

## Power Monitoring Using The Raspberry Pi Eric

This book presents selected papers from the International Conference on Renewable Energy Systems (ICRES 2020). It throws light over the state of the art of renewable energy sources and their technological advances. Renewable energy sources discussed in this book include solar, wind, biomass, fuel cells, hydropower, hydrogen, nuclear, and geothermal. This book comprehensively explains each of these sources, materials associated, technological development, economics and their impact on the environment. As the renewable energy sources are intermittent, they require specific power electronic converter to convert the generated power into useful form that can be used for utility. Hence, this book describes different forms of power converter such as AC-DC, DC-DC, DC-AC and AC-AC. Advanced power semiconductor devices, their gate drive and protection circuits, heat sink design and magnetic components for power converter are the additional topics included in this book. The topics covered in these proceedings will have a large impact among academicians, researchers, policy makers, scientists, practitioners and students in fields of electronics and electrical engineering, energy engineering, automotive engineering, and so on.

This volume presents the first part of the proceedings of the Mediterranean Conference on Information & Communication Technologies (MedICT 2015), which was held at Saida, Morocco during 7 – 9 May, 2015. MedICT provides an excellent international forum to the researchers and practitioners from both academia as well as industry to meet and share cutting-edge development. The conference has also a special focus on enabling technologies for societal challenges, and seeks to address multidisciplinary challenges in Information & Communication Technologies such as health, demographic change, wellbeing, security and sustainability issues. The proceedings publish high quality papers which are closely related to the various theories, as well as emerging and practical applications of particular interest to the ICT community. This first volume provides a compact yet broad view of recent developments in devices, technologies and processing, and covers recent research areas in the field including Microwave Devices and Printed Antennas, Advances in Optical and RF Devices and Applications, Signal Processing and Information Theory, Wireless and Optical Technologies and Techniques, Computer Vision, Optimization and Modeling in Wireless Communication Systems, Modeling, Identification and Biomedical Signal Processing, Photovoltaic Cell & Systems, RF Devices and Antennas for Wireless Applications, RFID, Ad Hoc and Networks Issues.

This book brings together several aspects of hosting capacity (HC) assessment and enhancement of modern electrical power systems. HC is a key enabler for affordable, reliable and renewable energy sources, that will aid in transitioning away from traditional high-carbon energy sources. The chapters provide insight into the state of the art on current hosting capacity concepts, restrictive performance limits, distribution network operators and network planners' viewpoints, and the cutting-edge technologies deployed worldwide for hosting capacity enhancement. Written by leading experts in power, control, and renewable energy resources. This book is beneficial to distribution system operators, network planners, distribution generation investors, and researchers in this field. Due to its broad scope, it is an ideal resource for students in advanced graduate-level courses and special topics in the field of hosting capacity assessment and enhancement in modern electrical power systems.

This book, divided in two volumes, originates from Techno-Social 2020, the 3rd International Conference on Advanced Technologies for Societal Applications, Maharashtra, India, that brings together faculty members of various engineering colleges to solve Indian regional relevant problems under the guidance of eminent researchers from various reputed organizations. The focus of this volume is on technologies that help develop and improve society, in particular on issues such as sensor and ICT based technologies for the betterment of people. Technologies for agriculture and healthcare, micro and nano technologies for applications. This conference also helps innovators to share their best practices products developed to solve specific local problems which in turn may help the other researchers to take inspiration to solve problems in their region. On the other hand, technologies proposed by expert researchers may find applications in different regions. This offers a multidisciplinary platform for researchers from a broad range of disciplines of Science, Engineering and Technology for reporting innovations at different levels.

2019 3rd International Conference on Computing Methodologies and Communication (ICCCM)

Realization with Raspberry Pi, NodeMCU and Arduino

Recent Findings in Intelligent Computing Techniques

Proceedings of the 3rd International Conference on Advanced Technologies for Societal Applications—Volume 1

Recent Trends in Renewable Energy Sources and Power Conversion

Proceedings of the 3rd International Symposium on Big Data and Cloud Computing Challenges (ISBCC – 16 ' )

Internet of Things Programming with JavaScript

This book provides insights of World Conference on Smart Trends in Systems, Security and Sustainability (WS4 2021) which is divided into different sections such as Smart IT Infrastructure for Sustainable Society, Smart Management perspective for Sustainable Society, Smart Secure Systems for Next Generation Technologies, Smart Trends for Computational Graphics and Image Modeling, and Smart Trends for Biomedical and Health Informatics. The proceedings is presented in two volumes. The book is helpful for active researchers and practitioners in the field.

This book is a collection of peer-reviewed best selected research papers presented at 3rd International Conference on Computer Networks and Inventive Communication Technologies (ICCNCT 2020). The book covers new results in theory, methodology, and applications of computer networks and data communications. It includes original papers on computer networks, network protocols and wireless networks, data communication technologies, and network security. The proceedings of this conference is a valuable resource, dealing with both the important core and the specialized issues in the areas of next generation wireless network design, control, and management, as well as in the areas of protection, assurance, and trust in information security practice. It is a reference for researchers, instructors, students, scientists, engineers, managers, and industry practitioners for

advance work in the area.

Internet of things (IoT) has had a major impact on academic and industrial fields. Applying these technologies to healthcare systems reduces medical costs while enriching the patient-centric approach to medicine, allowing for better overall healthcare proficiency. However, usage of IoT in healthcare is still suffering from significant challenges with respect to the cost and accuracy of medical sensors, non-standard IoT system architectures, assorted wearable devices, the huge volume of generated data, and interoperability issues. Incorporating the Internet of Things in Healthcare Applications and Wearable Devices is an essential publication that examines existing challenges and provides solutions for building smart healthcare systems with the latest IoT-enabled technology and addresses how IoT improves the proficiency of healthcare with respect to wireless sensor networks. While highlighting topics including mobility management, sensor integration, and data analytics, this book is ideally designed for computer scientists, bioinformatics analysts, doctors, nurses, hospital executives, medical students, IT specialists, software developers, computer engineers, industry professionals, academicians, researchers, and students seeking current research on how these emerging wireless technologies improve efficiency within the healthcare domain.

This book discusses new cognitive informatics tools, algorithms and methods that mimic the mechanisms of the human brain which lead to an impending revolution in understating a large volume of data generated by various smart applications. The book is a collection of peer-reviewed best selected research papers presented at the International Conference on Data Intelligence and Cognitive Informatics (ICICI 2020), organized by SCAD College of Engineering and Technology, Tirunelveli, India, during 8-9 July 2020. The book includes novel work in data intelligence domain which combines

with the increasing efforts of artificial intelligence, machine learning, deep learning and cognitive science to study and develop a deeper understanding of the information processing systems.

Proceedings of the 8th ICIECE 2019

Symposium proceedings - XVI International symposium Symborg 2018

Selected Articles from IM3F 2020, Malaysia

Results from the 3rd International Conference on Robot Intelligence Technology and Applications

Proceedings of Sixth International Congress on Information and Communication Technology

Hosting Capacity for Smart Power Grids

Proceedings of Thrid ICCNCT 2020

**This book covers all aspects of robot intelligence from perception at sensor level and reasoning at cognitive level to behavior planning at execution level for each low level segment of the machine. It also presents the technologies for cognitive reasoning, social interaction with humans, behavior generation, ability to cooperate with other robots, ambience awareness, and an artificial genome that can be passed on to other robots. These technologies are to materialize cognitive intelligence, social intelligence, behavioral intelligence, collective intelligence, ambient intelligence and genetic intelligence. The book aims at serving researchers and practitioners with a timely dissemination of the recent progress on robot intelligence technology and its applications, based on a collection of papers presented at the 3rd International Conference on Robot Intelligence Technology and Applications (RITA), held in Beijing, China, November 6 - 8, 2014. For better readability, this edition has the total 74 papers grouped into 3 chapters: Chapter I: Ambient, Behavioral, Cognitive, Collective, and Social Robot Intelligence, Chapter II: Computational Intelligence and Intelligent Design for Advanced Robotics, Chapter III: Applications of Robot Intelligence Technology, where individual chapters, edited respectively by Peter Sincak, Hyun Myung, Jun Jo along with Weimin Yang and Jong-Hwan Kim, begin with a brief introduction written by the respective chapter editors.**

**This book provides an overview of distributed control and distributed optimization theory, followed by specific details on industrial applications to smart grid systems. It discusses the fundamental analysis and design schemes for developing actual working smart grids and covers all aspects concerning the conventional and nonconventional methods of their use. Hybrid Intelligence for Smart Grid Systems provides an overview of a smart grid, along with its needs, benefits, challenges, and existing structure and describes the inverter topologies adopted for integrating renewable power, and provides an overview of its needs, benefits, challenges, and possible future technologies. This pioneering book is a must-read for researchers, engineering professionals, and students, giving them the tools needed to move from the concept of a smart grid to its actual design and implementation. Moreover, it will enable regulators, policymakers, and energy executives to understand the future of energy delivery systems towards safe, economical, high-quality power delivery in a dynamic and demanding environment.**

This book presents the latest research on applications of artificial intelligence and the Internet of Things in renewable energy systems. Advanced renewable energy systems must necessarily involve the latest technology like artificial intelligence and Internet of Things to develop low cost, smart and efficient solutions. Intelligence allows the system to optimize the power, thereby making it a power efficient system; whereas, Internet of Things makes the system independent of wire and flexibility in operation. As a result, intelligent and IOT paradigms are finding increasing applications in the study of renewable energy systems. This book presents advanced applications of artificial intelligence and the internet of things in renewable energy systems development. It covers such topics as solar energy systems, electric vehicles etc. In all these areas applications of artificial intelligence methods such as artificial neural networks, genetic algorithms, fuzzy logic and a combination of the above, called hybrid systems, are included. The book is intended for a wide audience ranging from the undergraduate level up to the research academic and industrial communities engaged in the study and performance prediction of renewable energy systems.

**This book constitutes refereed proceedings of the Third International Conference on Emerging Technology Trends in Electronics, Communication and Networking, ET2ECN 2020, held in Surat, India, in February 2020. The 17 full papers and 6 short papers presented were thoroughly reviewed and selected from 70 submissions. The volume covers a wide range of topics including electronic devices, VLSI design and fabrication, photo electronics, systems and applications, integrated optics, embedded systems, wireless communication, optical communication, free space optics, signal processing, image/ audio/ video processing, wireless sensor networks, next generation networks, network security, and many others.**

Smart Buildings Digitalization, Two Volume Set

Recent Trends and Advances in Artificial Intelligence and Internet of Things

Internet of Things for Indoor Air Quality Monitoring

Information and Communication Technology for Sustainable Development

Smart and Intelligent Systems

Artificial IoT in Renewable Energy

**Proceedings of 2nd International Multi-Disciplinary Conference Theme: Integrated Sciences and Technologies, IMDC-IST 2021, 7-9 September 2021, Sakarya, Turkey**

*Uncertainties in Modern Power Systems combines several aspects of uncertainty management in power systems at the planning and operation stages within an integrated framework. This book provides the state-of-the-art in electric network planning, including time-scales, reliability, quality, optimal allocation of compensators and distributed generators, mathematical formulation, and search algorithms. The book introduces innovative research outcomes, programs, algorithms, and approaches that consolidate the present status and future opportunities and challenges of power systems. The book also offers a comprehensive description of the overall process in terms of understanding, creating, data gathering, and managing complex electrical engineering applications with uncertainties. This reference is useful for researchers, engineers, and operators in power distribution systems. Includes innovative research outcomes, programs, algorithms, and approaches that consolidate current status and future of modern power systems Discusses how uncertainties will impact on the performance of power systems Offers solutions to significant challenges in power systems planning to achieve the best operational performance of the different energy power sectors*

*This proceedings volume contains selected papers that were presented in the 3rd International Symposium on Big Data and Cloud Computing Challenges, 2018 held at VIT University, India on March 10 and 11. New research issues, challenges and opportunities shaping the future agenda in the field of Big Data and Cloud Computing are identified and presented throughout the book, which is intended for researchers, scholars, students, software developers and practitioners working at the forefront in their field. The book includes design smart buildings with enhanced air quality. Consequently, this book aims to present future scope for carrying out potential research activities in this domain. Over the past few years, the Internet of Things (IoT) is proven as the most revolutionizing invention in the field of engineering and design. This technology has wide scope in automation and real-time monitoring. Indoor air quality assessment is one of the most important applications of IoT which helps in the development of smart and healthy living spaces. Numerous methods have been developed for air quality assessment to ensure enhanced public health and well-being. The combination of sensors, microcontrollers, and communication technologies can be used to handle the massive amount of field data to access the condition of building air quality.*

*This book contains the proceedings of the Second International Conference on Integrated Sciences and Technologies (IMDC-IST-2021). Where held on 7th-9th Sep 2021 in Sakarya, Turkey. This conference was organized by University of Bradford, UK and Southern Technical University, Iraq. The papers in this conference were collected in a proceedings book entitled: Proceedings of the second edition of the International Multi-Disciplinary Conference Theme: "Integrated Sciences and Technologies" (IMDC-IST-2021). The presentation of such a multi-discipline conference provides a lot of exciting insights and new understanding on recent issues in terms of Green Energy, Digital Health, Blended Learning, Big Data, Meta-material, Artificial-Intelligence powered applications, Cognitive Communications, Image Processing, Health Technologies, 5G Communications. Referring to the argument, this conference would serve as a valuable reference for future researchers and practitioners. The book is of interest to electronic and mechanical engineers, researchers and students in the field of photovoltaics.*

*Driven by new regulations, new market structures, and new energy resources, the smart grid has been the trigger for profound changes in the way that electricity is generated, distributed, managed, and consumed. The smart grid has raised the traditional power grid by using a two-way electricity and information flow to create an advanced, automated power supply network. However, these pioneering smart grid technologies must grow to adapt to the demands of the current digital society. In today's digital landscape, we can access feasible data and knowledge that were merely inconceivable. This Special Issue aims to address the landscape in which smart grids are progressing, due to the advent of pervasive technologies like the Internet of Things (IoT). It will be the advanced exploitation of the massive amounts of data generated from (low-cost) IoT sensors that will become the main driver to evolve the concept of the smart grid, currently focused on infrastructure, towards the digital energy network paradigm, focused on service. Furthermore, collective intelligence will improve the processes of decision making and empower citizens. Original manuscripts focusing on state-of-the-art IoT networking and communications, M2M communications, cyberphysical system architectures, big data analytics or cloud computing applied to digital energy platforms, including design methodologies and practical implementation aspects, are welcome.*

*This book explains the application of Artificial Intelligence and Internet of Things on green energy systems. The design of smart grids and empower citizens enhances energy efficiency, while the collection of environmental data through sensors and their prediction through machine learning models improve the reliability of green energy systems.*

Proceedings of ICT4SD 2018

Towards the Digital Energy Network

Big Data and HPC: Ecosystem and Convergence

Nanogrids, Microgrids, and the Internet of Things (IoT)

Select Proceedings of ICRES 2020

Functional Reverse Engineering of Strategic and Non-Strategic Machine Tools

Techno-Social 2020

Due to the increasing need to solve complex problems, high-performance computing (HPC) is now one of the most fundamental infrastructures for scientific development in all disciplines, and it has progressed massively in recent years as a result. HPC facilitates the processing of big data, but the tremendous research challenges faced in recent years include: the scalability of computing performance for high velocity, high variety and high volume big data; deep learning with massive-scale datasets; big data programming paradigms on multi-core; GPU and hybrid distributed environments; and unstructured data processing with high-performance computing. This book presents 19 selected papers from the TopHPC2017 congress on Advances in High-Performance Computing and Big Data Analytics in the Eascalare era, held in Tehran, Iran, in April 2017. The book is divided into 3 sections: State of the Art and Future Scenarios, Big Data Challenges, and HPC Challenges, and will be of interest to all those whose work involves the processing of Big Data and the use of HPC.

This book provides a synthesis for using IoT for indoor air quality assessment. It will help upcoming researchers to understand the gaps in the literature while identifying the new challenges and opportunities to develop healthy living spaces. On the other hand, this book provides insights about integrating IoT with advanced building design to improve smart buildings with enhanced air quality. Consequently, this book aims to present future scope for carrying out potential research activities in this domain. Over the past few years, the Internet of Things (IoT) is proven as the most revolutionizing invention in the field of engineering and design. This technology has wide scope in automation and real-time monitoring. Indoor air quality assessment is one of the most important applications of IoT which helps in the development of smart and healthy living spaces. Numerous methods have been developed for air quality assessment to ensure enhanced public health and well-being. The combination of sensors, microcontrollers, and communication technologies can be used to handle the massive amount of field data to access the condition of building air quality.

This book contains the proceedings of the Second International Conference on Integrated Sciences and Technologies (IMDC-IST-2021). Where held on 7th-9th Sep 2021 in Sakarya, Turkey. This conference was organized by University of Bradford, UK and Southern Technical University, Iraq. The papers in this conference were collected in a proceedings book entitled: Proceedings of the second edition of the International Multi-Disciplinary Conference Theme: "Integrated Sciences and Technologies" (IMDC-IST-2021). The presentation of such a multi-discipline conference provides a lot of exciting insights and new understanding on recent issues in terms of Green Energy, Digital Health, Blended Learning, Big Data, Meta-material, Artificial-Intelligence powered applications, Cognitive Communications, Image Processing, Health Technologies, 5G Communications. Referring to the argument, this conference would serve as a valuable reference for future researchers and practitioners. The book is of interest to electronic and mechanical engineers, researchers and students in the field of photovoltaics.

This book presents a detailed description, analysis, comparison of the latest research and developments in photovoltaic energy. Discussing everything from semiconductors to system integration, and applying various advanced technologies to stand alone and electric utility interfaced in normal and abnormal operating conditions of PV systems, this book provides a thorough introduction to the topic. This book brings together research from around the world, covering the use of technologies such as embedded systems, the Internet of things and blockchain technologies for PV systems for different applications including controllers, solar trackers and cooling systems. The book is of interest to electronic and mechanical engineers, researchers and students in the field of photovoltaics.

Proceedings of the 5th ICACNI 2017, Volume 1

23rd International Conference, PAM 2022, Virtual Event, March 28–30, 2022, Proceedings

Proceedings of International Conference on Renewal Power (ICRP 2020)

MedCT 2015 Volume 1

Renewable Power for Sustainable Growth

Computational Methodologies for Electrical and Electronics Engineers

Green Innovation, Sustainable Development, and Circular Economy

This book is a collection of the best research papers presented at the 8th International Conference on Innovations in Electronics and Communication Engineering at Guru Nanak Institutions Hyderabad, India. Featuring contributions by researchers, technocrats and experts, the book covers various areas of communication engineering, like signal processing, VLSI design, embedded systems, wireless communications, and electronics and communications in general, as well as cutting-edge technologies. As such, it is a valuable reference resource for young researchers.

Although green innovation and technology is not new, so far very limited information is available regarding the diversified approaches for green technologies and engineering. This book highlights the challenges and opportunities, offering a roadmap for using various approaches in the most cost effective way. The book discusses the interrelationship between a circular economy and green technologies. It presents the dimensions of green innovations and illustrates the challenges of industrialization, especially in terms of material synthesis and utilized processes. It covers the current environmental and health challenges of societies and describes the role of stakeholders in developing sustainable societies and industries. This book provides a line of approach to core and interdisciplinary studies, academicians, research scientists, and various industry personnel to present their ideas of green innovations with a common vision of sustainable development of community and industries in mind. Features Discusses the interrelationship between a circular economy and green technologies Presents the dimensions of green innovations Illustrates the challenges of industrialization, especially in terms of material synthesis and utilized processes Covers the current environmental and health challenges of societies Offers the identification and role of stakeholders in the sustainable development of societies and industries

This book presents part of the IM3F 2020 proceedings from the Mechatronics track. It highlights key challenges and recent trends in mechatronics engineering and technology that are non-trivial in the age of Industry 4.0. It discusses traditional as well as modern solutions that are employed in the multitude spectra of mechatronics-based applications. The readers are expected to gain an insightful view on the current trends, issues, mitigating factors as well as solutions from this book.

This book is a collection of papers presented at the International Conference on Renewable Power (ICRP 2020), held during 13/14 July 2020 in Rajouri, Jammu, India. The book covers different topics of renewable energy sources in modern power systems. The book focuses on smart grid technologies and applications, renewable power systems including solar PV, solar thermal, wind, power generation, transmission and distribution, transportation electrification and automotive technologies, power electronics and applications in renewable power system, energy management and control system, energy storage in modern power system, active distribution network, artificial intelligence in renewable power systems, and cyber-physical systems and Internet of things in smart grid and renewable power.

Selected Papers of WorldS4 2021, Volume 2

ICICT 2021, London, Volume 4

Passive and Active Measurement

Case Studies on Data Centers and Automation

Proceedings of the Mediterranean Conference on Information & Communication Technologies 2015

Emerging Technology Trends in Electronics, Communication and Networking

Artificial Intelligence and Internet of Things for Renewable Energy Systems

This book is a collection of high-quality research papers presented at the International Conference on Smart and Intelligent Systems (SIS 2021), which will be held in Velagapudi Ramakrishna Siddhartha Engineering College (VRSCE), Andhra Pradesh, India, during February 25–26, 2021. In virtual mode. It highlights how recent informatics intelligent systems have successfully been used to develop innovative smart techniques and infrastructure in the field of modern engineering and technology. The book will also be of interest to those working in the field of computational intelligence, smart computer network and security analysis, control and automation system, cloud computing, fog computing and IoT, smart grid communication, smart cities, solar cell synthesis and their performance, green technology, and many more. The contents of this book prove useful to researchers and professionals.

Artificial intelligence has been applied to many areas of science and technology, including the power and energy sector. Renewable energy in particular has experienced the tremendous positive impact of these developments. With the recent evolution of smart energy technologies, engineers and scientists working in this sector need an exhaustive source of current knowledge to effectively cater to the energy needs of citizens of developing countries. Computational Methodologies for Electrical and Electronics Engineers is a collection of innovative research that provides a complete insight and overview of the application of artificial computational intelligence in energy. Featuring research on a wide range of topics such as artificial neural networks, smart grids, and soft computing, this book is ideally designed for programmers, engineers, technicians, ecologists, entrepreneurs, researchers, academicians, and students.

Learn the art of bringing the Internet of Things into your projects with the power of JavaScript About This Book This is a practical guide to help you configure and build a complete distributed IoT system from scratch using JavaScript Utilize the power of Node and HTML5 to develop web services and a centralized web server, enabling high-level communication between connected devices Control all your connected devices from the browser by setting up a common dashboard Who This Book Is For This book is for developers who are interested in learning how to communicate with connected devices in JavaScript to set up an IoT system. Some basic knowledge of JavaScript is expected. Hobbyists who want to explore the potential of IoT in JavaScript will also find this book useful. What You Will Learn Develop the skills to connected devices prepared the field to interact with the devices in a network system Internet of Things Find out how to connect sensors and actuators to the devices Send data to a web server connected devices Understand Internet of things using web services and database Configure a dashboard using HTML5 and JavaScript Control devices connected from a dashboard Monitor different devices from the dashboard Build an app for a smartphone to control different devices in Detail The Internet of Things (IoT) is an entirely new platform for developers and engineers, but one thing that remains consistent as we move into this new world, are the programming languages. JavaScript is the most widely used language over the Internet, and with IoT gaining momentum, you need to know how to use JavaScript to interact with connected devices. This book will teach you how to interact with endpoint devices by developing web services in JavaScript and also set up an interface to control all connected devices. This book begins with setting up a centralized web server that serves as a hub for all connected devices. The book then progresses further towards building web services to facilitate high-level communication between connected devices. Using Arduino and Raspberry Pi Zero as endpoint devices, the book will show you how devices can communicate with each other, perform a wide range of tasks, and also be controlled from a centralized location using JavaScript. The book ends with creating a hybrid app to control the devices that can be run from a browser or installed on a smartphone. Style and approach This book offers step-by-step guidance on how to set up a distributed IoT system using JavaScript. It will teach you how to interact with endpoint devices by developing web services in JavaScript and also set up an interface for controlling all connected devices.

A smart building is the state-of-art in building with features that facilitates informed decision making based on the available data through smart metering and IoT sensors. This set provides useful information for developing smart buildings including significant improvement of energy efficiency, implementation of operational improvements and targeting sustainable environment to create an effective customer experience. It includes case studies from industrial results which provide cost effective solutions and integrates the digital SCADA solution. Describes complete implication of smart buildings via industrial, commercial and community platforms for smart buildings, employing power consumption optimization techniques with inclusion of renewable energy sources Covers data centre and cyber security with excellent data storage features for smart buildings Includes systematic and detailed strategies for building air conditioning and lighting Details smart building security propulsion. This set is aimed at graduate students, researchers and professionals in building systems, architectural, and electrical engineering.

Data Intelligence and Cognitive Informatics

Recent Trends in Mechatronics Towards Industry 4.0

Incorporating the Internet of Things in Healthcare Applications and Wearable Devices

Robot Intelligence Technology and Applications 3

Innovations in Electronics and Communication Engineering

Advanced Technologies for Solar Photovoltaics Energy Systems

Intelligent Sustainable Systems

**This book explains the concept of data centers, including data collection, public parking systems, smart metering, and sanitizer dispensers. Electric urban transport systems and effective electric distribution in smart cities are discussed as well. The extensive role of power electronics in smart building applications, such as electric vehicles, rooftop terracing, and renewable energy integration, is included. Case studies on automation in smart homes and commercial and official buildings are elaborated. This book describes the complete implication of smart buildings via industrial, commercial, and community platforms. FEATURES Systematically defines energy-efficient buildings employing power consumption optimization techniques with the inclusion of renewable energy sources Covers data centers and cybersecurity with excellent data storage features for smart buildings Includes systematic and detailed strategies for building air-conditioning and lighting Details smart building security propulsion This book is aimed at graduate students, researchers, and professionals in building systems engineering, architectural engineering, and electrical engineering.**

**Create your own IoT projects DESIGNED FOR YOU! The book has been written in such a way that the concepts are explained in detail. It is entirely based on the practical experience of the authors while undergoing projects with students and industries, giving adequate emphasis on circuits and code examples. To make the topics more relevant, circuit diagrams and code samples are furnished extensively throughout the book. The book is conceptualized and written in such a way that the beginner readers will find it very easy to understand and implement the circuits and programs. The objective of this book is to discuss the various projects based on the Internet of Things (IoT). KEY FEATURES Comprehensive coverage of various aspects of IoT concepts Covers various Arduino boards and shields Simple language, crystal clear approach and straight forward comprehensible presentation Adopting user-friendly style for the explanation of circuits and examples Includes basics of Raspberry Pi and related projects WHAT WILL YOU LEARN?E Internet of Things, IoT-Based Smart Camera, IoT-Based Dust Sampler? Learn to create ESP8266-Based Wireless Web Server and Air Pollution Meter Using Raspberry Pi, Smart Garage Door, Baggage Tracker, Smart Trash Collector, Car parking system, Home Automation Windows 10 on Raspberry and Node to create Wireless Video Surveillance Robot Using Raspberry PiE WHO THIS BOOK IS FOR?E Students pursuing BE/BSc/ME/MSc/BTech/MTech in Computer Science, Electronics, Electrical. TABLE OF CONTENTS 1. ESP8266-Based Wireless Web Server 2. Air Pollution Meter Using Raspberry Pi 3. Smart Garage Door 4. Baggage Tracker 5. Smart Trash Collector 6. Car parking system 7. Home Automation 8. Environmental Parameter Monitoring 9. Intelligent System for the Blind 10. Sign to Speech Using the IoTs 11. Windows 10 on Raspberry 12. Wireless Video Surveillance Robot Using Raspberry PiE 13. IoT-Based Smart Camera 14. IoT-Based Dust Sampler and Air Quality Monitoring System**

**This book covers all the emerging trends in artificial intelligence (AI) and the Internet of Things (IoT). The Internet of Things is a term that has been introduced in recent years to define devices that are able to connect and transfer data to other devices via the Internet. While IoT and sensors have the ability to harness large volumes of data, AI can learn patterns in the data and quickly extract insights in order to automate tasks for a variety of business benefits. Machine learning, an AI technology, brings the ability to automatically identify patterns and detect anomalies in the data that smart sensors and devices generate, and it can have significant advantages over traditional business intelligence tools for analyzing IoT data, including being able to make operational predictions up to 20 times earlier and with greater accuracy than threshold-based monitoring systems. Further, other AI technologies, such as speech recognition and computer vision can help extract insights from data that used to require human review. The powerful combination of AI and IoT technology is helping to avoid unplanned downtime, increase operating efficiency, enable new products and services, and enhance risk management.**

**This three volume book contains the Proceedings of 5th International Conference on Advanced Computing, Networking and Informatics (ICACNI 2017). The book focuses on the recent advancement of the broad areas of advanced computing, networking and informatics. It also includes novel approaches devised by researchers from across the globe. This book brings together academic scientists, professors, research scholars and students to share and disseminate information on knowledge and scientific research works related to computing, networking, and informatics to discuss the practical challenges encountered and the solutions adopted. The book also promotes translation of basic research into applied investigation and convert applied investigation into practice.**

Handbook of Research on Big Data and the IoT

Third International Conference, ET2ECN 2020, Surat, India, February 7-8, 2020, Revised Selected Papers

“Doing Business in the Digital Age: Challenges, Approaches and Solutions”

Uncertainties in Modern Power Systems

IoT based Projects

Computer Networks and Inventive Communication Technologies

Hybrid Intelligence for Smart Grid Systems

This book describes capacity building in strategic and non-strategic machine tool technology. It includes machine building in sectors such as machine tools, automobiles, home appliances, energy, and biomedical engineering, along with case studies. The book offers guidelines for capacity building in academia, covering how to promote enterprises of functional reverse engineering enterprises. It also discusses machine tool development, engineering design, prototyping of strategic, and non-strategies machine tools, as well as presenting communication strategies and IoT, along with case studies. Professionals from the CNC (Computer Numeric Control) machine tools industry, industrial and manufacturing engineers, and students and faculty in engineering disciplines will find interest in this book.

Computing Methodologies 2019 will provide an outstanding international forum for scientists from all over the world to share ideas and achievements in the theory and practice of all areas of inventive systems which includes artificial intelligence, automation systems, computing systems, electronics systems, electrical and informative systems etc. Presentations should highlight computing methodologies as a concept that combines theoretical research and applications in automation, information and computing technologies All aspects of inventive systems are of interest theory, algorithms, tools, applications, etc. The book proposes new technologies and discusses future solutions for ICT design infrastructures, and includes high-quality submissions presented at the Third International Conference on ICT for Sustainable Development (ICT4SD 2018), held in Goa, India, on 30–31 August 2018. The conference stimulated cutting-edge research discussions among pioneering researchers, scientists, industrial engineers, and students from all around the world. Bringing together experts from different countries, the book focuses on innovative issues at an international level.

This book discusses data communication and computer networking, communication technologies and the applications of IoT (Internet of Things), big data, cloud computing and healthcare informatics. It explores, examines and critiques intelligent data communications and presents inventive methodologies in communication technologies and IoT. Aimed at researchers and academicians who need to understand the importance of data communication and advanced technologies in IoT, it offers different perspectives to help readers increase their knowledge and motivates them to conduct research in the area, highlighting various innovative ideas for future research.

IMDC-IST 2021

Smart Buildings Digitalization

Proceedings of SICIS 2020

Proceedings of ICICI 2021

International Conference on Intelligent Data Communication Technologies and Internet of Things (ICICI) 2018

*The increase in connected devices in the internet of things (IoT) is leading to an exponential increase in the data that an organization is required to manage. To successfully utilize IoT in businesses, big data analytics are necessary in order to efficiently sort through the increased data. The combination of big data and IoT can thus enable new monitoring services and powerful processing of sensory data streams. The Handbook of Research on Big Data and the IoT is a pivotal reference source that provides vital research on emerging trends and recent innovative applications of big data and IoT, challenges facing organizations and the implications of these technologies on society, and best practices for their implementation. While highlighting topics such as bootstrapping, data fusion, and graph mining, this publication is ideally designed for IT specialists, managers, policymakers, analysts, software engineers, academicians, and researchers.*