

Cloud Computing Applications For Quality Health Care Delivery Advances In Healthcare Information Systems And Administration

The first textbook to teach students how to build data analytic solutions on large data sets using cloud-based technologies. This is the first textbook to teach students how to build data analytic solutions on large data sets (specifically in Internet of Things applications) using cloud-based technologies for data storage, transmission and mashup, and AI techniques to analyze this data. This textbook is designed to train college students to master modern cloud computing systems in operating principles, architecture design, machine learning algorithms, programming models and software tools for big data mining, analytics, and cognitive applications. The book will be suitable for use in one-semester computer science or electrical engineering courses on cloud computing, machine learning, cloud programming, cognitive computing, or big data science. The book will also be very useful as a reference for professionals who want to work in cloud computing and data science. Cloud and Cognitive Computing begins with two introductory chapters on fundamentals of cloud computing, data science, and

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adaptive computing that lay the foundation for the rest of the book. Subsequent chapters cover topics including cloud architecture, mashup services, virtual machines, Docker containers, mobile clouds, IoT and AI, inter-cloud mashups, and cloud performance and benchmarks, with a focus on Google's Brain Project, DeepMind, and X-Lab programs, IBKai HwangM SyNapse, Bluemix programs, cognitive initiatives, and neurocomputers. The book then covers machine learning algorithms and cloud programming software tools and application development, applying the tools in machine learning, social media, deep learning, and cognitive applications. All cloud systems are illustrated with big data and cognitive application examples.

"This book bridges the gap between solutions and users' needs pertaining to the most relevant open source cloud technologies available today from a practical perspective"--

Recent technology trends involving the combination of mobile networks and cloud computing have offered new chances for mobile network providers to use specific carrier-cloud services. These advancements will enhance the utilization of the mobile cloud in industry and corporate settings. Mobile Networks and Cloud Computing Convergence for Progressive Services and Applications is a fundamental source for the advancement of knowledge, application, and practice

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in the interdisciplinary areas of mobile network and cloud computing. By addressing innovative concepts and critical issues, this book is essential for researchers, practitioners, and students interested in the emerging field of vehicular wireless networks.

This book provides an overview of the problems involved in engineering scalable, elastic, and cost-efficient cloud computing services and describes the CloudScale method — a description of rescuing tools and the required steps to exploit these tools. It allows readers to analyze the scalability problem in detail and identify scalability anti-patterns and bottlenecks within an application. With the CloudScale method, software architects can analyze both existing and planned IT services. The method allows readers to answer questions like: • With an increasing number of users, can my service still deliver acceptable quality of service? • What if each user uses the service more intensively? Can my service still handle it with acceptable quality of service? • What if the number of users suddenly increases? Will my service still be able to handle it? • Will my service be cost-efficient? First the book addresses the importance of scalability, elasticity, and cost-efficiency as vital quality-related attributes of modern cloud computing applications. Following a brief overview of CloudScale, cloud computing applications are then introduced in detail and the aspects that need to

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be captured in models of such applications are discussed. In CloudScale, these aspects are captured in instances of the ScaleDL modeling language.

Subsequently, the book describes the forward engineering part of CloudScale, which is applicable when developing a new service. It also outlines the reverse and reengineering parts of CloudScale, which come into play when an existing (legacy) service is modified. Lastly, the book directly focuses on the needs of both business-oriented and technical managers by providing guidance on all steps of implementing CloudScale as well as making decisions during that implementation. The demonstrators and reference projects described serve as a valuable starting point for learning from experience. This book is meant for all stakeholders interested in delivering scalable, elastic, and cost-efficient cloud computing applications: managers, product owners, software architects and developers alike. With this book, they can both see the overall picture as well as dive into issues of particular interest.

Introduction to Sensors in IoT and Cloud Computing Applications provides information about sensors and their applications. Readers are first introduced to the concept of small instruments and their application as sensors. The chapters which follow explain Internet of Things (IoT) architecture while providing notes on the implementation, demonstration and related issues of IoT systems. The book

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continues to explore the topic by providing information about sensor-cloud infrastructure, mobile cloud, fog computing (an extension of cloud computing that takes cloud computing to the cutting-edge of networking where data is produced) and integration of IoT devices with cloud computing. The book also presents notes on the taxonomy of fog-computing systems. The six chapters in this book provide essential information for general readers, and students of computer science to understand the basics of cloud computing networks, related concepts and applications.

As the Web grows and expands into ever more remote parts of the world, the availability of resources over the Internet increases exponentially. Making use of this widely prevalent tool, organizations and individuals can share and store knowledge like never before. *Cloud Technology: Concepts, Methodologies, Tools, and Applications* investigates the latest research in the ubiquitous Web, exploring the use of applications and software that make use of the Internet's anytime, anywhere availability. By bringing together research and ideas from across the globe, this publication will be of use to computer engineers, software developers, and end users in business, education, medicine, and more.

This book presents the latest research on *Software Engineering Frameworks for the Cloud Computing Paradigm*, drawn from an international selection of

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researchers and practitioners. The book offers both a discussion of relevant software engineering approaches and practical guidance on enterprise-wide software deployment in the cloud environment, together with real-world case studies. Features: presents the state of the art in software engineering approaches for developing cloud-suitable applications; discusses the impact of the cloud computing paradigm on software engineering; offers guidance and best practices for students and practitioners; examines the stages of the software development lifecycle, with a focus on the requirements engineering and testing of cloud-based applications; reviews the efficiency and performance of cloud-based applications; explores feature-driven and cloud-aided software design; provides relevant theoretical frameworks, practical approaches and future research directions.

This book documents the scientific results of the projects related to the Trusted Cloud Program, covering fundamental aspects of trust, security, and quality of service for cloud-based services and applications. These results aim to allow trustworthy IT applications in the cloud by providing a reliable and secure technical and legal framework. In this domain, business models, legislative circumstances, technical possibilities, and realizable security are closely interwoven and thus are addressed jointly. The book is organized in four parts on

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“Security and Privacy”, “Software Engineering and Software Quality”, “Platforms, Middleware and Integration”, and “Social Aspects, Business Models and Standards”. It thus provides a holistic view on technological, societal, and legal aspects, which are indispensable not only to ensure the security of cloud services and the data they process, but also to gain the trust of society, business, industry, and science in these services. The ultimate goal of the book, as well as of the Trusted Cloud Program in general, is to distribute these results to a broader audience in both academia and industry, and thus to help with the proliferation of "Industry 4.0" services.

Advancements in data science have created opportunities to sort, manage, and analyze large amounts of data more effectively and efficiently. Applying these new technologies to the healthcare industry, which has vast quantities of patient and medical data and is increasingly becoming more data-reliant, is crucial for refining medical practices and patient care. *Data Analytics in Medicine: Concepts, Methodologies, Tools, and Applications* is a vital reference source that examines practical applications of healthcare analytics for improved patient care, resource allocation, and medical performance, as well as for diagnosing, predicting, and identifying at-risk populations. Highlighting a range of topics such as data security and privacy, health informatics, and predictive analytics, this

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multi-volume book is ideally designed for doctors, hospital administrators, nurses, medical professionals, IT specialists, computer engineers, information technologists, biomedical engineers, data-processing specialists, healthcare practitioners, academicians, and researchers interested in current research on the connections between data analytics in the field of medicine.

The COVID-19 pandemic has put massive stress on healthcare professionals' formal training, their creed to do no harm, and the patient safety movement. COVID-19 affects all aspects of daily life and healthcare's organizational culture and values. Healthcare institutions experience absenteeism, change in commerce patterns, and interrupted supply/delivery in this context. It has also revealed the extensive amounts of data needed for population health management, as well as the opportunities afforded by mainstreaming telehealth and virtual care capabilities, thus making the implementation of health IT essential in the post-pandemic era. *Quality of Healthcare in the Aftermath of the COVID-19 Pandemic* clarifies how healthcare professionals might provide their services differently than treating a patient through its vicinity with multiple providers. It examines the notion that healthcare education requires a pack of healthcare workers from varied educational backgrounds and training levels for the nuances of a disease. Covering topics such as blockchain technology, power density analysis, and supply chain, this book is a valuable resource for undergraduate and extended degree program students, graduate students of healthcare quality and health services

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management, healthcare managers, health professionals, researchers, professors, and academicians.

Applies lean manufacturing principles across the cloud service delivery chain to enable application and infrastructure service providers to sustainably achieve the shortest lead time, best quality, and value Applies lean thinking across the cloud service delivery chain to recognize and minimize waste Leverages lessons learned from electric power industry operations to operations of cloud infrastructure Applies insights from just-in-time inventory management to operation of cloud based applications Explains how traditional, Information Technology Infrastructure Library (ITIL) and Enhanced Telecom Operation Map (eTOM) capacity management evolves to lean computing for the cloud "This book provides a theoretical and academic description of Cloud security issues, methods, tools and trends for developing secure software for Cloud services and applications"--Provided by publisher.

This lecture provides an introduction to cyber foraging, a topic that lies at the intersection of mobile and cloud computing. Cyber foraging dynamically augments the computing resources of mobile computers by opportunistically exploiting fixed computing infrastructure in the surrounding environment. In a cyber foraging system, applications functionality is dynamically partitioned between the mobile computer and infrastructure servers that store data and execute computation on behalf of mobile users. The location of application functionality changes in response to user mobility,

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platform characteristics, and variation in resources such as network bandwidth and CPU load. Cyber foraging also introduces a new, surrogate computing tier that lies between mobile users and cloud data centers. Surrogates are wired, infrastructure servers that offer much greater computing resources than those offered by small, battery-powered mobile devices. Surrogates are geographically distributed to be as close as possible to mobile computers so that they can provide substantially better response time to network requests than that provided by servers in cloud data centers. For instance, surrogates may be co-located with wireless hotspots in coffee shops, airport lounges, and other public locations. This lecture first describes how cyber foraging systems dynamically partition data and computation. It shows how dynamic partitioning can often yield better performance, energy efficiency, and application quality than static thin-client or thick-client approaches for dividing functionality between cloud and mobile computers. The lecture then describes the design of the surrogate computing tier. It shows how strong isolation can enable third-party computers to host computation and store data on behalf of nearby mobile devices. It then describes how surrogates can provide reasonable security and privacy guarantees to the mobile computers that use them. The lecture concludes with a discussion of data staging, in which surrogates temporarily store data in transit between cloud servers and mobile computers in order to improve transfer bandwidth and energy efficiency.

Table of Contents: Introduction / Partitioning / Management / Security and Privacy / Data

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Staging / Challenges and Opportunities

"This book provides research into parallel & distributed computing, high performance computing, and Grid computing"--Provided by publisher.

Online gaming is widely popular and gaining more user attention every day. Computer game industries have made considerable growth in terms of design and development, but the scarcity of hardware resources at player or client side is a major pitfall for the latest high-end multimedia games. Cloud gaming is one proposed solution, allowing the end-user to play games using a variety of platforms with less demanding hardware requirements. *Emerging Technologies and Applications for Cloud-Based Gaming* explores the opportunities for the gaming industry through the integration of cloud computing. Focusing on design methodologies, fundamental architectures, and the end-user experience, this publication is an essential reference source for IT specialists, game developers, researchers, and graduate-level students.

Cloud computing continues to emerge as a subject of substantial industrial and academic interest. Although the meaning and scope of "cloud computing" continues to be debated, the current notion of clouds blurs the distinctions between grid services, web services, and data centers, among other areas. Clouds also bring considerations of lowering the cost for relatively bursty applications to the fore. *Cloud Computing: Principles, Systems and Applications* is an essential reference/guide that provides thorough and timely examination of the services, interfaces and types of applications

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that can be executed on cloud-based systems. The book identifies and highlights state-of-the-art techniques and methods for designing cloud systems, presents mechanisms and schemes for linking clouds to economic activities, and offers balanced coverage of all related technologies that collectively contribute towards the realization of cloud computing. With an emphasis on the conceptual and systemic links between cloud computing and other distributed computing approaches, this text also addresses the practical importance of efficiency, scalability, robustness and security as the four cornerstones of quality of service. Topics and features: explores the relationship of cloud computing to other distributed computing paradigms, namely peer-to-peer, grids, high performance computing and web services; presents the principles, techniques, protocols and algorithms that can be adapted from other distributed computing paradigms to the development of successful clouds; includes a Foreword by Professor Mark Baker of the University of Reading, UK; examines current cloud-practical applications and highlights early deployment experiences; elaborates the economic schemes needed for clouds to become viable business models. This book will serve as a comprehensive reference for researchers and students engaged in cloud computing. Professional system architects, technical managers, and IT consultants will also find this unique text a practical guide to the application and delivery of commercial cloud services. Prof. Nick Antonopoulos is Head of the School of Computing, University of Derby, UK. Dr. Lee Gillam is a Lecturer in the Department of Computing at the

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University of Surrey, UK.

Many professional fields have been affected by the rapid growth of technology and information. Included in this are the business and management markets as the implementation of e-commerce and cloud computing have caused enterprises to make considerable changes to their practices. With the swift advancement of this technology, professionals need proper research that provides solutions to the various issues that come with data integration and shifting to a technology-driven environment. Cloud Computing Applications and Techniques for E-Commerce is an essential reference source that discusses the implementation of data and cloud technology within the fields of business and information management. Featuring research on topics such as content delivery networks, virtualization, and software resources, this book is ideally designed for managers, educators, administrators, researchers, computer scientists, business practitioners, economists, information analysts, sociologists, and students seeking coverage on the recent advancements of e-commerce using cloud computing techniques.

From small start-ups to major corporations, companies of all sizes have embraced cloud computing for the scalability, reliability, and cost benefits it can provide. It has even been said that cloud computing may have a greater effect on our lives than the PC and dot-com revolutions combined. Filled with comparative charts and decision trees, Impleme

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From cloud computing to big data to mobile technologies, there is a vast supply of information being mined and collected. With an abundant amount of information being accessed, stored, and saved, basic controls are needed to protect and prevent security incidents as well as ensure business continuity. Applications of Security, Mobile, Analytic, and Cloud (SMAC) Technologies for Effective Information Processing and Management is a vital resource that discusses various research findings and innovations in the areas of big data analytics, mobile communication and mobile applications, distributed systems, and information security. With a focus on big data, the internet of things (IoT), mobile technologies, cloud computing, and information security, this book proves a vital resource for computer engineers, IT specialists, software developers, researchers, and graduate-level students seeking current research on SMAC technologies and information security management systems.

The recent explosion of digital media, online networking, and e-commerce has generated great new opportunities for those Internet-savvy individuals who see potential in new technologies and can turn those possibilities into reality. It is vital for such forward-thinking innovators to stay abreast of all the latest technologies. *Web-Based Services: Concepts, Methodologies, Tools, and Applications* provides readers with comprehensive coverage of some of the latest tools and

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technologies in the digital industry. The chapters in this multi-volume book describe a diverse range of applications and methodologies made possible in a world connected by the global network, providing researchers, computer scientists, web developers, and digital experts with the latest knowledge and developments in Internet technologies.

There is a significant deficiency among contemporary medicine practices reflected by experts making medical decisions for a large proportion of the population for which no or minimal data exists. Fortunately, our capacity to procure and apply such information is rapidly rising. As medicine becomes more individualized, the implementation of health IT and data interoperability become essential components to delivering quality healthcare. Quality Assurance in the Era of Individualized Medicine is a collection of innovative research on the methods and utilization of digital readouts to fashion an individualized therapy instead of a mass-population-directed strategy. While highlighting topics including assistive technologies, patient management, and clinical practices, this book is ideally designed for health professionals, doctors, nurses, hospital management, medical administrators, IT specialists, data scientists, researchers, academicians, and students.

In recent years, cloud computing has gained a significant amount of attention by

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providing more flexible ways to store applications remotely. With software testing continuing to be an important part of the software engineering life cycle, the emergence of software testing in the cloud has the potential to change the way software testing is performed. *Software Testing in the Cloud: Perspectives on an Emerging Discipline* is a comprehensive collection of research by leading experts in the field providing an overview of cloud computing and current issues in software testing and system migration. Deserving the attention of researchers, practitioners, and managers, this book aims to raise awareness about this new field of study.

Cloud computing is the latest market-oriented computing paradigm which brings software design and development into a new era characterized by “XaaS”, i.e. everything as a service. Cloud workflows, as typical software applications in the cloud, are composed of a set of partially ordered cloud software services to achieve specific goals. However, due to the low QoS (quality of service) nature of the cloud environment, the design of workflow systems in the cloud becomes a challenging issue for the delivery of high quality cloud workflow applications. To address such an issue, this book presents a systematic investigation to the three critical aspects for the design of a cloud workflow system, viz. system architecture, system functionality and quality of service. Specifically, the system

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architecture for a cloud workflow system is designed based on the general four-layer cloud architecture, viz. application layer, platform layer, unified resources layer and fabric layer. The system functionality for a cloud workflow system is designed based on the general workflow reference model but with significant extensions to accommodate software services in the cloud. The support of QoS is critical for the quality of cloud workflow applications. This book presents a generic framework to facilitate a unified design and development process for software components that deliver lifecycle support for different QoS requirements. While the general QoS requirements for cloud workflow applications can have many dimensions, this book mainly focuses on three of the most important ones, viz. performance, reliability and security. In this book, the architecture, functionality and QoS management of our SwinDeW-C prototype cloud workflow system are demonstrated in detail as a case study to evaluate our generic design for cloud workflow systems. To conclude, this book offers a general overview of cloud workflow systems and provides comprehensive introductions to the design of the system architecture, system functionality and QoS management.

As information systems become ever more pervasive in an increasing number of fields and professions, workers in healthcare and medicine must take into

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consideration new advances in technologies and infrastructure that will better enable them to treat their patients and serve their communities. *Healthcare Administration: Concepts, Methodologies, Tools, and Applications* brings together recent research and case studies in the medical field to explore topics such as hospital management, delivery of patient care, and telemedicine, among others. With a focus on some of the most groundbreaking new developments as well as future trends and critical concerns, this three-volume reference source will be a significant tool for medical practitioners, hospital managers, IT administrators, and others actively engaged in the healthcare field.

This book offers a systematic and practical overview of Quality of Service prediction in cloud and service computing. Intended to thoroughly prepare the reader for research in cloud performance, the book first identifies common problems in QoS prediction and proposes three QoS prediction models to address them. Then it demonstrates the benefits of QoS prediction in two QoS-aware research areas. Lastly, it collects large-scale real-world temporal QoS data and publicly releases the datasets, making it a valuable resource for the research community. The book will appeal to professionals involved in cloud computing and graduate students working on QoS-related problems.

This book constitutes the thoroughly refereed post-conference proceedings of the

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5th International Conference on Mobile Computing, Applications, and Services (MobiCASE 2013) held in Paris, France, in November 2013. The 13 full, 5 short and 9 poster papers were carefully reviewed and selected from 64 submissions, and are presented together with 3 papers from the Workshop on Near Field Communication for Mobile Applications (NFS). The conference papers are covering mobile applications development, mobile social networking, novel user experience and interfaces, mobile services and platforms such as Android, iOS, BlackBerry OS, Windows phone, Bada, mobile software engineering and mobile Web, mobile payments and M2M infrastructure, mobile services such as novel hardware add-ons, energy aware services or tools, NFC-based services, authentication services.

Cloud computing has provided multiple advantages as well as challenges to software and infrastructure services. In order to be fully beneficial, these challenges facing cloud specific communication protocols must be addressed. Communication Infrastructures for Cloud Computing presents the issues and research directions for a broad range of cloud computing aspects of software, computing, and storage systems. This book will highlight a broad range of topics in communication infrastructures for cloud computing that will benefit researchers, academics, and practitioners in the active fields of engineering,

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computer science, and software.

Software applications once held on local computers and servers are beginning to shift to the public Internet sphere, and private health information is no exception. The likelihood of placing once restricted and private health records “in the cloud” is increasing. Cloud Computing Applications for Quality Health Care Delivery focuses on cloud technologies that could affect quality in the healthcare field. Leading experts in this area offer their knowledge and contribute to the demystification of healthcare in the Cloud. This publication will prove to be a useful tool for undergraduate and graduate students of healthcare quality and management, healthcare managers, and industry professionals.

From the Foreword "Getting CPS dependability right is essential to forming a solid foundation for a world that increasingly depends on such systems. This book represents the cutting edge of what we know about rigorous ways to ensure that our CPS designs are trustworthy. I recommend it to anyone who wants to get a deep look at these concepts that will form a cornerstone for future CPS designs." --Phil Koopman, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA Trustworthy Cyber-Physical Systems Engineering provides practitioners and researchers with a comprehensive introduction to the area of trustworthy Cyber Physical Systems (CPS) engineering. Topics in this book cover questions such

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as What does having a trustworthy CPS actually mean for something as pervasive as a global-scale CPS? How does CPS trustworthiness map onto existing knowledge, and where do we need to know more? How can we mathematically prove timeliness, correctness, and other essential properties for systems that may be adaptive and even self-healing? How can we better represent the physical reality underlying real-world numeric quantities in the computing system? How can we establish, reason about, and ensure trust between CPS components that are designed, installed, maintained, and operated by different organizations, and which may never have really been intended to work together? Featuring contributions from leading international experts, the book contains sixteen self-contained chapters that analyze the challenges in developing trustworthy CPS, and identify important issues in developing engineering methods for CPS. The book addresses various issues contributing to trustworthiness complemented by contributions on TCSP roadmapping, taxonomy, and standardization, as well as experience in deploying advanced system engineering methods in industry. Specific approaches to ensuring trustworthiness, namely, proof and refinement, are covered, as well as engineering methods for dealing with hybrid aspects.

Modern society requires a specialized, persistent approach to IT service delivery.

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Cloud computing offers the most logical answer through a highly dynamic and virtualized resource made available by an increasing number of service providers. Advanced Research on Cloud Computing Design and Applications shares the latest high quality research results on cloud computing and explores the broad applicability and scope of these trends on an international scale, venturing into the hot-button issue of IT services evolution and what we need to do to be prepared for future developments in cloud computing. This book is an essential reference source for researchers and practitioners in the field of cloud computing, as well as a guide for students, academics, or anyone seeking to learn more about advancement in IT services. This publication features chapters covering a broad range of relevant topics, including cloud computing for e-government, cloud computing in the public sector, security in the cloud, hybrid clouds and outsourced data, IT service personalization, and supply chain in the cloud.

The primary purpose of this book is to capture the state-of-the-art in Cloud Computing technologies and applications. The book will also aim to identify potential research directions and technologies that will facilitate creation a global market-place of cloud computing services supporting scientific, industrial, business, and consumer applications. We expect the book to serve as a

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reference for larger audience such as systems architects, practitioners, developers, new researchers and graduate level students. This area of research is relatively recent, and as such has no existing reference book that addresses it. This book will be a timely contribution to a field that is gaining considerable research interest, momentum, and is expected to be of increasing interest to commercial developers. The book is targeted for professional computer science developers and graduate students especially at Masters level. As Cloud Computing is recognized as one of the top five emerging technologies that will have a major impact on the quality of science and society over the next 20 years, its knowledge will help position our readers at the forefront of the field.

This practically-focused reference presents a comprehensive overview of the state of the art in Cloud Computing, and examines the potential for future Cloud and Cloud-related technologies to address specific industrial and research challenges. This new edition explores both established and emergent principles, techniques, protocols and algorithms involved with the design, development, and management of Cloud-based systems. The text reviews a range of applications and methods for linking Clouds, undertaking data management and scientific data analysis, and addressing requirements both of data analysis and of management of large scale and complex systems. This new edition also extends

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into the emergent next generation of mobile telecommunications, relating network function virtualization and mobile edge Cloud Computing, as supports Smart Grids and Smart Cities. As with the first edition, emphasis is placed on the four quality-of-service cornerstones of efficiency, scalability, robustness, and security. "This reference presents a vital compendium of research detailing the latest case studies, architectures, frameworks, methodologies, and research on Grid and Cloud Computing"--

Medical imaging has transformed the ways in which various conditions, injuries, and diseases are identified, monitored, and treated. As various types of digital visual representations continue to advance and improve, new opportunities for their use in medical practice will likewise evolve. *Medical Imaging: Concepts, Methodologies, Tools, and Applications* presents a compendium of research on digital imaging technologies in a variety of healthcare settings. This multi-volume work contains practical examples of implementation, emerging trends, case studies, and technological innovations essential for using imaging technologies for making medical decisions. This comprehensive publication is an essential resource for medical practitioners, digital imaging technologists, researchers, and medical students.

Medical practitioners are continuing to advance their knowledge of the latest

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technologies in order to keep up with the opportunities for faster and more reliable treatments for patients. *Advancing Medical Practice through Technology: Applications for Healthcare Delivery, Management, and Quality* focuses on the latest medical practices through the utilization of technologies and innovative concepts. This book is an essential reference source for researchers, academics, and industry professionals interested in the latest advancements in the healthcare, biomedicine, and medical communications fields.

The implementation of cloud technologies in healthcare is paving the way to more effective patient care and management for medical professionals around the world. As more facilities start to integrate cloud computing into their healthcare systems, it is imperative to examine the emergent trends and innovations in the field. *Cloud Computing Systems and Applications in Healthcare* features innovative research on the impact that cloud technology has on patient care, disease management, and the efficiency of various medical systems. Highlighting the challenges and difficulties in implementing cloud technology into the healthcare field, this publication is a critical reference source for academicians, technology designers, engineers, professionals, analysts, and graduate students.

Cloud Computing Applications for Quality Health Care Delivery IGI Global

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One of the central engines of the current shift towards decentralization and reorientation of healthcare services is mobile healthcare (mHealth). mHealth offers unique opportunities to reduce cost, increase efficiencies, and improve quality and access to healthcare. However, the full impact of mHealth is just beginning to be felt by the medical community and requires further examination to understand the full range of benefits it contributes to medical staff and patients. Mobile Health Applications for Quality Healthcare Delivery explores the emergence of mHealth in the healthcare setting and examines its impact on patient-centered care, including how it has reshaped access, quality, and treatment. Highlighting topics such as patient management, emergency medicine, and health monitoring, this publication supports e-health systems designers in understanding how mobile technologies can best be used for the benefit of both doctors and their patients. It is designed for healthcare professionals, administrators, students, health services managers, and academicians.

One of the primary topics at the center of discussion, and very often debate, between industry professionals, government officials, and the general public is the current healthcare system and the potential for an overhaul of its processes and services. Many organizations concerned for the long-term care of patients

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wish to see new strategies, practices, and organizational tools developed to optimize healthcare systems all over the world. One of the central engines of the current shift toward reorientation of healthcare services is virtual and mobile healthcare. *Virtual and Mobile Healthcare: Breakthroughs in Research and Practice* explores the trends, challenges, and issues related to the emergence of mobile and virtual healthcare. The book also examines how mobile technologies can best be used for the benefit of both doctors and their patients. Highlighting a range of topics such as smart healthcare, electronic health records, and m-health, this publication is an ideal reference source for medical professionals, healthcare administrators, doctors, nurses, practitioners, and researchers in all areas of the medical field.

This book explains why applications running on cloud might not deliver the same service reliability, availability, latency and overall quality to end users as they do when the applications are running on traditional (non-virtualized, non-cloud) configurations, and explains what can be done to mitigate that risk.

This handbook covers recent advances in the integration of three areas, namely, cloud computing, cyber-physical systems, and the Internet of things which is expected to have a tremendous impact on our daily lives. It contains a total of thirteen peer-reviewed and edited chapters. This book covers topics such as

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context-aware cyber-physical systems, sustainable cloud computing, fog computing, and cloud monitoring; both the theoretical and practical aspects belonging to these topics are discussed. All the chapters also discuss open research challenges in the areas mentioned above. Finally, the handbook presents three use cases regarding healthcare, smart buildings and disaster management to assist the audience in understanding how to develop next-generation IoT- and cloud-enabled cyber-physical systems. This timely handbook is edited for students, researchers, as well as professionals who are interested in the rapidly growing fields of cloud computing, cyber-physical systems, and the Internet of things.

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