

## 2013 Ieee Papers For Eee

This book constitutes the revised selected papers of the workshops of the 11th International Conference on Service-Oriented Computing (ICSOC 2013), held in Berlin, Germany, in December 2013. The conference hosted the following five workshops: 3rd International Workshop on Cloud Computing and Scientific Applications (CCSA'13); 1st International Workshop on Cloud Service Brokerage (CSB'13); 1st International Workshop on Pervasive Analytical Service Clouds for the Enterprise and Beyond (PASCEB'13); 9th International Workshop on Semantic Web Enabled Software Engineering (SWESE'13); 9th International Workshop on Engineering Service-Oriented Applications (WESOA'13); and a PhD Symposium, with best papers also being included in this book. The 54 papers included in this volume were carefully reviewed and selected from numerous submissions. They address various topics in the service-oriented computing domain and its emerging applications.

2013 International Conference on Electrical, Control and Automation Engineering (ECAE2013) aims to provide a forum for accessing to the most up-to-date and authoritative knowledge from both Electrical, Control and Automation Engineering. ECAE2013 features unique mixed topics of Electrical Engineering, Automation, Control Engineering and so on. The goal of this conference is to bring researchers, engineers, and students to the areas of Electrical, Control and Automation Engineering to share experiences and original research contributions on those topics. Researchers and practitioners are invited to submit their contributions to ECAE2013

Practicing designers, engineers, physicists, and research scientists those new to the field and those experienced The 2013 IEEE Holm Conference will include excellent papers authored by outstanding technical people in this field The international contributors come from the USA, Canada, China, France, Germany, India, Japan, Poland, Sweden and the United Kingdom These papers will provide the attendees with up to date information on a wide range of subjects that makes this conference so attractive to the practicing engineer and scientist Additionally, the 2013 IEEE Holm Conference will make it possible for any attendee to discuss personally, with any author, either additional details concerning the work presented by the author at the conference or any subject related to the author's field of expertise.

This book constitutes the refereed proceedings of the 32nd International Conference on Conceptual Modeling, ER 2013, held in Hong Kong, China, in November 2013. The 23 full and 17 short papers presented were carefully reviewed and selected from 148 abstracts and 126 full papers submissions. The papers are organized in topical sections on modeling and reasoning, fundamentals of conceptual modeling, business process modeling, network modeling, data semantics, security and optimization, ontology-based modeling, searching and mining, conceptual modeling and applications, demonstration papers.

The book presents the latest advances and research findings in the fields of computational science and communication. The areas covered include smart innovation; systems and technologies; embedded knowledge and intelligence; innovation and sustainability; advanced computing; and networking and informatics. It also focuses on the knowledge-transfer methodologies and the innovation strategies employed to make these effective. This fascinating compilation appeals to researchers, academics and engineers around the globe.

The last decade has seen an unprecedented growth in the demand for wireless services. These services are fueled by applications that often require not only high data rates, but also very low latency to function as desired. However, as wireless networks grow and support increasingly large numbers of users, these control algorithms must also incur only low complexity in order to be implemented in practice. Therefore, there is a pressing need to develop wireless control algorithms that can achieve both high throughput and low delay, but with low-complexity operations. While these three performance metrics, i.e., throughput, delay, and complexity, are widely acknowledged as being among the most important for modern wireless networks, existing approaches often have had to sacrifice a subset of them in order to optimize the others, leading to wireless resource allocation algorithms that either suffer poor performance or are difficult to implement. In contrast, the recent results presented in this book demonstrate that, by cleverly taking advantage of multiple physical or virtual channels, one can develop new low-complexity algorithms that attain both provably high throughput and provably low delay. The book covers both the intra-cell and network-wide settings. In each case, after the pitfalls of existing approaches are examined, new systematic methodologies are provided to develop algorithms that perform provably well in all three dimensions.

This book constitutes revised selected papers from the 8th and 9th IFIP WG 2.6 International Symposium on Data-Driven Process Discovery and Analysis, SIMPDA 2018, held in Seville, Spain, on December 13–14, 2018, and SIMPDA 2019, held in Bled, Slovenia, on September 8, 2019. From 16 submissions received for SIMPDA 2018 and 9 submissions received for SIMPDA 2019, 3 papers each were carefully reviewed and selected for presentation in this volume. They cover theoretical issues related to process representation, discovery, and analysis or provide practical and operational examples of their application.

With the explosive growth of mobile computing and Internet of Things (IoT) applications, as exemplified by AR/VR, smart city, and video/audio surveillance, billions of mobile and IoT devices are being connected to the Internet, generating zillions of bytes of data at the network edge. Driven by this trend, there is an urgent need to push the frontiers of artificial intelligence (AI) to the network edge to fully unleash the potential of IoT big data. Indeed, the marriage of edge computing and AI has resulted in innovative solutions, namely edge intelligence or edge AI. Nevertheless, research and practice on this emerging inter-disciplinary field is still in its infancy stage. To facilitate the dissemination of the recent advances in edge intelligence in both academia and industry, this book conducts a comprehensive and detailed survey of the recent research efforts and also showcases the authors' own research progress on edge intelligence. Specifically, the book first reviews the background and present motivation for AI running at the network edge. Next, it provides an overview of the overarching architectures, frameworks, and emerging key technologies for deep learning models toward training/inference at the network edge. To illustrate the research problems for edge intelligence, the book also showcases four of the authors' own research projects on edge intelligence, ranging from rigorous theoretical analysis to studies based on realistic implementation. Finally, it discusses the applications, marketplace, and future research opportunities of edge intelligence. This emerging interdisciplinary field offers many open problems and yet also tremendous opportunities, and this book only touches the tip of iceberg. Hopefully, this book will elicit escalating attention, stimulate fruitful discussions, and open new directions on edge intelligence.

This book constitutes revised selected papers from 7 workshops that were held in conjunction with the ISC High Performance 2016 conference in Frankfurt, Germany, in June 2016. The 45 papers presented in this volume were carefully reviewed and selected for inclusion in this book. They stem from the following workshops: Workshop on Exascale Multi/Many Core Computing

Systems, E-MuCoCoS; Second International Workshop on Communication Architectures at Extreme Scale, ExaComm; HPC I/O in the Data Center Workshop, HPC-IODC; International Workshop on OpenPOWER for HPC, IWOPH; Workshop on the Application Performance on Intel Xeon Phi – Being Prepared for KNL and Beyond, IXPUG; Workshop on Performance and Scalability of Storage Systems, WOPSSS; and International Workshop on Performance Portable Programming Models for Accelerators, P3MA. The purpose of this workshop is to spread the vast amount of information available on semiconductor physics to every possible field throughout the scientific community. As a result, the latest findings, research and discoveries can be quickly disseminated. This workshop provides all participating research groups with an excellent platform for interaction and collaboration with other members of their respective scientific community. This workshop's technical sessions include various current and significant topics for applications and scientific developments, including • Optoelectronics • VLSI & ULSI Technology • Photovoltaics • MEMS & Sensors • Device Modeling and Simulation • High Frequency/ Power Devices • Nanotechnology and Emerging Areas • Organic Electronics • Displays and Lighting Many eminent scientists from various national and international organizations are actively participating with their latest research works and also equally supporting this mega event by joining the various organizing committees.

This book presents selected articles from India Smart Grid Week (ISGW 2018), held on March 5 to 9, 2018, at the Manekshaw Centre, New Delhi, India. It was the fourth conference and exhibition on smart grids and smart cities organized by the India Smart Grid Forum (ISGF), a Government of India public-private partnership, tasked with accelerating smart grid deployment across the country. Providing current-scenario-based updates on the Indian power sector, the book also highlights various disruptive technologies.

Focusing on technical, policy and social/societal practices and innovations for electrified transport for personal, public and freight purposes, this book provides a state-of-the-art overview of developments in e-mobility in Europe and the West Coast of the USA. It serves as a learning base for further implementing and commercially developing this field for the benefit of society, the environment and public health, as well as for economic development and private industry. A fast-growing, interdisciplinary sector, electric mobility links engineering, infrastructure, environment, transport and sustainable development. But despite the relevance of the topic, few publications have ever attempted to document or promote the wide range of electric mobility initiatives and projects taking place today. Addressing this need, this publication consists of case studies, reports on technological developments and examples of successful infrastructure installation in cities, which document current initiatives and serve as an inspiration for others.

The book contains high quality papers presented in the Fifth International Conference on Innovations in Electronics and Communication Engineering (ICIECE 2016) held at Guru Nanak Institutions, Hyderabad, India during 8 and 9 July 2016. The objective is to provide the latest developments in the field of electronics and communication engineering specially the areas like Image Processing, Wireless Communications, Radar Signal Processing, Embedded Systems and VLSI Design. The book aims to provide an opportunity for researchers, scientists, technocrats, academicians and engineers to exchange their innovative ideas and research findings in the field of Electronics and Communication Engineering.

The new edition of this popular book has been transformed into a hands-on textbook, focusing on the principles of wireless sensor networks (WSNs), their applications, their protocols and standards, and their analysis and test tools; a meticulous care has been accorded to the definitions and terminology. To make WSNs felt and seen, the adopted technologies as well as their manufacturers are presented in detail. In introductory computer networking books, chapters sequencing follows the bottom up or top down architecture of the seven layers protocol. This book starts some steps later, with chapters ordered based on a topic's significance to the elaboration of wireless sensor networks (WSNs) concepts and issues. With such a depth, this book is intended for a wide audience, it is meant to be a helper and motivator, for both the senior undergraduates, postgraduates, researchers, and practitioners; concepts and WSNs related applications are laid out, research and practical issues are backed by appropriate literature, and new trends are put under focus. For senior undergraduate students, it familiarizes readers with conceptual foundations, applications, and practical project implementations. For graduate students and researchers, transport layer protocols and cross-layering protocols are presented and testbeds and simulators provide a must follow emphasis on the analysis methods and tools for WSNs. For practitioners, besides applications and deployment, the manufacturers and components of WSNs at several platforms and testbeds are fully explored.

Practicing designers, engineers, physicists, and research scientists those new to the field and those experienced The 2013 IEEE Holm Conference will include excellent papers authored by outstanding technical people in this field The international contributors come from the USA, Canada, China, France, Germany, India, Japan, Poland, Sweden and the United Kingdom These papers will provide the attendees with up to date information on a wide range of subjects that makes this conference so attractive to the practicing engineer and scientist Additionally, the 2013 IEEE Holm Conference will make it possible for any attendee to discuss personally, with any author, either additional details concerning the work presented by the author at the conference or any subject related to the author s field of expertise

The book is a collection of best papers presented in the Second International Conference on Microelectronics Electromagnetics and Telecommunication (ICMEET 2016), an international colloquium, which aims to bring together academic scientists, researchers and research scholars to discuss the recent developments and future trends in the fields of microelectronics, electromagnetics and telecommunication. Microelectronics research investigates semiconductor materials and device physics for developing electronic devices and integrated circuits with data/energy efficient performance in terms of speed, power consumption, and functionality. The book discusses various topics like analog, digital and mixed signal circuits, bio-medical circuits and systems, RF circuit design, microwave and millimeter wave circuits, green circuits and systems, analog and digital signal processing, nano electronics and giga scale systems, VLSI circuits and systems, SoC and NoC, MEMS and NEMS, VLSI digital signal processing, wireless communications, cognitive radio, and data communication.

In recent years, transmitarray antennas have attracted growing interest with many antenna researchers. Transmitarrays combines both optical and antenna array theory, leading to a low profile design with high gain, high radiation efficiency, and versatile radiation performance for many wireless communication systems. In this book, comprehensive analysis, new methodologies, and novel designs of transmitarray antennas are presented. Detailed analysis for the design of planar space-fed array antennas is presented. The basics of aperture field distribution and the analysis of the array

elements are described. The radiation performances (directivity and gain) are discussed using array theory approach, and the impacts of element phase errors are demonstrated. The performance of transmitarray design using multilayer frequency selective surfaces (M-FSS) approach is carefully studied, and the transmission phase limit which are generally independent from the selection of a specific element shape is revealed. The maximum transmission phase range is determined based on the number of layers, substrate permittivity, and the separations between layers. In order to reduce the transmitarray design complexity and cost, three different methods have been investigated. As a result, one design is performed using quad-layer cross-slot elements with no dielectric material and another using triple-layer spiral dipole elements. Both designs were fabricated and tested at X-Band for deep space communications. Furthermore, the radiation pattern characteristics were studied under different feed polarization conditions and oblique angles of incident field from the feed. New design methodologies are proposed to improve the bandwidth of transmitarray antennas through the control of the transmission phase range of the elements. These design techniques are validated through the fabrication and testing of two quad-layer transmitarray antennas at Ku-band. A single-feed quad-beam transmitarray antenna with 50 degrees elevation separation between the beams is investigated, designed, fabricated, and tested at Ku-band. In summary, various challenges in the analysis and design of transmitarray antennas are addressed in this book. New methodologies to improve the bandwidth of transmitarray antennas have been demonstrated. Several prototypes have been fabricated and tested, demonstrating the desirable features and potential new applications of transmitarray antennas.

Research and innovation in areas such as circuits, microsystems, packaging, biocompatibility, miniaturization, power supplies, remote control, reliability, and lifespan are leading to a rapid increase in the range of devices and corresponding applications in the field of wearable and implantable biomedical microsystems, which are used for monitoring, diagnosing, and controlling the health conditions of the human body. This book provides comprehensive coverage of the fundamental design principles and validation for implantable microsystems, as well as several major application areas. Each component in an implantable device is described in details, and major case studies demonstrate how these systems can be optimized for specific design objectives. The case studies include applications of implantable neural signal processors, brain-machine interface (BMI) systems intended for both data recording and treatment, neural prosthesis, bladder pressure monitoring for treating urinary incontinence, implantable imaging devices for early detection and diagnosis of diseases as well as electrical conduction block of peripheral nerve for chronic pain management. Implantable Biomedical Microsystems is the first comprehensive coverage of bioimplantable system design providing an invaluable information source for researchers in Biomedical, Electrical, Computer, Systems, and Mechanical Engineering as well as engineers involved in design and development of wearable and implantable bioelectronic devices and, more generally, teams working on low-power microsystems and their corresponding wireless energy and data links. First time comprehensive coverage of system-level and component-level design and engineering aspects for implantable microsystems. Provides insight into a wide range of proven applications and application specific design trade-offs of bioimplantable systems, including several major case studies Enables Engineers involved in development of implantable electronic systems to optimize applications for specific design objectives.

Advances in Grid-Connected Photovoltaic Power Conversion Systems addresses the technological challenges of fluctuating and unreliable power supply in grid-connected photovoltaic (PV) systems to help students, researchers, and engineers work toward more PV installations in the grid to make society more sustainable and reliable while complying with grid regulations. The authors combine their extensive knowledge and experience in this book to address both the basics of the power electronic converter technology and the advances of such practical electric power conversion systems. This book includes extensive, step-by-step practical application examples to assist students and engineers to better understand the role of power electronics in modern PV applications and solve the practical issues in grid-connected PV systems. Offers a step-by-step modeling approach to solving the practical issues and technological challenges in grid-connected PV systems Provides practical application examples to assist the reader to better understand the role of power electronics in modern PV applications Extends to the most modern technologies for grid-friendly PV systems

With the increased functionality demand for mobile speed and access in our everyday lives, broadband wireless networks have emerged as the solution in providing high data rate communications systems to meet these growing needs. Broadband Wireless Access Networks for 4G: Theory, Application, and Experimentation presents the latest trends and research on mobile ad hoc networks, vehicular ad hoc networks, and routing algorithms which occur within various mobile networks. This publication smartly combines knowledge and experience from enthusiastic scholars and expert researchers in the area of wideband and broadband wireless networks. Students, professors, researchers, and other professionals in the field will benefit from this book's practical applications and relevant studies.

This book describes the current state of the art in big-data analytics, from a technology and hardware architecture perspective. The presentation is designed to be accessible to a broad audience, with general knowledge of hardware design and some interest in big-data analytics. Coverage includes emerging technology and devices for data-analytics, circuit design for data-analytics, and architecture and algorithms to support data-analytics. Readers will benefit from the realistic context used by the authors, which demonstrates what works, what doesn't work, and what are the fundamental problems, solutions, upcoming challenges and opportunities. Provides a single-source reference to hardware architectures for big-data analytics; Covers various levels of big-data analytics hardware design abstraction and flow, from device, to circuits and systems; Demonstrates how non-volatile memory (NVM) based hardware platforms can be a viable solution to existing challenges in hardware architecture for big-data analytics.

Issues in Electrical, Computer, and Optical Engineering: 2013 Edition is a ScholarlyEditions™ book that delivers timely,

authoritative, and comprehensive information about Electrical Engineering. The editors have built Issues in Electrical, Computer, and Optical Engineering: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Electrical Engineering in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Electrical, Computer, and Optical Engineering: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

With optical fiber telecommunications firmly entrenched in the global information infrastructure, a key question for the future is how deeply will optical communications penetrate and complement other forms of communication (e.g., wireless access, on-premises networks, interconnects, and satellites). Optical Fiber Telecommunications, the seventh edition of the classic series that has chronicled the progress in the research and development of lightwave communications since 1979, examines present and future opportunities by presenting the latest advances on key topics such as: Fiber and 5G-wireless access networks Inter- and intra-data center communications Free-space and quantum communication links Another key issue is the use of advanced photonics manufacturing and electronic signal processing to lower the cost of services and increase the system performance. To address this, the book covers: Foundry and software capabilities for widespread user access to photonic integrated circuits Nano- and microphotonic components Advanced and nonconventional data modulation formats The traditional emphasis of achieving higher data rates and longer transmission distances are also addressed through chapters on space-division-multiplexing, undersea cable systems, and efficient reconfigurable networking. This book is intended as an ideal reference suitable for university and industry researchers, graduate students, optical systems implementers, network operators, managers, and investors. Quotes:

"This book series, which owes much of its distinguished history to the late Drs. Kaminow and Li, describes hot and growing applied topics, which include long-distance and wideband systems, data centers, 5G, wireless networks, foundry production of photonic integrated circuits, quantum communications, and AI/deep-learning. These subjects will be highly beneficial for industrial R&D engineers, university teachers and students, and funding agents in the business sector."

Prof. Kenichi Iga President (Retired), Tokyo Institute of Technology "With the passing of two luminaries, Ivan Kaminow and Tingye Li, I feared the loss of one of the premier reference books in the field. Happily, this new version comes to chronicle the current state-of-the-art and is written by the next generation of leaders. This is a must-have reference book for anyone working in or trying to understand the field of optical fiber communications technology."

Dr. Donald B. Keck Vice President, Corning, Inc. (Retired) "This book is the seventh edition in the definitive series that was previously marshaled by the extraordinary Ivan Kaminow and Tingye Li, both sadly no longer with us. The series has charted the remarkable progress made in the field, and over a billion kilometers of optical fiber currently snake across the globe carrying ever-increasing Internet traffic. Anyone wondering about how we will cope with this incredible growth must read this book." Prof. Sir David Payne Director, Optoelectronics Research Centre, University of Southampton Updated edition presents the latest advances in optical fiber components, systems, subsystems and networks Written by leading authorities from academia and industry Gives a self-contained overview of specific technologies, covering both the state-of-the-art and future research challenges

This book discusses vegetable oil based biolubricants and their applications in the power distribution industry. Vegetable oil based lubricants offer significant advantages over petroleum-based lubricants, including biodegradability, cost-effectiveness, renewability, and lower environmental effects. This book provides a detailed literature survey of modified vegetable oils. It discusses the physical and chemical properties of vegetable oil, and their effects on its applications in tribology. The book discusses additives and enhancements to make vegetable oils suitable for use as lubricating oils and transformer oils in power plants and power distribution grids. The contents of the book will be useful to researchers and professionals as well as policy makers and standards agencies.

The third international conference on INformation Systems Design and Intelligent Applications (INDIA – 2016) held in Visakhapatnam, India during January 8-9, 2016. The book covers all aspects of information system design, computer science and technology, general sciences, and educational research. Upon a double blind review process, a number of high quality papers are selected and collected in the book, which is composed of three different volumes, and covers a variety of topics, including natural language processing, artificial intelligence, security and privacy, communications, wireless and sensor networks, microelectronics, circuit and systems, machine learning, soft computing, mobile computing and applications, cloud computing, software engineering, graphics and image processing, rural engineering, e-commerce, e-governance, business computing, molecular computing, nano-computing, chemical computing, intelligent computing for GIS and remote sensing, bio-informatics and bio-computing. These fields are not only limited to computer researchers but also include mathematics, chemistry, biology, bio-chemistry, engineering, statistics, and all others in which computer techniques may assist.

Natural language processing (NLP) is a branch of artificial intelligence that has emerged as a prevalent method of practice for a sizeable amount of companies. NLP enables software to understand human language and process complex data that is generated within businesses. In a competitive market, leading organizations are showing an increased interest in implementing this technology to improve user experience and establish smarter decision-making methods. Research on the application of intelligent analytics is crucial for professionals and companies who wish to gain an edge on the opposition. The Handbook of Research on Natural Language Processing and Smart Service Systems is a collection of innovative research on the integration and development of intelligent software tools and their various applications within professional environments. While highlighting topics including discourse analysis, information retrieval, and advanced dialog systems, this book is ideally designed for developers, practitioners, researchers, managers, engineers, academicians, business professionals, scholars, policymakers, and students seeking current research on the improvement of competitive practices through the use of NLP and smart service systems.

This descriptive, practical guide explains how to build a commercially impactful, operationally effective and technically robust IoT ecosystem that takes advantage of the IoT revolution and drives business growth in the consumer IoT as well as industrial internet spaces. With this book, executives, business managers, developers and decision-makers are given the tools to make more informed decisions about IoT solution development, partner eco-system design, and the monetization of products and services. Security and privacy issues are also addressed. Readers will explore the design guidelines and technology choices required to build commercially viable IoT solutions, but also uncover the various monetization and business modeling for connected products. As technology continues to become more sophisticated, mimicking natural processes and phenomena becomes more of a reality. Continued research in the field of natural computing enables an understanding of the world around us, in addition to opportunities for manmade computing to mirror the natural processes and systems that have existed for centuries. Nature-Inspired Algorithms for Big Data Frameworks is a collection of innovative research on the methods and applications of extracting meaningful information from data using algorithms that are capable of handling the constraints of processing time, memory usage, and the dynamic and unstructured nature of data. Highlighting a range of topics including genetic algorithms, data classification, and wireless sensor networks, this book is ideally designed for computer engineers, software developers, IT professionals, academicians, researchers, and upper-level students seeking current research on the application of nature and biologically inspired algorithms for handling challenges posed by big data in diverse environments.

This book presents a comprehensive framework for model-based electrical stimulation (ES) controller design, covering the whole process needed to develop a system for helping people with physical impairments perform functional upper limb tasks such as eating, grasping and manipulating objects. The book first demonstrates procedures for modelling and identifying biomechanical models of the response of ES, covering a wide variety of aspects including mechanical support structures, kinematics, electrode placement, tasks, and sensor locations. It then goes on to demonstrate how complex functional activities of daily living can be captured in the form of optimisation problems, and extends ES control design to address this case. It then lays out a design methodology, stability conditions, and robust performance criteria that enable control schemes to be developed systematically and transparently, ensuring that they can operate effectively in the presence of realistic modelling uncertainty, physiological variation and measurement noise.

This book constitutes the thoroughly refereed post-workshop proceedings of the 5th International Workshop on Modelling and Simulation for Autonomous Systems, MESAS 2018, held in Prague, Czech Republic, in October 2018. The 46 revised full papers included in the volume were carefully reviewed and selected from 66 submissions. They are organized in the following topical sections: Future Challenges of Advanced M&S Technology; Swarming - R&D and Application; M&S of Intelligent Systems - AI, R&D and Application; AxS in Context of Future Warfare and Security Environment (Concepts, Applications, Training, Interoperability, etc.).

This volume presents the Proceedings of the 6th European Conference of the International Federation for Medical and Biological Engineering (MBEC2014), held in Dubrovnik September 7 – 11, 2014. The general theme of MBEC 2014 is "Towards new horizons in biomedical engineering" The scientific discussions in these conference proceedings include the following themes: - Biomedical Signal Processing - Biomedical Imaging and Image Processing - Biosensors and Bioinstrumentation - Bio-Micro/Nano Technologies - Biomaterials - Biomechanics, Robotics and Minimally Invasive Surgery - Cardiovascular, Respiratory and Endocrine Systems Engineering - Neural and Rehabilitation Engineering - Molecular, Cellular and Tissue Engineering - Bioinformatics and Computational Biology - Clinical Engineering and Health Technology Assessment - Health Informatics, E-Health and Telemedicine - Biomedical Engineering Education

Hardware Security: A Hands-On Learning Approach provides a broad, comprehensive and practical overview of hardware security that encompasses all levels of the electronic hardware infrastructure. It covers basic concepts like advanced attack techniques and countermeasures that are illustrated through theory, case studies and well-designed, hands-on laboratory exercises for each key concept. The book is ideal as a textbook for upper-level undergraduate students studying computer engineering, computer science, electrical engineering, and biomedical engineering, but is also a handy reference for graduate students, researchers and industry professionals. For academic courses, the book contains a robust suite of teaching ancillaries. Users will be able to access schematic, layout and design files for a printed circuit board for hardware hacking (i.e. the HaHa board) that can be used by instructors to fabricate boards, a suite of videos that demonstrate different hardware vulnerabilities, hardware attacks and countermeasures, and a detailed description and user manual for companion materials. Provides a thorough overview of computer hardware, including the fundamentals of computer systems and the implications of security risks Includes discussion of the liability, safety and privacy implications of hardware and software security and interaction Gives insights on a wide range of security, trust issues and emerging attacks and protection mechanisms in the electronic hardware lifecycle, from design, fabrication, test, and distribution, straight through to supply chain and deployment in the field

The book presents the latest, high-quality, technical contributions and research findings in the areas of data management and smart computing, big data management, artificial intelligence and data analytics, along with advances in network technologies. It discusses state-of-the-art topics as well as the challenges and solutions for future development. It includes original and previously unpublished international research work highlighting research domains from different perspectives. This book is mainly intended for researchers and practitioners in academia and industry.

This book provides a comprehensive view of green communications considering all areas of ICT including wireless and wired networks. It analyses particular concepts and practices, addressing holistic approaches in future networks considering a system perspective. It makes full use of tables, illustrations, performance graphs, case studies and examples making it accessible for a wide audience.

Maintaining a stable level of power quality in the distribution network is a growing challenge due to increased use of power electronics converters in domestic, commercial and industrial sectors. Power quality deterioration is manifested in increased losses; poor utilization of distribution systems; mal-operation of sensitive equipment and disturbances to nearby consumers, protective devices, and communication systems. However, as the energy-saving benefits will result in increased AC power processed through power electronics converters, there is a compelling need for improved understanding of mitigation techniques for power quality problems. This timely book comprehensively identifies, classifies, analyses and quantifies all associated power quality problems, including the direct integration of renewable energy sources in the distribution system, and systematically delivers mitigation techniques to overcome these problems. Key features: Emphasis on in-depth learning of the latest topics in power quality extensively illustrated with waveforms and phasor diagrams. Essential theory supported by solved numerical examples, review questions, and unsolved numerical problems to reinforce understanding. Companion website contains solutions to unsolved numerical problems, providing hands-on experience. Senior undergraduate and graduate electrical engineering

students and instructors will find this an invaluable resource for education in the field of power quality. It will also support continuing professional development for practicing engineers in distribution and transmission system operators.

Issues in Information Science Research / 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Web and Grid Services. The editors have built Issues in Information Science Research: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Web and Grid Services in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Information Science Research: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

This book focuses on modelling and simulation, control and optimization, signal processing, and forecasting in selected nonlinear dynamical systems, presenting both literature reviews and novel concepts. It develops analytical or numerical approaches, which are simple to use, robust, stable, flexible and universally applicable to the analysis of complex nonlinear dynamical systems. As such it addresses key challenges are addressed, e.g. efficient handling of time-varying dynamics, efficient design, faster numerical computations, robustness, stability and convergence of algorithms. The book provides a series of contributions discussing either the design or analysis of complex systems in sciences and engineering, and the concepts developed involve nonlinear dynamics, synchronization, optimization, machine learning, and forecasting. Both theoretical and practical aspects of diverse areas are investigated, specifically neurocomputing, transportation engineering, theoretical electrical engineering, signal processing, communications engineering, and computational intelligence. It is a valuable resource for students and researchers interested in nonlinear dynamics and synchronization with applications in selected areas.

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