
Introduction To Knx And Konnex

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New Frontiers for Design of Interior Lighting Products BoD - Books on Demand

Smart City and sensing platforms are considered some of the most significant topics in the Internet of Things (IoT). Sensors are at the heart of the IoT, and their development is a key issue if such concepts are to achieve their full potential. This book addresses the major challenges in realizing smart city and sensing platforms in the era of the IoT and the Cloud. Challenges vary from cost and energy efficiency to availability and service quality. To tackle these challenges, sensors must meet certain expectations and requirements such as size constraints, manufacturing costs and resistance to environmental factors. This book focuses on both the design and implementation aspects for smart city and sensing applications that are enabled and supported by IoT paradigms. Attention is also given to data delivery approaches and performance aspects.

Introduction to Smart eHealth and eCare Technologies CRC Press

Managing the Web of Things: Linking the Real World to the Web presents a consolidated and holistic coverage of engineering, management, and analytics of the Internet of Things. The web has gone through many transformations, from traditional linking and sharing of computers and documents (i.e., Web of Data), to the current connection of people (i.e., Web of People), and to the emerging connection of billions of physical objects (i.e., Web of Things). With increasing numbers of electronic devices and systems providing different services to people, Web of Things applications present numerous challenges to research institutions, companies, governments, international organizations, and others. This book compiles the newest developments and advances in the area of the Web of Things, ranging from modeling, searching, and data analytics, to software building, applications, and social impact. Its coverage will enable effective exploration, understanding, assessment, comparison, and the selection of WoT models, languages, techniques, platforms, and tools. Readers will gain an up-to-date understanding of the Web of Things systems that accelerates their research. Offers a comprehensive and systematic presentation of the methodologies, technologies, and applications that enable efficient and effective management of the Internet of Things Provides an in-depth analysis on the state-of-the-art Web of Things modeling and searching technologies, including how to collect, clean, and analyze data generated by the Web of Things Covers system design and software building principles, with discussions and explorations of social impact for the Web of Things through real-world applications Acts as an ideal reference or recommended text for graduate

courses in cloud computing, service computing, and more

Toward Brain-computer Interfacing Springer Nature

Cloud computing has created a shift from the use of physical hardware and locally managed software-enabled platforms to that of virtualized cloud-hosted services. Cloud assembles large networks of virtual services, including hardware (CPU, storage, and network) and software resources (databases, message queuing systems, monitoring systems, and load-balancers). As Cloud continues to revolutionize applications in academia, industry, government, and many other fields, the transition to this efficient and flexible platform presents serious challenges at both theoretical and practical levels—ones that will often require new approaches and practices in all areas. Comprehensive and timely, *Cloud Computing: Methodology, Systems, and Applications* summarizes progress in state-of-the-art research and offers step-by-step instruction on how to implement it. Summarizes Cloud Developments, Identifies Research Challenges, and Outlines Future Directions Ideal for a broad audience that includes researchers, engineers, IT professionals, and graduate students, this book is designed in three sections: Fundamentals of Cloud Computing: Concept, Methodology, and Overview Cloud Computing Functionalities and Provisioning Case Studies, Applications, and Future Directions It addresses the obvious technical aspects of using Cloud but goes beyond, exploring the cultural/social and regulatory/legal challenges that are quickly coming to the forefront of discussion. Properly applied as part of an overall IT strategy, Cloud can help small and medium business enterprises (SMEs) and governments in optimizing expenditure on application-hosting infrastructure. This material outlines a strategy for using Cloud to exploit opportunities in areas including, but not limited to, government, research, business, high-performance computing, web hosting, social networking, and multimedia. With contributions from a host of internationally recognized researchers, this reference delves into everything from necessary changes in users' initial mindset to actual physical requirements for the successful integration of Cloud into existing in-house infrastructure. Using case studies throughout to reinforce concepts, this book also addresses recent advances and future directions in methodologies, taxonomies, IaaS/SaaS, data management and processing, programming models, and applications.

Embedded Systems Handbook 2-Volume Set MDPI

In an emergency, availability of the pervasive communications environment could mean the difference between life and death. Possibly one of the first guides to comprehensively explore these futuristic omnipresent communications networks, the *Pervasive Communications Handbook* addresses current technology (i.e., MAC protocols and P2P-based VoD architecture) and

developments expected in the very near future, when most people and places will be virtually connected through a constant and perpetual exchange of information. This monumental advance in communications is set to dramatically change daily life, in areas ranging from healthcare, transportation, and education to commerce and socialization. With contributions from dozens of pioneering experts, this important reference discusses one-to-one, one-to-many, and many-to-one exchanges of information. Organized by the three key aspects—technology, architecture, and applications—the book explores enabling technologies, applications and services, location and mobility management, and privacy and trust. Citing the technology’s importance to energy distribution, home automation, and telecare among other areas, it delves into topics such as quality of service, security, efficiency, and reliability in mobile network design, and environment interoperability.

Automation and Control Morgan Kaufmann

Computational intelligence is rapidly becoming an essential part of reliability engineering. This book offers a wide spectrum of viewpoints on the merger of technologies. Leading scientists share their insights and progress on reliability engineering techniques, suitable mathematical methods, and practical applications. Thought-provoking ideas are embedded in a solid scientific basis that contribute to the development the emerging field. This book is for anyone working on the most fundamental paradigm-shift in resilience engineering in decades. Scientists benefit from this book by gaining insight in the latest in the merger of reliability engineering and computational intelligence. Businesses and (IT) suppliers can find inspiration for the future, and reliability engineers can use the book to move closer to the cutting edge of technology.

IEEE Africon Springer Nature

Industries which use pumps, seals and pipes will almost certainly also use valves in their systems. Someone in each industry needs to be able to design, purchase or maintain the right valve for the job in hand, and that can amount to a lot of valves world-wide. Here is a single resource which is aimed at those designers and end users, plus their engineering staff. Brian Nesbitt is a well-known consultant with a considerable publishing record. A lifetime of experience backs up the huge amount of practical detail found in this volume. Its international approach is no accident: it will have world-wide take-up. *Ideal reference for industry *Practical approach compared with competition *Buyers' guide included.

Technology and Aging Springer Nature

This book serves as a single-source reference to the state-of-the-art in Internet of Things (IoT) platforms, services, tools, programming languages, and applications. In particular, the authors focus on IoT-related requirements such as low-power, time-to-market, connectivity, reliability, interoperability, security, and privacy. Authors discuss the question of whether we need new IoT standardization bodies or initiatives, toward a fully connected, cyber-physical world. Coverage includes the research outcomes of several, current European projects related to IoT platforms, services, APIs, tools, and applications.

IoT Technologies in Smart-Cities MDPI

This Special Issue presents the recent advances in sensor technologies for smart homes, including fiber Bragg grating (FBG) sensors for detecting the presence and number of occupants, the Internet

of things for monitoring CO2 concentration, and designing a novel eye-tracking system for monitoring and controlling a smart home, and infrared thermal sensors for fall detection. Such new explorations are pushing the boundary of sensing technologies and, thus, will have more profound implications for the future smart home. Advanced machine learning and data mining algorithms have been proposed to address sensor failure, appliance identification, and human activity recognition in a home environment. These results will enable a promising, sustainable deployment of sensing technologies. A novel multi-agent gamification system is proposed for managing tasks between household members and between families, which demonstrate another dimension of future smart home application. This Special Issue concludes with a review on sensors for human activity recognition. This work paves the roadmap for deploying smart home systems in different socioeconomic contexts. The whole Special Issue has significantly helped to shape our understanding of the strength, implications, and barriers of deploying long-term, sustainable, sensor technologies for smart homes.

Embedded Systems Handbook CRC Press

Considered a standard industry resource, the Embedded Systems Handbook provided researchers and technicians with the authoritative information needed to launch a wealth of diverse applications, including those in automotive electronics, industrial automated systems, and building automation and control. Now a new resource is required to report on current developments and provide a technical reference for those looking to move the field forward yet again. Divided into two volumes to accommodate this growth, the Embedded Systems Handbook, Second Edition presents a comprehensive view on this area of computer engineering with a currently appropriate emphasis on developments in networking and applications. Those experts directly involved in the creation and evolution of the ideas and technologies presented offer tutorials, research surveys, and technology overviews that explore cutting-edge developments and deployments and identify potential trends. This second self-contained volume of the handbook, Network Embedded Systems, focuses on select application areas. It covers automotive field, industrial automation, building automation, and wireless sensor networks. This volume highlights implementations in fast-evolving areas which have not received proper coverage in other publications. Reflecting the unique functional requirements of different application areas, the contributors discuss inter-node communication aspects in the context of specific applications of networked embedded systems. Those looking for guidance on preliminary design of embedded systems should consult the first volume: Embedded Systems Design and Verification.

Components and Services for IoT Platforms CRC Press

This book offers the first comprehensive view on integrated circuit and system design for the Internet of Things (IoT), and in particular for the tiny nodes at its edge. The authors provide a fresh perspective on how the IoT will evolve based on recent and foreseeable trends in the semiconductor industry, highlighting the key challenges, as well as the opportunities for circuit and system innovation to address them. This book describes what the IoT really means from the design point of view, and how the constraints imposed by applications translate into integrated circuit requirements and design guidelines. Chapter contributions equally come from industry and academia. After providing a system perspective on IoT nodes, this book focuses on state-of-the-art design techniques

for IoT applications, encompassing the fundamental sub-systems encountered in Systems on Chip for IoT: ultra-low power digital architectures and circuits low- and zero-leakage memories (including emerging technologies) circuits for hardware security and authentication System on Chip design methodologies on-chip power management and energy harvesting ultra-low power analog interfaces and analog-digital conversion short-range radios miniaturized battery technologies packaging and assembly of IoT integrated systems (on silicon and non-silicon substrates). As a common thread, all chapters conclude with a prospective view on the foreseeable evolution of the related technologies for IoT. The concepts developed throughout the book are exemplified by two IoT node system demonstrations from industry. The unique balance between breadth and depth of this book: enables expert readers quickly to develop an understanding of the specific challenges and state-of-the-art solutions for IoT, as well as their evolution in the foreseeable future provides non-experts with a comprehensive introduction to integrated circuit design for IoT, and serves as an excellent starting point for further learning, thanks to the broad coverage of topics and selected references makes it very well suited for practicing engineers and scientists working in the hardware and chip design for IoT, and as textbook for senior undergraduate, graduate and postgraduate students (familiar with analog and digital circuits).

Reliability Engineering and Computational Intelligence CRC Press

An all-in-one reference to the major Home Area Networking, Building Automation and AMI protocols, including 802.15.4 over radio or PLC, 6LowPAN/RPL, ZigBee 1.0 and Smart Energy 2.0, Zwave, LON, BACNet, KNX, ModBus, mBus, C.12 and DLMS/COSEM, and the new ETSI M2M system level standard.

In-depth coverage of Smart-grid and EV charging use cases. This book describes the Home Area Networking, Building Automation and AMI protocols and their evolution towards open protocols based on IP such as 6LowPAN and ETSI M2M. The authors discuss the approach taken by service providers to interconnect the protocols and solve the challenge of massive scalability of machine-to-machine communication for mission-critical applications, based on the next generation machine-to-machine ETSI M2M architecture. The authors demonstrate, using the example of the smartgrid use case, how the next generation utilities, by interconnecting and activating our physical environment, will be able to deliver more energy (notably for electric vehicles) with less impact on our natural resources. Key Features: Offers a comprehensive overview of major existing M2M and AMI protocols Covers the system aspects of large scale M2M and smart grid applications Focuses on system level architecture, interworking, and nationwide use cases Explores recent emerging technologies: 6LowPAN, ZigBee SE 2.0 and ETSI M2M, and for existing technologies covers recent developments related to interworking Relates ZigBee to the issue of smartgrid, in the more general context of carrier grade M2M applications Illustrates the benefits of the smartgrid concept based on real examples, including business cases This book will be a valuable guide for project managers working on smartgrid, M2M, telecommunications and utility projects, system engineers and developers, networking companies, and home automation companies. It will also be of use to senior academic researchers, students, and policy makers and regulators.

Fieldbus Systems and Their Applications 2005 MIT Press

Both the demographics and lack of resources in the health and well-being industry are increasingly forcing us to find alternative solutions for individualized health and social care. In an effort to

address this issue, smart technologies present enormous potential in solving this challenge. This book strives to enhance communication and collaboration between technology and health and social care sectors. The reader will receive an extensive overview of the possibilities of various technologies in care sectors (including ICT, electronics, automation, and sensor technology) written by experts from various countries. It will prove extremely useful for engineers developing well-being related systems, software, or other devices that can be used by professionals working with people with specialist needs, well-being and health service providers, educators teaching related courses, and upper level undergraduate students and graduate student studying related topics. The technology focus of the book is widespread and addresses elderly care and hospitals, in addition to solutions for various user groups, devices, and technologies. Beyond serving as a resource for nurses and people working in care sector, the book is also meant to give guidelines for engineers developing person-centered systems by exploring the integration of these technologies into service systems.

Energy and Technical Building Systems - Scientific and Technological Advances Springer
HCTL Open International Journal of Technology Innovations and Research (IJTIR) [ISSN (Online): 2321-1814] is an International, Open-Access, Peer-Reviewed, Online journal devoted to various disciplines of Science and Technology. HCTL Open IJTIR is a bi-monthly journal published by HCTL Open Publications Solutions, India and Hybrid Computing Technology Labs, India. - Get more information at: <http://ijtir.hctl.org/>

Proceedings Springer

IoT is emerging as a popular area of research and has piqued the interest of academics and scholars across the world. This book serves as a textbook and a single point of reference for readers looking to delve further into this domain. Written by leading experts in the field, this lucid and comprehensive work provides a clear understanding of the operation and scope of the IoT. Along with the description of the basic outline and technologies associated with the subject, the book discusses the IoT case studies and hands-on exercises, enabling readers to visualise the vastly interdisciplinary nature of its applications. The book also serves curious, non-technical readers, enabling them to understand necessary concepts and terminologies associated with the IoT.

The Engineering Handbook of Smart Technology for Aging, Disability, and Independence John Wiley & Sons

Proceedings of SPIE present the original research papers presented at SPIE conferences and other high-quality conferences in the broad-ranging fields of optics and photonics. These books provide prompt access to the latest innovations in research and technology in their respective fields. Proceedings of SPIE are among the most cited references in patent literature.

The Internet of Things SPIE-International Society for Optical Engineering

A concise, systematic introduction to natural and artificial lighting design More than any building material, light produces spatial effects, generates moods, and "stages" architectural designs. In well-lit spaces, we feel good, and we are capable and effective; light promotes health. Moreover, especially in office buildings, the combination of a sensible natural lighting design with a corresponding approach to artificial lighting is a decisive factor in energy conservation. Assembled by experienced authors and experts from the worlds of practice and teaching, this new volume in

the series Detail Practice provides an introduction to the most important aspects of natural and artificial lighting design. In addition to straightforward planning rules — such as ground plan design, building orientation, and the structuring of facades — it also introduces and explains current natural and artificial lighting systems with the help of example projects.

Home Networking Technologies and Standards IOS Press

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

Communication and Networking in Smart Grids Springer

The proliferation of Internet of Things (IoT) has enabled rapid enhancements for applications, not only in home and environment scenarios, but also in factory automation. Now, Industrial Internet of Things (IIoT) offers all the advantages of IoT to industry, with applications ranging from remote sensing and actuating, to de-centralization and autonomy. In this book, the editor presents the IIoT and its place during the new industrial revolution (Industry 4.0) as it takes us to a better,

sustainable, automated, and safer world. The book covers the cross relations and implications of IIoT with existing wired/wireless communication/networking and safety technologies of the Industrial Networks. Moreover, the book includes practical use-case scenarios from the industry for the application of IIoT on smart factories, smart cities, and smart grids. IoT-driven advances in commercial and industrial building lighting and in street lighting are presented as an example to shed light on the application domain of IIoT. The state of the art in Industrial Automation is also presented to give a better understanding of the enabling technologies, potential advantages, and challenges of the Industry 4.0 and IIoT. Finally, yet importantly, the security section of the book covers the cyber-security related needs of the IIoT users and the services that might address these needs. User privacy, data ownership, and proprietary information handling related to IIoT networks are all investigated. Intrusion prevention, detection, and mitigation are all covered at the conclusion of the book.

Industrial IoT CRC Press

Here is a thorough treatment of distortion in RF power amplifiers. This unique resource offers expert guidance in designing easily linearizable systems that have low memory effects. It offers you a detailed understanding of how the matching impedances of a power amplifier and other RF circuits can be tuned to minimize overall distortion. What's more, you see how to build models that can be used for distortion simulations. A new measurement methodology enables you to gauge the amplitude and phase of distortion components and recognize memory effects. The book explains that by killing memory effects, it is possible to use simple linearizers, such as analog predistortion, and still achieve sufficient performance. You learn a distortion analysis technique that allows you to repeat the analysis with other amplifier structures. Including over 120 equations and more than 110 illustrations, this practical reference provides you with the assistance you need to create amplifiers suitable for linear transmitters, and offers you new views of semiconductor modeling.

Building Automation CRC Press

This handbook incorporates new developments in automation. It also presents a widespread and well-structured conglomeration of new emerging application areas, such as medical systems and health, transportation, security and maintenance, service, construction and retail as well as production or logistics. The handbook is not only an ideal resource for automation experts but also for people new to this expanding field.