
Web, Artificial Intelligence and Network Applications This proceedings book showcases the latest research work presented at the Second Edition of the Mediterranean Symposium on Smart City Application (SCAMS 2017), which was held in Tangier, Morocco on October 15–27, 2017. It presents original research results, new ideas and practical development experiences that concentrate on both theory and practice. It includes papers from all areas of Smart City Applications, e.g. Smart Mobility, Big Data, Smart Grids, Smart Homes and Buildings, clouds, crowds, mashups, social networks, and security issues. The conference stimulated cutting-edge research discussions among pioneering researchers, scientists, industrial engineers, and students from all around the world. The topics covered in this book also focus on innovative issues at the international level by bringing together experts from different countries. The scope of SCAMS 2017 included methods and practices that combine various emerging internetworking and data technologies to capture, integrate, analyze, mine, annotate, and visualize data in a meaningful and collaborative manner. A series of international workshops were organized as invited sessions during the SCAMS 2017: The 2nd International Workshop on Smart Learning and Innovative Educations The 1st International Workshop on Smart Healthcare The 1st International Workshop on Smart Manufacturing Management of IoT Open Data Projects in Smart Cities This book gathers selected papers presented at the 2nd International Conference on Computing, Communications and Data Engineering, held at Sri Padmavati Mahila Visvavidyalaya, Tirupati, India from 1 to 2 Feb 2019. Chiefly discussing major issues and challenges in data engineering systems and computer communications, the topics covered include wireless systems and IoT, machine learning, optimization, control, statistics, and social computing.

Raspberry Pi 3 Home Automation Projects Showcases the forefront car-housing designs of contemporary architects, from the classic circular Marina City tower in Chicago to the Parcheggio Nuovo Salarie under construction in Rome, in a visual survey that documents the influence of aesthetic parking garage design.

Innovations in Smart Cities and Applications This book lays bare the essentials of park design for anyone who has to be involved with the designing of parklands, students & non-students alike.

Lots of Parking In practice, many different people with backgrounds in many different disciplines contribute to the design of an enterprise. Anyone who makes decisions to change the current enterprise to achieve some preferred structure is considered a designer. What is problematic is how to use the knowledge of separate aspects of the enterprise to achieve a glob
IoT and Edge Computing for Architects 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

Design of Enterprise Systems A system is complex that it comprises multiple views such as strategy/version n, strategy/version n+1, concept, analysis, design, implementation, structure, behavior, and input/output data views. Accordingly, a system is defined as a set of interacting components forming an integrated whole of that system’s multiple views. Since structure and behavior views are the two most prominent ones among multiple views, integrating the structure and behavior views is a method for integrating multiple views of a system. In other words, structure-behavior coalescence (SBC) results in the coalescence of multiple views. Therefore, it is concluded that the SBC architecture is so proper to model the multiple views of a system. In this book, we use the SBC architecture description language (SBC-ADL) to describe and represent the systems architecture of Smart Parking Cloud Applications and Services IoT System (SPCASIS). An architecture description language is a special kind of system model used in defining the architecture of a system. SBC-ADL uses six fundamental diagrams to formally grasp the essence of a system and its details at the same time. These diagrams are: a) architecture hierarchy diagram, b) framework diagram, c) component operation diagram, d) component connection diagram, e) structure-behavior coalescence diagram, and f) interaction flow diagram. Systems architecture is on the rise. By this book’s introduction and elaboration of the systems architecture of SPCASIS, all readers may understand clearly how the SBC-ADL helps architects effectively perform architecting, in order to productively construct the fruitful systems architecture.

Smart Grid Communications and Networking Internet of Things (IoT) refers to physical and virtual objects that have unique identities and are connected to the internet to facilitate intelligent applications that make energy, logistics, industrial control, retail, agriculture and many other domains “smarter”. Internet of Things is a new revolution of the Internet that is rapidly gathering momentum driven by the advancements in sensor networks, mobile devices, wireless communications, networking and cloud technologies. Experts forecast that by the year 2020 there will be a total of 50 billion devices/things connected to the internet. This book is written as a textbook on Internet of Things for educational programs at colleges and universities, and also for IoT vendors and service providers who may be interested in offering a broader perspective of Internet of Things to accompany their own customer and developer training programs. The typical reader is expected to have completed a couple of courses in programming using traditional high-level languages at the college-level, and is either a senior or a beginning graduate student in one of the science, technology, engineering or mathematics (STEM) fields. Like our companion book on Cloud Computing, we have tried to write a comprehensive book that transfers knowledge through an immersive “hands on” approach, where the reader is provided the necessary guidance and knowledge to develop working code for real-world IoT applications. Additional support is available at the book’s website: www.internet-of-things-book.com Organization The book is organized into 3 main parts, comprising of a total of 11 chapters. Part I covers the building blocks of Internet of Things (IoTs) and their characteristics. A taxonomy of IoT systems is proposed comprising of various IoT levels with increasing levels of complexity. Domain specific Internet of Things and their real-world applications are described. A generic design methodology for IoT is proposed. An IoT system management approach using NETCONF-YANG is described. Part II introduces the reader to the programming aspects of Internet of Things with a view towards rapid prototyping of complex IoT applications. We chose Python as the primary programming language for this book, and an introduction to Python is also included within the text to bring readers to a common level of expertise. We describe packages, frameworks and cloud services including the WAMP-AutoBahn, Xively cloud and Amazon Web Services which can be used for developing IoT systems. We chose the Raspberry Pi device for the examples in this book. Reference architectures for different levels of IoT applications are examined in detail. Case studies with complete source code for various IoT domains including home automation, smart environment, smart cities, logistics, retail, smart energy, smart agriculture, industrial control and smart health, are described. Part III introduces the reader to advanced topics on IoT including IoT data analytics and Tools for IoT. Case studies on collecting and analyzing data generated by Internet of Things in the cloud are described.

Cognitive Informatics and Soft Computing The classic work on the evaluation of city form. What does the city's form actually mean to the people who live there? What can the city planner do to make the city's image more vivid and memorable to the city dweller? To answer these questions, Mr. Lynch, supported by studies of Los Angeles, Boston, and Jersey City, formulates a new criterion--imageability--and shows its potential value as a guide for the building and rebuilding of cities. The wide scope of this study leads to an original and vital method for the evaluation of city form. The architect, the planner, and certainly the city dweller will all want to read this book.

Smart Buildings Systems for Architects, Owners and Builders This book focuses on RFID (Radio Frequency Identification), IoT (Internet of Things), and WSN (Wireless Sensor Network). It includes contributions that discuss the security and privacy issues as well as the opportunities and applications that are tightly linked to sensitive infrastructures and strategic services. This book addresses the complete functional framework and workflow in IoT-enabled RFID systems and explores basic and high-level concepts. It is based on the latest technologies and covers the major challenges, issues, and advances in the field. It presents data acquisition and case studies related to data-intensive technologies in RFID-based IoT and includes WSN-based systems and their security. It can serve as a manual for those in the industry while also helping beginners to understand both the basic and advanced aspects of IoT-based RFID-related issues. This book can be a premier interdisciplinary platform for researchers, practitioners, and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered, and find solutions that have been adopted in the fields of IoT and analytics.
Recent Advances in Information and Communication Technology 2018 “With futuristic homes on the rise, learn to control and automate the living space with intriguing IoT projects.” About This Book Build exciting (six) end-to-end home automation projects with Raspberry Pi 3, Seamlessly communicate and control your existing devices and build your own home automation system, Automate tasks in your home through projects that are reliable and fun Who This Book Is For This book is for all those who are excited about building home automation systems with Raspberry Pi 3. It's also for electronic hobbyists and developers with some knowledge of electronics and programming. What You Will Learn Integrate different embedded microcontrollers and development boards like Arduino, ESP8266, Particle Photon and Raspberry Pi 3, creating real life solutions for day to day tasks and home automation Create your own magic mirror that lights up with useful information as you walk up to it Create a system that intelligently decides when to water your garden and then goes ahead and waters it for you Use the Wi-fi enabled Adafruit ESP8266 Huzzah to create your own networked festive display lights Create a simple machine learning application and build a parking automation system using Raspberry Pi Learn how to work with AWS cloud services and connect your home automation to the cloud Learn how to work with Windows IoT in Raspberry Pi 3 and build your own Windows IoT Face Recognition door locking system In Detail Raspberry Pi 3 Home Automation Projects addresses the challenge of applying real-world projects to automate your house using Raspberry Pi 3 and Arduino. You will learn how to customize and program the Raspberry Pi 3 and Arduino-based boards in several home automation projects around your house, in order to develop home devices that will really rejuvenate your home. This book aims to help you integrate different microcontrollers like Arduino, ESP8266 Wi-Fi module, Particle Photon and Raspberry Pi 3 into the real world, taking the best of these boards to develop some exciting home automation projects. You will be able to use these projects in everyday tasks, thus making life easier and comfortable. We will start with an interesting project creating a Raspberry Pi-Powered smart mirror and move on to Automated Gardening System, which will help you build a simple smart gardening system with plant-sensor devices and Arduino to keep your garden healthy with minimal effort. You will also learn to build projects such as CheerLights into a holiday display, a project to erase parking headaches with OpenCV and Raspberry Pi 3, create Netflix’s “The Switch” for the living room and lock down your house like Fort Knox with a Windows IoT face recognition-based door lock system. By the end of the book, you will be able to build and automate the living space with intriguing IoT projects and bring a new degree of interconnectivity to your world. Style and approach End to end home automation projects with Raspberry Pi 3. Sensor and Data Fusion Parking Structures provides a single-source reference for parking structure designers, builders, and owners. This third edition is still the only such book. It addresses how to select the best functional and structural designs for a given situation, ensure long-term durability, design for easy maintenance, decide on the number and placement of entrances and exits, design an easily understood wayfinding system, design for ADA compliance, plan for internal auto and pedestrian traffic circulation, select the most effective and energy efficient lighting system, avoid the most common design and construction pitfalls, provide for adequate patron safety and security, carry out needed repairs, and extend the parking structure life. Parking Structures addresses all the major issues related to parking garages. It is an essential reference for parking structure owners, structural engineers, architects, contractors, and other professionals. New in the third edition: This third edition of Parking Structures includes new material on metric dimensions and recommendations for functional design globally, new research on flow capacity and queueing at parking entry/exits, an entirely new chapter on planning for a new parking structure, including cost issues and alternatives to structure construction, pedestrian considerations, safety in parking facilities, plazas above parking structures, an expanded chapter on seismic design, seismic retrofit, life cycle cost analysis, and upgrades to existing structures.

Industrial Applications of Holonic and Multi-Agent Systems Smart Buildings Systems for Architects, Owners and Builders is a practical guide and resource for architects, builders, engineers, facility managers, developers, contractors, and design consultants. The book covers the costs and benefits of smart buildings, and the basic design foundations, technology systems, and management systems encompassed within a smart building. Unlike other resources, Smart Buildings is organized to provide an overview of each of the technology systems in a building, and to indicate where each of these systems is in their migration to and utilization of the standard underpinnings of a smart building. Written for any professional interested in designing or building smart Buildings systems, this book provides you with the fundamentals needed to select and utilize the most up to date technologies to serve your purpose. In this book, you'll find simple to follow illustrations and diagrams, detailed explanations of systems and how they work and their draw backs. Case studies are used to provide examples of systems and the common problems encountered during installation. Some simple Repair and Trouble shooting tips are also included. After reading this book, builders, architects and owners will have a solid understanding of how these systems work which of these system is right for their project. Concise and easy to understand, the book will also provide a common language for ensure understanding across the board. Thereby, eliminating confusion and creating a common understanding among professionals. Ethernet, TCP/IP protocols, SQL databases, standard fiber optic Data Networks and Voice Networks Fire Alarm Systems, Access Control Systems and Video Surveillance Systems Heating, Ventilating and Air Conditioning Systems and Electric Power Management Systems. Lighting Control Systems Facility Management Systems

The Internet of Things Discover how to build your own Intelligent Internet of Things projects and bring a new degree of interconnectivity to your world. About This Book Build intelligent and unusual IoT projects in just 7 days, Create home automation, smart home, and robotic projects and allow your devices to do smart work Build IoT skills through exciting projects and leverage revolutionary computing hardware through the RPI and Arduino. Who This Book Is For If you're a developer, IoT enthusiast, or just someone curious about Internet of Things, then this book is for you. A basic understanding of electronic hardware, networking, and basic programming skills would do wonders. What You Will Learn how to get started with intelligent IoT projects Explore various pattern recognition and machine learning algorithms to make IoT projects smarter. Make decisions on which devices to use based on the kind of project to build. Create a simple machine learning application and implement design decision systems. Build a smart parking system using Arduino and Raspberry Pi Learn how to work with Amazon Echo and to build your own smart speaker machine Build multi-robot cooperation using swarm intelligence. In Detail Intelligent IoT Projects in 7 days is about creating smart IoT projects in just 7 days. This book will help you to overcome the challenge of analyzing data from physical devices. This book aims to help you put together some of the most exciting IoT projects in a short span of time. You'll be able to use these in achieving or automating everyday tasks—one project per day. We will start with a simple smart gardening system and move on to a smart parking system, and then we will make our own vending machine, a smart digital advertising dashboard, a smart speaker machine, an autonomous fire fighter robot, and finally look at a multi-robot cooperation using swarm intelligence Style and approach A clear step-by-step instruction guide to completing fully-fledged projects in just 7 days.

JTS Sensors and Architectures for Traffic Management and Connected Vehicles This book constitutes the proceedings from the 20th Tyrrhenian
The Art of Systems Architecting, Third Edition This book contains the research contributions presented at the 14th International Conference on Computing and Information Technology (IC2IT 2018) organised by King Mongkut’s University of Technology North Bangkok and its partners, and held in the northern Thai city of Chiang Mai in July 2018. Traditionally, IC2IT 2018 provides a forum for exchange on the state of the art and on expected future developments in its field. Correspondingly, this book contains chapters on topics in data mining, machine learning, natural language processing, image processing, networks and security, software engineering and information technology. With them, the editors want to foster inspiring discussions among colleagues, not only during the conference. It is also intended to contribute to a deeper understanding of the underlying problems as needed to solve them in complex environments and, beneficial for this purpose, to encourage interdisciplinary cooperation.

Anatomy of a Park "In one accessible, engaging, and easy-to-use volume readers will find historical context, directions, factual information, and analytical architectural analysis for more than two hundred places of interest across the United States. The traveler (armchair, behind the wheel, or on foot), the researcher (seeking a comprehensive view of some of America's greatest ideas and accomplishments), and the architect and landscape architect (seeking sources of inspiration) will find a rewarding journey inside this book."—BOOK JACKET.

Emerging Research in Data Engineering Systems and Computer Communications 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.

Kinetic Architecture Urban Systems Design: Creating Sustainable Smart Cities in the Internet of Things Era shows how to design, model and monitor smart communities using a distinctive IoT-based urban systems approach. Focusing on the essential dimensions that constitute smart communities energy, transport, urban form, and human comfort, this helpful guide explores how IoT-based sharing platforms can achieve greater community health and well-being based on relationship building, trust, and resilience. Uncovering the achievements of the most recent research on the potential of IoT and big data, this book shows how to identify, structure, measure and monitor multi-dimensional urban sustainability standards and progress. This thorough book demonstrates how to select a project, which technologies are most cost-effective, and their cost-benefit considerations. The book also illustrates the financial, institutional, policy and technological needs for the successful transition to smart cities, and concludes by discussing both the conventional and innovative regulatory instruments needed for a fast and smooth transition to smart, sustainable communities. Provides operational case studies and best practices from cities throughout Europe, North America, Latin America, Asia, Australia, and Africa, providing instructive examples of the social, environmental, and economic aspects of “smartification” Reviews assessment and urban sustainability certification systems such as LEED, BREEAM, and CASBEE, examining how each addresses smart technologies criteria Examines existing technologies for efficient energy management, including HEMS, BEMS, energy harvesting, electric vehicles, smart grids, and more

Architecture as a Global System Learn to design, implement, and secure your IoT infrastructure. Revised and expanded for edge computing. Key Features Build a complete IoT system that’s the best fit for your organization Learn about different concepts, tech, and trade-offs in the IoT architectural stack Understand the theory and implementation of each element that comprises IoT design Book Description Industries are embracing IoT technologies to improve operational expenses, product life, and people’s well-being. An architectural guide is needed if you want to traverse the spectrum of technologies needed to build a successful IoT system, whether that’s a single device or millions of IoT devices. IoT and Edge Computing for Architects, Second Edition encompasses the entire spectrum of IoT solutions, from IoT sensors to the cloud. It examines modern sensor systems, focusing on their power and functionality. It also looks at communication theory, paying close attention to near-range PAN, including the new Bluetooth® 5.0 specification and mesh networks. Then, the book explores IP-based communication in LAN and WAN, including 802.11ah, 5G LTE cellular, Sigfox, and LoRaWAN. It also explains edge computing, routing and gateways, and their role in fog computing, as well as the messaging protocols of MQTT 5.0 and CoAP. With the data now in internet form, you’ll get an understanding of cloud and fog architectures, including the OpenFog standards. The book wraps up the analytics portion with the application of statistical analysis, complex event processing, and deep learning models. The book then concludes by providing a holistic view of IoT security, cryptography, and shell security in addition to software-defined perimeters and blockchains. What you will learn Understand the role and scope of architecting a successful IoT deployment Scan the landscape of IoT technologies, from sensors to the cloud and more See the trade-offs in choices of protocols and communications in IoT deployments Become familiar with the terminology needed to work in the IoT space Broaden your skills in the multiple engineering domains necessary for the IoT architect Implement best practices to ensure reliability, scalability, and security in your IoT infrastructure Who this book is for This book is for architects, system designers, technologists, and technology managers who want to understand the IoT ecosphere, technologies, and trade-offs, and develop a 50,000-foot view of IoT architecture. An understanding of the architectural side of IoT is necessary. Intelligent IoT Projects in 7 Days The aim of the book is to provide latest research findings, innovative research results, methods and development techniques from both theoretical and practical perspectives related to the emerging areas of Web Computing, Intelligent Systems and Internet Computing. As the Web has become a major source of information, techniques and methodologies that extract quality information are of paramount importance for many Web and Internet applications. Data mining and knowledge discovery play key roles in many of today’s prominent Web applications such as e-commerce and computer security. Moreover, the outcome of Web services delivers a new platform for enabling service-oriented systems. The emergence of large scale distributed computing paradigms, such as Cloud Computing and Mobile Computing Systems, has opened many opportunities for collaboration services, which are at the core of any Information System. Artificial Intelligence (AI) is an area of computer science that build intelligent systems and algorithms that work and react like humans. The AI techniques and computational intelligence are powerful tools for learning, adaptation, reasoning and planning. They have the potential to become enabling technologies for the future intelligent networks. Recent research in the field of intelligent systems, robotics, neuroscience, artificial intelligence and cognitive sciences are very important for the future development and innovation of Web and Internet applications.
Smart Architecture Authored by two of the leading authorities in the field, this guide offers readers the knowledge and skills needed to achieve proficiency with embedded software.

The Image of the City The main objective of this book is to provide a multidisciplinary overview of methodological approaches, architectures, platforms, and algorithms for the realization of an Internet of Things (IoT)-based Smart Urban Ecosystem (SUE). Moreover, the book details a set of real-world applications and case studies related to specific smart infrastructures and smart cities, including structural health monitoring, smart urban drainage networks, smart grids, power efficiency, healthcare, city security, and emergency management. A Smart Urban Ecosystem (SUE) is a people-centric system of systems that involves smart city environments, applications, and infrastructures. SUEs require the close integration of cyber and physical components for monitoring, understanding and controlling the urban environment. In this context, the Internet of Things (IoT) offers a valuable enabling technology, as it bridges the gap between physical things and software components, and empowers cooperation between distributed, pervasive, and heterogeneous entities.

Transportation and Power Grid in Smart Cities Internet of Things (IoT)-enabled spaces have made revolutionary advances in the utility grid. Among these advances, intelligent energy-efficient services are gaining considerable interest. The use of the smart grid is increasing day after day around us and is not only used in saving energy but also in our daily life for intelligent health, traffic, and even farming systems. The grid enabled with IoT features is also expected to communicate with cellular networks smoothly in the next-generation networks (6G and beyond). This will open the door for other interesting research areas. In this book, we consider the most significant and emergent research topics in this domain, addressing major issues and challenges in IoT-based solutions proposed for the smart grid. The chapters provide insight on comprehensive topics in IoT-based smart grids, combining technical aspects with the most up-to-date theory. It investigates the grid under varying and potential emerging paradigms such as edge/fog computing, in addition to big data aspects considerations in the IoT era. With comprehensive surveys and case studies, this book explores basic and high-level grid aspects in the emerging smart city paradigm, which makes it especially attractive to researchers, academics, and higher-level students. This authored book can be used by computer science undergraduate and postgraduate students, researchers and practitioners, city administrators, policymakers, and government regulators.

LPWAN Technologies for IoT and M2M Applications If engineering is the art and science of technical problem solving, systems architecting happens when you don’t yet know what the problem is. The third edition of a highly respected bestseller, The Art of Systems Architecting provides in-depth coverage of the least understood part of systems design: moving from a vague concept and limited resources to a satisfactory and feasible system concept and an executable program. The book provides a practical, heuristic approach to the “art” of systems architecting. It provides methods for embracing, and then taming, the growing complexity of modern systems. New in the Third Edition: Five major case studies illustrating successful and unsuccessful practices Information on architecture frameworks as standards for architecture descriptions New methods for integrating business strategy and architecture and the role of architecture as the technical embodiment of strategy Integration of process guidance for organizing and managing architecture projects Updates to the rapidly changing fields of software and systems-of-systems architecture Organization of heuristics around a simple and practical process model A Practical Heuristic Approach to the Art of Systems Architecting Extensively rewritten to reflect the latest developments, the text explains how to create a system from scratch, presenting invention/design rules together with clear explanations of how to use them. The author supplies practical guidelines for avoiding common systematic failures while implementing new mandates. He uses a heuristics-based approach that provides an organized attack on very ill-structured engineering problems. Examining architecture as more than a set of diagrams and documents, but as part of decisions that either drive a system to success or doom it to failure, the book provide methods for integrating business strategy with technical architectural decision making.

Data Security in Internet of Things Based RFID and WSN Systems Applications Covers demand methods, data issues, valuation, cost and performance, and traffic models. This book contains supplementary case studies that illustrate how modelling can be applied to the study of the different transport modes and the infrastructures that support them.

Smart-Grid in IoT-Enabled Spaces The 2nd International Conference on Computer Applications & Information Security (ICCAIS 2019) is inviting authors to submit original contributions in the event research area ICCAIS 2019 is covering all aspects of Networking and Information Security, Computer Applications, Electrical Engineering & Computer Science, Network Management, Network Function Virtualization, Software Defined Networks, Network Applications and Convergence of IT and Telecom Networks The core track is accompanied by a series of workshops and poster sessions

Communications, Signal Processing, and Systems

Parking Structures An intelligent transportation system (ITS) offers considerable opportunities for increasing the safety, efficiency, and predictability of traffic flow and reducing vehicle emissions. Sensors (or detectors) enable the effective gathering of arterial and controlled-access highway information in support of automatic incident detection, active transportation and demand management, traffic-adaptive signal control, and ramp and freeway metering and dispatching of emergency response providers. As traffic flow sensors are integrated with big data sources such as connected and cooperative vehicles, and cell phones and other Bluetooth-enabled devices, more accurate and timely traffic flow information can be obtained. The book examines the roles of traffic management centers that serve cities, counties, and other regions, and the collocation issues that ensue when multiple agencies share the same space. It describes sensor applications and data requirements for several ITS strategies; sensor technologies; sensor installation, initialization, and field-testing procedures; and alternate sources of traffic flow data. The book addresses concerns related to the introduction of automated and connected vehicles, and the benefits that systems engineering and national ITS architectures in the US, Europe, Japan, and elsewhere bring to ITS. Sensor and data fusion benefits to traffic management are described, while the Bayesian and Dempster–Shafer approaches to data fusion are discussed in more detail. ITS Sensors and Architectures for Traffic Management and Connected Vehicles suit the needs of personnel in transportation institutes and highway agencies, and students in undergraduate or graduate transportation engineering courses.
aspects, standardization activities and experimental studies of communication and networking technologies for the smart grid. Expert authors provide all the essential information researchers need to progress in the field and to allow power systems engineers to optimize their communication systems.

Park and Recreation Structures This book illustrates the benefits of sensor fusion by considering the characteristics of infrared, microwave, and millimeter-wave sensors, including the influence of the atmosphere on their performance. Applications that benefit from this technology include: vehicular traffic management, remote sensing, target classification and tracking- weather forecasting- military and homeland defense. Covering data fusion algorithms in detail, Klein includes a summary of the information required to implement each of the algorithms discussed, and outlines system application scenarios that may limit sensor size but that require high resolution data.


The Internet of Things for Smart Urban Ecosystems With the increasing worldwide trend in population migration into urban centers, we are beginning to see the emergence of the kinds of mega-cities which were once the stuff of science fiction. It is clear to most urban planners and developers that accommodating the needs of the tens of millions of inhabitants of those megalopolises in an orderly and uninterrupted manner will require the seamless integration of and real-time monitoring and response services for public utilities and transportation systems. Part speculative look into the future of the world’s urban centers, part technical blueprint, this visionary book helps lay the groundwork for the communication networks and services on which tomorrow’s “smart cities” will run. Written by a uniquely well-qualified author team, this book provides detailed insights into the technical requirements for the wireless sensor and actuator networks required to make smart cities a reality.

Urban Systems Design This book provides a clear-sighted analysis which suggests that architectural design may yet shape and order the future of cities. A clear argument that emerges is that to retain their future agency, architects must understand the contours and ecologies of practice that constitute the global system of architectural production.

Programming Embedded Systems This book constitutes the refereed proceedings of the 9th International Conference on Industrial Applications of Holonic and Multi-Agent Systems, HoloMAS 2019, held in Linz, Austria, in August 2019. The 14 full papers presented were carefully reviewed and selected from 15 submissions, and 2 invited papers were also included. The papers are organized in the following topical sections: invited talks; methodologies and framework; agent-based production scheduling and control; data and knowledge; and MAS in various areas.

Handbook of Transport Modelling This book brings together papers from the 2019 International Conference on Communications, Signal Processing, and Systems, which was held in Urumqi, China, on July 20-22, 2019. Presenting the latest developments and discussing the interactions and links between these multidisciplinary fields, the book spans topics ranging from communications to signal processing and systems. It is chiefly intended for undergraduate and graduate students in electrical engineering, computer science and mathematics, researchers and engineers from academia and industry, as well as government employees.

IoT Fundamentals Princeton Architectural Press's classic reprint series was established in 1981 to make rare volumes on architecture available to a wider audience. The books' beautiful reproductions and finest quality printing and binding match those of the originals, while their 9-by-12-inch format makes them accessible and affordable. New introductions bring a modern voice to these texts, updating them to become invaluable contemporary resources.