

Systems Architecture Of Smart Parking Cloud Applications And Services lot System Sbc Architecture Description Language In Practice

"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.

This book constitutes the refereed post-conference proceedings of the International Conferences ICCASA and ICTCC 2018, held in November 2018 in Viet Tri City, Vietnam. The 20 revised full papers presented were carefully selected from 30 submissions. The papers of ICCASA cover a wide spectrum in the area of context-aware-systems. CAS is characterized by its self- facets such as self-organization, self-configuration, self-healing, self-optimization, self-protection used to dynamically control computing and networking functions. The papers of ICTCC cover formal methods for self-adaptive systems and discuss natural approaches and techniques for computation and communication. This book reviews the state of the art of big data analysis and smart city. It includes issues which pertain to signal processing, probability models, machine learning, data mining, database, data engineering, pattern recognition, visualisation, predictive analytics, data warehousing, data compression, computer programming, smart city, etc. Data is becoming an increasingly decisive resource in modern societies, economies, and governmental organizations. Data science inspires novel techniques and theories drawn from mathematics, statistics, information theory, computer science, and social science. Papers in this book were the outcome of research conducted in this field of study. The latter makes use of applications and techniques related to data analysis in general and big data and smart city in particular. The book appeals to advanced undergraduate and graduate students, postdoctoral researchers, lecturers and industrial researchers, as well as anyone interested in big data analysis and smart city.

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.

This book is composed by the papers written in English and accepted for presentation and discussion at The 2021 International Conference on Information Technology & Systems (ICITS 21), held at the Universidad Estatal Península de Santa Elena, in Libertad, Ecuador, between the 10th and the 12th of February 2021. ICITS is a global forum for researchers and practitioners to present and discuss recent findings and innovations, current trends, professional experiences and challenges of modern information technology and systems research, together with their technological development and applications. The main topics covered are information and knowledge management; organizational models and information systems; software and systems modelling; software systems, architectures, applications and tools; multimedia systems and applications; computer networks, mobility and pervasive systems; intelligent and decision support systems; big data analytics and applications; human-computer interaction; ethics, computers & security; health informatics; and information technologies in education. The five-volume set LNCS 11536, 11537, 11538, 11539, and 11540 constitutes the proceedings of the 19th International Conference on Computational Science, ICCS 2019, held in Faro, Portugal, in June 2019. The total of 65 full papers and 168 workshop papers presented in this book set were carefully reviewed and selected from 573 submissions (228 submissions to the main track and 345 submissions to the workshops). The papers were organized in topical sections named: Part I: ICCS Main Track Part II: ICCS Main Track; Track of Advances in High-Performance Computational Earth Sciences: Applications and Frameworks; Track of Agent-Based Simulations, Adaptive Algorithms and Solvers; Track of Applications of Matrix Methods in Artificial Intelligence and Machine Learning; Track of Architecture, Languages, Compilation and Hardware Support for Emerging and Heterogeneous Systems Part III: Track of Biomedical and Bioinformatics Challenges for Computer Science; Track of Classifier Learning from Difficult Data; Track of Computational Finance and Business Intelligence; Track of Computational Optimization, Modelling and Simulation; Track of Computational Science in IoT and Smart Systems Part IV: Track of Data-Driven Computational Sciences; Track of Machine Learning and Data Assimilation for Dynamical Systems; Track of Marine Computing in the Interconnected World for the Benefit of the Society; Track of Multiscale Modelling and Simulation; Track of Simulations of Flow and Transport: Modeling, Algorithms and Computation Part V: Track of Smart Systems: Computer Vision, Sensor Networks and Machine Learning; Track of Solving Problems with Uncertainties; Track of Teaching Computational Science; Poster Track ICCS 2019 Chapter "Comparing Domain-decomposition Methods for the Parallelization of Distributed Land Surface Models" is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

This book presents state-of-the-art intelligent methods and techniques for solving real-world problems and offers a vision of future research. Featuring 143 papers from the 4th Future Technologies Conference, held in San Francisco, USA, in 2019, it covers a wide range of important topics, including, but not limited to, computing, electronics, artificial intelligence, robotics, security and communications and their applications to the real world. As such, it is an interesting, exciting and inspiring read.

Parking is a challenge for cities everywhere, but especially for cities in low- and middle-income countries. There, cities are experiencing rapid urbanization and increasing motorization, while investment capacity for parking infrastructure is limited, and despite the availability of free on-street parking, it is not used in an efficient and coordinated way. This book is meant to act as a resource for those managing urban parking

challenges, particularly in low- and middle-income countries. This openAccess book can provide immediate guidance to city authorities, engineering firms, and urban planners worldwide and help develop data-driven solutions for smarter cities. The first part of this book portrays geospatial technologies in the context of urban mobility in smart cities. The second part focuses on implementing those technologies in parking management in low and middle-income countries.

Even though blockchain technology was originally created as a ledger system for bitcoin to operate on, using it for areas other than cryptocurrency has become increasingly popular as of late. The transparency and security provided by blockchain technology is challenging innovation in a variety of businesses and is being applied in fields that include accounting and finance, supply chain management, and education. With the ability to perform such tasks as tracking fraud and securing the distribution of medical records, this technology is key to the advancement of many industries.

The **Research Anthology on Blockchain Technology in Business, Healthcare, Education, and Government** is a vital reference source that examines the latest scholarly material on trends, techniques, and uses of blockchain technology applications in a variety of industries, and how this technology can further transparency and security. Highlighting a range of topics such as cryptography, smart contracts, and decentralized blockchain, this multi-volume book is ideally designed for academics, researchers, industry leaders, managers, healthcare professionals, IT consultants, engineers, programmers, practitioners, government officials, policymakers, and students.

The objective of this book is to teach what IoT is, how it works, and how it can be successfully utilized in business. This book helps to develop and implement a powerful IoT strategy for business transformation as well as project execution. Digital change, business creation/change and upgrades in the ways and manners in which we work, live, and engage with our clients and customers, are all enveloped by the Internet of Things which is now named "Industry 5.0" or "Industrial Internet of Things. The sheer number of IoT(a billion+), demonstrates the advent of an advanced business society led by sustainable robotics and business intelligence. This book will be an indispensable asset in helping businesses to understand the new technology and thrive. The edited volume contains original papers contributed to 1st International Conference on Smart System, Innovations and Computing (SSIC 2017) by researchers from different countries. The contributions focuses on two main areas, i.e. Smart Systems Innovations which includes applications for smart cities, smart grid, social computing and privacy challenges with their theory, specification, design, performance, and system building. And second Computing of Complex Solutions which includes algorithms, security solutions, communication and networking approaches. The volume provides a snapshot of current progress in related areas and a glimpse of future possibilities. This volume is useful for researchers, Ph.D. students, and professionals working in the core areas of smart systems, innovations and computing.

This book focuses on the core areas of computing and their applications in the real world. Presenting papers from the Computing Conference 2020 covers a diverse range of research areas, describing various detailed techniques that have been developed and implemented. The Computing Conference 2020, which provided a venue for academic and industry practitioners to share new ideas and development experiences, attracted a total of 514 submissions from pioneering academic researchers, scientists, industrial engineers and students from around the globe. Following a double-blind, peer-review process, 160 papers (including 15 poster papers) were selected to be included in these proceedings. Featuring state-of-the-art intelligent methods and techniques for solving real-world problems, the book is a valuable resource and will inspire further research and technological improvements in this important area.

This book gathers papers addressing state-of-the-art research in all areas of information and communication technologies and their applications in intelligent computing, cloud storage, data mining and software analysis. It presents the outcomes of the Fourth International Conference on Information and Communication Technology for Intelligent Systems, which was held in Ahmedabad, India. Divided into two volumes, the book discusses the fundamentals of various data analysis techniques and algorithms, making it a valuable resource for researchers and practitioners alike.

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.

Today, cloud computing, big data, and the internet of things (IoT) are becoming indubitable parts of modern information and communication systems. They cover not only information and communication technology but also all types of systems in society including within the realms of business, finance, industry, manufacturing, and management. Therefore, it is critical to remain up-to-date on the latest advancements and applications, as well as current issues and challenges. The Handbook of Research on Cloud Computing and Big Data Applications in IoT is a pivotal reference source that provides relevant theoretical frameworks and the latest empirical research findings on principles, challenges, and applications of cloud computing, big data, and IoT. While highlighting topics such as fog computing, language interaction, and scheduling algorithms, this publication is ideally designed for software developers, computer engineers, scientists, professionals, academicians, researchers, and students.

This book concludes a trilogy that began with *Intelligent Cities: Innovation, Knowledge Systems and digital spaces* (Routledge 2002) and *Intelligent Cities and Globalisation of Innovation Networks* (Routledge 2008). Together these books examine intelligent cities as environments of innovation and collaborative problem-solving. In this final book, the focus is on planning, strategy and governance of intelligent cities. Divided into three parts, each section elaborates upon complementary aspects of intelligent city strategy and planning. Part I is about the drivers and architectures of the spatial intelligence of cities, while Part II turns to planning processes and discusses top-down and bottom-up planning for intelligent cities. Cities such as Amsterdam, Manchester, Stockholm and Helsinki are examples of cities that have used bottom-up planning through the gradual implementation of

successive initiatives for regeneration. On the other hand, Living PlanIT, Neapolis in Cyprus, and Saudi Arabia intelligent cities have started with the top-down approach, setting up urban operating systems and common central platforms. Part III focuses on intelligent city strategies; how cities should manage the drivers of spatial intelligence, create smart environments, mobilise communities, and offer new solutions to address city problems. Main findings of the book are related to a series of models which capture fundamental aspects of intelligent cities making and operation. These models consider structure, function, planning, strategies toward intelligent environments and a model of governance based on mobilisation of communities, knowledge architectures, and innovation cycles.

This book constitutes the Proceeding of the Computational Intelligence in Information Systems conference (CIIS 2020), held in Brunei, January 25–27, 2021. The CIIS conference provides a platform for researchers to exchange the latest ideas and to present new research advances in general areas related to computational intelligence and its applications. The 23 revised papers presented in this book have been carefully selected from 55 submissions.

Transportation Cyber-Physical Systems provides current and future researchers, developers and practitioners with the latest thinking on the emerging interdisciplinary field of Transportation Cyber Physical Systems (TCPS). The book focuses on enhancing efficiency, reducing environmental stress, and meeting societal demands across the continually growing air, water and land transportation needs of both people and goods. Users will find a valuable resource that helps accelerate the research and development of transportation and mobility CPS-driven innovation for the security, reliability and stability of society at-large. The book integrates ideas from Transport and CPS experts and visionaries, consolidating the latest thinking on the topic. As cars, traffic lights and the built environment are becoming connected and augmented with embedded intelligence, it is important to understand how smart ecosystems that encompass hardware, software, and physical components can help sense the changing state of the real world. Bridges the gap between the transportation, CPS and civil engineering communities Includes numerous examples of practical applications that show how diverse technologies and topics are integrated in practice Examines timely, state-of-the-art topics, such as big data analytics, privacy, cybersecurity and smart cities Shows how TCPS can be developed and deployed, along with its associated challenges Includes pedagogical aids, such as Illustrations of application scenarios, architecture details, tables describing available methods and tools, chapter objectives, and a glossary Contains international contributions from academia, government and industry

Blockchain was first conceptualized as a method of building trust in machines and has grown into a vital aspect of many different sectors of the economy. Recently, attention has shifted to the field of autonomous vehicles, and the added value blockchain can provide for the future of this sector by building next generation secure decentralized, distributed, and trusted automated environments and enhancing the productivity of several autonomous applications. Opportunities and Challenges for Blockchain Technology in Autonomous Vehicles is a critical reference source that explores the applications of blockchain in automated industries. Featuring coverage on a wide range of topics including privacy, risk assessment, and performance optimization, this book is ideally designed for design engineers, industry professionals, cryptographers, service designers, entrepreneurs, government officials, consultants, researchers, academicians, and students.

This book presents high-quality research papers presented at the International Conference on Smart Computing and Cyber Security: Strategic Foresight, Security Challenges and Innovation (SMARTCYBER 2020) held during July 78, 2020, in the Department of Smart Computing, Kyungdong University, Global Campus, South Korea. The book includes selected works from academics and industrial experts in the field of computer science, information technology, and electronics and telecommunication. The content addresses challenges of cyber security. .

This book constitutes the refereed proceedings of the 16th IFIP WG 2.13 International Conference on Open Source Systems, OSS 2020, held in Innopolis, Russia, in May 2020.* The 12 revised full papers and 8 short papers presented were carefully reviewed and selected from 42 submissions. The papers cover a wide range of topics in the field of free/libre open source software (FLOSS) and discuss theories, practices, experiences, and tools on development and applications of OSS systems, with a specific focus on two aspects:(a) the development of open source systems and the underlying technical, social, and economic issue, (b) the adoption of OSS solutions and the implications of such adoption both in the public and in the private sector. *Due to the COVID-19 pandemic, the conference was held virtually.

This book is a printed edition of the Special Issue "Wireless Sensor and Actuator Networks for Smart Cities" that was published in JSAN This handbook provides a glimpse of the research that is underway in smart cities, with an examination of the relevant issues. It describes software infrastructures for smart cities, the role of 5G and Internet of things in future smart cities scenarios, the use of clouds and sensor-based devices for monitoring and managing smart city facilities, a variety of issues in the emerging field of urban informatics, and various smart city applications. Handbook of Smart Cities includes fifteen chapters from renowned worldwide researchers working on various aspects of smart city scale cyber-physical systems. It is intended for researchers, developers of smart city technologies and advanced-level students in the fields of communication systems, computer science, and data science. This handbook is also designed for anyone wishing to find out more about the on-going research thrusts and deployment experiences in smart cities. It is meant to provide a snapshot of the state-of-the-art at the time of its writing in several software services and cyber infrastructures as pertinent to smart cities. This handbook presents application case studies in video surveillance, smart parking, and smart building management in the smart city context. Unique experiences in designing and implementing the applications or the issues involved in developing smart city level applications are described in these chapters.

Integration of machine learning into several smart city application scenarios is also examined in some chapters of this handbook.

This book provides solution for challenges facing engineers in urban environments looking towards smart development and IoT. The authors address the challenges faced in developing smart applications along with the solutions. Topics addressed include reliability, security and financial issues in relation to all the smart and sustainable development solutions discussed. The solutions they provide are affordable, resistive to threats, and provide high reliability. The book pertains to researchers, academics, professionals, and students. Provides solutions to urban sustainable development problems facing engineers in developing and developed countries Discusses results with industrial problems and current issues in smart city development Includes solutions that are reliable, secure and financially sound

The proposed book will discuss various aspects of big data Analytics. It will deliberate upon the tools, technology, applications, use cases and research directions in the field. Chapters would be contributed by researchers, scientist and practitioners from various reputed universities and organizations for the benefit of readers.

From past decades, Computational intelligence embraces a number of nature-inspired computational techniques which mainly encompasses fuzzy sets, genetic algorithms, artificial neural networks and hybrid neuro-fuzzy systems to address the computational complexities such as uncertainties, vagueness and stochastic nature of various computational problems practically. At the same time, Intelligent Control systems are emerging as an innovative methodology which is inspired by various computational intelligence process to promote a control over the systems without the use of any mathematical models. To address the effective use of intelligent control in Computational intelligence systems, International Conference on Intelligent Computing, Information and Control Systems (ICICCS 2019) is initiated to encompass the various research works that helps to develop and advance the next-generation intelligent computing and

control systems. This book integrates the computational intelligence and intelligent control systems to provide a powerful methodology for a wide range of data analytics issues in industries and societal applications. The recent research advances in computational intelligence and control systems are addressed, which provide very promising results in various industry, business and societal studies. This book also presents the new algorithms and methodologies for promoting advances in common intelligent computing and control methodologies including evolutionary computation, artificial life, virtual infrastructures, fuzzy logic, artificial immune systems, neural networks and various neuro-hybrid methodologies. This book will be pragmatic for researchers, academicians and students dealing with mathematically intransigent problems. It is intended for both academicians and researchers in the field of Intelligent Computing, Information and Control Systems, along with the distinctive readers in the fields of computational and artificial intelligence to gain more knowledge on Intelligent computing and control systems and their real-world applications.

Smart Cities and intelligence are among the most significant topics in IoT. Intelligence in communication and infrastructure implementation is at the heart of this concept, and its development is a key issue in smart cities. This book addresses the challenges in realizing intelligence in smart cities and sensing platforms in the era of cloud computing and IoT, varying from cost and energy efficiency to availability and service quality. It focuses on both the design and implementation aspects of artificial intelligence approaches in smart cities and sensing applications that are enabled and supported by IoT paradigms, and mainly on data delivery approaches and their performability aspects.

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.

This book gathers selected papers presented at the 2nd International Conference on Computing, Communications and Data Engineering, held at Sri Padmavati Mahila Visvavidyalayam, 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.

This proceedings book is the fourth edition of a series of works which features emergent research trends and recent innovations related to smart city presented at the 5th International Conference on Smart City Applications SCA20 held in Safranbolu, Turkey. This book is composed of peer-reviewed chapters written by leading international scholars in the field of smart cities from around the world. This book covers all the smart city topics including Smart Citizenship, Smart Education, Smart Mobility, Smart Healthcare, Smart Mobility, Smart Security, Smart Earth Environment & Agriculture, Smart Economy, Smart Factory and Smart Recognition Systems. This book contains a special section intended for Covid-19 pandemic researches. This book edition is an invaluable resource for courses in computer science, electrical engineering and urban sciences for sustainable development.

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.

This book highlights state-of-the-art research on big data and the Internet of Things (IoT), along with related areas to ensure efficient and Internet-compatible IoT systems. It not only discusses big data security and privacy challenges, but also energy-efficient approaches to improving virtual machine placement in cloud computing environments. Big data and the Internet of Things (IoT) are ultimately two sides of the same coin, yet extracting, analyzing and managing IoT data poses a serious challenge. Accordingly, proper analytics infrastructures/platforms should be used to analyze IoT data. Information technology (IT) allows people to upload, retrieve, store and collect information, which ultimately forms big data. The use of big data analytics has grown tremendously in just the past few years. At the same time, the IoT has entered the public consciousness, sparking people's imaginations as to what a fully connected world can offer. Further, the book discusses the analysis of real-time big data to derive actionable intelligence in enterprise applications in several domains, such as in industry and agriculture. It explores possible automated solutions in daily life, including structures for smart cities and automated home systems based on IoT technology, as well as health care systems that manage large amounts of data (big data) to improve clinical decisions. The book addresses the security and privacy of the IoT and big data technologies, while also revealing the impact of IoT technologies on several scenarios in smart cities design. Intended as a comprehensive introduction, it offers in-depth analysis and provides scientists, engineers and professionals the latest techniques, frameworks and strategies used in IoT and big data technologies.

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LEARN MORE ABOUT FOUNDATIONAL AND ADVANCED TOPICS IN INTERNET OF THINGS TECHNOLOGY WITH THIS ALL-IN-ONE GUIDE Enabling the Internet of Things: Fundamentals, Design, and Applications delivers a comprehensive starting point for anyone hoping to understand the fundamentals and design of Internet of Things (IoT) systems. The book's distinguished academics and authors offer readers an opportunity to understand IoT concepts via programming in an abstract way. Readers will learn about IoT fundamentals, hardware and software components, IoT protocol stacks, security, IoT applications and implementations, as well as the challenges, and potential solutions, that lie ahead. Readers will learn about the social aspects of IoT systems, as well as receive an introduction to the Blockly Programming Language, IoT Microcontrollers, IoT Microprocessors, systems on a chip and IoT Gateway Architecture. The book also provides implementation of simple code examples in Packet Tracer, increasing the usefulness and practicality of the book. Enabling the Internet of Things examines a wide variety of other essential topics, including: The fundamentals of IoT, including its evolution, distinctions, definitions, vision, enabling technologies, and building blocks An elaboration of the sensing principles of IoT and the essentials of wireless sensor networks A detailed examination of the IoT protocol stack for communications An analysis of the security challenges and threats faced by users of IoT devices, as well as the countermeasures that can be used to fight them, from the perception layer to the application layer Perfect as a supplementary text for undergraduate students taking computer science or electrical engineering courses, Enabling the Internet of Things also belongs on the bookshelves of industry professionals and researchers who regularly work with and on the Internet of Things and who seek a better understanding of its foundational and advanced topics.

Internet of Things (IoT)-enabled spaces have made revolutionary advances in the utility grid. Among these advances, intelligent and 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.

The Cloud in IoT-enabled Spaces addresses major issues and challenges in IoT-based solutions proposed for the Cloud. It paves the way for IoT-enabled spaces in the next generation cloud computing paradigm and opens the door for further innovative ideas. Topics include Cloud-based optimization in the IoT era, scheduling and routing, medium access, data caching, secure access, uncertainty, home automation, machine learning in wearable devices, energy monitoring, and plant phenotyping in farming. Smart spaces are solutions where Internet of Things (IoT)-enabling technologies have been employed towards further advances in the lifestyle. It tightly integrates with the existing Cloud infrastructure to impact several fields in academia and industry. The Cloud in IoT-enabled Spaces provides an overview of the issues around small spaces and proposes the most up-to-date alternatives and solutions. The objective is to pave the way for IoT-enabled spaces in the next-generation Cloud computing and open the door for further innovative ideas.

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 & Innovative Educations The 1st International Workshop on Smart Healthcare The 1st International Workshop on Mathematics for Smart City The 1st International Workshop Industry 4.0 and Smart Manufacturing

This book includes extended and revised selected papers from the 8th International Conference on Smart Cities and Green ICT Systems, SMARTGREENS 2019, and the 5th International Conference on Vehicle Technology and Intelligent Transport Systems, VEHITS 2019, held in Heraklion, Crete, Greece, in May 2019. The 17 full papers presented during SMARTGREENS and VEHITS 2019 were carefully reviewed and selected from the 134 submissions. The papers present research on advances and applications in the fields of smart cities, green information and communication technologies, sustainability, energy aware systems and technologies, vehicle technology and intelligent transport systems.

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