Smart Dust Aims To Monitor Everything Cnn

RODERICK YOUNG

eMaintenance Springer Science & Business Media
This book exploits the benefits of integration of wireless sensor networks (WSN) and Internet of Things (IoT) for smart cities. The authors discuss WSN and IoT in tackling complex computing tasks and challenges in the fields of disaster relief, security, and weather forecasting (among many others). This book highlights the challenges in the field of quality of service metrics (QoS) in the WSN based IoT applications. Topics include IoT Applications for eHealth, smart environments, intelligent transportation systems, delay tolerant models for IoT applications, protocols and architectures for industrial IoT, energy efficient protocols, and much more. Readers will get to know the solutions of these problems for development of smart city applications with the integration of WSN with IoT.
Compact Wireless and Wired Sensing Systems Elsevier
Written by a team of experts, Nanotechnology Standards provides the first comprehensive, state-of-the-art reviews of nanotechnology standards development, both in the field of standards development and in specific areas of nanotechnology. It also describes global standards-developing processes for nanotechnology, which can be extended to other emerging technologies. For topics related to nanotechnology, the reviews summarize active areas of standards development, supporting knowledge and future directions in easy-to-understand language aimed at a broad technical audience. This unique book is also an excellent resource for up-to-date information on the growing base of knowledge supporting the introduction of nanotechnology standards and applications into the market. Praise for this volume: “This book provides a valuable and detailed overview of current activities and issues relevant to the area as well as a useful summary of the short history of standardization for nanotechnologies and the somewhat longer history of standardization in general. I have no hesitation in recommending this book to anyone with an interest in nanotechnologies whether it is from a technical or societal perspective.” --Dr. Peter Hatto, Director of Research, IonBond Limited, Durham, UK
Wireless Sensor Networks Computational Vision and Bio Inspired Computing
This textbook, now in its Second Edition, addresses the rapid advancements to the area of mobile computing. Almost every chapter has been revised to make the book up to date with the latest developments. It covers the main topics associated with mobile computing and wireless networking at a level that enables the students to develop a fundamental understanding of the technical issues involved in this new and fast emerging discipline. This book first examines the basics of wireless technologies and computer communications that form the essential infrastructure required for building knowledge in the area of mobile computations involving the study of invocation mechanisms at the client end, the underlying wireless communication, and the corresponding server-side technologies. It includes coverage of development of mobile cellular systems, protocol design for mobile networks, special issues involved in the mobility management of cellular system users, realization and applications of mobile ad hoc networks (MANETs), design and operation of sensor networks, special constraints and requirements of mobile operating systems, and development of mobile computing applications. Finally, an example application of the mobile computing infrastructure to M-commerce is described in the concluding chapter

of the book. The book is suitable for a one-semester course in mobile computing for the undergraduate students of Computer Science and Engineering, Information Technology, Electronics and Communication Engineering, Master of Computer Applications (MCA), and the undergraduate and postgraduate science courses in computer science and Information Technology. Key Features • Provides unified coverage of mobile computing and communication aspects • Discusses the mobile application development, mobile operating systems and mobile databases as part of the material devoted to mobile computing • Incorporates a survey of mobile operating systems and the latest developments

Smart Dust Academic Press

Successful management teams can identify the cost and return derived from the implementation of new technology, and they can properly apply the technology toward gaining a competitive advantage. IT and business managers alike need a resource that enables them to prepare for future operating conditions, identify beneficial solutions, and use high technology to achieve organizational goals. The Real-Time Enterprise analyzes the forward-looking implementation of IT within a business, focusing on how careful planning can improve efficiency while reducing costs. The book includes case studies that emphasize how the most profitable uses of technology are now the real-time response to customer requirements, and the accumulation of knowledge about markets and business partners. Divided into four parts, the text begins by explaining how advanced information technology is a moving target, and why companies that want to benefit from it must set priorities and move quickly. Part II covers many recent developments in IT and its implementation, including smart dust and straight through processing (STP). Part III is made up of case studies that address specific application areas, including credit institutions, treasury operations, risk management, and approaches to replace office automation. The book concludes by exploring a series of prerequisites made necessary by advanced applications. The Real-Time Enterprise provides a perspective on the deployment of strategic information technology, covering guidelines, advanced applications, and practical examples. It delivers a much-needed upgrade of knowledge and skills for IT professionals seeking to progress beyond traditional implementations.

Computerworld Springer

It is difficult to believe that our planet has been weaponized before our very eyes, but that is exactly what has happened. First, we were seduced by the convenience of a wireless world; then, atmospheric weather experimentation in the guise of carbons “climate change” converted the air we breathe into an antenna. Now, the geo-engineering we’ve been subjected to for two decades is being normalized as the “Star Wars” Space Fence rises around and within us. Is this the Space Age we were promised?

Transdisciplinary Systems Engineering Zed Books

New technologies are breaking the boundaries of how social researchers practice their craft, and it has become clear these changes are dramatically altering research design from the way data is collected to what is considered data. Bringing together all the emerging social science researchtechnologies in one place, The Handbook of Emergent Technologies in Social Research offers comprehensive and up-to-date thinking on emerging technologies and addresses their impact on research methods, and in turn how new technologies lead to new research questions and areas of inquiry. The Handbook is organized into five sections, covering internet technologies, emergent data-collection methods, audio/visual, mobile, and geospatial technologies, and technology's impact on studying social life in natural settings, all after taking a look at emergent technologies from a broad,social-research context. Many of the twenty-nine chapters provide a commentary on and summary of specific technologies, like global surveys on the internet, mobile phones, data mining, and remote sensing, with a central focus on the most effective ways to use them. Others discuss the ethical andmoral implications, especially issues of privacy and confidentiality, and collaborations across disciplines and outside the academy. The Handbook of Emergent Technologies in Social Research is indispensable for any social researcher looking to incorporate emerging technologies into their methods andpractice.

John Wiley & Sons

This book explores the ways that disciplinary convergence and technological advance are transforming systems engineering to address gaps in complex systems engineering: Transdisciplinary Systems Engineering (TSE). TSE reaches beyond traditional disciplines to find connections—and this book examines a range of new methods from across such disparate areas of scholarship as computer science, social science, human studies, and systems design to reveal patterns, efficiencies, affordances, and pathways to intuitive design. Organized to serve multiple constituencies, the book stands as an ideal textbook supplement for graduate courses in systems engineering, a reference text for program managers and practicing engineers in all industries, and a primary source for researchers engaged in multidisciplinary research in systems engineering and design.

Decision-Making Models and Solutions Currency

This book describes a full range of contemporary techniques for the design of transmitters and receivers for communications systems operating in the range from 1 through to 300 GHz. In this frequency range there is a wide range of technologies that need to be employed, with silicon ICs at the core but, compared with other electronics systems, a much greater use of more specialist devices and components for high performance – for example, high Q-factor/low loss and good power efficiency. Many text books do, of course, cover these topics but what makes this book timely is the rapid adoption of millimetre-waves (frequencies from 30 to 300 GHz) for a wide range of consumer applications such as wireless high definition TV, “5G” Gigabit mobile internet systems and automotive radars. It has taken many years to develop low-cost technologies for suitable transmitters and receivers, so previously these frequencies have been employed only in expensive military and space applications. The book will cover these modern technologies, with the follow topics covered; transmitters and receivers, lumped element filters, tranmission lines and S-parameters, RF MEMS, RFICs and MMICs, and many others. In addition, the book includes extensive line diagrams to illustrate circuit diagrams and block diagrams of systems, including diagrams and photographs showing how circuits are implemented practically. Furthermore, case studies are also included to explain the salient features of a range of important wireless communications systems. The book is accompanied with suitable design examples and exercises based on the Advanced Design System – the industry leading CAD tool for wireless design. More importantly, the authors have been working with Keysight Technologies on a learning & teaching initiative which is designed to promote access to industry-standard EDA tools such as ADS. Through its University Educational Support Program, Keysight offers students the opportunity to request a student license, backed up with extensive classroom materials and support resources. This culminates with students having the chance to demonstrate their RF/MW design and measurement expertise through the Keysight RF & Microwave Industry-Ready Student Certification Program. www.keysight.com/find/eesof-university www.keysight.com/find/eesof-student-certification

Wireless Sensor Networks PHI Learning Pvt. Ltd.

The Internet of Things (IoT) and related technologies have the promise of realizing pervasive and smart applications which, in turn, have the potential of improving the quality of life of people living in a connected world. According to the IoT vision, all things can cooperate amongst themselves and be managed from anywhere via the Internet, allowing tight integration between the physical and cyber worlds and thus improving efficiency, promoting usability, and opening up new application opportunities. Nowadays, IoT technologies have successfully been exploited in several domains, providing both social and economic benefits. The realization of the full potential of the next generation of the Internet of Things still needs further research efforts concerning, for instance, the identification of new architectures, methodologies, and infrastructures dealing with distributed and decentralized IoT systems; the integration of IoT with cognitive and social capabilities; the enhancement of the sensing-analysis-control cycle; the integration of consciousness and awareness in IoT environments; and the design of new algorithms and techniques for managing IoT big data. This Special Issue is devoted to advancements in technologies, methodologies, and applications for IoT, together with emerging standards and research topics which would lead to realization of the future Internet of Things.

Internet of Things, Smart Computing and Technology: A Roadmap Ahead MIT Press

A space cruiser, in search of its sister ship, encounters beings descended from self-replicating machines. In the grand tradition of H. G. Wells and Jules Verne, Stanisław Lem's The Invincible tells the story of a space cruiser sent to an obscure planet to determine the fate of a sister spaceship whose communication with Earth has abruptly ceased. Landing on the planet Regis III, navigator Rohan and his crew discover a form of life that has apparently evolved from autonomous, self-replicating machines—perhaps the survivors of a “robot war.” Rohan and his men are forced to confront the classic quandary: what course of action can humanity take once it has reached the limits of its knowledge? In The Invincible, Lem has his characters confront the inexplicable and the bizarre: the problem that lies just beyond analytical reach.

New Promises, New Dangers BoD – Books on Demand

PCMag.com is a leading authority on technology, delivering Labs-based, independent reviews of the latest products and services. Our expert industry analysis and practical solutions help you make better buying decisions and get more from technology.

From Personal Robots to Motorized Monocycles Feral House

eMaintenance: Essential Electronic Tools for Efficiency enables the reader to improve efficiency of operations, maintenance staff, infrastructure managers and system integrators, by accessing a real time computerized system from data to decision. In recent years, the exciting possibilities of eMaintenance have become increasingly recognized as a source of productivity improvement in industry. The seamless linking of systems and equipment to control centres for real time reconfiguring is improving efficiency, reliability, and sustainability in a variety of settings. The book provides an introduction to collecting and processing data from machinery, explains the methods of overcoming the challenges of data collection and processing, and presents tools for data driven condition monitoring and decision making. This is a groundbreaking handbook for those interested in the possibilities of running a plant as a smart asset. Provides an introduction to collecting and processing data from machinery Explains how to use sensor-based tools to increase efficiency of diagnosis, prognosis, and decision-making in maintenance Describes methods for overcoming the challenges of data collection and processing

Exploiting Convergence in a Hyper-Connected World Springer

Nanotechnology has grown in its use and adoption across sectors. In particular, the medical field has identified the vast opportunities nanotechnology presents, especially for earlier disease detection and diagnosis versus traditional methods. Integrating Biologically-Inspired Nanotechnology into Medical Practice presents the latest research on nanobiotechnology and its application as a real-world healthcare solution. Emphasizing applications of micro-scale technologies in the areas of oncology, food science, and pharmacology, this reference publication is an essential resource for medical professionals, researchers, chemists, and graduate-level students in the medical and pharmaceutical sciences.

Biologically-Inspired Computing for the Arts: Scientific Data through Graphics BoD – Books on Demand

Interconnecting Smart Objects with IP: The Next Internet explains why the Internet Protocol (IP) has become the protocol of choice for smart object networks. IP has successfully demonstrated the ability to interconnect billions of digital systems on the global Internet and in private IP networks. Once smart objects can be easily interconnected, a whole new class of smart object systems can begin to evolve. The book discusses how IP-based smart object networks are being designed and deployed. The book is organized into three parts. Part 1 demonstrates why the IP architecture is well suited to smart object networks, in contrast to non-IP based sensor network or other proprietary systems that interconnect to IP networks (e.g. the public Internet of private IP networks) via hard-to-manage and expensive multi-protocol translation gateways that scale poorly. Part 2 examines protocols and algorithms, including smart objects and the low power link layers technologies used in these networks. Part 3 describes the following smart object network applications: smart grid, industrial automation, smart cities and urban networks, home automation, building automation, structural health monitoring, and container tracking. Shows in detail how connecting smart objects impacts our lives with practical implementation examples and case studies Provides an in depth understanding of the technological and architectural aspects underlying smart objects technology Offers an in-depth examination of relevant IP protocols to build large scale smart object networks in support of a myriad of new services

Microwave and Millimetre-Wave Design for Wireless Communications Springer

This is the proceedings of the International Conference On Computational Vision and Bio Inspired Computing (ICCVBIC 2017) held at RVS Technical Campus, September 21-22, 2017. It includes papers on state of the art innovations in bio-inspired computing applications, where new algorithms and results are produced and described. Additionally, this volume addresses evolutionary computation paradigms, artificial neural networks and biocomputing. It focuses mainly on research based on visual interference on the basis of biological images. Computation of data sources also plays a major role in routine day-to-day life for the purposes such as video transmission, wireless applications, fingerprint recognition and processing, big data intelligence, automation, human centric recognition systems. With the advantage of processing bio-inspired computations, a variety of

computational paradigms can be processed. Finally, this book also treats the formation of neural networks by enabling local connectivity within it with the aid of vision sensing elements. The work also provides potential directions for future research.

Technolife 2035 Springer Nature

This book addresses a broad range of topics concerning machine learning, big data, the Internet of things (IoT), and security in the IoT. Its goal is to bring together several innovative studies on these areas, in order to help researchers, engineers, and designers in several interdisciplinary domains pursue related applications. It presents an overview of the various algorithms used, focusing on the advantages and disadvantages of each in the fields of machine learning and big data. It also covers next-generation computing paradigms that are expected to support wireless networking with high data transfer rates and autonomous decision-making capabilities. In turn, the book discusses IoT applications (e.g. healthcare applications) that generate a huge amount of sensor data and imaging data that must be handled correctly for further processing. In the traditional IoT ecosystem, cloud computing offers a solution for the efficient management of huge amounts of data, thanks to its ability to access shared resources and provide a common infrastructure in a ubiquitous manner. Though these new technologies are invaluable, they also reveal serious IoT security challenges. IoT applications are vulnerable to various types of attack such as eavesdropping, spoofing and false data injection, the man-in-the-middle attack, replay attack, denial-of-service attack, jamming attack, flooding attack, etc. These and other security issues in the Internet of things are explored in detail. In addition to highlighting outstanding research and recent advances from around the globe, the book reports on current challenges and future directions in the IoT. Accordingly, it offers engineers, professionals, researchers, and designers an applied-oriented resource to support them in a broad range of interdisciplinary areas.

Sensor Network Applications, Architecture and Design IGI Global

This book is published open access under a CC BY 4.0 license. Over the past decades, rapid developments in digital and sensing technologies, such as the Cloud, Web and Internet of Things, have dramatically changed the way we live and work. The digital transformation is revolutionizing our ability to monitor our planet and transforming the way we access, process and exploit Earth Observation data from satellites. This book reviews these megatrends and their implications for the Earth Observation community as well as the wider data economy. It provides insight into new paradigms of Open Science and Innovation applied to space data, which are characterized by openness, access to large volume of complex data, wide availability of new community tools, new techniques for big data analytics such as Artificial Intelligence, unprecedented level of computing power, and new types of collaboration among researchers, innovators, entrepreneurs and citizen scientists. In addition, this book aims to provide readers with some reflections on the future of Earth Observation, highlighting through a series of use cases not just the new opportunities created by the New Space revolution, but also the new challenges that must be addressed in order to make the most of the large volume of complex and diverse data delivered by the new generation of satellites.

Smart Monitoring and Control in the Future Internet of Things Springer Science & Business Media

Artificial Intelligence to Solve Pervasive Internet of Things Issues discusses standards and technologies and wide-ranging technology areas and their applications and challenges, including discussions on architectures, frameworks, applications, best practices, methods and techniques required for integrating AI to resolve IoT issues. Chapters also provide step-by-step measures, practices and solutions to tackle vital decision-making and practical issues affecting IoT technology, including autonomous devices and computerized systems. Such issues range from adopting, mitigating, maintaining, modernizing and protecting AI and IoT infrastructure components such as scalability, sustainability, latency, system decentralization and maintainability. The book enables readers to explore, discover and implement new solutions for integrating AI to solve IoT issues. Resolving these issues will help readers address many real-world applications in areas such as scientific research, healthcare, defense, aeronautics, engineering, social media, and many others. Discusses intelligent techniques for the implementation of Artificial Intelligence in Internet of Things Prepared for researchers and specialists who are interested in the use and integration of IoT and Artificial Intelligence technologies

Deployments and Design Frameworks IGI Global

Based on Stanford University psychologist Kelly McGonigal's wildly popular course "The Science of Willpower," The Willpower Instinct is the first book to explain the science of self-control and how it can be harnessed to improve our health, happiness, and productivity. Informed by the latest research and combining cutting-edge insights from psychology, economics, neuroscience, and medicine, The Willpower Instinct explains exactly what willpower is, how it works, and why it matters. For example, readers will learn: • Willpower is a mind-body response, not a virtue. It is a biological function that can be improved through mindfulness, exercise, nutrition, and sleep. • Willpower is not an unlimited resource. Too much self-control can actually be bad for your health. • Temptation and stress hijack the brain's systems of self-control, but the brain can be trained for greater willpower • Guilt and shame over your setbacks lead to giving in again, but self-forgiveness and self-compassion boost self-control. • Giving up control is sometimes the only way to gain self-control. • Willpower failures are contagious—you can catch the desire to overspend or overeat from your friends—but you can also catch self-control from the right role models. In the groundbreaking tradition of Getting Things Done, The Willpower Instinct combines life-changing prescriptive advice and complementary exercises to help readers with goals ranging from losing weight to more patient parenting, less procrastination, better health, and greater productivity at work.

Nanotechnology Standards National Geographic Books

As the field of communications networks continues to evolve, the challenging area of wireless sensor networks is rapidly coming of age. Recent advances have made it possible to make sensor components more compact, robust, and energy efficient than ever, earning the idiosyncratic alias ofSmart Dust. Production has also improved, yielding larger,