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Computer and Information Sciences II - Erol Gelenbe 2011-09-30
Information technology is the enabling foundation for all of human activity at the beginning of the 21st century, and advances in this area are crucial to all of us. These advances are taking place all

over the world and can only be followed and perceived when researchers from all over the world assemble, and exchange their ideas in conferences such as the one presented in this proceedings volume regarding the 26th International Symposium on Computer and Information Systems, held at the Royal Society in London on 26th to 28th September 2011. Computer and Information Sciences II contains novel advances in the state of the art covering applied research in electrical and computer engineering and computer science, across the broad area of information technology. It provides access to the main innovative activities in research across the world, and points to the results obtained recently by some of the most active teams in both Europe and Asia.

Visual Information Processing in Wireless Sensor Networks: Technology, Trends and Applications - Ang, Li-Minn 2011-09-30

"This book provides a central source of reference on visual information processing in wireless sensor network environments and its technology, application, and society issues"--

Proceedings of Data Analytics and Management - Deepak Gupta 2021-11-21

This book includes original unpublished contributions presented at the International Conference on Data Analytics and Management (ICDAM 2021), held at Jan Wyzykowski University, Poland, during June 2021. The book covers the topics in data analytics, data management, big data, computational intelligence, and communication networks. The book presents innovative work by leading academics, researchers, and experts from industry which is useful for young researchers and students.

Measurement, Instrumentation, and Sensors Handbook - John G. Webster 2017-12-19

The Second Edition of the bestselling Measurement, Instrumentation, and Sensors Handbook brings together all

aspects of the design and implementation of measurement, instrumentation, and sensors. Reflecting the current state of the art, it describes the use of instruments and techniques for performing practical measurements in engineering, physics, chemistry, and the life sciences and discusses processing systems, automatic data acquisition, reduction and analysis, operation characteristics, accuracy, errors, calibrations, and the incorporation of standards for control purposes. Organized according to measurement problem, the Spatial, Mechanical, Thermal, and Radiation Measurement volume of the Second Edition: Contains contributions from field experts, new chapters, and updates to all 96 existing chapters Covers instrumentation and measurement concepts, spatial and mechanical variables, displacement, acoustics, flow and spot velocity, radiation, wireless sensors and instrumentation, and control and human factors A concise and useful reference for engineers, scientists, academic faculty, students, designers, managers, and industry professionals involved in instrumentation and measurement research and development, Measurement, Instrumentation, and Sensors Handbook, Second Edition: Spatial, Mechanical, Thermal, and Radiation Measurement provides readers with a greater understanding of advanced applications.

Evolution in Computational Intelligence - Vikrant Bhateja 2020-09-08

This book presents the proceedings of 8th International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA 2020), which aims to bring together researchers, scientists, engineers and practitioners to share new ideas and experiences in the domain of intelligent computing theories with prospective applications to various engineering disciplines. The book is divided

into two volumes: Evolution in Computational Intelligence (Volume 1) and Intelligent Data Engineering and Analytics (Volume 2). Covering a broad range of topics in computational intelligence, the book features papers on theoretical as well as practical aspects of areas such as ANN and genetic algorithms, computer interaction, intelligent control optimization, evolutionary computing, intelligent e-learning systems, machine learning, mobile computing, and multi-agent systems. As such, it is a valuable reference resource for postgraduate students in various engineering disciplines.

Technology and Applications of Autonomous Underwater Vehicles - Gwyn Griffiths 2002-11-28

The oceans are a hostile environment, and gathering information on deep-sea life and the seabed is incredibly difficult. Autonomous underwater vehicles are robot submarines that are revolutionizing the way in which researchers and industry obtain data. Advances in technology have resulted in capable vehicles that have made new discoveries on how th

Applied Optimization Methods for Wireless Networks - Y. Thomas Hou 2014-04-10

Provides a variety of practical optimization techniques and modeling tips for solving challenging wireless networking problems. Case studies show how the techniques can be applied in practice, homework exercises are given at the end of each chapter, and PowerPoint slides are available online, together with a solutions manual for instructors.

Computer Aided Systems Theory -- EUROCAST 2011 - Roberto Moreno-Díaz 2012-01-26

The two-volume proceedings, LNCS 6927 and LNCS 6928, constitute the papers presented at the 13th International Conference on Computer Aided Systems Theory, EUROCAST 2011, held in February 2011 in Las Palmas de Gran Canaria, Spain. The

total of 160 papers presented were carefully reviewed and selected for inclusion in the books. The contributions are organized in topical sections on concepts and formal tools; software applications; computation and simulation in modelling biological systems; intelligent information processing; heurist problem solving; computer aided systems optimization; model-based system design, simulation, and verification; computer vision and image processing; modelling and control of mechatronic systems; biomimetic software systems; computer-based methods for clinical and academic medicine; modeling and design of complex digital systems; mobile and autonomous transportation systems; traffic behaviour, modelling and optimization; mobile computing platforms and technologies; and engineering systems applications.

Wireless-Powered Communication Networks - Dusit Niyato 2016-11-17

Learn the fundamentals of architecture design, protocol optimization, and application development for wireless-powered communication networks with this authoritative guide. Readers will gain a detailed understanding of the issues surrounding architecture and protocol design, with key topics covered including relay-based energy harvesting systems, multiple-antenna systems for simultaneous wireless information and power transfer (SWIPT), performance modeling and analysis, and ambient wireless energy harvesting based cellular systems. Current applications of energy harvesting and transfer in different wireless networking scenarios are discussed, aiding the understanding of practical system development and implementation issues from an engineering perspective. The first book to provide a unified view of energy harvesting and wireless power transfer networks from a communications perspective,

this is an essential text for researchers working on wireless communication networks and wireless systems, RF engineers, and wireless application developers.

IAENG Transactions on Engineering Sciences - Ao Sio-iong 2017-11-17

Two large international conferences on Advances in Engineering Sciences were held in London, UK, 29 June - 1 July, 2016, under the World Congress on Engineering (WCE 2016), and San Francisco, USA, 19-21 October, 2016, under the World Congress on Engineering and Computer Science (WCECS 2016) respectively. This volume contains 42 revised and extended research articles written by prominent researchers participating in the conferences. Topics covered include electrical engineering, manufacturing engineering, industrial engineering, computer science, engineering mathematics and industrial applications. The book offers state-of-the-art advances in engineering sciences and also serves as an excellent reference work for researchers and graduate students working with/on engineering sciences.

Rechargeable Sensor Networks - Jiming Chen 2014

The harvesting of energy from ambient energy sources to power electronic devices has been recognized as a promising solution to the issue of powering the ever-growing number of mobile devices around us.Key technologies in the rapidly growing field of energy harvesting focus on developing solutions to capture ambient energy surrounding the mobile devices and convert it into usable electrical energy for the purpose of recharging said devices. Achieving a sustainable network lifetime via battery-aware designs brings forth a new frontier for energy optimization techniques. These techniques had, in their early stages, resulted in the development of low-power hardware designs. Today, they have evolved into power-aware designs and even battery-aware designs.This book covers recent results in

the field of rechargeable sensor networks, including technologies and protocol designs to enable harvesting energy from alternative energy sources such as vibrations, temperature variations, wind, solar, and biochemical energy and passive human power.

Wireless Sensor Networks - Zhanjun Hao 2020-11-24

This book constitutes the refereed proceedings of the 14th China Conference on Wireless Sensor Networks, CWSN 2020 held in Dunhuang, China, in September 2020. The 20 full papers were carefully reviewed and selected from 85 submissions. The papers are organized in topical sections on wireless sensor network theory and technology, basic theory and application of internet of things, internet of things security and privacy protection, and perception and positioning.

Intelligent Systems in Cybernetics and Automation Control Theory - Radek Silhavy 2018-08-28

This book presents real-world problems and pioneering research that reflect novel approaches to cybernetics, algorithms and software engineering in the context of intelligent systems. It gathers the peer-reviewed proceedings of the 2nd Computational Methods in Systems and Software 2018 (CoMeSySo 2018), a conference that broke down traditional barriers by being held online. The goal of the event was to provide an international forum for discussing the latest high-quality research results.

Wireless Information and Power Transfer: A New Paradigm for Green Communications - Dushantha Nalin K. Jayakody 2017-07-20

This book presents breakthroughs in the design of Wireless Energy Harvesting (WEH) networks. It bridges the gap between WEH through radio waves communications and power transfer, which have largely been designed separately. The authors present an overview of the RF-EHNs including system architecture and RF energy harvesting techniques and

existing applications. They also cover the idea of WEH in novel discoveries of information, the theoretical bounds in WEH, wireless sensor networks, usage of modern channel coding together with WEH, energy efficient resource allocation mechanisms, distributed self-organized energy efficient designs, delay-energy trade-off, specific protocols for energy efficient communication designs, D2D communication and energy efficiency, cooperative wireless networks, and cognitive networks.

Ad Hoc and Sensor Networks - Carlos de Morais Cordeiro 2011-02-28

This book provides a comprehensive yet easy coverage of ad hoc and sensor networks and fills the gap of existing literature in this growing field. It emphasizes that there is a major interdependence among various layers of the network protocol stack. Contrary to wired or even one-hop cellular networks, the lack of a fixed infrastructure, the inherent mobility, the wireless channel, and the underlying routing mechanism by ad hoc and sensor networks introduce a number of technological challenges that are difficult to address within the boundaries of a single protocol layer. All existing textbooks on the subject often focus on a specific aspect of the technology, and fail to provide critical insights on cross-layer interdependencies. To fully understand these intriguing networks, one need to grasp specific solutions individually, and also the many interdependencies and cross-layer interactions.

Rechargeable Sensor Networks: Technology, Theory, and Application - Jiming Chen 2014-01-28

The harvesting of energy from ambient energy sources to power electronic devices has been recognized as a promising solution to the issue of powering the ever-growing number of mobile devices around us. Key technologies in the rapidly growing field of energy harvesting focus on

developing solutions to capture ambient energy surrounding the mobile devices and convert it into usable electrical energy for the purpose of recharging said devices. Achieving a sustainable network lifetime via battery-aware designs brings forth a new frontier for energy optimization techniques. These techniques had, in their early stages, resulted in the development of low-power hardware designs. Today, they have evolved into power-aware designs and even battery-aware designs. This book covers recent results in the field of rechargeable sensor networks, including technologies and protocol designs to enable harvesting energy from alternative energy sources such as vibrations, temperature variations, wind, solar, and biochemical energy and passive human power. Contents:Wind Energy Harvesting for Recharging Wireless Sensor Nodes: Brief Review and a Case Study (Yen Kheng Tan, Dibin Zhu and Steve Beeby)Rechargeable Sensor Networks with Magnetic Resonant Coupling (Liguang Xie, Yi Shi, Y Thomas Hou, Wenjing Lou, Hanif D Sherali and Huaibei Zhou)Cross-Layer Resource Allocation in Energy-Harvesting Sensor Networks (Zhoujia Mao, C Emre Koksal and Ness B Shroff)Energy-Harvesting Technique and Management for Wireless Sensor Networks (Jianhui Zhang and Xiangyang Li)Information Capacity of an AWGN Channel Powered by an Energy-Harvesting Source (R Rajesh, P K Deekshith and Vinod Sharma)Energy Harvesting in Wireless Sensor Networks (Nathalie Mitton and Riaan Wolhuter)Topology Control for Wireless Sensor Networks and Ad Hoc Networks (Sunil Jardosh)An Evolutionary Game Approach for Rechargeable Sensor Networks (Majed Haddad, Eitan Altman, Dieter Fiems and Julien Gaillard)Marine Sediment Energy Harvesting for Sustainable Underwater Sensor Networks (Baikun Li, Lei Wang and Jun-Hong Cui)Wireless Rechargeable

Sensor Networks in the Smart Grid (Melike Erol-Kantarci and Hussein T Mouftah)Energy-Harvesting Methods for Medical Devices (Pedro Dinis Gaspar, Virginie Felizardo and Nuno M Garcia) Readership: Graduates, researchers, and professionals studying/dealing with networking, computer engineering, parallel computing, and electrical & electronic engineering. Keywords:Rechargeable Sensor;Energy Harvesting Technology;Renewable Sensor NetworksKey Features:This book provides comprehensive coverage from hardware design, protocol design, to applications. This book provides very recent results. And this book has prominent contributorsWith the increasing deterioration of global warming, energy harvesting technologies as a green source of energy are of great interest to research community. For wireless networks especially wireless sensor networks, the introduction of energy harvesting technologies can address the challenge of energy constraint and obtain perpetual network operation. Although there are lots of existing publications on energy harvesting, most of them are journal and conference papers, which concentrate on specific research problems and do not provide a comprehensive overview and prerequisite preliminaries to understand the energy harvesting technologies. To the best of our knowledge, there are only a few books which are concerned with energy harvesting technologies. One main drawback of these books are that they all elaborate on the hardware design of energy harvesting devices but neglect the impact of hardware design on the performance of overall networks which is also of great significance in practice. For example, the energy management subsystem should be designed to fulfill all the tasks without running out of energy, which is dependent on the available energy of each node and all the tasks of the whole networks. Hence, the

algorithm and protocol optimization are as important as hardware design. But this was not elaborated in existing publications and motivates this book

Communication, Management and Information Technology - Marcelo Sampaio de Alencar 2016-11-03

Communication, Management and Information Technology contains the contributions presented at the International Conference on Communication, Management and Information Technology (ICCMIT 2016, Cosenza, Italy, 26-29 April 2016, organized by the Universal Society of Applied Research (USAR). The book aims at researchers, scientists, engineers, and scholar students interested or involved in Computer Science and Systems, Communication, and Management.

Machine-to-Machine Communications - Vojislav B. Misic 2014-06-25

With the number of machine-to-machine (M2M)–enabled devices projected to reach 20 to 50 billion by 2020, there is a critical need to understand the demands imposed by such systems. Machine-to-Machine Communications: Architectures, Technology, Standards, and Applications offers rigorous treatment of the many facets of M2M communication, including its integration with current technology. Presenting the work of a different group of international experts in each chapter, the book begins by supplying an overview of M2M technology. It considers proposed standards, cutting-edge applications, architectures, and traffic modeling and includes case studies that highlight the differences between traditional and M2M communications technology. Details a practical scheme for the forward error correction code design Investigates the effectiveness of the IEEE 802.15.4 low data rate wireless personal area network standard for use in M2M communications Identifies algorithms that will ensure functionality, performance, reliability, and

security of M2M systems Illustrates the relationship between M2M systems and the smart power grid Presents techniques to ensure integration with and adaptation of existing communication systems to carry M2M traffic Providing authoritative insights into the technologies that enable M2M communications, the book discusses the challenges posed by the use of M2M communications in the smart grid from the aspect of security and proposes an efficient intrusion detection system to deal with a number of possible attacks. After reading this book, you will develop the understanding required to solve problems related to the design, deployment, and operation of M2M communications networks and systems.

Green, Energy-Efficient and Sustainable Networks - Josip Lorincz 2020-01-21

The book Green, Energy-Efficient and Sustainable Networks provides insights and solutions for a range of problems in the field of obtaining greener, energy-efficient, and sustainable networks. The book contains the outcomes of the Special Issue on “Green, Energy-Efficient and Sustainable Networks” of the Sensors journal. Seventeen high-quality papers published in the Special Issue have been collected and reproduced in this book, demonstrating significant achievements in the field. Among the published papers, one paper is an editorial and one is a review, while the remaining 15 works are research articles. The published papers are self-contained peer-reviewed scientific works that are authored by more than 75 different contributors with both academic and industry backgrounds. The editorial paper gives an introduction to the problem of information and communication technology (ICT) energy consumption and greenhouse gas emissions, presenting the state of the art and future trends in terms of improving the energy-efficiency of wireless networks and data

centers, as the major energy consumers in the ICT sector. In addition, the published articles aim to improve energy efficiency in the fields of software-defined networking, Internet of things, machine learning, authentication, energy harvesting, wireless relay systems, routing metrics, wireless sensor networks, device-to-device communications, heterogeneous wireless networks, and image sensing. The last paper is a review that gives a detailed overview of energy-efficiency improvements and methods for the implementation of fifth-generation networks and beyond. This book can serve as a source of information in industrial, teaching, and/or research and development activities. The book is a valuable source of information, since it presents recent advances in different fields related to greening and improving the energy-efficiency and sustainability of those ICTs particularly addressed in this book

RFID and Sensor Networks - Yan Zhang 2009-11-04

The escalating demand for ubiquitous computing along with the complementary and flexible natures of Radio Frequency Identification (RFID) and Wireless Sensor Networks (WSNs) have sparked an increase in the integration of these two dynamic technologies. Although a variety of applications can be observed under development and in practical use, there

Wireless Rechargeable Sensor Networks - Yuanyuan Yang 2015-04-30

This SpringerBrief provides a concise guide to applying wireless energy transfer techniques in traditional battery-powered sensor networks. It examines the benefits and challenges of wireless power including efficiency and reliability. The authors build a wireless rechargeable sensor networks from scratch and aim to provide perpetual network operation. Chapters cover a wide range of topics from the

collection of energy information and recharge scheduling to joint design with typical sensing applications such as data gathering. Problems are approached using a natural combination of probability theory, optimization, algorithm and protocol designs. All proposed mechanisms are evaluated by extensive simulations. Wireless Rechargeable Sensor Networks targets professionals and researchers working in networks, wireless communications, energy technology and information technology. Advanced-level students studying electrical engineering and computer science will also find this material useful as a study guide.

Wireless Sensor Networks and Energy Efficiency: Protocols, Routing and Management - Zaman, Noor 2012-01-31

"This book focuses on wireless sensor networks and their operation, covering topics including routing, energy efficiency and management"--

Modeling, Methodologies and Tools for Molecular and Nano-scale Communications - Junichi Suzuki 2017-03-15

This book reports on cutting-edge modeling techniques, methodologies and tools used to understand, design and engineer nanoscale communication systems, such as molecular communication systems. Moreover, it includes introductory materials for those who are new to the field. The book's interdisciplinary approach, which merges perspectives in computer science, the biological sciences and nanotechnology, will appeal to graduate students and researchers in these three areas.The book is organized into five parts, the first of which describes the fundamentals of molecular communication, including basic concepts, models and designs. In turn, the second part examines specific types of molecular communication found in biological systems, such as neuronal communication in the brain. The book continues by exploring further types of

nanoscale communication, such as fluorescence resonance energy transfer and electromagnetic-based nanoscale communication, in the third part, and by describing nanomaterials and structures for practical applications in the fourth. Lastly, the book presents nanomedical applications such as targeted drug delivery and biomolecular sensing.

Data Management, Analytics and Innovation - Neha Sharma 2019-10-24

This book presents the latest findings in the areas of data management and smart computing, big data management, artificial intelligence and data analytics, along with advances in network technologies. It addresses state-of-the-art topics and discusses challenges and solutions for future development. Gathering original, unpublished contributions by scientists from around the globe, the book is mainly intended for a professional audience of researchers and practitioners in academia and industry.

Distributed Computing and Internet Technology - Günter Fahrnberger 2019-01-02

This book constitutes the proceedings of the 15th International Conference on Distributed Computing and Internet Technology, ICDCIT 2019, held in Bhubaneswar, India, in January 2019. The 18 full papers and 14 short papers presented together with 5 invited papers were carefully reviewed and selected from 115 submissions. The papers present research in three areas: distributed computing, Internet technologies, and societal applications.

Advances in Computing and Communications, Part III - Ajith Abraham 2011-07-08

This volume is the third part of a four-volume set (CCIS 190, CCIS 191, CCIS 192, CCIS 193), which constitutes the refereed proceedings of the First International Conference on Computing and Communications, ACC 2011, held in Kochi, India, in July 2011. The 70 revised full papers presented in this

volume were carefully reviewed and selected from a large number of submissions. The papers are organized in topical sections on security, trust and privacy; sensor networks; signal and image processing; soft computing techniques; system software; vehicular communications networks.

Underwater Acoustic Sensor Networks - Yang Xiao 2010-05-19

A detailed review of underwater channel characteristics, Underwater Acoustic Sensor Networks investigates the fundamental aspects of underwater communication. Prominent researchers from around the world consider contemporary challenges in the development of underwater acoustic sensor networks (UW-ASNs) and introduce a cross-layer approach for effective integration of all communication functionalities. Discussing architectures for two- and three-dimensional sensor networks, this authoritative resource clearly delineates the main differences between terrestrial and underwater sensor networks—covering the wide range of topics related to UW-ASNs. It examines efficient distributed routing algorithms for delay-insensitive and delay-sensitive applications and introduces a realistic acoustic model characterized by channel utilization efficiency that enables proper setting of the optimal packet size for underwater communication. It also: Provides efficient sensor communication protocols for the underwater environment Addresses the topology control problem for sparse and dense 3D networks Presents a novel distributed MAC protocol that incorporates a unique closed-loop distributed algorithm for setting the optimal transmit power and code length The book includes coverage of routing, fault tolerance, time synchronization, optimal clustering, medium access control, software, hardware, and channel modeling. Exploring the need to design an energy-efficient cross-layer

protocol suite, this resource provides the understanding required to achieve high-performance channel access, routing, event transport reliability, and data flow control with underwater acoustic sensors.

Effective Surveillance for Homeland Security - Francesco Flammini 2013-06-13

Effective Surveillance for Homeland Security: Balancing Technology and Social Issues provides a comprehensive survey of state-of-the-art methods and tools for the surveillance and protection of citizens and critical infrastructures against natural and deliberate threats. Focusing on current technological challenges involving multi-disciplinary problem analysis and systems engineering approaches, it provides an overview of the most relevant aspects of surveillance systems in the framework of homeland security. Addressing both advanced surveillance technologies and the related socio-ethical issues, the book consists of 21 chapters written by international experts from the various sectors of homeland security. Part I, Surveillance and Society, focuses on the societal dimension of surveillance—stressing the importance of societal acceptability as a precondition to any surveillance system. Part II, Physical and Cyber Surveillance, presents advanced technologies for surveillance. It considers developing technologies that are part of a framework whose aim is to move from a simple collection and storage of information toward proactive systems that are able to fuse several information sources to detect relevant events in their early incipient phase. Part III, Technologies for Homeland Security, considers relevant applications of surveillance systems in the framework of homeland security. It presents real-world case studies of how innovative technologies can be used to effectively improve the security of sensitive areas

without violating the rights of the people involved. Examining cutting-edge research topics, the book provides you with a comprehensive understanding of the technological, legislative, organizational, and management issues related to surveillance. With a specific focus on privacy, it presents innovative solutions to many of the issues that remain in the quest to balance security with the preservation of privacy that society demands.

Wireless Sensor Systems for Extreme Environments - Habib F. Rashvand 2017-06-09

Provides unique coverage of wireless sensor system applications in space, underwater, underground, and extreme industrial environments in one volume This book covers the challenging aspects of wireless sensor systems and the problems and conditions encountered when applying them in outer space, under the water, below the ground, and in extreme industrial environments. It explores the unique aspects of designs and solutions that address those problems and challenges, and illuminates the connections, similarities, and differences between the challenges and solutions in those various environments. The creation of Wireless Sensor Systems for Extreme Environments is a response to the spread of wireless sensor technology into fields of health, safety, manufacturing, space, environmental, smart cities, advanced robotics, surveillance, and agriculture. It is the first of its kind to present, in a single reference, the unique aspects of wireless sensor system design, development, and deployment in such extreme environments—and to explore the similarities and possible synergies between them. The application of wireless sensor systems in these varied environments has been lagging dramatically behind their application in more conventional environments, making this an especially relevant book for investigators and practitioners in all of these

areas. Wireless Sensor Systems for Extreme Environments is presented in five parts that cover: Wireless Sensor Systems for Extreme Environments—Generic Solutions Space WSS Solutions and Applications Underwater and Submerged WSS Solutions Underground and Confined Environments WSS Solutions Industrial and Other WSS Solutions This book is a welcome guide for researchers, post-graduate students, engineers and scientists who design and build operational and environmental control systems, emergency response systems, and situational awareness systems for unconventional environments.

Encyclopedia of Renewable and Sustainable Materials - 2020-01-09

Encyclopedia of Renewable and Sustainable Materials provides a comprehensive overview, covering research and development on all aspects of renewable, recyclable and sustainable materials. The use of renewable and sustainable materials in building construction, the automotive sector, energy, textiles and others can create markets for agricultural products and additional revenue streams for farmers, as well as significantly reduce carbon dioxide (CO2) emissions, manufacturing energy requirements, manufacturing costs and waste. This book provides researchers, students and professionals in materials science and engineering with tactics and information as they face increasingly complex challenges around the development, selection and use of construction and manufacturing materials. Covers a broad range of topics not available elsewhere in one resource Arranged thematically for ease of navigation Discusses key features on processing, use, application and the environmental benefits of renewable and sustainable materials Contains a special focus on sustainability that will lead to the reduction of carbon emissions and enhance protection of the natural environment with regard to

sustainable materials

Smart City 360° - Alberto Leon-Garcia 2016-06-28

This volume constitutes the thoroughly refereed post-conference proceedings of the First EAI International Summit, Smart City 360°, held in Bratislava, Slovakia and Toronto, ON, Canada, in October 2015. The 77 carefully reviewed papers include eight conferences: The Bratislava program covered the Conference on Sustainable Solutions beyond Mobility of Goods (SustainableMoG 2015), the MOBIDANUBE conference which strengthens research in the field of mobility opportunities and within Danube strategy, and the conference on Social Innovation and Community Aspects of Smart Cities (SmartCityCom 2015). In parallel the SmartCity360 Toronto included five conferences addressing urban mobility (SUMS), sustainable cities (S2CT), smart grids SGSC), wearable devices for health and wellbeing SWIT Health), and big data (BigDASC).

Mobile Wireless Middleware, Operating Systems and Applications - Wuyungerile Li 2020-11-04

This book constitutes the refereed conference proceedings of the 9th International Conference on Mobile Wireless Middleware, Operating Systems and Applications, MOBILWARE 2020, held in Hohhot, China, in July 2020. Due to COVID-19 pandemic the conference was held virtually. The 21 revised full papers were reviewed and selected from 69 submissions and are organized in tracks on MobilWare; Big data, data mining and artificial intelligence workshop; Blockchain and internet of things workshop.

Wireless Rechargeable Sensor Networks 2019 - ChangWu Yu 2020-12-15

Wireless sensor networks, due to their various applications in many fields and limited power consumption, have attracted much attention recently. Most previous methods have focused on providing energy-saving

strategies to elevate the lifetime of sensor networks. Another aggressive but different approach is to wirelessly recharge sensor nodes to increase the lifetime of the sensor networks. This book collects articles that address state-of-the-art technologies and new developments for wireless rechargeable sensor networks (WRSNs), including the latest hot topics such as charger deployment, charger scheduling, wireless energy transfer, mobile charger design, energy-harvesting technique, and energy provisioning. We believe that the accepted articles present the most up-to-date progress in algorithms and theory for robust wireless sensor networks with respect to different networking problems.

Sensor Networks in Structural Health Monitoring: From Theory to Practice - Eleni Chatzi 2021-05-05

The intense development of novel data-driven and hybrid methods for structural health monitoring (SHM) has been demonstrated by field deployments on large-scale systems, including transport, wind energy, and building infrastructure. The actionability of SHM as an essential resource for life-cycle and resilience management is heavily dependent on the advent of low-cost and easily deployable sensors Nonetheless, in optimizing these deployments, a number of open issues remain with respect to the sensing side. These are associated with the type, configuration, and eventual processing of the information acquired from these sensors to deliver continuous behavioral signatures of the monitored structures. This book discusses the latest advances in the field of sensor networks for SHM. The focus lies both in active research on the theoretical foundations of optimally deploying and operating sensor networks and in those technological developments that might designate the next generation of sensing solutions targeted for SHM. The

included contributions span the complete SHM information chain, from sensor design to configuration, data interpretation, and triggering of reactive action. The featured papers published in this Special Issue offer an overview of the state of the art and further proceed to introduce novel methods and tools. Particular attention is given to the treatment of uncertainty, which inherently describes the sensed information and the behavior of monitored systems.

Ultra-Wideband and 60 GHz Communications for Biomedical Applications - Mehmet R. Yuce 2013-10-16

This book investigates the design of devices, systems, and circuits for medical applications using the two recently established frequency bands: ultra-wideband (3.1-10.6 GHz) and 60 GHz ISM band. These two bands provide the largest bandwidths available for communication technologies and present many attractive opportunities for medical applications. The applications of these bands in healthcare are wireless body area network (WBAN), medical imaging, biomedical sensing, wearable and implantable devices, fast medical device connectivity, video data transmission, and vital signs monitoring. The recent technological advances and developments proposed or used in medicine based on these two bands are covered. The book introduces possible solutions and design techniques to efficiently implement these systems in medical environment. All individual chapters are written by leading experts in their fields. Contributions by authors are on various applications of ultra-wideband and the 60 GHz ISM band including circuit implementation, UWB and 60 GHz signal transmission around and in-body, antenna design solution, hardware implementation of body sensors, UWB transceiver design, 60 GHz transceiver design, UWB radar for contactless respiratory monitoring, and ultra-wideband based medical Imaging. The

book will be a key resource for medical professionals, bio-medical engineers, and graduate and senior undergraduate students in computer, electrical, electronic and biomedical engineering disciplines.

Neural Networks for Intelligent Signal Processing -

Green, Pervasive, and Cloud Computing - Xinyi Huang 2016-05-02

This book constitutes the refereed proceedings of the 8th International Conference on Grid and Pervasive Computing, GPC 2016, held in Seoul, Korea, in May 2016. The 20 revised papers were carefully reviewed and selected from 94 submissions. The conference contains various aspects including green computing, cloud computing, virtualisation, data and storage, and network security.

Information Processing and Routing in Wireless Sensor Networks - Yang Yu 2006

This book presents state-of-the-art cross-layer optimization techniques for energy-efficient information processing and routing in wireless sensor networks. Besides providing a survey on this important research area, three specific topics are discussed in detail OCo information processing in a collocated cluster, information transport over a tree substrate, and information routing for computationally intensive applications. The book covers several important system knobs for cross-layer optimization, including voltage scaling, rate adaptation, and tunable compression. By exploring tradeoffs of energy versus latency and computation versus communication using these knobs, significant energy conservation is achieved. Sample Chapter(s). Chapter 1: Introduction to Wireless Sensor Networks (421 KB). Contents: Introduction of Wireless Sensor Networks; Background; Energy Models; Information Processing within a Collocated Cluster; Information Transportation over a Tree Substrate; Information Routing with Tunable Compression. Readership: Researchers and

graduate students in networking and electrical engineering."

Mobile Web and Intelligent Information Systems - Irfan Awan 2019-08-19

This book constitutes the refereed proceedings of the 16th International Conference on Mobile Web and Intelligent Information Systems, MobiWIS 2019, held in Istanbul, Turkey, in August 2019. The 23 full papers presented together with 3 short papers were carefully reviewed and selected from 74 submissions. The papers of the MobiWIS 2019 deal with areas such as: mobile apps and services; web and mobile applications; security and privacy; wireless networks and cloud computing; intelligent mobile applications; and mobile web and practical applications.

Algorithmic Aspects in Information and Management - Zhao Zhang 2020-08-09

This volume constitutes the proceedings of the 14th International Conference on Algorithmic Aspects in Information and Management, AAIM 2020, held in Jinhua, China in August 2020. The 39 full papers and 17 short papers presented were carefully reviewed and selected from 76 submissions. The papers deal with emerging important algorithmic problems with a focus on the fundamental background, theoretical technology development, and real-world applications associated with information and management analysis, modeling and data mining. Special considerations are given to algorithmic research that was motivated by real-world applications.