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Building Wireless Sensor Networks
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LPWAN Technologies for IoT and M2M Applications
4G and Beyond
2018 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS)
Applications of Internet of Things
Artificial Intelligence and IoT-Based Technologies for Sustainable Farming and Smart Agriculture
Knowledge Graphs
Deploying IPv6 Networks
Free the Practices from the Method Prisons!
2016 IEEE Wireless Communications and Networking Conference
The Essentials of Modern Software Engineering
Low-rate Wireless Personal Area Networks
Principles, Measurements, Technologies, and Computer Models
Fog Data Analytics for IoT Applications

GILLIAN LONG

Interoperability, Provenance and Beyond
MDPI
The collaborative nature of industrial wireless sensor networks (IWSNs) brings several advantages over traditional wired industrial monitoring and control systems, including self-organization, rapid deployment, flexibility, and inherent intelligent processing. In this regard, IWSNs play a vital role in creating more reliable, efficient, and productive industrial systems, thus improving companies' competitiveness in the marketplace. Industrial Wireless Sensor Networks: Applications, Protocols, and Standards examines the current state of the art in industrial wireless sensor networks and outlines future directions for research. What Are the Main Challenges in Developing IWSN Systems? Featuring contributions by researchers around the world, this book explores the software and hardware platforms, protocols, and standards that are needed to address the unique challenges posed by IWSN systems. It offers an in-depth review of emerging and already deployed IWSN applications and technologies, and outlines technical issues and design objectives. In particular, the book covers radio technologies, energy harvesting techniques, and network and resource management. It also discusses issues critical to industrial applications, such as latency, fault tolerance, synchronization, real-time constraints, network security, and cross-layer design. A chapter on standards highlights the need for specific wireless communication standards for industrial applications. A Starting Point for Further Research Delving into wireless sensor networks from an industrial perspective, this comprehensive work provides readers with a better understanding of the potential advantages and research challenges of IWSN applications. A contemporary reference for anyone working at the cutting edge of industrial automation, communication systems, and networks, it will inspire further exploration in this promising research area.

Networking Technologies, Protocols, and Use Cases for the Internet of Things
Springer Science & Business Media
A comprehensive review of position location technology — from fundamental theory to advanced practical applications Positioning systems and location technologies have become significant components of modern life, used in a multitude of areas such as law enforcement and security, road safety and navigation, personnel and object tracking, and many more. Position location systems have greatly reduced societal vulnerabilities and enhanced the quality of life for billions of people around the globe — yet limited resources are available to researchers and students in this important field. The Handbook of Position Location: Theory, Practice, and Advances fills this gap, providing a comprehensive overview of both fundamental and cutting-edge techniques and introducing practical methods of advanced localization and positioning. Now in its second edition, this handbook offers broad and in-depth coverage of essential topics including Time of Arrival (TOA) and Direction of Arrival (DOA) based positioning, Received Signal Strength (RSS) based positioning, network localization, and others. Topics such as GPS, autonomous

vehicle applications, and visible light localization are examined, while major revisions to chapters such as body area network positioning and digital signal processing for GNSS receivers reflect current and emerging advances in the field. This new edition: Presents new and revised chapters on topics including localization error evaluation, Kalman filtering, positioning in inhomogeneous media, and Global Positioning (GPS) in harsh environments Offers MATLAB examples to demonstrate fundamental algorithms for positioning and provides online access to all MATLAB code Allows practicing engineers and graduate students to keep pace with contemporary research and new technologies Contains numerous application-based examples including the application of localization to drone navigation, capsule endoscopy localization, and satellite navigation and localization Reviews unique applications of position location systems, including GNSS and RFID-based localization systems The Handbook of Position Location: Theory, Practice, and Advances is valuable resource for practicing engineers and researchers seeking to keep pace with current developments in the field, graduate students in need of clear and accurate course material, and university instructors teaching the fundamentals of wireless localization.
Signal Processing Perspectives Cisco Press
Electrical Engineering Engineering Electromagnetic Compatibility Principles, Measurements, Technologies, and Computer Models Second Edition This practical, enhanced second edition will teach you to avoid costly post-design electromagnetic compatibility (EMC) fixes. Once again, V. Prasad Kodali provides a comprehensive introduction to EMC and presents current technical information on sources of electromagnetic interference (EMI), EMC/EMI measurements, technologies to control EMI, computer simulation and design, and international EMC standards. Features added to this second edition include: * Two new chapters covering EMC computer modeling and simulation and signal integrity * Expanded assignments at the close of each chapter * Illustrative examples that enhance comprehension * Updated information in Selected Bibliography and EMC Standards chapters * A new appendix that lists websites relevant to EMC/EMI Engineering Electromagnetic Compatibility, Second Edition is presented in a concise, user-friendly format that combines a rigorous solutions-based, mathematical treatment of the underlying theories of EMC with the most recent practical applications. It is ideally suited as a desk reference for practicing engineers and as a textbook for students who need to understand the form and function of EMC and its relevance to a variety of systems.
IoT and ICT for Healthcare Applications Springer Nature
This book features extended versions of selected papers from the International Conference on Computer Communication and Internet of Things (ICCCIoT 2020). Presenting recent research addressing new trends and challenges, and promising technologies and developments, it covers various topics related to IoT (Internet of Things) and communications, and machine learning for applications such as energy management systems, smart asthma alerts, smart irrigation systems, cloud healthcare systems, preventing side channel attacks, and cooperative spectrum sensing in cognitive radio

networks.
Technologies, Applications, Challenges and Solutions Springer Nature
Computer Vision,Image Processing,Pattern Recognition,Machine Learning,Medical Image Processing,Medical Informatics,Human Computer Interaction,Remote Sensing and Geoscience,Biomedical Systems, Applications in Medicine,Robotics and Mechatronics,Automation and Control Systems,Biometrics,Intelligent Transportation Systems,Vehicular Electrotechnology,Cybernetics,Computational Intelligence,Soft Computing,Fuzzy systems,Signal Processing,Electron Devices,Photovoltaics,Optoelectronics and Photonics,Renewable Energy,Smart Grid and Sustainable Energy,Nuclear Energy,Environmental Engineering and Green Technology,, Computer Networking,Communication Systems,Information Theory,Mobile Computing,Antennas and Wireless Propagation,Electronics,Electronic Systems,Circuits and Systems,Sensors and Embedded Systems,VLSI,Nanotechnology,Informatics, IT, multimedia, SW
Applications and Technologies Elsevier
LPWAN Technologies for IoT and M2M Applications provides insight into LPWAN technologies, also presenting a wide range of applications and a discussion on security issues and future challenges and research directions. This book is a beneficial and insightful resource for university researchers, graduate students and R&D engineers who are designing networks and implementing IoT applications. To support new requirements for this emerging industry, a new paradigm of Low Power Wide Area Networks (LPWAN) has recently evolved, including LoRa, Sigfox and NB-IoT, hence this book presents the latest updates.

Semantic IoT: Theory and Applications Academic Press
As technology continues to saturate modern society, agriculture has started to adopt digital computing and data-driven innovations. This emergence of “smart” farming has led to various advancements in the field, including autonomous equipment and the collection of climate, livestock, and plant data. As connectivity and data management continue to revolutionize the farming industry, empirical research is a necessity for understanding these technological developments. Artificial Intelligence and IoT-Based Technologies for Sustainable Farming and Smart Agriculture provides emerging research exploring the theoretical and practical aspects of critical technological solutions within the farming industry. Featuring coverage on a broad range of topics such as crop monitoring, precision livestock farming, and agronomic data processing, this book is ideally designed for farmers, agriculturalists, product managers, farm holders, manufacturers, equipment suppliers, industrialists, governmental professionals, researchers, academicians, and students seeking current research on technological applications within agriculture and farming.
Environmental Geoinformatics Springer Nature
This book discusses the unique nature and complexity of fog data analytics (FDA) and develops a comprehensive taxonomy abstracted into a process model. The exponential increase in sensors and smart gadgets (collectively referred as smart devices or Internet of things (IoT) devices) has generated significant amount of heterogeneous and multimodal data, known as big data. To deal with this big data, we require

efficient and effective solutions, such as data mining, data analytics and reduction to be deployed at the edge of fog devices on a cloud. Current research and development efforts generally focus on big data analytics and overlook the difficulty of facilitating fog data analytics (FDA). This book presents a model that addresses various research challenges, such as accessibility, scalability, fog nodes communication, nodal collaboration, heterogeneity, reliability, and quality of service (QoS) requirements, and includes case studies demonstrating its implementation. Focusing on FDA in IoT and requirements related to Industry 4.0, it also covers all aspects required to manage the complexity of FDA for IoT applications and also develops a comprehensive taxonomy.

Concepts, Paradigms and Solutions

LPWAN Technologies for IoT and M2M Applications

Building Wireless Sensor Networks: Application to Routing and Data Diffusion discusses challenges involved in securing routing in wireless sensor networks with new hybrid topologies. An analysis of the security of real time data diffusion—a protocol for routing in wireless sensor networks—is provided, along with various possible attacks and possible countermeasures. Different applications are introduced, and new topologies are developed. Topics include audio video bridging (AVB) switched Ethernet, which uses the representation of a network of wireless sensors by a grayscale image to construct routing protocols, thereby minimizing energy consumption and data sharing in vehicular ad-hoc networks. Existing wireless networks aim to provide communication services between vehicles by enabling the vehicular networks to support wide range applications. New topologies are proposed first, based on the graphiton models, then the wireless sensor networks (WSN) based on the IEEE 802.15.4 standard (ZigBee sensors, and finally the Pancake graphs as an alternative to the Hypercube for interconnecting processors in parallel computer networks. Presents an analysis and protocol for routing in wireless sensor networks Presents ways to prevent attacks against this protocol Introduces different applications Develops new topologies

Industrial Wireless Sensor Networks CRC Press

Synthesis and design of new nanocatalysts is an important area of research that aims to introduce multiple types of useful applications in a greener market. The necessity of nanostructuring the active sites has emerged as the key point in a successful design of the catalysts. The book covers the progress in this research area done in the last ten years. It includes the classification of catalysts and structure of active sites at the nanoscale. The book covers examples to present the concept, evolution of nanocatalysts from the perspective of chemistry of materials and their applications.

Extreme Hydro-Climatic and Food Security Challenges: Exploiting the Big Data Springer Nature

The conference has four major tracks physical later communications, networking, mobile and wireless communications

IoT Fundamentals John Wiley & Sons

This book is focused on an emerging area, i.e. combination of IoT and semantic technologies, which should enable breaking the silos of local and/or domain-specific IoT deployments. Taking

into account the way that IoT ecosystems are realized, several challenges can be identified. Among them of definite importance are (this list is, obviously, not exhaustive): (i) How to provide common representation and/or shared understanding of data that will enable analysis across (systematically growing) ecosystems? (ii) How to build ecosystems based on data flows? (iii) How to track data provenance? (iv) How to ensure/manage trust? (v) How to search for things/data within ecosystems? (vi) How to store data and assure its quality? Semantic technologies are often considered among the possible ways of addressing these (and other, related) questions. More precisely, in academic research and in industrial practice, semantic technologies materialize in the following contexts (this list is, also, not exhaustive, but indicates the breadth of scope of semantic technology usability): (i) representation of artefacts in IoT ecosystems and IoT networks, (ii) providing interoperability between heterogeneous IoT artefacts, (ii) representation of provenance information, enabling provenance tracking, trust establishment, and quality assessment, (iv) semantic search, enabling flexible access to data originating in different places across the ecosystem, (v) flexible storage of heterogeneous data. Finally, Semantic Web, Web of Things, and Linked Open Data are architectural paradigms, with which the aforementioned solutions are to be integrated, to provide production-ready deployments.

Principles of Waveform Diversity and Design IGI Global

Younglings can draw, color, and create with all their favorite characters from the Marvel films. From Guardians of the Galaxy to Spider-Man, every page is packed with doodles. Readers can use their artistic powers to bring these sensational scenes to life!

Next-Generation Wireless Technologies Springer

LPWAN Technologies for IoT and M2M ApplicationsAcademic Press

A First Course in Digital Communications ACM Books

The book begins by introducing signals and systems, and then discusses Time-Domain analysis and Frequency-Domain analysis for Continuous-Time systems. It also covers Z-transform, state-space analysis and system synthesis. The author provides abundant examples and exercises to facilitate learning, preparing students for subsequent courses on circuit analysis and communication theory.

Applications, Protocols, and Standards CRC Press

This book considers all aspects of managing the complexity of Multimedia Big Data Computing (MMBD) for IoT applications and develops a comprehensive taxonomy. It also discusses a process model that addresses a number of research challenges associated with MMBD, such as scalability, accessibility, reliability, heterogeneity, and Quality of Service (QoS) requirements, presenting case studies to demonstrate its application. Further, the book examines the layered architecture of MMBD computing and compares the life cycle of both big data and MMBD. Written by leading experts, it also includes numerous solved examples, technical descriptions, scenarios, procedures, and algorithms.

Fangtales Morgan & Claypool Publishers

Today, billions of devices are Internet-connected, IoT standards and protocols

are stabilizing, and technical professionals must increasingly solve real problems with IoT technologies. Now, five leading Cisco IoT experts present the first comprehensive, practical reference for making IoT work. IoT Fundamentals brings together knowledge previously available only in white papers, standards documents, and other hard-to-find sources—or nowhere at all. The authors begin with a high-level overview of IoT and introduce key concepts needed to successfully design IoT solutions. Next, they walk through each key technology, protocol, and technical building block that combine into complete IoT solutions. Building on these essentials, they present several detailed use cases, including manufacturing, energy, utilities, smart+connected cities, transportation, mining, and public safety. Whatever your role or existing infrastructure, you'll gain deep insight what IoT applications can do, and what it takes to deliver them. Fully covers the principles and components of next-generation wireless networks built with Cisco IOT solutions such as IEEE 802.11 (Wi-Fi), IEEE 802.15.4-2015 (Mesh), and LoRaWAN Brings together real-world tips, insights, and best practices for designing and implementing next-generation wireless networks Presents start-to-finish configuration examples for common deployment scenarios Reflects the extensive first-hand experience of Cisco experts

Anniversary Feature Papers SciTech This second edition includes updated chapters from the first edition as well as five additional new chapters (Light detection and ranging (LiDAR), CORONA historical de-classified products, Unmanned Aircraft Vehicles (UAVs), GNSS-reflectometry and GNSS applications to climate variability), shifting the main focus from monitoring and management to extreme hydro-climatic and food security challenges and exploiting big data. Since the publication of first edition, much has changed in terms of technology, and the demand for geospatial data has increased with the advent of the big data era. For instance, the use of laser scanning has advanced so much that it is unavoidable in most environmental monitoring tasks, whereas unmanned aircraft vehicles (UAVs)/drones are emerging as efficient tools that address food security issues as well as many other contemporary challenges. Furthermore, global navigation satellite systems (GNSS) are now responding to challenges posed by climate change by unravelling the impacts of teleconnection (e.g., ENSO) as well as advancing the use of reflected signals (GNSS-reflectometry) to monitor, e.g., soil moisture variations. Indeed all these rely on the explosive use of "big data" in many fields of human endeavour. Moreover, with the ever-increasing global population, intense pressure is being exerted on the Earth's resources, leading to significant changes in its land cover (e.g., deforestation), diminishing biodiversity and natural habitats, dwindling fresh water supplies, and changing weather and climatic patterns (e.g., global warming, changing sea level). Environmental monitoring techniques that provide information on these are under scrutiny from an increasingly environmentally conscious society that demands the efficient delivery of such information at a minimal cost. Environmental changes vary both spatially and temporally, thereby putting pressure on traditional methods of data acquisition, some of which are highly

labour intensive, such as animal tracking for conservation purposes. With these challenges, conventional monitoring techniques, particularly those that record spatial changes call for more sophisticated approaches that deliver the necessary information at an affordable cost. One direction being pursued in the development of such techniques involves environmental geoinformatics, which can act as a stand-alone method or complement traditional methods.

Building Wireless Sensor Networks Springer Science & Business Media

The Journal of Manufacturing and Materials Processing (JMMP) aims to provide an international forum for the documentation and dissemination of recent, original, and significant research studies in the analysis of processes, equipment, systems, and materials related to material heat treatment, solidification, deformation, addition, removal, welding, and accretion for the industrial fabrication and production of parts, components, and products. The JMMP was established in 2017 and has published more than 300 contributions. It has been listed in the ESCI, Inspec (IET), and Scopus (Elsevier). In celebration of the anniversary of the JMMP, the Editorial Office has put together this Special Issue, which includes several representative papers that reflect the vibrant growth and dynamic trend of research in this field.

Wireless Communications Pearson Education India

This book provides an insight on the importance that Internet of Things (IoT) and Information and Communication Technology (ICT) solutions can have in taking care of people's health. Key features of this book present the recent and emerging developments in various specializations in curing health problems and finding their solutions by incorporating IoT and ICT. This book presents useful IoT and ICT applications and architectures that cater to their improved healthcare requirements. Topics include in-home healthcare services based on the Internet-of-Things; RFID technology for IoT based personal healthcare; Real-time reporting and monitoring; Interfacing devices to IoT; Smart medical services; Embedded gateway configuration (EGC); Health monitoring infrastructure; and more. Features a number of practical solutions and applications of IoT and ICT on healthcare; Includes application domains such as communication technology and electronic materials and devices; Applies to researchers, academics, students, and practitioners around the world.