverage of algorithm and design methodologies with an emphasis on today's rapidly-evolving high-speed architectures for VLSI implementations. These volumes will serve as vital resources for engineers who want a comprehensive knowledge of the extremely interdisciplinary field of high-performance VLSI processing. The editors provide a practical understanding of the merits of total system design through an insightful, synergistic presentation of methodology, architecture, and infrastructure. Each volume features: Major papers that span the wide range of research areas in the field Chapter introductions, including historical perspectives Numerous applications-oriented design examples Coverage of current and future technological trends Thorough treatment of high-speed architectures

500 Lines Or Less Apr 05 2020 As we pointed out in The Architecture of Open Source Applications, architects look at thousands of buildings during their training, and study the critiques of many more. But most software developers only ever get to know a handful of programs well - usually programs they wrote themselves. This book provides you with the chance to study how 26 experienced programmers think when they are building something new. The programs you will read about in this book were all written from scratch to solve difficult problems. A web server, a pedometer, a Python interpreter, a web-based spreadsheet, and many more applications are written, in 500 lines of code or less, and described by their creators so that you can learn from their insights and their mistakes.

Software and Systems Architecture in Action Jan 03 2020 Modern-day projects require software and systems engineers to work together in realizing architectures of large and complex software-intensive systems. To date, the two have used their own tools and methods to deal with similar issues when it comes to the requirements, design, testing, maintenance, and evolution of these architectures. Software and Systems Architecture in Action explores practices that can be helpful in the development of architectures of large-scale systems in which software is a major component. Examining the synergies that exist between the disciplines of software and systems engineering, it presents concepts, techniques, and methods for creating and documenting architectures. The book describes an approach to architecture design that is driven from systemic quality attributes determined from both the business and technical goals of the system, rather than just its functional requirements. This architecture-centric design approach utilizes analytically derived patterns and tactics for quality attributes that inform the architect's design choices and help shape the architecture of a given system. The book includes coverage of techniques used to assess the impact of architecture-centric design on the structural complexity of a system. After reading the book, you will understand how to create architectures of systems and assess their ability to meet the business goals of your organization. Ideal for anyone involved with large and complex software-intensive systems, the book details powerful methods for engaging the software and systems engineers on your team. The book is also suitable for use in undergraduate and graduate-level courses on software and systems architecture as it exposes students to the concepts and techniques used to create and manage architectures of software-intensive systems.

Intelligent Agents V: Agents Theories, Architectures, and Languages Feb 25 2022 The leading edge of computer science research is notoriously fickle. New trends come and go with alarming and unflinching regularity. In such a rapidly changing field, the fact that research interest in a subject lasts more than a year is worthy of note. The fact that, after 7ve years, interest not only remains, but actually continues to grow is highly unusual. As 1998 marked the 7th birthday of the International Workshop on Agent Theories, Architectures, and Languages (ATAL), it seemed appropriate for the organizers of the original workshop to comment on this remarkable growth, and to reflect on how the field has developed and matured. The 7rst ATAL workshop was co-located with the Eleventh European Conference on Artificial Intelligence (ECAI-94), which was held in Amsterdam. The fact that we chose an AI conference to co-locate with is telling: at that time, we expected most researchers with an interest in agents to come from the AI community. The workshop, which was planned over the summer of 1993, attracted 32 submissions, and was attended by 55 people. ATAL was the largest workshop at ECAI-94, and the clear enthusiasm on behalf of the community made the decision to hold another ATAL workshop simple. The ATAL-94 proceedings were formally published in January 1995 under the title Intelligent Agents, and included an extensive review article, a glossary, a list of key agent systems, and — unusually for the proceedings of an academic workshop — a full subject index. The high scientific and production values embodied by the ATAL-94 proceedings appear to have been recognized by the community, and resulted in ATAL proceedings being the most successful sequence of books published in Springer-Verlag's Lecture Notes in Artificial Intelligence series.

Security for Service Oriented Architectures Jan 27 2022 Although integrating security into the design of applications has proven to deliver resilient products, there are few books available that provide guidance on how to incorporate security into the design of an application. Filling this need, Security for Service Oriented Architectures examines both application and security architectures and illustrates the relationship between the two. Supplying authoritative guidance on how to design distributed and resilient applications, the book provides an overview of the various standards that service oriented and distributed applications leverage, including SOAP, HTML 5, SAML, XML Encryption, XML Signature, WS-Security, and WS-SecureConversation. It examines emerging issues of privacy and discusses how to design applications within a secure context to facilitate the understanding of these technologies you need to make intelligent decisions regarding their design. This complete guide to security for web services and SOA considers the malicious user story of the abuses and attacks against applications as examples of how design flaws and oversights have subverted the goals of providing resilient business functionality. It reviews recent research on access control for simple and conversation-based web services, advanced digital identity management techniques, and access control for web-based workflows. Filled with illustrative examples and analyses of critical issues, this book provides both security and software architects with a bridge between software and service-oriented architectures and security architectures, with the goal of providing a means to develop software architectures that leverage security architectures. It is also a reliable source of reference on Web services standards. Coverage includes the four types of architectures, implementing and securing SOA, Web 2.0, other SOA platforms, auditing SOAs, and defending and detecting attacks.