Microservice Architecture Aligning Principles Pra

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Recent Advances in Information and Communication Technology 2018 IGI Global
Serverless computing has emerged as a transformative technology, gaining prominence over traditional cloud computing. It is characterized by reduced costs, lower latency, and the elimination of server-side management overhead, and is driven by the increasing adoption of containerization and microservices architectures. However, there is a significant lack of comprehensive resources for academic research purposes in this field. Serverless Computing Concepts, Technology, and Architecture addresses this gap and provides a comprehensive exploration of the fundamental concepts, characteristics, challenges, applications, and futuristic approaches of serverless computing. This book serves as a valuable reference for doctorate and post-doctorate research scholars, undergraduates, and postgraduates in fields such as computer science, information technology, electronics engineering, and other related disciplines. Serverless Computing Concepts, Technology, and Architecture is poised to be a one-stop reference point for those seeking to understand and harness the potential of serverless computing. It will serve as a prominent guide for researchers in this field for years to come, enriching their knowledge and advancing the study of serverless computing.
Building Microservices Springer
This book constitutes the proceedings of the 8th International Symposium on Business Modeling and Software Design, BMSD 2018, held in Vienna, Austria, in July 2018. The 14 full papers and 21 short papers selected for inclusion in this book deal with a large number of research topics: (i) Some topics concern Business Processes (BP), such as BP modeling / notations / visualizations, BP management, BP variability, BP contracting, BP interoperability, BP modeling within augmented reality, inter-enterprise collaborations, and so on; (ii) Other topics concern Software Design, such as software ecosystems, specification of context-aware software systems, service-oriented solutions and micro-service architectures, product variability, software development monitoring, and so on; (iii) Still other topics are crosscutting with regard to business modeling and software design, such as data analytics as well as information security and privacy; (iv) Other topics concern hot technology / innovation areas, such as blockchain technology and internet-of-things. Underlying with regard to all those topics is the BMSD'18 theme: Enterprise Engineering and Software Engineering - Processes and Systems for the Future.
Service-Oriented Computing John Wiley & Sons
Software services are established as a programming concept, but their impact on the overall architecture of enterprise IT and business operations is not well-understood. This has led to problems in deploying SOA, and some disillusionment. The SOA Source Book adds to this a collection of reference material for SOA. It is an invaluable resource for enterprise architects working with SOA.The SOA Source Book will help enterprise architects to use SOA effectively. It explains: What SOA is How to evaluate SOA features in business terms How to model SOA How to use The Open Group Architecture

Framework (TOGAF) for SOA SOA governance This book explains how TOGAF can help to make an Enterprise Architecture. Enterprise Architecture is an approach that can help management to understand this growing complexity.

Microservice Architecture Springer Nature

The book focuses on original approaches intended to support the development of biologically inspired cognitive architectures. It bridges together different disciplines, from classical artificial intelligence to linguistics, from neuro- and social sciences to design and creativity, among others. The chapters, based on contributions presented at the Eleventh Annual Meeting of the BICA Society, held on November 10-14, 2020, in Natal, Brazil, discuss emerging methods, theories and ideas towards the realization of general-purpose humanlike artificial intelligence or fostering a better understanding of the ways the human mind works. All in all, the book provides engineers, mathematicians, psychologists, computer scientists and other experts with a timely snapshot of recent research and a source of inspiration for future developments in the broadly intended areas of artificial intelligence and biological inspiration.

Production-Ready Microservices IOS Press

How do you detangle a monolithic system and migrate it to a microservice architecture? How do you do it while maintaining business-as-usual? As a companion to Sam Newman’s extremely popular Building Microservices, this new book details a proven method for transitioning an existing monolithic system to a microservice architecture. With many illustrative examples, insightful migration patterns, and a bevy of practical advice to transition your monolith enterprise into a microservice operation, this practical guide covers multiple scenarios and strategies for a successful migration, from initial planning all the way through application and database decomposition. You’ll learn several tried and tested patterns and techniques that you can use as you migrate your existing architecture. Ideal for organizations looking to transition to microservices, rather than rebuild Helps companies determine whether to migrate, when to migrate, and where to begin Addresses communication, integration, and the migration of legacy systems Discusses multiple migration patterns and where they apply Provides database migration examples, along with synchronization strategies Explores application decomposition, including several architectural refactoring patterns Delves into details of database decomposition, including the impact of breaking referential and transactional integrity, new failure modes, and more

Intelligent Distributed Computing XIV IGI Global

This book constitutes the proceedings of the 16th International Conference on Service-Oriented Computing, ICSOC 2018, held in Hangzhou, China, in November 2018. The 63 full papers presented together with 3 keynotes in this volume were carefully reviewed and selected from numerous submissions. The papers have been organized in the following topical sections: Microservices; Services and Processes; Service Trust and Security; Business Services and Processes; Edge + IoT Services; Social and Interactive Services; Recommendation; Service Analytics; Quality of Service; Service Engineering; Service Applications; Service Management.

Ernst Denert Award for Software Engineering 2022 Springer Nature

This book constitutes selected papers from the 18th European, Mediterranean, and Middle Eastern Conference, EMCIS 2021, which took place during December 8-9, 2021. The conference was initially planned to take place in Dubai, UAE, but had to change to an online event due to the COVID-19 pandemic. EMCIS covers technical, organizational, business, and social issues in the application of information technology and is dedicated to the definition and establishment of Information Systems (IS) as a discipline of high impact for IS professionals and practitioners. It focuses on approaches that facilitate the identification of innovative research of significant relevance to the IS discipline following sound research methodologies that lead to results of measurable impact. The 54 full papers presented in this volume were carefully reviewed and selected from a total of 155 submissions. They were organized in topical sections named: Big Data and Analytics; Blockchain Technology and Applications; Cloud Computing; Digital Governance; Digital Services and Social Media; Emerging Computing Technologies and Trends for Business Process Management; Healthcare Information Systems; Information Systems security and Information Privacy Protection; Innovative Research Projects; IT Governance and Alignment; and Management and Organisational Issues in Information Systems.

Continuous API Management O'Reilly Media

This book gathers peer-review contributions to the 4th International Workshop on Gerontechnology, IWoG 2021, held on November 23-24, 2021, in Évora, Portugal. They report on cutting-edge technologies and optimized workflows for promoting active aging and assisting elderly people at home, as well as in healthcare centers. They discuss the main challenges in the development, use and delivery of health care services and technologies. Not only they propose solutions for improving in practice the monitoring and management of health parameters and age-related diseases, yet they also describe improved approaches for helping seniors in their daily tasks and facilitating their communication and integration with assistive technologies, thus improving their quality of life, as well as their social integration. All in all, this book provides health professionals, researchers, and service providers with extensive information on the latest trends in the development and practical application of gerontechnology, with a special emphasis on improving quality of life of the elderly.

Analytics for the Sharing Economy: Mathematics, Engineering and Business Perspectives Springer

This book collects 43 regular papers received from 18 countries that present innovative advances in intelligent and distributed computing, encompassing both architectural and algorithmic results related to these fields. Significant attention is given to new models, techniques, and applications for distributed intelligent architectures and high-performance architectures, machine learning techniques, Internet of Things, blockchain, intelligent transport systems, data analytics, trust and reputation systems, and many others. The book includes the peer-reviewed proceedings of the 14th International Symposium on Intelligent Distributed Computing (IDC 2021), which was held in online mode due to the COVSARS2 pandemic situation, during September 16–18, 2021. The IDC 2021 event included sessions on Internet of Things, data analytics, machine learning, multi-agent systems, algorithms, future intelligent transport solutions, blockchain, intelligent distributed computing for cyber-physical security, and security and trust and reputation in intelligent environments.

Gerontechnology IV Springer Nature

Have you heard about the tremendous success Amazon and Netflix have had by switching to a microservice architecture? Are you wondering how this can benefit your company? Or are you skeptical about how it might work? If you've answered yes to any of these questions, this practical book will benefit you. You'll learn how to take advantage of the microservice architectural style for building systems, and learn from the experiences of others to adopt and execute this approach most successfully.

Safety and Security of Cyber-Physical Systems Van Haren

This book contains the research contributions presented at the 14th International Conference on Computing and Information Technology (IC2IT 2018) organised by King Mongkut’s University of Technology North Bangkok and its partners, and held in the northern Thai city of Chiang Mai in July 2018. Traditionally, IC2IT 2018 provides a forum for exchange on the state of the art and on expected future developments in its field. Correspondingly, this book contains chapters on topics in data mining, machine learning, natural language processing, image processing, networks and security, software engineering and information technology. With them, the editors want to foster inspiring discussions among colleagues, not only during the conference. It is also intended to contribute to a deeper understanding of the underlying problems as needed to solve them in complex environments and, beneficial for this purpose, to encourage interdisciplinary cooperation.

Microservices Patterns Springer Nature

This book constitutes the refereed proceedings of the 22nd International Conference on Product-Focused Software Process Improvement, PROFES 2021, held in Turin, Italy, in November 2021. Due to COVID-19 pandemic the conference was held as a hybrid event. The 20 revised papers, including 14 full papers, 3 short papers and 3 industry papers, presented were carefully reviewed and selected from 48 submissions. The papers cover a broad range of topics related to professional software development and process improvement driven by product and service quality needs. They are organized in the following topical sections: agile and migration, requirements, human factors, and software quality.

Essentials of Microservices Architecture IBM Redbooks

The unprecedented scale at which data is both produced and consumed today has generated a large demand for scalable data management solutions facilitating fast access from all over the world. As one consequence, a plethora of non-relational, distributed NoSQL database systems have risen in recent years and today’s data management system landscape has thus become somewhat hard to overlook. As another consequence, complex polyglot designs and elaborate schemes for data distribution and delivery have become the norm for building applications that connect users and organizations across the globe – but choosing the right combination of systems for a given use case has become increasingly difficult as well. To help practitioners stay on top of that challenge, this book presents a comprehensive overview and classification of the current system landscape in cloud data management as well as a survey of the state-of-the-art approaches for efficient data distribution and delivery to end-user devices. The topics covered thus range from NoSQL storage systems and polyglot architectures (backend) over distributed transactions and Web caching (network) to data access and rendering performance in the client (end-user). By distinguishing popular data management systems by data model, consistency guarantees, and other dimensions of interest, this book provides an abstract framework for reasoning about the overall design space and the individual positions claimed by each of the systems therein. Building on this classification, this book further presents an application-driven decision guidance tool that breaks the process of choosing a set of viable system candidates for a given application scenario down into a straightforward decision tree.

Innovations and Trends in Environmental and Agricultural Informatics Springer Nature

This book constitutes the proceedings of the 18th International Conference on Software and Systems Reuse, ICSR 2019, held in Cincinnati, Ohio, USA in June 2019. The 13 research papers included in this book were carefully reviewed and selected from 32 submissions. In addition, 3 industry innovation papers are included. The papers were organized in topical sections named: software reuse practice; software product line and requirements reuse; reuse and design and evolution; intelligent software reuse; and domain-specific software development.

Information Systems Springer Nature

This book constitutes the proceedings of the 11th International and Interdisciplinary Conference on Modeling and Using Context, CONTEXT 2019, held in Trento, Italy, in November 2019. The 20 full papers and 4 invited talks presented were carefully reviewed and selected from 31 submissions. The papers feature research in a wide range of disciplines related to issues of context and contextual knowledge and discuss commonalities across and differences between the disciplines' approaches to the study of context. They cover a large spectrum of fields, including philosophy of language and of science, computational papers on context-aware information systems, artificial intelligence, and computational linguistics, as well as cognitive and social sciences.

Proceedings of the Future Technologies Conference (FTC) 2021, Volume 3 Springer

COMMUNICATION NETWORKS AND SERVICE MANAGEMENT IN THE ERA OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING Discover the impact that new technologies are having on communication systems with this up-to-date and one-stop resource Communication Networks and Service Management in the Era of Artificial Intelligence and Machine Learning delivers a comprehensive overview of the impact of artificial intelligence (AI) and machine learning (ML) on service and network management. Beginning with a fulsome description of ML and AI, the book moves on to discuss management models, architectures, and frameworks. The authors also explore how AI and ML can be used in service management functions like the generation of workload profiles, service provisioning, and more. The book includes a handpicked selection of applications and case studies, as well as a treatment of emerging technologies the authors predict could have a significant impact on network and service management in the future. Statistical analysis and data mining are also discussed, particularly with respect to how they allow for an improvement of the management and security of IT systems and networks. Readers will also enjoy topics like: A thorough introduction to network and service management, machine learning, and artificial intelligence An exploration of artificial intelligence and machine learning for management models, including autonomic management, policy-based management, intent based management, and network virtualization-based management Discussions of AI and ML for architectures and frameworks, including cloud systems, software defined networks, 5G and 6G networks, and Edge/Fog networks An examination of AI and ML for service management, including the automatic generation of workload profiles using unsupervised learning Perfect for information and communications technology educators, Communication Networks and Service Management in the Era of Artificial Intelligence and Machine Learning

will also earn a place in the libraries of engineers and professionals who seek a structured reference on how the emergence of artificial intelligence and machine learning techniques is affecting service and network management.
Strategic Blueprint for Enterprise Analytics Springer Nature
Microservices is an architectural style in which large, complex software applications are composed of one or more smaller services. Each of these microservices focuses on completing one task that represents a small business capability. These microservices can be developed in any programming language. They communicate with each other using language-neutral protocols, such as Representational State Transfer (REST), or messaging applications, such as IBM® MQ Light. This IBM Redbooks® publication gives a broad understanding of this increasingly popular architectural style, and provides some real-life examples of how you can develop applications using the microservices approach with IBM BluemixTM. The source code for all of these sample scenarios can be found on GitHub (https://github.com/). The book also presents some case studies from IBM products. We explain the architectural decisions made, our experiences, and lessons learned when redesigning these products using the microservices approach. Information technology (IT) professionals interested in learning about microservices and how to develop or redesign an application in Bluemix using microservices can benefit from this book.
Proceedings of the 6th China Aeronautical Science and Technology Conference Springer Nature
This book gathers the proceedings of the I-ESA'18 Conference, which was organised by the Fraunhofer IPK, on behalf of the European Virtual Laboratory for Enterprise Interoperability (INTEROP-VLab) and the DFI, and was held in Berlin, Germany in March 2018. It presents contributions ranging from academic research and case studies, to industrial and administrative experiences with interoperability that show how, in a globalised market scenario – where the ability to cooperate with other organisations efficiently is essential in order to remain economically, socially and environmentally cost-effective – the most innovative digitised and networked enterprises ensure that their systems and applications can interoperate across heterogeneous collaborative networks of independent organisations. Furthermore, the content addresses smart services, and the business impact of enterprise interoperability on organisations. Many of the papers in this ninth volume of the I-ESA Conference proceedings include examples and illustrations to help deepen readers' understanding and generate new ideas. Offering a detailed guide to the state of the art in systems interoperability, the book will be of great value to all engineers and computer scientists working in manufacturing and other process industries, and to software engineers and electronic and manufacturing engineers working in academic settings.
Serverless Computing Concepts, Technology and Architecture Springer Nature

This book describes in contributions by scientists and practitioners the development of scientific concepts, technologies, engineering techniques and tools for a service-based society. The focus is on microservices, i.e cohesive, independent processes deployed in isolation and equipped with dedicated memory persistence tools, which interact via messages. The book is structured in six parts. Part 1 "Opening" analyzes the new (and old) challenges including service design and specification, data integrity, and consistency management and provides the introductory information needed to successfully digest the remaining parts. Part 2 "Migration" discusses the issue of migration from monoliths to microservices and their loosely coupled architecture. Part 3 "Modeling" introduces a catalog and a taxonomy of the most common microservices anti-patterns and identifies common problems. It also explains the concept of RESTful conversations and presents insights from studying and developing two further modeling approaches. Next , Part 4 is dedicated to various aspects of "Development and Deployment". Part 5 then covers "Applications" of microservices, presenting case studies from Industry 4.0, Netflix, and customized SaaS examples. Eventually, Part 6 focuses on "Education" and reports on experiences made in special programs, both at academic level as a master program course and for practitioners in an industrial training. As only a joint effort between academia and industry can lead to the release of modern paradigm-based programming languages, and subsequently to the deployment of robust and scalable software systems, the book mainly targets researchers in academia and industry who develop tools and applications for microservices.
SOA Source Book "O'Reilly Media, Inc."
The book provides an encompassing overview of all aspects relating to the sharing economy paradigm in different fields of study, and shows the ongoing research efforts in filling previously identified gaps in understanding in this area. Control and optimization analytics for the sharing economy explores bespoke analytics, tools, and business models that can be used to help design collaborative consumption services (the shared economy). It provides case studies of collaborative consumption in the areas of energy and mobility. The contributors review successful examples of sharing systems, and explore the theory for designing effective and stable shared-economy models. They discuss recent innovations in and uses of shared economy models in niche areas, such as energy and mobility. Readers learn the scientific challenging issues associated with the realization of a sharing economy. Conceptual and practical matters are examined, and the state-of-the-art tools and techniques to address such applications are explained. The contributors also show readers how topical problems in engineering, such as energy consumption in power grids, or bike sharing in transportation networks, can be formulated and solved from a general collaborative consumption perspective. Since the book takes a mathematical perspective to the topic, researchers in business, computer science, optimization and control find it useful. Practitioners also use the book as a point of reference, as it explores and investigates the analytics behind economy sharing.