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Cognitive Radio Sensor Networks: Applications, Architectures, and Challenges - Rehmani, Mubashir Husain
2014-06-30

"This book examines how wireless sensor nodes with cognitive radio capabilities can address these network challenges and improve the

spectrum utilization, presenting a broader picture on the applications, architecture, challenges, and open research directions in the area of WSN research"--Provided by publisher.
Encyclopedia of Cloud Computing - San Murugesan 2016-08-01
The Encyclopedia of Cloud Computing

provides IT professionals, educators, researchers and students with a compendium of cloud computing knowledge. Authored by a spectrum of subject matter experts in industry and academia, this unique publication, in a single volume, covers a wide range of cloud computing topics, including technological trends and developments, research opportunities, best practices, standards, and cloud adoption. Providing multiple perspectives, it also addresses questions that stakeholders might have in the context of development, operation, management, and use of clouds. Furthermore, it examines cloud computing's impact now and in the future. The encyclopedia presents 56 chapters logically organized into 10 sections. Each chapter covers a major topic/area with cross-references to other chapters and contains tables, illustrations, side-bars as appropriate. Furthermore,

each chapter presents its summary at the beginning and backend material, references and additional resources for further information.

Transportation and Power Grid in Smart Cities - Hussein T. Mouftah
2018-12-28

With the increasing worldwide trend in population migration into urban centers, we are beginning to see the emergence of the kinds of mega-cities which were once the stuff of science fiction. It is clear to most urban planners and developers that accommodating the needs of the tens of millions of inhabitants of those megalopolises in an orderly and uninterrupted manner will require the seamless integration of and real-time monitoring and response services for public utilities and transportation systems. Part speculative look into the future of the world's urban centers, part technical blueprint, this visionary book helps lay the groundwork for the communication

networks and services on which tomorrow's "smart cities" will run. Written by a uniquely well-qualified author team, this book provides detailed insights into the technical requirements for the wireless sensor and actuator networks required to make smart cities a reality.

Information Security Handbook - Noor Zaman Jhanjhi 2022-02-17

This handbook provides a comprehensive collection of knowledge for emerging multidisciplinary research areas such as cybersecurity, IoT, Blockchain, Machine Learning, Data Science, and AI. This book brings together, in one resource, information security across multiple domains. Information Security Handbook addresses the knowledge for emerging multidisciplinary research. It explores basic and high-level concepts and serves as a manual for industry while also helping beginners to understand both basic and advanced aspects in security-related issues.

The handbook explores security and privacy issues through the IoT ecosystem and implications to the real world and, at the same time, explains the concepts of IoT-related technologies, trends, and future directions. University graduates and postgraduates, as well as research scholars, developers, and end-users, will find this handbook very useful.

Cognitive Networks - Jaime Lloret Mauri 2014-12-09

A cognitive network makes use of the information gathered from the network in order to sense the environment, plan actions according to the input, and make appropriate decisions using a reasoning engine. The ability of cognitive networks to learn from the past and use that knowledge to improve future decisions makes them a key area of interest for anyone whose work involves wireless networks and communications. Cognitive Networks: Applications and Deployments examines recent developments in cognitive

networks from the perspective of cutting-edge applications and deployments. Presenting the contributions of internationally renowned experts, it supplies complete and balanced treatment of the fundamentals of both cognitive radio communications and cognitive networks—together with implementation details. The book includes case studies and detailed descriptions of cognitive radio platforms and testbeds that demonstrate how to build real-world cognitive radio systems and network architectures. It begins with an introduction to efficient spectrum management and presents a survey on joint routing and dynamic spectrum access in cognitive radio networks. Next, it examines radio spectrum sensing and network coding and design. It explores intelligent routing in graded cognitive networks and presents an energy-efficient routing protocol for cognitive radio ad hoc

networks. The book concludes by considering dynamic radio spectrum access and examining vehicular cognitive networks and applications. Presenting the latest standards and spectrum policy developments, the book's strong practical orientation provides you with the understanding you will need to participate in the development of compliant cognitive systems.

Mobile Applications and Solutions for Social Inclusion - Paiva, Sara
2018-05-19

Advancements in technology have allowed the creation of new tools and innovations that can improve different aspects of life. Mobile technologies are an ever-expanding area of research that can benefit users. *Mobile Applications and Solutions for Social Inclusion* provides emerging research on the use of mobile technology to assist in improving social inclusion in several domains and for users in their daily

lives. While highlighting topics such as alert systems, indoor navigation, and tracking and monitoring, this publication explores the various applications and techniques of mobile solutions in assistive technology. This book is an important resource for researchers, academics, professionals, and students seeking current research on the benefits and uses of mobile devices for end users and community acceptance.

Computer Science and its Applications - Sang-Soo Yeo 2012-10-19

The 4th FTRA International Conference on Computer Science and its Applications (CSA-12) will be held in Jeju, Korea on November 22~25, 2012. CSA-12 will be the most comprehensive conference focused on the various aspects of advances in computer science and its applications. CSA-12 will provide an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of CSA. In

addition, the conference will publish high quality papers which are closely related to the various theories and practical applications in CSA.

Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in this important subject. CSA-12 is the next event in a series of highly successful International Conference on Computer Science and its Applications, previously held as CSA-11 (3rd Edition: Jeju, December, 2011), CSA-09 (2nd Edition: Jeju, December, 2009), and CSA-08 (1st Edition: Australia, October, 2008).

Proceedings of International Conference on Information Technology and Applications - Abrar Ullah
2022-04-21

This book includes high-quality papers presented at 15th International Conference on Information Technology and Applications (ICITA 2021), held in

Dubai, UAE during 13 - 14 November 2021. The book presents original research work of academics and industry professionals to exchange their knowledge of the state-of-the-art research and development in information technology and applications. The topics covered in the book are cloud computing, business process engineering, machine learning, evolutionary computing, big data analytics, internet of things and cyber-physical systems, information and knowledge management, computer vision and image processing, computer graphics and games programming, mobile computing, ontology engineering, software and systems modelling, human computer interaction, online learning / e-learning, computer networks, and web engineering.

Evolving Application Domains of Data Warehousing and Mining: Trends and Solutions - Furtado, Pedro Nuno San-Banto 2009-09-30

"This book provides insight into the latest findings concerning data warehousing, data mining, and their applications in everyday human activities"--Provided by publisher. Smart Grid as a Solution for Renewable and Efficient Energy - Ahmad, Ayaz 2016-04-20
As the need for proficient power resources continues to grow, it is becoming increasingly important to implement new strategies and technologies in energy distribution to meet consumption needs. The employment of smart grid networks assists in the efficient allocation of energy resources. Smart Grid as a Solution for Renewable and Efficient Energy features emergent research and trends in energy consumption and management, as well as communication techniques utilized to monitor power transmission and usage. Emphasizing developments and challenges occurring in the field, this book is a critical resource for researchers and students

concerned with signal processing, power demand management, energy storage procedures, and control techniques within smart grid networks.

Handbook of Research on Mobile Software Engineering: Design, Implementation, and Emergent Applications - Alencar, Paulo

2012-05-31

The popularity of an increasing number of mobile devices, such as PDAs, laptops, smart phones, and tablet computers, has made the mobile device the central method of communication in many societies. These devices may be used as electronic wallets, social networking tools, or may serve as a person's main access point to the World Wide Web. The Handbook of Research on Mobile Software Engineering: Design, Implementation, and Emergent Applications highlights state-of-the-art research concerning the key issues surrounding current and future

challenges associated with the software engineering of mobile systems and related emergent applications. This handbook addresses gaps in the literature within the area of software engineering and the mobile computing world.

Handbook of Research on Novel Soft Computing Intelligent Algorithms -

Pandian Vasant 2013-08-31

"This book explores emerging technologies and best practices designed to effectively address concerns inherent in properly optimizing advanced systems, demonstrating applications in areas such as bio-engineering, space exploration, industrial informatics, information security, and nuclear and renewable energies"--Provided by publisher.

Wireless Sensor Networks - Shafiullah Khan 2016-04-21

Wireless sensor networks (WSNs) utilize fast, cheap, and effective applications to imitate the human

intelligence capability of sensing on a wider distributed scale. But acquiring data from the deployment area of a WSN is not always easy and multiple issues arise, including the limited resources of sensor devices run with one-time batteries. Additi

Computer Engineering: Concepts, Methodologies, Tools and Applications

- Management Association, Information Resources 2011-12-31

"This reference is a broad, multi-volume collection of the best recent works published under the umbrella of computer engineering, including perspectives on the fundamental aspects, tools and technologies, methods and design, applications, managerial impact, social/behavioral perspectives, critical issues, and emerging trends in the field"--

Provided by publisher.

Proceeding of 2021 International Conference on Wireless Communications, Networking and Applications - Zhihong Qian

2022-08-13

This open access proceedings includes original, unpublished, peer-reviewed research papers from the International Conference on Wireless Communications, Networking and Applications (WCNA2021), held in Berlin, Germany on December 17-19th, 2021. The topics covered include but are not limited to wireless communications, networking and applications. The papers showcased here share the latest findings on methodologies, algorithms and applications in communication and network, making the book a valuable asset for professors, researchers, engineers, and university students alike. This is an open access book.

Multimedia over Cognitive Radio Networks - Fei Hu 2014-12-04

With nearly 7 billion mobile phone subscriptions worldwide, mobility and computing have become pervasive in our society and business. Moreover, new mobile multimedia communication

services are challenging telecommunication operators. To support the significant increase in multimedia traffic—especially video—over wireless networks, new technological infrastructure must be created. Cognitive Radio Networks (CRNs) are widely regarded as one of the most promising technologies for future wireless communications. This book explains how to efficiently deliver video, audio, and other data over CRNs. Covering advanced algorithms, protocols, and hardware-/software-based experiments, this book describes how to encode video in a prioritized way to send to dynamic radio links. It discusses different FEC codes for video reliability and explains how different machine learning algorithms can be used for video quality control. It also explains how to use readily available software tools to build a CRN simulation model. This book explains both theoretical and experimental

designs. It describes how universal software radio peripheral (USRP) boards can be used for real-time, high-resolution video transmission. It also discusses how a USRP board can sense the spectrum dynamics and how it can be controlled by GNU Radio software. A separate chapter discusses how the network simulator ns-2 can be used to build a simulated CRN platform.

Ambient Assisted Living and Enhanced Living Environments - Ciprian Dobre
2016-11-02

Ambient Assisted Living and Enhanced Living Environments: Principles, Technologies and Control separates the theoretical concepts concerning the design of such systems from their real-world implementations. For each important topic, the book bridges theory and practice, introducing the instruments needed by professionals in their activities. To this aim, topics are presented in a logical sequence, with the introduction of

each topic motivated by the need to respond to claims and requirements from a wide range of AAL/ELE applications. The advantages and limitations of each model or technology are presented through concrete case studies for AAL/ELE systems. The book also presents up-to-date technological solutions to the main aspects regarding AAL/ELE systems and applications, a highly dynamic scientific domain that has gained much interest in the world of IT in the last decade. In addition, readers will find discussions on recent AAL/ELE technologies that were designed to solve some of the thorniest business problems that affect applications in areas such as health and medical supply, smart city and smart housing, Big Data and Internet of Things, and many more. Introduces readers to technologies supporting the development of Ambient Assisted Living applications Explains state-of-the-art technological

solutions for the main issues regarding AAL and Enhanced Living Environments Reports the development process of scientific and commercial applications and platforms that support AAL and ELE Identifies the advanced solutions in the context of Enhanced Living Environments
Handbook On Business Information Systems - Gunasekaran Angappa
2010-04-27

This handbook covers the vast field of business information systems, focusing particularly on developing information systems to capture and integrate information technology together with the people and their businesses. Part I of the book, "Health Care Information Systems", focuses on providing global leadership for the optimal use of health care information technology (IT). It provides knowledge about the best use of information systems for the betterment of health care services. Part II, "Business Process

Information Systems”, extends the previous theory in the area of process development by recognizing that improvements in intra-organizational business processes need to be complemented by corresponding improvements in inter-organizational processes. Part III deals with “Industrial Data and Management Systems” and captures the main challenges faced by the industry, such as the changes in the operations paradigm of manufacturing and service organizations. Finally, Part IV, “Evaluation of Business Information Systems”, discusses the empirical investigation into the adoption of systems development methodologies and the security pattern of the business systems along with the mathematical models.

Emerging Communication Technologies Based on Wireless Sensor Networks – Mubashir Husain Rehmani 2016-04-05
Emerging Communication Technologies Based on Wireless Sensor Networks:

Current Research and Future Applications fills a gap in the existing literature by combining a plethora of WSN-based emerging technologies into a single source so that researchers can form opinions regarding these technologies. It presents different types of emerging communication technologies based on WSNs and describes how wireless sensor networks can be integrated with other communication technologies. It covers many of the new techniques and demonstrates the application of WSNs. The book’s 14 chapters are divided into four parts. The first part covers the basics of wireless sensor networks and their principal working methods. The authors then move on to discuss different types of WSNs, characteristics of different types of emerging technologies based on WSNs, renewable energy sources, battery replenishment strategies, and application-specific energy

challenges of WSNs. The second part is dedicated to issues related to wireless body area networks (WBANs). It discusses wearable WSNs and their applications, standards, and research trends. The authors also discuss routing schemes devised for WBANs and thermal-aware routing protocols for WBANs. The third part focuses on different emerging communication technologies based on WSNs, including electromagnetic wireless nanosensor networks, WSNs in the IoT, management of WSNs through satellite networks, WSNs in smart homes, and cognitive radio technology in conjunction with WSNs. The last part of the book covers topics generally related to typical WSNs, including energy-efficient data collection in WSNs, key distribution mechanisms in WSNs, distributed data gathering algorithms for mobile WSNs, and finally, a novel mobility scheme for WSNs that supports IPv6.

Cyber-Physical Systems for Next-

Generation Networks - Rodrigues, Joel J. P. C. 2018-05-19

The use of cyber-physical systems in recent computing, communication, and control methods to design and operate intelligent and autonomous systems using cutting-edge technologies has led to many advances. By studying emerging trends in these systems, programming techniques can be optimized and strengthened to create a higher level of effectiveness. Cyber-Physical Systems for Next-Generation Networks provides emerging research on using cyber-physical systems (CPS) as a method to control design and operation of intelligent systems through next-generation networks. While highlighting issues such as increasing CPS complexity due to components within physical and industrial systems, this publication explores information on real-time sensing, reasoning, and adaptation for cyber-physical systems while gaining an understanding of

evolutionary computing for it. This book is a valuable resource for engineers, academicians, researchers, and graduate-level students seeking current research on CPS in cutting-edge technologies.

Internet of Things - Qusay F. Hassan
2017-12-15

Internet of Things: Challenges, Advances, and Applications provides a comprehensive introduction to IoT, related technologies, and common issues in the adoption of IoT on a large scale. It surveys recent technological advances and novel solutions for challenges in the IoT environment. Moreover, it provides detailed discussion of the utilization of IoT and its underlying technologies in critical application areas, such as smart grids, healthcare, insurance, and the automotive industry. The chapters of this book are authored by several international researchers and industry experts. This book is

composed of 18 self-contained chapters that can be read, based on interest. Features: Introduces IoT, including its history, common definitions, underlying technologies, and challenges Discusses technological advances in IoT and implementation considerations Proposes novel solutions for common implementation issues Explores critical application domains, including large-scale electric power distribution networks, smart water and gas grids, healthcare and e-Health applications, and the insurance and automotive industries The book is an excellent reference for researchers and post-graduate students working in the area of IoT, or related areas. It also targets IT professionals interested in gaining deeper knowledge of IoT, its challenges, and application areas.

Smart Trends in Systems, Security and Sustainability - Xin-She Yang
2017-12-30

The volume deals with sustainability transitions which are transformations of major socio-technical systems of provision and use in areas such as energy, water, mobility, and food, towards more sustainable ways of production and consumption. The book provides insights of World Conference on Smart Trends in Systems, Security and Sustainability (WS4 2017) which is divided into different sections such as Smart IT Infrastructure for Sustainable Society; Smart Management prospective for Sustainable Society; Smart Secure Systems for Next Generation Technologies; Smart Trends for Computational Graphics and Image Modelling; and Smart Trends for Biomedical and Health Informatics. The book volume contains 31 high-quality papers presented at WS4 2017.

Handbook of Research on E-Services in the Public Sector: E-Government Strategies and Advancements - Al Ajeeli, Abid Thyab 2010-08-31

"This book assists its readers in

recommending formulation of ICT strategies for e-government implementation and maintenance from the perspective of acknowledging the importance of e-Governance for building institutions to achieve transparency and accountability, and eventually democratic governance"-- Provided by publisher.

Data-Driven Intelligence in Wireless Networks - Muhammad Khalil Afzal 2023-03-27

This book highlights the importance of data-driven techniques to solve wireless communication problems. It presents a number of problems (e.g., related to performance, security, and social networking), and provides solutions using various data-driven techniques, including machine learning, deep learning, federated learning, and artificial intelligence. This book details wireless communication problems that can be solved by data-driven solutions. It presents a generalized

approach toward solving problems using specific data-driven techniques. The book also develops a taxonomy of problems according to the type of solution presented and includes several case studies that examine data-driven solutions for issues such as quality of service (QoS) in heterogeneous wireless networks, 5G/6G networks, and security in wireless networks. The target audience of this book includes professionals, researchers, professors, and students working in the field of networking, communications, machine learning, and related fields.

Smart Trends in Computing and Communications - Yu-Dong Zhang
2019-12-03

This book gathers high-quality papers presented at the International Conference on Smart Trends for Information Technology and Computer Communications (SmartCom 2019), organized by the Global Knowledge

Research Foundation (GR Foundation) from 24 to 25 January 2019. It covers the state-of-the-art and emerging topics pertaining to information, computer communications, and effective strategies for their use in engineering and managerial applications. It also explores and discusses the latest technological advances in, and future directions for, information and knowledge computing and its applications.

Meta-Heuristics Optimization Algorithms in Engineering, Business, Economics, and Finance - Vasant, Pandian M. 2012-09-30

Optimization techniques have developed into a significant area concerning industrial, economics, business, and financial systems. With the development of engineering and financial systems, modern optimization has played an important role in service-centered operations and as such has attracted more attention to this field. Meta-

heuristic hybrid optimization is a newly development mathematical framework based optimization technique. Designed by logicians, engineers, analysts, and many more, this technique aims to study the complexity of algorithms and problems. Meta-Heuristics Optimization Algorithms in Engineering, Business, Economics, and Finance explores the emerging study of meta-heuristics optimization algorithms and methods and their role in innovated real world practical applications. This book is a collection of research on the areas of meta-heuristics optimization algorithms in engineering, business, economics, and finance and aims to be a comprehensive reference for decision makers, managers, engineers, researchers, scientists, financiers, and economists as well as industrialists.

Innovative Solutions for Access Control Management - Malik, Ahmad

Kamran 2016-05-16

Technological innovation and evolution continues to improve personal and professional lifestyles, as well as general organizational and business practices; however, these advancements also create potential issues in the security and privacy of the user's information. Innovative Solutions for Access Control Management features a comprehensive discussion on the trending topics and emergent research in IT security and governance. Highlighting theoretical frameworks and best practices, as well as challenges and solutions within the topic of access control and management, this publication is a pivotal reference source for researchers, practitioners, students, database vendors, and organizations within the information technology and computer science fields.

Computer and Cyber Security - Brij B. Gupta 2018-11-19

This is a monumental reference for

the theory and practice of computer security. Comprehensive in scope, this text covers applied and practical elements, theory, and the reasons for the design of applications and security techniques. It covers both the management and the engineering issues of computer security. It provides excellent examples of ideas and mechanisms that demonstrate how disparate techniques and principles are combined in widely-used systems. This book is acclaimed for its scope, clear and lucid writing, and its combination of formal and theoretical aspects with real systems, technologies, techniques, and policies.

Innovative Research and Applications in Next-Generation High Performance Computing - Hassan, Qusay F.

2016-07-05

High-performance computing (HPC) describes the use of connected computing units to perform complex tasks. It relies on parallelization

techniques and algorithms to synchronize these disparate units in order to perform faster than a single processor could, alone. Used in industries from medicine and research to military and higher education, this method of computing allows for users to complete complex data-intensive tasks. This field has undergone many changes over the past decade, and will continue to grow in popularity in the coming years. Innovative Research Applications in Next-Generation High Performance Computing aims to address the future challenges, advances, and applications of HPC and related technologies. As the need for such processors increases, so does the importance of developing new ways to optimize the performance of these supercomputers. This timely publication provides comprehensive information for researchers, students in ICT, program developers, military and government organizations, and

business professionals.

Advances in Information Communication Technology and Computing - Vishal Goar 2020-08-18

This book features selected research papers presented at the International Conference on Advances in Information Communication Technology and Computing (AICTC 2019), held at the Government Engineering College Bikaner, Bikaner, India, on 8-9 November 2019. It covers ICT-based approaches in the areas ICT for energy efficiency, life cycle assessment of ICT, green IT, green information systems, environmental informatics, energy informatics, sustainable HCI and computational sustainability.

Technological Advancements and Applications in Mobile Ad-Hoc

Networks: Research Trends - Lakhtaria, Kamaljit I. 2012-03-31

Mobile ad-hoc networks must be rapidly interoperable, customizable, and quick to adapt to the latest

technological advances. Technological Advancements and Applications in Mobile Ad-Hoc Networks: Research Trends offers a current look into the latest research in the field, frameworks for development, and future directions. As mobile networks become more complex, it is vital for researchers, practitioners, and academics alike to stay abreast within the ever-burgeoning field. With a wide range of applications, theories, and use across industrial, commercial, and domestic settings, mobile ad-hoc networks are a topic of vital discussion, and this volume offers the cutting edge developments with contributions from around the world.

Handbook of Research on Artificial Intelligence Techniques and

Algorithms - Vasant, Pandian 2014-11-30

For decades, optimization methods such as Fuzzy Logic, Artificial Neural Networks, Firefly, Simulated

annealing, and Tabu search, have been capable of handling and tackling a wide range of real-world application problems in society and nature. Analysts have turned to these problem-solving techniques in the event during natural disasters and chaotic systems research. The Handbook of Research on Artificial Intelligence Techniques and Algorithms highlights the cutting edge developments in this promising research area. This premier reference work applies Meta-heuristics Optimization (MO) Techniques to real world problems in a variety of fields including business, logistics, computer science, engineering, and government. This work is particularly relevant to researchers, scientists, decision-makers, managers, and practitioners.

Trends in Intelligent Systems and Computer Engineering - Oscar Castillo
2008-04-25

This volume contains contributions

from participants in the 2007 International Multiconference of Engineers and Computer Scientists. It covers a variety of subjects in the frontiers of intelligent systems and computer engineering and their industrial applications. The book offers up-to-date information on advances in intelligent systems and computer engineering and also serves as an excellent reference work for researchers and graduate students working in the field.

Biomedical Information Technology - David Dagan Feng 2019-10-22
Biomedical Information Technology, Second Edition, contains practical, integrated clinical applications for disease detection, diagnosis, surgery, therapy and biomedical knowledge discovery, including the latest advances in the field, such as biomedical sensors, machine intelligence, artificial intelligence, deep learning in medical imaging, neural networks,

natural language processing, large-scale histopathological image analysis, virtual, augmented and mixed reality, neural interfaces, and data analytics and behavioral informatics in modern medicine. The enormous growth in the field of biotechnology necessitates the utilization of information technology for the management, flow and organization of data. All biomedical professionals can benefit from a greater understanding of how data can be efficiently managed and utilized through data compression, modeling, processing, registration, visualization, communication and large-scale biological computing. Presents the world's most recognized authorities who give their "best practices" Provides professionals with the most up-to-date and mission critical tools to evaluate the latest advances in the field Gives new staff the technological fundamentals and updates experienced professionals

with the latest practical integrated clinical applications
Energy-Efficient Distributed Computing Systems - Albert Y. Zomaya
2012-07-26

The energy consumption issue in distributed computing systems raises various monetary, environmental and system performance concerns. Electricity consumption in the US doubled from 2000 to 2005. From a financial and environmental standpoint, reducing the consumption of electricity is important, yet these reforms must not lead to performance degradation of the computing systems. These contradicting constraints create a suite of complex problems that need to be resolved in order to lead to 'greener' distributed computing systems. This book brings together a group of outstanding researchers that investigate the different facets of green and energy efficient distributed computing. Key features:

One of the first books of its kind
Features latest research findings on
emerging topics by well-known
scientists Valuable research for grad
students, postdocs, and researchers
Research will greatly feed into other
technologies and application domains
**Computer Methods in Medicine and
Health Care** - G. Casalino 2022-10-27

The last decade has seen great
progress in modern healthcare;
progress which could not have been
achieved without the developments in
computer science and technology.
Image processing, disease modeling,
biosensors and bioprinting are just
some of the innovations which have
contributed to improving the accuracy
and efficiency of diagnosis and the
more effective treatment of patients.
This book presents the accepted
papers from CMMHC2022, the Workshop
on Computer Methods in Medicine &
Health Care, hosted from Hainan,
China and held as an online event
from 22 to 25 September 2022. CMMHC

is aimed at fostering high-quality
research by bringing together
scholars, doctors, engineers, and
radiologists to discuss emerging
ideas, approaches, theories,
frameworks, and practices in
preventive healthcare technology. The
organizers received 40 submissions
for the 2022 workshop. These were
subjected to a thorough peer-review
process, with each paper being
reviewed by at least 2 members of the
Technical Committee. From the
original submissions, 15 were
selected for presentation and
publication, resulting in a final
acceptance rate of less than 40%. The
main focus of the papers is hospital
informatization, medical imaging and
health management, which continue to
be major research hotspots. The book
offers an overview of recent research
and developments in the field of
computer methods in medicine and
healthcare, and will provide a useful
reference to the direction of future

developments for those researchers and practitioners facing the challenges and demands of the era of big data.

Intelligent Decision Systems in Large-Scale Distributed Environments

- Pascal Bouvry 2011-06-19

One of the most challenging issues for the intelligent decision systems is to effectively manage the large-scale complex distributed environments such as computational clouds, grids, ad hoc and P2P networks, under the different types of users, their relations, and real-world uncertainties. In this context the IT resources and services usually belong to different owners (institutions, enterprises, or individuals) and are managed by different administrators. These administrators conform to different sets of rules and configuration directives, and can impose different usage policies on the system users. Additionally, uncertainties are

presented in various types of information that are incomplete, imprecise, fragmentary or overloading, which hinders the full and precise determination of the evaluation criteria, their subsequent and selection, the assignment scores, and eventually the final integrated decision result. This book presents new ideas, analysis, implementations and evaluation of the next generation intelligent techniques for solving complex decision problems in large-scale distributed systems. In 15 chapters several important formulations of the decision problems in heterogeneous environments are identified and a review of the recent approaches, from game theoretical models and computational intelligent techniques, such as genetic, memetic and evolutionary algorithms, to intelligent multi-agent systems and networking are presented. We believe that this volume will serve as a reference for the students,

researchers and industry practitioners working in or are interested in joining interdisciplinary works in the areas of intelligent decision systems using emergent distributed computing paradigms. It will also allow newcomers to grasp key concerns and potential solutions on the selected topics.

Applying Big Data Analytics in Bioinformatics and Medicine - Lytras, Miltiadis D. 2017-06-16

Many aspects of modern life have become personalized, yet healthcare practices have been lagging behind in this trend. It is now becoming more common to use big data analysis to improve current healthcare and medicinal systems, and offer better health services to all citizens. Applying Big Data Analytics in Bioinformatics and Medicine is a comprehensive reference source that overviews the current state of medical treatments and systems and

offers emerging solutions for a more personalized approach to the healthcare field. Featuring coverage on relevant topics that include smart data, proteomics, medical data storage, and drug design, this publication is an ideal resource for medical professionals, healthcare practitioners, academicians, and researchers interested in the latest trends and techniques in personalized medicine.

The Industrial Electronics Handbook - Five Volume Set - Bogdan M. Wilamowski 2011-03-04

Industrial electronics systems govern so many different functions that vary in complexity—from the operation of relatively simple applications, such as electric motors, to that of more complicated machines and systems, including robots and entire fabrication processes. The Industrial Electronics Handbook, Second Edition combines traditional and new **Industrial Communication Systems** -

Bogdan M. Wilamowski 2018-10-03
The Industrial Electronics Handbook, Second Edition, Industrial Communications Systems combines traditional and newer, more specialized knowledge that helps industrial electronics engineers develop practical solutions for the design and implementation of high-power applications. Embracing the broad technological scope of the field, this collection explores fundamental areas, including analog and digital circuits, electronics, electromagnetic machines, signal processing, and industrial control and communications systems. It also facilitates the use of intelligent systems—such as neural networks, fuzzy systems, and evolutionary methods—in terms of a hierarchical structure that makes factory control and supervision more efficient by addressing the needs of all production components. Enhancing its

value, this fully updated collection presents research and global trends as published in the IEEE Transactions on Industrial Electronics Journal, one of the largest and most respected publications in the field. Modern communication systems in factories use many different—and increasingly sophisticated—systems to send and receive information. Industrial Communication Systems spans the full gamut of concepts that engineers require to maintain a well-designed, reliable communications system that can ensure successful operation of any production process. Delving into the subject, this volume covers: Technical principles Application-specific areas Technologies Internet programming Outlook, including trends and expected challenges Other volumes in the set: Fundamentals of Industrial Electronics Power Electronics and Motor Drives Control and Mechatronics Intelligent Systems