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Pervasive Computing in Healthcare *Pervasive Computing in Healthcare* **Fog Computing for Healthcare 4.0 Environments** Green Computing and Predictive Analytics for Healthcare **Pervasive Healthcare Computing** *Cloud Computing Systems and Applications in Healthcare Cloud Computing Technologies for Smart Agriculture and Healthcare* **Introduction to Computers for Healthcare Professionals** The Fusion of Internet of Things, Artificial Intelligence, and Cloud Computing in Health Care *Fieldwork for Healthcare* **Pervasive and Mobile Sensing and Computing for Healthcare Health Informatics: A Computational Perspective in Healthcare Fieldwork for Healthcare Computing Paradigms for Smart Healthcare** *Computational Intelligence and Soft Computing Applications in Healthcare Management Science Intelligent Pervasive Computing Systems for Smarter Healthcare* **Pervasive and Mobile Sensing and Computing for Healthcare Cognitive and Soft Computing Techniques for the Analysis of Healthcare Data Soft Computing Applications and Techniques in Healthcare Healthcare Analytics Made Simple** 5G IoT and Edge Computing for Smart Healthcare Contemporary Applications of Mobile Computing in Healthcare Settings **Tele-Healthcare Handbook of Large-Scale Distributed Computing in Smart Healthcare** Cognitive Social Mining Applications in Data Analytics and Forensics **Connected e-Health Introduction to Nursing Informatics Healthcare Systems and Health Informatics Pervasive Computing Technologies for Healthcare Fieldwork for Healthcare** Connected E-Health **Computational Intelligence in Healthcare** *Biomedical Informatics* Computational Technology for Effective Health Care **Computational Intelligence and Its Applications in Healthcare** *Semantic Web for Effective Healthcare Systems* **Pervasive Healthcare Computers in Healthcare** *Cognitive Intelligence and Big Data in Healthcare* **Applied Computing in Medicine and Health**

Computing Paradigms for Smart Healthcare Sep 17 2021 Smart healthcare has gradually gained its popularity because of the development of information technologies and computing paradigms such as internet of things (loT), big data, Cloud computing and artificial intelligence. These technologies transform the conventional medical system in to smarter one by making healthcare more convenient, efficient, accurate, and more customized. Smart healthcare will lead to a revolutionized healthcare system that enables the participation of all people for the early prediction and prevention of diseases so that preemptive and pro-active treatment can be delivered. The aim of this edited book is to publish the latest research advancements in the convergence of automation technology, artificial intelligence, biomedical engineering and health informatics. This will help the readers to grasp the extensive point of view and the essence of the recent advances in this field. This book solicits contributions which include theory, case studies and computing paradigms pertaining to the healthcare applications. The prospective audience would be researchers, professionals, practitioners, and students from academia and industry who work in this field. We hope the chapters presented will inspire future research both from theoretical and practical viewpoints to spur further advances in the field.The entire book is the contribution of interdisciplinary expertise available in the esteemed Institution PSG College of Technology, an ISO 9001:2015 certified Government aided Institution, belonging to Department of Information Technology, Computer Science and Engineering, Electronics and Communication Engineering, Biomedical Engineering and Biotechnology. A brief introduction about each chapter is as follows.Chapter 1 focuses on health informatics which provides an overview of the various types of data originating from the medical information,Chapter 2 objective is to provide a 'smart connected environment' which includes storing, processing and exchange information seamlessly using technologies.Chapter 3 deals with an intelligent healthcare system for automatic diagnosis of diseases based on IOT enabled cloud computing framework and deep learningChapter 4 discuss about basic concepts of digital twin technology and implementation of digital twin in various health care domains.Chapter 5 proposes a graph based framework for classification, feature selection method which uses the existing notion, histograms for extracting isotonic features from a data set.Chapter 6 explains the significance of convolution neural network in medical image analysis.Chapter 7 summarizes recent advances in AI tools applied in cancer diagnosis and research for disease prediction and biomarker discovery.Chapter 8 explores DNA microarray data followed by the implementation of machine learning algorithms to obtain the highly predictive genes for classification. Chapter 9 uses various data structures such as hash tables and prefix-based search trees to efficiently query the EHR data present in the Blockchain.Chapter 10 focuses on agreeing upon a common symmetric cryptographic key generated from the ECG signal collected at different locations of a patient using linear prediction and error control coding techniques.We are grateful to the authors and reviewers for their excellent contributions for making this book possible.

Fog Computing for Healthcare 4.0 Environments Aug 29 2022 This book provides an analysis of the role of fog computing, cloud computing, and Internet of Things in providing uninterrupted context-aware services as they relate to Healthcare 4.0. The book considers a three-layer patient-driven healthcare architecture for real-time data collection, processing, and transmission. It gives insight to the readers for the applicability of fog devices and gateways in Healthcare 4.0 environments for current and future applications. It also considers aspects required to manage the complexity of fog computing for Healthcare 4.0 and also develops a comprehensive taxonomy.

Introduction to Nursing Informatics Aug 05 2020 Intended as a primer for those just beginning to study nursing informatics, this text equally provides a thorough introduction to basic terms and concepts, as well as an in-depth exploration of the most popular applications in nursing practice, education, administration and research. The Third Edition is updated and expanded to reflect the vast technological advances achieved in health care in recent years. Readers will learn how to use computers and information management systems in their practices, make informed choices related to software/hardware selection, and implement computerized solutions for information management strategies.

Soft Computing Applications and Techniques in Healthcare Apr 12 2021 This book provides insights into contemporary issues and challenges in soft computing applications and techniques in healthcare. It will be a useful guide to identify, categorise and assess the role of different soft computing techniques for disease, diagnosis and prediction due to technological advancements. The book explores applications in soft computing and covers empirical properties of artificial neural network (ANN), evolutionary computing, fuzzy logic and statistical techniques. It presents basic and advanced concepts to help beginners and industry professionals get up to speed on the latest developments in soft computing and healthcare systems. It incorporates the latest methodologies and challenges facing soft computing, examines descriptive, predictive and social network techniques and discusses analytics tools and their role in providing effective solutions for science and technology. The primary users for the book include researchers, academicians, postgraduate students, specialists and practitioners. Dr. Ashish Mishra is a professor in the Department of Computer Science and Engineering, Gyan Ganga Institute of Technology and Sciences, Jabalpur, Madhya Pradesh, India. He has contributed in organising the INSPIRE Science Internship Camp. He is a member of the Institute of Electrical and Electronics Engineers and is a life member of the Computer Society of India. His research interests include the Internet of Things, data mining, cloud computing, image processing and knowledge-based systems. He holds nine patents in Intellectual Property, India. He has authored four books in the areas of data mining, image processing and LaTex. Dr. G. Suseendran is an assistant professor, Department of Information Technology, School of Computing Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India. His research interests include ad-hoc networks, the Internet of Things, data mining, cloud computing, image processing,

knowledge-based systems, and Web information exploration. He has published more than 75 research papers in various international journals such as Science Citation Index, Springer Book Chapter, Scopus, IEEE Access and UGC-referred journals. Prof. Trung-Nghia Phung is an associate professor and Head of Academic Affairs, Thai Nguyen University of Information and Communication Technology (ICTU). He has published more than 60 research papers. His main research interest lies in the field of speech, audio, and biomedical signal processing. He serves as a technical committee program member, track chair, session chair, and reviewer of many international conferences and journals. He was a co-Chair of the International Conference on Advances in Information and Communication Technology 2016 (ICTA 2016) and a Session Chair of the 4th International Conference on Information System Design and Intelligent Applications (INDIA 2017).

Computers in Healthcare Aug 24 2019

Cloud Computing Systems and Applications in Healthcare May 26 2022 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.

Healthcare Systems and Health Informatics Jul 04 2020 This book covers the fundamentals of IoT and healthcare systems for carrying out system architectures, protocols, wearable devices, and interoperability. It explores major challenges in artificial intelligence (AI) and smart computing in resource-constrained IoT-based applications along with cost, energy efficiency, and the availability of quality service. Healthcare Systems and Health Informatics: Using Internet of Things explores the role of AI and smart computing in health informatics and healthcare with an emphasis on clinical data management and analysis for precise prediction and prompt action. It presents cutting-edge tracking, monitoring, real-time assistance, and security for IoT in healthcare and broadly discusses wearable sensors and IoT devices and their role in smart living assistance. The book goes on to describe a system model and architecture for a clear picture of energy conservation–based IoT in healthcare and explains the challenges and opportunities with IoT-based healthcare industries. A study of the threats and impacts, along with the need for information security, is also included. The chapters are written by experts in the field, and this book provides a comprehensive description of the important aspects of IoT and health from a beginner- to advanced-level perspective and is ideal for researchers, academicians, students, persons in industry, technologists, and entrepreneurs.

Handbook of Large-Scale Distributed Computing in Smart Healthcare Nov 07 2020 This volume offers readers various perspectives and visions for cutting-edge research in ubiquitous healthcare. The topics emphasize large-scale architectures and high performance solutions for smart healthcare, healthcare monitoring using large-scale computing techniques, Internet of Things (IoT) and big data analytics for healthcare, Fog Computing, mobile health, large-scale medical data mining, advanced machine learning methods for mining multidimensional sensor data, smart homes, and resource allocation methods for the BANs. The book contains high quality chapters contributed by leading international researchers working in domains, such as e-Health, pervasive and context-aware computing, cloud, grid, cluster, and big-data computing. We are optimistic that the topics included in this book will provide a multidisciplinary research platform to the researchers, practitioners, and students from biomedical engineering, health informatics, computer science, and computer engineering.

Cognitive Intelligence and Big Data in Healthcare Jul 24 2019 COGNITIVE INTELLIGENCE AND BIG DATA IN HEALTHCARE Applications of cognitive intelligence, advanced communication, and computational methods can drive healthcare research and enhance existing traditional methods in disease detection and management and prevention. As health is the foremost factor affecting the quality of human life, it is necessary to understand how the human body is functioning by processing health data obtained from various sources more quickly. Since an enormous amount of data is generated during data processing, a cognitive computing system could be applied to respond to queries, thereby assisting in customizing intelligent recommendations. This decision-making process could be improved by the deployment of cognitive computing techniques in healthcare, allowing for cutting-edge techniques to be integrated into healthcare to provide intelligent services in various healthcare applications. This book tackles all these issues and provides insight into these diversified topics in the healthcare sector and shows the range of recent innovative research, in addition to shedding light on future directions in this area. Audience The book will be very useful to a wide range of specialists including researchers, engineers, and postgraduate students in artificial intelligence, bioinformatics, information technology, as well as those in biomedicine.

Pervasive and Mobile Sensing and Computing for Healthcare Dec 21 2021 The pervasive healthcare system focus towards achieving two specific goals: the availability of eHealth applications and medical information anywhere and anytime and the invisibility of computing. Furthermore, pervasive health system encompasses new types of sensing and communication of health information as well as new type of interactions among health providers and people, among patients, among patients and researchers and patients and corporations. This book aims at promoting the discussion on current trends in technologies and concepts that help integrate health monitoring and healthcare more seamlessly to our everyday lives, regardless of space and time, but also present cutting edge perspectives and visions to highlight future development. The book presents not only the state of the art technologies and solutions to tackle the critical challenges faced by the building and development of the pervasive health system but also potential impact on society at social, medical and technological level.

Cognitive and Soft Computing Techniques for the Analysis of Healthcare Data May 14 2021 Cognitive and Soft Computing Techniques for the Analysis of Healthcare Data discusses the insight of data processing applications in various domains through soft computing techniques and enormous advancements in the field. The book focuses on the cross-disciplinary mechanisms and ground-breaking research ideas on novel techniques and data processing approaches in handling structured and unstructured healthcare data. It also gives insight into various information-processing models and many memories associated with it while processing the information for forecasting future trends and decision making. This book is an excellent resource for researchers and professionals who work in the Healthcare Industry, Data Science, and Machine learning. Focuses on data-centric operations in the Healthcare industry Provides the latest trends in healthcare data analytics and practical implementation outcomes of the proposed models Addresses real-time challenges and case studies in the Healthcare industry

Pervasive Healthcare Computing Jun 26 2022 Pervasive healthcare is the conceptual system of providing healthcare to anyone, at anytime, and anywhere by removing restraints of time and location while increasing both the coverage and the quality of healthcare. Pervasive Healthcare Computing is at the forefront of this research, and presents the ways in which mobile and wireless technologies can be used to implement the vision of pervasive healthcare. This vision includes prevention, healthcare maintenance and checkups; short-term monitoring (home healthcare), long-term monitoring (nursing home), and personalized healthcare monitoring; and incidence detection and management, emergency intervention, transportation and treatment. The pervasive healthcare applications include intelligent emergency management system, pervasive healthcare data access, and ubiquitous mobile telemedicine. Pervasive Healthcare Computing includes the treatment of several new wireless technologies and the ways in which they will implement the vision of pervasive healthcare.

Cognitive Social Mining Applications in Data Analytics and Forensics Oct 07 2020 Recently, there has been a rapid increase in interest regarding social network analysis in the data mining community. Cognitive radios are expected to play a major role in meeting this exploding traffic demand on social networks due to their ability to sense the environment, analyze outdoor parameters, and then make decisions for dynamic time, frequency, space, resource allocation, and management to improve the utilization of mining the social data. Cognitive Social Mining Applications in Data Analytics and Forensics is an essential reference source that reviews cognitive radio concepts and examines their applications to social mining using a machine learning approach so that an adaptive and intelligent mining is achieved. Featuring research on topics such as data mining, real-time

ubiquitous social mining services, and cognitive computing, this book is ideally designed for social network analysts, researchers, academicians, and industry professionals.

Green Computing and Predictive Analytics for Healthcare Jul 28 2022 Green Computing and Predictive Analytics for Healthcare excavates the rudimentary concepts of Green Computing, Big Data and the Internet of Things along with the latest research development in the domain of healthcare. It also covers various applications and case studies in the field of computer science with state-of-the-art tools and technologies. The rapid growth of the population is a challenging issue in maintaining and monitoring various experiences of quality of service in healthcare. The coherent usage of these limited resources in connection with optimum energy consumption has been becoming more important. The major healthcare nodes are gradually becoming Internet of Things-enabled, and sensors, work data and the involvement of networking are creating smart campuses and smart houses. The book includes chapters on the Internet of Things and Big Data technologies. Features: Biomedical data monitoring under the Internet of Things Environment data sensing and analyzing Big data analytics and clustering Machine learning techniques for sudden cardiac death prediction Robust brain tissue segmentation Energy-efficient and green Internet of Things for healthcare applications Blockchain technology for the healthcare Internet of Things Advanced healthcare for domestic medical tourism system Edge computing for data analytics This book on Green Computing and Predictive Analytics for Healthcare aims to promote and facilitate the exchange of research knowledge and findings across different disciplines on the design and investigation of healthcare data analytics. It can also be used as a textbook for a master’s course in biomedical engineering. This book will also present new methods for medical data evaluation and the diagnosis of different diseases to improve quality-of-life in general and for better integration of Internet of Things into society. Dr. Sourav Banerjee is an Assistant Professor at the Department of Computer Science and Engineering of Kalyani Government Engineering College, Kalyani, West Bengal, India. His research interests include Big Data, Cloud Computing, Distributed Computing and Mobile Communications. Dr. Chinmay Chakraborty is an Assistant Professor at the Department of Electronics and Communication Engineering, Birla Institute of Technology, Mesra, India. His main research interests include the Internet of Medical Things, WBAN, Wireless Networks, Telemedicine, m-Health/e-Health and Medical Imaging. Dr. Kousik Dasgupta is an Assistant Professor at the Department of Computer Science and Engineering, Kalyani Government Engineering College, India. His research interests include Computer Vision, AI/ML, Cloud Computing, Big Data and Security.

Contemporary Applications of Mobile Computing in Healthcare Settings Jan 10 2021 "This book explores how the use of mobile devices by health care professionals (HCPs) has transformed many aspects of clinical practice. It also explores how mobile devices and apps provide many benefits for HCPs, perhaps most significantly increased access to point-of-care tools, which has been shown to support better clinical decision-making and improved patient outcomes"--Provided by publisher.

Introduction to Computers for Healthcare Professionals Mar 24 2022 An introductory computer literacy text for nurses and other healthcare students, Introduction to Computers for Healthcare Professionals explains hardware, popular software programs, operating systems, and computer assisted communication. The Fifth Edition of this best-selling text has been revised and now includes content on on online storage, communication and online learning including info on PDA's, iPhones, IM, and other media formats, and another chapter on distance learning including video conferencing and streaming video.

Health Informatics: A Computational Perspective in Healthcare Nov 19 2021 This book presents innovative research works to demonstrate the potential and the advancements of computing approaches to utilize healthcare centric and medical datasets in solving complex healthcare problems. Computing technique is one of the key technologies that are being currently used to perform medical diagnostics in the healthcare domain, thanks to the abundance of medical data being generated and collected. Nowadays, medical data is available in many different forms like MRI images, CT scan images, EHR data, test reports, histopathological data and doctor patient conversation data. This opens up huge opportunities for the application of computing techniques, to derive data-driven models that can be of very high utility, in terms of providing effective treatment to patients. Moreover, machine learning algorithms can uncover hidden patterns and relationships present in medical datasets, which are too complex to uncover, if a data-driven approach is not taken. With the help of computing systems, today, it is possible for researchers to predict an accurate medical diagnosis for new patients, using models built from previous patient data. Apart from automatic diagnostic tasks, computing techniques have also been applied in the process of drug discovery, by which a lot of time and money can be saved. Utilization of genomic data using various computing techniques is another emerging area, which may in fact be the key to fulfilling the dream of personalized medications. Medical prognostics is another area in which machine learning has shown great promise recently, where automatic prognostic models are being built that can predict the progress of the disease, as well as can suggest the potential treatment paths to get ahead of the disease progression.

5G IoT and Edge Computing for Smart Healthcare Feb 08 2021 5G IoT and Edge Computing for Smart Healthcare addresses the importance of a 5G IoT and Edge-Cognitive-Computing-based system for the successful implementation and realization of a smart-healthcare system. The book provides insights on 5G technologies, along with intelligent processing algorithms/processors that have been adopted for processing the medical data that would assist in addressing the challenges in computer-aided diagnosis and clinical risk analysis on a real-time basis. Each chapter is self-sufficient, solving real-time problems through novel approaches that help the audience acquire the right knowledge. With the progressive development of medical and communication - computer technologies, the healthcare system has seen a tremendous opportunity to support the demand of today's new requirements. Focuses on the advancement of 5G in terms of its security and privacy aspects, which is very important in health care systems Address advancements in signal processing and, more specifically, the cognitive computing algorithm to make the system more real-time Gives insights into various information-processing models and the architecture of layers to realize a 5G based smart health care system

Computational Technology for Effective Health Care Dec 29 2019 Despite a strong commitment to delivering quality health care, persistent problems involving medical errors and ineffective treatment continue to plague the industry. Many of these problems are the consequence of poor information and technology (IT) capabilities, and most importantly, the lack cognitive IT support. Clinicians spend a great deal of time sifting through large amounts of raw data, when, ideally, IT systems would place raw data into context with current medical knowledge to provide clinicians with computer models that depict the health status of the patient. Computational Technology for Effective Health Care advocates re-balancing the portfolio of investments in health care IT to place a greater emphasis on providing cognitive support for health care providers, patients, and family caregivers; observing proven principles for success in designing and implementing IT; and accelerating research related to health care in the computer and social sciences and in health/biomedical informatics. Health care professionals, patient safety advocates, as well as IT specialists and engineers, will find this book a useful tool in preparation for crossing the health care IT chasm.

Computational Intelligence in Healthcare Feb 29 2020 Artificial intelligent systems, which offer great improvement in healthcare sector assisted by machine learning, wireless communications, data analytics, cognitive computing, and mobile computing provide more intelligent and convenient solutions and services. With the help of the advanced techniques, now a days it is possible to understand human body and to handle & process the health data anytime and anywhere. It is a smart healthcare system which includes patient, hospital management, doctors, monitoring, diagnosis, decision making modules, disease prevention to meet the challenges and problems arises in healthcare industry. Furthermore, the advanced healthcare systems need to upgrade with new capabilities to provide human with more intelligent and professional healthcare services to further improve the quality of service and user experience. To explore recent advances and disseminate state-of-the-art techniques related to intelligent healthcare services and applications. This edited book involved in designing systems that will permit the societal acceptance of ambient intelligence including signal processing, imaging, computing, instrumentation, artificial intelligence, internet of health things, data analytics, disease detection, telemedicine, and their applications. As the book includes recent trends in research issues and applications, the contents will be beneficial to Professors, researchers, and engineers. This book will provide support and aid to the

researchers involved in designing latest advancements in communication and intelligent systems that will permit the societal acceptance of ambient intelligence. This book presents the latest research being conducted on diverse topics in intelligence technologies with the goal of advancing knowledge and applications healthcare sector and to present the latest snapshot of the ongoing research as well as to shed further light on future directions in this space. The aim of publishing the book is to serve for educators, researchers, and developers working in recent advances and upcoming technologies utilizing computational sciences.

Pervasive Healthcare Sep 25 2019 This book provides in depth knowledge about critical factors involved in the success of pervasive healthcare. The book first presents critical components and importance of pervasive healthcare. The authors then give insight into the pervasive healthcare information systems and key consideration related to remote patient monitoring and safety. The book provides in-depth discussion about the security issues and protocols for pervasive healthcare. This book explores concepts and techniques behind the successive pervasive healthcare systems by providing in-depth knowledge about patient empowerment, remote patient monitoring, network establishment and protocols for effective pervasive healthcare. The book also provides case studies in the field. It is an ideal resource for researchers, students and healthcare organizations to get insight about the state of the art in pervasive healthcare systems. Provides current research, developments, and applications in pervasive healthcare; Includes technologies such as machine learning, cryptography, fog computing, and big data in the advancement of e-healthcare; Pertinent for researchers, students, practitioners and healthcare decision makers.

Pervasive Computing in Healthcare Sep 29 2022 With skyrocketing costs due to the increase in the elderly population, a rapid increase in lifestyle-related and chronic diseases, demand for new medical treatments and technologies, and a shortage in the number of available clinicians, nurses, and other caregivers, the challenges facing the healthcare industry seem insurmountable. However, by transforming the current model into a more distributed and highly responsive healthcare processing model, patients can take control of their own health in the form of wellness management, preventive care, and proactive intervention. Pioneering the concepts of this newly emerging field, Pervasive Computing in Healthcare provides an introduction to and is the first known comprehensive resource on the application of pervasive computing in healthcare. The book begins with an overview of healthcare, diseases, disabilities, and computer science principles. It describes challenges in using computers in large, modern hospitals, how current software and hardware technology is evolving to meet these challenges, and new pervasive technologies for people with cognitive disabilities. Identifying the main usage models and applications for mobile and personal health, the book explores sensors and wearable technologies. It also examines current research in assistive technologies, challenges associated with human factors and the usability of healthcare systems, and methods for technology innovation. The book concludes by presenting user evaluations with a special focus on real-world deployment and assessment of the technology. Pervasive healthcare is an exciting emerging research area that is bound to play an important role in an increasingly aging society. Providing a solid foundation on which current and future researchers and practitioners can build and use to further their endeavours, Pervasive Computing in Healthcare addresses a set of related technologies and concepts that help integrate healthcare more seamlessly

Tele-Healthcare Dec 09 2020 TELE-HEALTHCARE This book elucidates all aspects of tele-healthcare which is the application of AI, soft computing, digital information, and communication technologies, to provide services remotely and manage one’s healthcare. Throughout the world, there are huge developing crises with respect to healthcare workforce shortages, as well as a growing burden of chronic diseases. As a result, e-health has become one of the fastest-growing service areas in the medical sector. E-health supports and ensures the availability of proper healthcare, public health, and health education services at a distance and in remote places. For the sector to grow and meet the need of the marketplace, e-health applications have become one of the fastest growing areas of research. However, to grow at a larger scale requires the following: The availability of user cases for the exact identification of problems that need to be visualized. A well-supported market that can promote and adopt the e-health care concept. Development of cost-effectiveness applications and technologies for successful implementation of e-health at a larger scale. This book mainly focuses on these three points for the development and implementation of e-health services globally. In this book the reader will find: Details of the challenges in promoting and implementing the telehealth industry. How to expand a globalized agenda of personalized telehealth in integrative medical treatment for disease diagnosis and its industrial transformation. How to design machine learning techniques for improving the tele-healthcare system. Audience Researchers and post-graduate students in biomedical engineering, artificial intelligence, and information technology; medical doctors and practitioners and industry experts in the healthcare sector; healthcare sector network administrators.

Cloud Computing Technologies for Smart Agriculture and Healthcare Apr 24 2022 The Cloud is an advanced and fast-growing technology in the current era. The computing paradigm has changed drastically. It provided a new insight into the computing world with new characteristics including on-demand, virtualization, scalability and many more. Utility computing, virtualization and service-oriented architecture (SoA) are the key characteristics of Cloud computing. The Cloud provides distinct IT services over the web on a pay-as-you-go and on-demand basis. Cloud Computing Technologies for Smart Agriculture and Healthcare covers Cloud management and its framework. It also focuses how the Cloud computing framework can be integrated with applications based on agriculture and healthcare. Features: Contains a systematic overview of the state-of-the-art, basic theories, challenges, implementation, and case studies on Cloud technology Discusses of recent research results and future advancement in virtualization technology Focuses on core theories, architectures, and technologies necessary to develop and understand the computing models and its applications Includes a wide range of examples that uses Cloud technology for increasing farm profitability and sustainable production Presents the farming industry with Cloud technology that allows it toaggregate, analyze, and share data across farms and the world Includes Cloud-based electronic health records with privacy and security features Offers suitable IT solutions to the global issues in the domain of agriculture and health care for society This reference book is aimed at undergraduate and post-graduate programs. It will also help research scholars in their research work. This book also benefits like scientists, business innovators, entrepreneurs, professionals, and practitioners.

Pervasive Computing in Healthcare Oct 31 2022 With skyrocketing costs due to the increase in the elderly population, a rapid increase in lifestyle-related and chronic diseases, demand for new medical treatments and technologies, and a shortage in the number of available clinicians, nurses, and other caregivers, the challenges facing the healthcare industry seem insurmountable. However, by tra

Applied Computing in Medicine and Health Jun 22 2019 Applied Computing in Medicine and Health is a comprehensive presentation of on-going investigations into current applied computing challenges and advances, with a focus on a particular class of applications, primarily artificial intelligence methods and techniques in medicine and health. Applied computing is the use of practical computer science knowledge to enable use of the latest technology and techniques in a variety of different fields ranging from business to scientific research. One of the most important and relevant areas in applied computing is the use of artificial intelligence (AI) in health and medicine. Artificial intelligence in health and medicine (AIHM) is assuming the challenge of creating and distributing tools that can support medical doctors and specialists in new endeavors. The material included covers a wide variety of interdisciplinary perspectives concerning the theory and practice of applied computing in medicine, human biology, and health care. Particular attention is given to AI-based clinical decision-making, medical knowledge engineering, knowledge-based systems in medical education and research, intelligent medical information systems, intelligent databases, intelligent devices and instruments, medical AI tools, reasoning and metareasoning in medicine, and methodological, philosophical, ethical, and intelligent medical data analysis. Discusses applications of artificial intelligence in medical data analysis and classifications Provides an overview of mobile health and telemedicine with specific examples and case studies Explains how behavioral intervention technologies use smart phones to support a patient centered approach Covers the design and implementation of medical decision support systems in clinical practice using an applied case study approach

Pervasive and Mobile Sensing and Computing for Healthcare Jun 14 2021 The pervasive healthcare system focus towards achieving two specific goals: the availability of eHealth applications and medical

information anywhere and anytime and the invisibility of computing. Furthermore, pervasive health system encompasses new types of sensing and communication of health information as well as new type of interactions among health providers and people, among patients, among patients and researchers and patients and corporations. This book aims at promoting the discussion on current trends in technologies and concepts that help integrate health monitoring and healthcare more seamlessly to our everyday lives, regardless of space and time, but also present cutting edge perspectives and visions to highlight future development. The book presents not only the state of the art technologies and solutions to tackle the critical challenges faced by the building and development of the pervasive health system but also potential impact on society at social, medical and technological level.

Connected E-Health Mar 31 2020 With rise of smart medical sensors, cloud computing and the health care technologies, "connected health" is getting remarkable consideration everywhere. Recently, the Internet of Things (IoT) has brought the vision of a smarter world into reality. Cloud computing fits well in this scenario as it can provide high quality of clinical experience. Thus an IoT-cloud convergence can play a vital role in healthcare by offering better insight of heterogeneous healthcare content supporting quality care. It can also support powerful processing and storage facilities of huge data to provide automated decision making. This book aims to report quality research on recent advances towards IoT-Cloud convergence for smart healthcare, more specifically to the state-of-the-art approaches, design, development and innovative use of those convergence methods for providing insights into healthcare service demands. Students, researchers, and medical experts in the field of information technology, medicine, cloud computing, soft computing technologies, IoT and the related fields can benefit from this handbook in handling real-time challenges in healthcare. Current books are limited to focus either on soft computing algorithms or smart healthcare. Integration of smart and cloud computing models in healthcare resulting in connected health is explored in detail in this book.

Fieldwork for Healthcare Oct 19 2021 Performing fieldwork in healthcare settings is significantly different from fieldwork in other domains and it presents unique challenges to researchers. Whilst results are reported in research papers, the details of how to actually perform these fieldwork studies are not. This is the first of two volumes designed as a collective graduate guidebook for conducting fieldwork in healthcare. This volume brings together the experiences of established researchers who do fieldwork in clinical and non-clinical settings, focusing on how people interact with healthcare technology, in the form of case studies. These case studies are all personal, reflective accounts of challenges faced and lessons learned, which future researchers might also learn from. We open with an account of studies in the Operating Room, focusing on the role of the researcher, and how participants engage and resist engaging with the research process. Subsequent case studies address themes in a variety of hospital settings, which highlight the variability that is experienced across study settings and the importance of context in shaping what is possible when conducting research in hospitals. Recognising and dealing with emotions, strategies for gaining access, and data gathering are themes that pervade the studies. Later case studies introduce research involving collaborative design and intervention studies, which seek to have an immediate impact on practice. Mental health is a theme of two intervention studies as we move out of the hospital to engage with vulnerable participants suffering from long-term conditions and people in the home. This volume closes with an intervention study in the developing world that ends with some tips for conducting studies in healthcare. Such tips are synthesised through the thematic chapters presented in the companion volume.

Healthcare Analytics Made Simple Mar 12 2021 Add a touch of data analytics to your healthcare systems and get insightful outcomes Key Features Perform healthcare analytics with Python and SQL Build predictive models on real healthcare data with pandas and scikit-learn Use analytics to improve healthcare performance Book Description In recent years, machine learning technologies and analytics have been widely utilized across the healthcare sector. Healthcare Analytics Made Simple bridges the gap between practising doctors and data scientists. It equips the data scientists' work with healthcare data and allows them to gain better insight from this data in order to improve healthcare outcomes. This book is a complete overview of machine learning for healthcare analytics, briefly describing the current healthcare landscape, machine learning algorithms, and Python and SQL programming languages. The step-by-step instructions teach you how to obtain real healthcare data and perform descriptive, predictive, and prescriptive analytics using popular Python packages such as pandas and scikit-learn. The latest research results in disease detection and healthcare image analysis are reviewed. By the end of this book, you will understand how to use Python for healthcare data analysis, how to import, collect, clean, and refine data from electronic health record (EHR) surveys, and how to make predictive models with this data through real-world algorithms and code examples. What you will learn Gain valuable insight into healthcare incentives, finances, and legislation Discover the connection between machine learning and healthcare processes Use SQL and Python to analyze data Measure healthcare quality and provider performance Identify features and attributes to build successful healthcare models Build predictive models using real-world healthcare data Become an expert in predictive modeling with structured clinical data See what lies ahead for healthcare analytics Who this book is for Healthcare Analytics Made Simple is for you if you are a developer who has a working knowledge of Python or a related programming language, although you are new to healthcare or predictive modeling with healthcare data. Clinicians interested in analytics and healthcare computing will also benefit from this book. This book can also serve as a textbook for students enrolled in an introductory course on machine learning for healthcare.

Computational Intelligence and Its Applications in Healthcare Nov 27 2019 Computational Intelligence and Its Applications in Healthcare presents rapidly growing applications of computational intelligence for healthcare systems, including intelligent synthetic characters, man-machine interface, menu generators, user acceptance analysis, pictures archiving, and communication systems. Computational intelligence is the study of the design of intelligent agents, which are systems that act intelligently: they do what they think are appropriate for their circumstances and goals; they're flexible to changing environments and goals; they learn from experience; and they make appropriate choices given perceptual limitations and finite computation. Computational intelligence paradigms offer many advantages in maintaining and enhancing the field of healthcare. Provides coverage of fuzzy logic, neural networks, evolutionary computation, learning theory, probabilistic methods, telemedicine, and robotics applications Includes coverage of artificial intelligence and biological applications, soft computing, image and signal processing, and genetic algorithms Presents the latest developments in computational methods in healthcare Bridges the gap between obsolete literature and current literature

The Fusion of Internet of Things, Artificial Intelligence, and Cloud Computing in Health Care Feb 20 2022 This book reviews the convergence technologies like cloud computing, artificial intelligence (AI) and Internet of Things (IoT) in healthcare and how they can help all stakeholders in the healthcare sector. The book is a proficient guide on the relationship between AI, IoT and healthcare and gives examples into how IoT is changing all aspects of the healthcare industry. Topics include remote patient monitoring, the telemedicine ecosystem, pattern imaging analytics using AI, disease identification and diagnosis using AI, robotic surgery, prediction of epidemic outbreaks, and more. The contributors include applications and case studies across all areas of computational intelligence in healthcare data. The authors also include workflow in IoT-enabled healthcare technologies and explore privacy and security issues in healthcare-based IoT.

Connected e-Health Sep 05 2020 With rise of smart medical sensors, cloud computing and the health care technologies, “connected health” is getting remarkable consideration everywhere. Recently, the Internet of Things (IoT) has brought the vision of a smarter world into reality. Cloud computing fits well in this scenario as it can provide high quality of clinical experience. Thus an IoT-cloud convergence can play a vital role in healthcare by offering better insight of heterogeneous healthcare content supporting quality care. It can also support powerful processing and storage facilities of huge data to provide automated decision making. This book aims to report quality research on recent advances towards IoT-Cloud convergence for smart healthcare, more specifically to the state-of-the-art approaches, design, development and innovative use of those convergence methods for providing insights into healthcare service demands. Students, researchers, and medical experts in the field of information technology, medicine, cloud computing, soft computing technologies, IoT and the related fields can benefit from this handbook in handling real-time challenges in healthcare. Current books are limited to focus either on soft computing algorithms or smart healthcare. Integration

of smart and cloud computing models in healthcare resulting in connected health is explored in detail in this book.

Pervasive Computing Technologies for Healthcare Jun 02 2020 This book constitutes the refereed proceedings of the 15th International Conference on Pervasive Computing Technologies for Healthcare, Pervasive Health 2021, held in December 2021. Due to COVID-19 pandemic the conference was held virtually. The 28 full and 7 short papers were selected from 74 submissions and are organized in 3 main tracks: hospitality and community care, homecare and medical education. The COVID 19 pandemic was challenging all dimensions of Pervasive Health (PH) and traditional ways of monitoring, diagnosing, treating and communicating changed dramatically.

Fieldwork for Healthcare Jan 22 2022 Conducting fieldwork for investigating technology use in healthcare is a challenging undertaking, and yet there is little in the way of community support and guidance for conducting these studies. There is a need for better knowledge sharing and resources to facilitate learning. This is the second of two volumes designed as a collective graduate guidebook for conducting fieldwork in healthcare. This volume brings together thematic chapters that draw out issues and lessons learned from practical experience. Researchers who have first-hand experience of conducting healthcare fieldwork collaborated to write these chapters. This volume contains insights, tips, and tricks from studies in clinical and non-clinical environments, from hospital to home. This volume starts with an introduction to the ethics and governance procedures a researcher might encounter when conducting fieldwork in this sensitive study area. Subsequent chapters address specific aspects of conducting situated healthcare research. Chapters on readying the researcher and relationships in the medical domain break down some of the complex social aspects of this type of research. They are followed by chapters on the practicalities of collecting data and implementing interventions, which focus on domain-specific issues that may arise. Finally, we close the volume by discussing the management of impact in healthcare fieldwork. The guidance contained in these chapters enables new researchers to form their project plans and also their contingency plans in this complex and challenging domain. For more experienced researchers, it offers advice and support through familiar stories and experiences. For supervisors and teachers, it offers a source of reference and debate. Together with the first volume, Fieldwork for Healthcare: Case Studies Investigating Human Factors in Computing systems, these books provide a substantive resource on how to conduct fieldwork in healthcare. Table of Contents: Preface / Acknowledgments / Ethics, Governance, and Patient and Public Involvement in Healthcare / Readying the Researcher for Fieldwork in Healthcare / Establishing and Maintaining Relationships in Healthcare Fields / Practicalities of Data Collection in Healthcare Fieldwork / Healthcare Intervention Studies “In the Wild” / Impact of Fieldwork in Healthcare: Understanding Impact on Researchers, Research, Practice, and Beyond / References / Biographies

Fieldwork for Healthcare May 02 2020 Performing fieldwork in healthcare settings is significantly different from fieldwork in other domains and it presents unique challenges to researchers. Whilst results are reported in research papers, the details of how to actually perform these fieldwork studies are not. This is the first of two volumes designed as a collective graduate guidebook for conducting fieldwork in healthcare. This volume brings together the experiences of established researchers who do fieldwork in clinical and non-clinical settings, focusing on how people interact with healthcare technology, in the form of case studies. These case studies are all personal, reflective accounts of challenges faced and lessons learned, which future researchers might also learn from. We open with an account of studies in the Operating Room, focusing on the role of the researcher, and how participants engage and resist engaging with the research process. Subsequent case studies address themes in a variety of hospital settings, which highlight the variability that is experienced across study settings and the importance of context in shaping what is possible when conducting research in hospitals. Recognising and dealing with emotions, strategies for gaining access, and data gathering are themes that pervade the studies. Later case studies introduce research involving collaborative design and intervention studies, which seek to have an immediate impact on practice. Mental health is a theme of two intervention studies as we move out of the hospital to engage with vulnerable participants suffering from long-term conditions and people in the home. This volume closes with an intervention study in the developing world that ends with some tips for conducting studies in healthcare. Such tips are synthesised through the thematic chapters presented in the companion volume.

Biomedical Informatics Jan 28 2020 The practice of modern medicine and biomedical research requires sophisticated information technologies with which to manage patient information, plan diagnostic procedures, interpret laboratory results, and carry out investigations. Biomedical Informatics provides both a conceptual framework and a practical inspiration for this swiftly emerging scientific discipline at the intersection of computer science, decision science, information science, cognitive science, and biomedicine. Now revised and in its third edition, this text meets the growing demand by practitioners, researchers, and students for a comprehensive introduction to key topics in the field. Authored by leaders in medical informatics and extensively tested in their courses, the chapters in this volume constitute an effective textbook for students of medical informatics and its areas of application. The book is also a useful reference work for individual readers needing to understand the role that computers can play in the provision of clinical services and the pursuit of biological questions. The volume is organized so as first to explain basic concepts and then to illustrate them with specific systems and technologies.

Computational Intelligence and Soft Computing Applications in Healthcare Management Science Aug 17 2021 In today’s modernized world, the field of healthcare has seen significant practical innovations with the implementation of computational intelligence approaches and soft computing methods. These two concepts present various solutions to complex scientific problems and imperfect data issues. This has made both very popular in the medical profession. There are still various areas to be studied and improved by these two schemes as healthcare practices continue to develop. Computational Intelligence and Soft Computing Applications in Healthcare Management Science is an essential reference source that discusses the implementation of soft computing techniques and computational methods in the various components of healthcare, telemedicine, and public health. Featuring research on topics such as analytical modeling, neural networks, and fuzzy logic, this book is ideally designed for software engineers, information scientists, medical professionals, researchers, developers, educators, academicians, and students.

Semantic Web for Effective Healthcare Systems Oct 26 2019 SEMANTIC WEB FOR EFFECTIVE HEALTHCARE SYSTEMS The book summarizes the trends and current research advances in web semantics, delineating the existing tools, techniques, methodologies, and research solutions Semantic Web technologies have the opportunity to transform the way healthcare providers utilize technology to gain insights and knowledge from their data and make treatment decisions. Both Big Data and Semantic Web technologies can complement each other to address the challenges and add intelligence to healthcare management systems. The aim of this book is to analyze the current status on how the semantic web is used to solve health data integration and interoperability problems, and how it provides advanced data linking capabilities that can improve search and retrieval of medical data. Chapters analyze the tools and approaches to semantic health data analysis and knowledge discovery. The book discusses the role of semantic technologies in extracting and transforming healthcare data before storing it in repositories. It also discusses different approaches for integrating heterogeneous healthcare data. This innovative book offers: The first of its kind and highlights only the ontology driven information retrieval mechanisms and techniques being applied to healthcare as well as clinical information systems; Presents a comprehensive examination of the emerging research in areas of the semantic web; Discusses studies on new research areas including ontological engineering, semantic annotation and semantic sentiment analysis; Helps readers understand key concepts in semantic web applications for the biomedical engineering and healthcare fields; Includes coverage of key application areas of the semantic web. Audience: Researchers and graduate students in computer science, biomedical engineering, electronic and software engineering, as well as industry scientific researchers, clinicians, and systems managers in biomedical fields.

Intelligent Pervasive Computing Systems for Smarter Healthcare Jul 16 2021 A guide to intelligent decision and pervasive computing paradigms for healthcare analytics systems with a focus on the use of bio-sensors Intelligent Pervasive Computing Systems for Smarter Healthcare describes the innovations in healthcare made possible by computing through bio-sensors. The pervasive computing paradigm offers tremendous advantages in diversified areas of healthcare

research and technology. The authors—noted experts in the field—provide the state-of-the-art intelligence paradigm that enables optimization of medical assessment for a healthy, authentic, safer, and more productive environment. Today’s computers are integrated through bio-sensors and generate a huge amount of information that can enhance our ability to process enormous bio-informatics data that can be transformed into meaningful medical knowledge and help with diagnosis, monitoring and tracking health issues, clinical decision making, early detection of infectious disease prevention, and rapid analysis of health hazards. The text examines a wealth of topics such as the design and development of pervasive healthcare technologies, data modeling and information management, wearable biosensors and their systems, and more. This important resource: Explores the recent trends and developments in computing through bio-sensors and its technological applications Contains a review of biosensors and sensor systems and networks for mobile health monitoring Offers an opportunity for readers to examine the concepts and future outlook of intelligence on healthcare systems incorporating biosensor applications Includes information on privacy and security issues on wireless body area network for remote healthcare monitoring Written for scientists and application developers and professionals in related fields, Intelligent Pervasive Computing Systems for Smarter Healthcare is a guide to the most recent developments in intelligent computer systems that are applicable to the healthcare industry.