

Electrical Engineering Lecture Notes

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Sensors - Yueh-Min Ray Huang 2008-08-18

Sensors are the most important component in any system and engineers in any field need to understand the fundamentals of how these components work, how to select them properly and how to integrate them into an overall system. This book has outlined the fundamentals, analytical concepts, modelling and design issues, technical details and practical applications of different types of sensors, electromagnetic, capacitive, ultrasonic, vision, Terahertz, displacement, fibre-optic and so on. The book: addresses the identification, modeling, selection, operation and integration of a wide variety of sensors, demonstrates the concepts of different sensors technology through simulation, design and real implementations, discusses the design and fabrication of high performance modern sensors technology, presents a selection of cutting-edge applications. Written by experts in their area of research, this book will be useful reference book for engineers and scientist especially the post-graduate students find this book as reference book for their research.

Principles of Digital Communication - Robert G. Gallager 2008-02-28

The renowned communications theorist Robert Gallager brings his lucid writing style to the study of the fundamental system aspects of digital communication for a one-semester course for graduate students. With the clarity and insight that have characterized his teaching and earlier textbooks, he develops a simple framework and then combines this with careful proofs to help the reader understand modern systems and simplified models in an intuitive yet precise way. A strong narrative and links between theory and practice reinforce this concise, practical presentation. The book begins with data compression for arbitrary sources. Gallager then describes how to modulate the resulting binary data for transmission over wires, cables, optical fibers, and wireless channels. Analysis and intuitive interpretations are developed for channel noise models, followed by coverage of the principles of detection, coding, and decoding. The various concepts covered are brought together in a description of wireless communication, using CDMA as a case study.

Advances in Electronics Engineering - 2020

This book presents the proceedings of ICCEE 2019, held in Kuala Lumpur, Malaysia, on 29th-30th April 2019. It includes the latest advances in electrical engineering and electronics from leading experts around the globe.

Emergent Converging Technologies and Biomedical Systems - N. Marriwala 2022-03-23

The book contains peer-reviewed proceedings of the International Conference on Emergent Converging Technologies and Biomedical Systems 2021. It includes papers on wireless multimedia networks, green wireless networks, electric vehicles, biomedical signal processing and instrumentation, wearable sensors for health care monitoring, biomedical imaging, & bio-materials, modeling and simulation in medicine biomedical and health informatics. The book will serve as a useful guide for educators, researchers, and developers working in the area of signal processing, imaging, computing, instrumentation, artificial intelligence, and their related applications. This book will also provide support and aid to the researchers involved in designing the latest advancements in healthcare technologies.

Lightning - Chandima Gomes 2021-08-13

This book highlights the essential theoretical and practical aspects of lightning, lightning protection, safety and education. Additionally, several auxiliary topics that are required to understand the core themes are also included. The main objective of the contents is to enlighten the scientists, researchers, engineers and social activists (including policy makers) in developing countries regarding the key information related to lightning and thunderstorms. A majority of developing countries are in tropics where the lightning characteristics are somewhat different from those in temperate regions. The housing structures and

power/communication networks, and human behavioural patterns(that depends on socio-economic parameters) in these countries are also different from those in the developed world. As the existing books on similar themes address only those scenarios in developed countries, this book serves a vast spectrum of readership in developing world who seek knowledge in the principles of lightning and a practical guidance on lightning protection and safety education.

Advances in Electrical Engineering and Electrical Machines - Dehuai Zheng 2012-02-01

With success of ICEEE 2010 in Wuhan, China, and December 4 to 5, 2010, the second International Conference of Electrical and Electronics Engineering (ICEEE 2011) will be held in Macau, China, and December 1 to 2, 2011. ICEEE is an annual conference to call together researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Electrical and Electronics Engineering along with Computer Science and Technology, Communication Technology, Artificial Intelligence, Information Technology, etc. This year ICEEE is sponsored by International Industrial Electronics Center, Hong Kong. And based on the deserved reputation, more than 750 papers have been submitted to ICEEE 2011, from which about 98 high quality original papers have been selected for the conference presentation and inclusion in the "Electrical and Electronics Engineering" book based on the referees' comments from peer-refereed. We expect that the Electrical and Electronics Engineering book will be a trigger for further related research and technology improvements in the importance subject including Power Engineering, Telecommunication, Integrated Circuit, Electronic amplifier, Nano-technologies, Circuits and networks, Microelectronics, Analog circuits, Digital circuits, Circuits design, Silicon devices, Thin film technologies, VLSI, Sensors, CAD tools, Molecular computing, Superconductivity circuits, Antennas technology, System architectures, etc.

Design, Analysis and Test of Logic Circuits Under Uncertainty - Smita Krishnaswamy 2012-09-21

Logic circuits are becoming increasingly susceptible to probabilistic behavior caused by external radiation and process variation. In addition, inherently probabilistic quantum- and nano-technologies are on the horizon as we approach the limits of CMOS scaling. Ensuring the reliability of such circuits despite the probabilistic behavior is a key challenge in IC design---one that necessitates a fundamental, probabilistic reformulation of synthesis and testing techniques. This monograph will present techniques for analyzing, designing, and testing logic circuits with probabilistic behavior.

[Advances in Neural Network Research and Applications](#) - Zhigang Zeng 2010-05-10

This book is a part of the Proceedings of the Seventh International Symposium on Neural Networks (ISNN 2010), held on June 6-9, 2010 in Shanghai, China. Over the past few years, ISNN has matured into a well-established premier international symposium on neural networks and related fields, with a successful sequence of ISNN series in Dalian (2004), Chongqing (2005), Chengdu (2006), Nanjing (2007), Beijing (2008), and Wuhan (2009). Following the tradition of ISNN series, ISNN 2010 provided a high-level international forum for scientists, engineers, and educators to present the state-of-the-art research in neural networks and related fields, and also discuss the major opportunities and challenges of future neural network research. Over the past decades, the neural network community has witnessed significant breakthroughs and developments from all aspects of neural network research, including theoretical foundations, architectures, and network organizations, modeling and simulation, empirical studies, as well as a wide range of applications across different domains. The recent developments of science and technology, including neuroscience, computer science, cognitive science, nano-technologies and engineering design, among

others, has provided significant new understandings and technological solutions to move the neural network research toward the development of complex, large scale, and networked brain-like intelligent systems. This long-term goals can only be achieved with the continuous efforts from the community to seriously investigate various issues on neural networks and related topics.

Lecture Notes - 1986

Applied Physics, System Science and Computers III - Klimis

Ntalianis 2020-08-14

This book reports on advanced theories and methods in three related fields of research: applied physics, system science and computers. The first part covers applied physics topics, such as lasers and accelerators; fluid dynamics, optics and spectroscopy, among others. It also addresses astrophysics, security, and medical and biological physics. The second part focuses on advances in computers, such as those in the area of social networks, games, internet of things, deep learning models and more. The third part is especially related to systems science, covering swarm intelligence, smart cities, complexity and more. Advances in and application of computer communication, artificial intelligence, data analysis, simulation and modeling are also addressed. The book offers a collection of contributions presented at the 3rd International Conference on Applied Physics, System Science and Computers (APSAC), held in Dubrovnik, Croatia on September 26-28, 2018. Besides presenting new methods, it is also intended to promote collaborations between different communities working on related topics at the interface between physics, computer science and engineering.

InECCE2019 - Ahmad Nor Kasruddin Nasir 2020-03-23

This book presents the proceedings of the 5th International Conference on Electrical, Control & Computer Engineering 2019, held in Kuantan, Pahang, Malaysia, on 29th July 2019. Consisting of two parts, it covers the conferences' main foci: Part 1 discusses instrumentation, robotics and control, while Part 2 addresses electrical power systems. The book appeals to professionals, scientists and researchers with experience in industry. The conference provided a platform for professionals, scientists and researchers with experience in industry.

Advances in Industrial Engineering and Operations Research - Alan H.S. Chan 2008-03-03

This volume contains contributions from prominent researchers who participated in the 2007 IAENG International Conference on Operations Research. It presents theories and applications of modern industrial engineering and operations research to meet the needs of rapidly developing fields. The book reflects the tremendous advances in communication systems and electrical engineering and also serves as an excellent reference work for researchers and graduate students.

Machine Learning and Systems Engineering - Sio-Iong Ao 2010-10-05

A large international conference on Advances in Machine Learning and Systems Engineering was held in UC Berkeley, California, USA, October 20-22, 2009, under the auspices of the World Congress on Engineering and Computer Science (WCECS 2009). Machine Learning and Systems Engineering contains forty-six revised and extended research articles written by prominent researchers participating in the conference. Topics covered include Expert system, Intelligent decision making, Knowledge-based systems, Knowledge extraction, Data analysis tools, Computational biology, Optimization algorithms, Experiment designs, Complex system identification, Computational modeling, and industrial applications. Machine Learning and Systems Engineering offers the state of the art of tremendous advances in machine learning and systems engineering and also serves as an excellent reference text for researchers and graduate students, working on machine learning and systems engineering.

Proceedings of the Sixth International Conference on Management Science and Engineering Management - Jiuping Xu 2012-09-27

Welcome to the proceedings of the Sixth International Conference on Management Science and Engineering Management (ICMSEM2012) held from November 11 to 14, 2012 at Quaid-i-Azam University, Islamabad, Pakistan and supported by Sichuan University (Chengdu, China), Quaid-i-Azam University (Islamabad, Pakistan) and The National Natural Science Foundation of China. The International Conference on Management Science and Engineering Management is the annual conference organized by the International Society of Management Science and Engineering Management. The goals of the Conference are to foster international research collaborations in Management Science and Engineering Management as well as to provide a forum to present

current research results. The papers are classified into 8 sections: Computer and Networks, Information Technology, Decision Support System, Industrial Engineering, Supply Chain Management, Project Management, Manufacturing and Ecological Engineering. The key issues of the sixth ICMSEM cover various areas in MSEM, such as Decision Support System, Computational Mathematics, Information Systems, Logistics and Supply Chain Management, Relationship Management, Scheduling and Control, Data Warehousing and Data Mining, Electronic Commerce, Neural Networks, Stochastic models and Simulation, Heuristics Algorithms, Risk Control, and Carbon Credits.

Advances in Communication Systems and Electrical Engineering - He Huang 2008-02-02

This volume contains contributions from participants in the 2007 International Multiconference of Engineers and Computer Scientists. It covers a variety of subjects in the frontiers of intelligent systems and computer engineering and their industrial applications. The book reflects the tremendous advances in communication systems and electrical engineering. The book provides an excellent reference work for researchers and graduate students working in the field.

An Introduction to Python and Computer Programming - Yue Zhang 2015-07-08

This book introduces Python programming language and fundamental concepts in algorithms and computing. Its target audience includes students and engineers with little or no background in programming, who need to master a practical programming language and learn the basic thinking in computer science/programming. The main contents come from lecture notes for engineering students from all disciplines, and has received high ratings. Its materials and ordering have been adjusted repeatedly according to classroom reception. Compared to alternative textbooks in the market, this book introduces the underlying Python implementation of number, string, list, tuple, dict, function, class, instance and module objects in a consistent and easy-to-understand way, making assignment, function definition, function call, mutability and binding environments understandable inside-out. By giving the abstraction of implementation mechanisms, this book builds a solid understanding of the Python programming language.

Trace-Based Post-Silicon Validation for VLSI Circuits - Xiao Liu 2013-06-12

This book first provides a comprehensive coverage of state-of-the-art validation solutions based on real-time signal tracing to guarantee the correctness of VLSI circuits. The authors discuss several key challenges in post-silicon validation and provide automated solutions that are systematic and cost-effective. A series of automatic tracing solutions and innovative design for debug (DfD) techniques are described, including techniques for trace signal selection for enhancing visibility of functional errors, a multiplexed signal tracing strategy for improving functional error detection, a tracing solution for debugging electrical errors, an interconnection fabric for increasing data bandwidth and supporting multi-core debug, an interconnection fabric design and optimization technique to increase transfer flexibility and a DfD design and associated tracing solution for improving debug efficiency and expanding tracing window. The solutions presented in this book improve the validation quality of VLSI circuits, and ultimately enable the design and fabrication of reliable electronic devices.

Efficient Test Methodologies for High-Speed Serial Links - Dongwoo Hong 2009-12-24

Efficient Test Methodologies for High-Speed Serial Links describes in detail several new and promising techniques for cost-effectively testing high-speed interfaces with a high test coverage. One primary focus of Efficient Test Methodologies for High-Speed Serial Links is on efficient testing methods for jitter and bit-error-rate (BER), which are widely used for quantifying the quality of a communication system. Various analysis as well as experimental results are presented to demonstrate the validity of the presented techniques.

Machine Learning and Systems Engineering - Sio-Iong Ao 2012-12-05

A large international conference on Advances in Machine Learning and Systems Engineering was held in UC Berkeley, California, USA, October 20-22, 2009, under the auspices of the World Congress on Engineering and Computer Science (WCECS 2009). Machine Learning and Systems Engineering contains forty-six revised and extended research articles written by prominent researchers participating in the conference. Topics covered include Expert system, Intelligent decision making, Knowledge-based systems, Knowledge extraction, Data analysis tools, Computational biology, Optimization algorithms, Experiment designs, Complex system identification, Computational modeling, and industrial applications.

Machine Learning and Systems Engineering offers the state of the art of tremendous advances in machine learning and systems engineering and also serves as an excellent reference text for researchers and graduate students, working on machine learning and systems engineering.

Fundamental Numerical Methods for Electrical Engineering - Stanislaw Rosloniec 2008-07-17

Stormy development of electronic computation techniques (computer systems and software), observed during the last decades, has made possible automation of data processing in many important human activity areas, such as science, technology, economics and labor organization. In a broadly understood technology area, this development led to separation of specialized forms of using computers for the design and manufacturing processes, that is: - computer-aided design (CAD) - computer-aided manufacture (CAM) In order to show the role of computer in the first of the two applications mentioned above, let us consider basic stages of the design process for a standard piece of electronic system, or equipment: - formulation of requirements concerning user properties (characteristics, parameters) of the designed equipment, - elaboration of the initial, possibly general electric structure, - determination of mathematical model of the system on the basis of the adopted electric structure, - determination of basic responses (frequency- or time-domain) of the system, on the basis of previously established mathematical model, - repeated modification of the adopted diagram (changing its structure or element values) in case, when it does not satisfy the adopted requirements, - preparation of design and technological documentation, - manufacturing of model (prototype) series, according to the prepared documentation, - testing the prototype under the aspect of its electric properties, mechanical durability and sensitivity to environment conditions, - modification of prototype documentation, if necessary, and handing over the documentation to series production. The most important stages of the process under discussion are illustrated in Fig. 1. xi xii Introduction Fig. 1.

Futuristic Communication and Network Technologies - A. Sivasubramanian 2021-10-11

This book presents select proceedings of the International Conference on Futuristic Communication and Network Technologies (CFCNT 2020) conducted at Vellore Institute of Technology, Chennai. It covers various domains in communication engineering and networking technologies. This volume comprises of recent research in areas like optical communication, optical networks, optics and optical computing, emerging trends in photonics, MEMS and sensors, active and passive RF components and devices, antenna systems and applications, RF devices and antennas for microwave emerging technologies, wireless communication for future networks, signal and image processing, machine learning/AI for networks, internet of intelligent things, network security and blockchain technologies. This book will be useful for researchers, professionals, and engineers working in the core areas of electronics and communication.

Networks for Pervasive Services - Antonio Liotta 2011-05-12

Readers will progress from an understanding of what the Internet is now towards an understanding of the motivations and techniques that will drive its future.

Fractional Calculus for Scientists and Engineers - Manuel Duarte Ortigueira 2011-06-02

This book gives a practical overview of Fractional Calculus as it relates to Signal Processing

Fundamentals of Digital Electronics - Dhanasekharan Natarajan 2020-03-25

This book presents the fundamentals of digital electronics in a focused and comprehensive manner with many illustrations for understanding of the subject with high clarity. Digital Signal Processing (DSP) application information is provided for many topics of the subject to appreciate the practical significance of learning. To summarize, this book lays a foundation for students to become DSP engineers.

Advanced Electrical and Electronics Engineering - Jian Lee 2011-04-13

2010 First International Conference on Electrical and Electronics Engineering was held in Wuhan, China December 4-5. Advanced Electrical and Electronics Engineering book contains 72 revised and extended research articles written by prominent researchers participating in the conference. Topics covered include, Power Engineering, Telecommunication, Control engineering, Signal processing, Integrated circuit, Electronic amplifier, Nano-technologies, Circuits and networks, Microelectronics, Analog circuits, Digital circuits, Nonlinear circuits, Mixed-mode circuits, Circuits design, Sensors, CAD

tools, DNA computing, Superconductivity circuits. Electrical and Electronics Engineering will offer the state of art of tremendous advances in Electrical and Electronics Engineering and also serve as an excellent reference work for researchers and graduate students working with/on Electrical and Electronics Engineering.

Computational Science and Technology - Rayner Alfred 2021-04-16

This book gathers the proceedings of the Seventh International Conference on Computational Science and Technology 2020 (ICCST 2020), held in Pattaya, Thailand, on 29-30 August 2020. The respective contributions offer practitioners and researchers a range of new computational techniques and solutions, identify emerging issues, and outline future research directions, while also showing them how to apply the latest large-scale, high-performance computational methods.

Recent Advances in Power Electronics and Drives - Jitendra Kumar 2020-12-03

This book presents select proceedings of the Electric Power and Renewable Energy Conference 2020 (EPREC-2020). It provides rigorous discussions, case studies, and recent developments in the emerging areas of power electronics, especially, power inverter and converter, electrical drives, regulated power supplies, operation of FACTS & HVDC, etc. The readers would be benefited in enhancing their knowledge and skills in these domain areas. The book will be a valuable reference for beginners, researchers, and professionals interested in advancements in power electronics and drives.

Power Electronics and Renewable Energy Systems - C. Kamalakannan 2014-11-19

The book is a collection of high-quality peer-reviewed research papers presented in the Proceedings of International Conference on Power Electronics and Renewable Energy Systems (ICPERES 2014) held at Rajalakshmi Engineering College, Chennai, India. These research papers provide the latest developments in the broad area of Power Electronics and Renewable Energy. The book discusses wide variety of industrial, engineering and scientific applications of the emerging techniques. It presents invited papers from the inventors/originators of new applications and advanced technologies.

Lightning - Chandima Gomes 2022-08-15

This book highlights the essential theoretical and practical aspects of lightning, lightning protection, safety and education. Additionally, several auxiliary topics that are required to understand the core themes are also included. The main objective of the contents is to enlighten the scientists, researchers, engineers and social activists (including policy makers) in developing countries regarding the key information related to lightning and thunderstorms. A majority of developing countries are in tropics where the lightning characteristics are somewhat different from those in temperate regions. The housing structures and power/communication networks, and human behavioural patterns (that depends on socio-economic parameters) in these countries are also different from those in the developed world. As the existing books on similar themes address only those scenarios in developed countries, this book serves a vast spectrum of readership in developing world who seek knowledge in the principles of lightning and a practical guidance on lightning protection and safety education.

Fundamental Research in Electrical Engineering - Shahram Montaser Kouhsari 2018-07-25

This volume presents the selected papers of the First International Conference on Fundamental Research in Electrical Engineering, held at Khwarazmi University, Tehran, Iran in July, 2017. The selected papers cover the whole spectrum of the main four fields of Electrical Engineering (Electronic, Telecommunications, Control, and Power Engineering).

Electrical Machines - Dr. Hidaia Mahmood Alassouli 2020-06-30

This book includes my lecture notes for electrical machines course. The book is divided to different learning parts Part 1- Apply basic physical concepts to explain the operation and solve problems related to electrical machines. Part 2- Explain the principles underlying the performance of three-phase electrical machines. Part 3- Analyse, operate and test three-phase induction machines. Part 4- Investigate the performance, design, operation, and testing of the three-phase synchronous machine. Part 1: Apply basic physical concepts to explain the operation and solve problems related to electrical machines. Describe the construction of simple magnetic circuits, both with and without an air gap. Explain the basic laws which govern the electrical machine operation, such as Faraday's Law, Ampere-Biot-Savart's Law, and Lenz's Law. Apply Faraday's Law of electromagnetic induction, Ampere-Biot-Savart's Law, and Lenz's Law to solve for induced voltage and currents in relation to

simple magnetic circuits with movable parts. Illustrate the principle of the electromechanical energy conversion in magnetic circuits with movable parts. Part 2: Explain the principles underlying the performance of three-phase electrical machines. Compare and contrast concentric and distributed windings in three-phase electrical machines. Identify the advantages of distributed windings applied to three-phase machines. Explain how the pulsating and rotating magnetic fields are produced in distributed windings. Calculate the synchronous speed of a machine based on its number of poles and frequency of the supply. Describe the process of torque production in multi-phase machines. Part 3: Analyse, operate and test three-phase induction machines. Calculate the slip of an induction machine given the operating and synchronous speeds. Calculate and compare between different torques of a three-phase induction machine, such as the locked rotor or starting torque, pull-up torque, breakdown torque, full-load torque or braking torque. Develop and manipulate the equivalent circuit model for the three-phase induction machine. Analyse, and test experimentally, the torque-speed and current-speed characteristics of induction machines. and discuss the effects of varying such motor parameters as rotor resistance, supply voltage and supply frequency on motor torque-speed characteristics. Perform no-load and blocked rotor tests in order to determine the equivalent circuit parameters of an induction machine. Explore various techniques to start an induction motor. Identify the applications of the three-phase induction machines in industry and utility. Classify the insulations implemented in electrical machines windings and identify the factors affecting them. Part 4. Investigate the performance, design, operation, and testing of the three-phase synchronous machine. Describe the construction of three-phase synchronous machines, particularly the rotor, stator windings and the rotor saliency. Develop and manipulate an equivalent circuit model for the three-phase synchronous machine. Sketch the phasor diagram of a non-salient poles synchronous machine operating at various modes operation, such as no-load operation, motor operation, and generator operation. Investigate the influence of the rotor saliency on machine performance. Perform open and short circuit tests in order to determine the equivalent circuit parameters of a synchronous machine. Identify the applications of the three-phase synchronous machines in industry and utility List and explain the conditions of parallel operation of a group of synchronous generators. Evaluate the performance of the synchronous condenser and describe the power flow control between a synchronous condenser and the utility in both modes: over and under excited. Explain the principles of controlling the output voltage and frequency of a synchronous generator.

Electronic Engineering and Computing Technology - Len Gelman 2010-04-21

Electronic Engineering and Computing Technology contains sixty-one revised and extended research articles written by prominent researchers participating in the conference. Topics covered include Control Engineering, Network Management, Wireless Networks, Biotechnology, Signal Processing, Computational Intelligence, Computational Statistics, Internet Computing, High Performance Computing, and industrial applications. Electronic Engineering and Computing Technology will offer the state of art of tremendous advances in electronic engineering and computing technology and also serve as an excellent reference work for researchers and graduate students working with/on electronic engineering and computing technology.

Recent Advances in Electrical Engineering, Electronics and Energy - Miguel Botto Tobar 2021-03-24

This book constitutes the proceedings of the XV Multidisciplinary International Congress on Science and Technology (CIT 2020), held in Quito, Ecuador, on 26-30 October 2020, proudly organized by Universidad de las Fuerzas Armadas ESPE in collaboration with GDEON. CIT is an international event with a multidisciplinary approach that promotes the dissemination of advances in Science and Technology research through the presentation of keynote conferences. In CIT, theoretical, technical, or application works that are research products are presented to discuss and debate ideas, experiences, and challenges. Presenting high-quality, peer-reviewed papers, the book discusses the following topics: • Electrical and Electronic • Energy and Mechanics
Engineering Circuit Analysis - Hayt 2011-09

IT Security Management - Alberto Partida 2010-06-08

IT securiteers - The human and technical dimension working for the organisation. Current corporate governance regulations and international standards lead many organisations, big and small, to the creation of an information technology (IT) security function in their

organisational chart or to the acquisition of services from the IT security industry. More often than desired, these teams are only useful for companies' executives to tick the corresponding box in a certification process, be it ISO, ITIL, PCI, etc. Many IT security teams do not provide business value to their company. They fail to really protect the organisation from the increasing number of threats targeting its information systems. IT Security Management provides an insight into how to create and grow a team of passionate IT security professionals. We will call them "securiteers". They will add value to the business, improving the information security stance of organisations.

Innovations in Electrical and Electronic Engineering - Saad Mekhilef 2021-05-24

This book presents selected papers from the 2021 International Conference on Electrical and Electronics Engineering (ICEEE 2020), held on January 2-3, 2021. The book focuses on the current developments in various fields of electrical and electronics engineering, such as power generation, transmission and distribution; renewable energy sources and technologies; power electronics and applications; robotics; artificial intelligence and IoT; control, automation and instrumentation; electronics devices, circuits and systems; wireless and optical communication; RF and microwaves; VLSI; and signal processing. The book is a valuable resource for academics and industry professionals alike.

Proceedings of the 5th International Conference on Electrical Engineering and Information Technologies for Rail Transportation (EITRT) 2021 - Jianying Liang 2022-02-19

This book reflects the latest research trends, methods, and experimental results in the field of electrical and information technologies for rail transportation, which covers abundant state-of-the-art research theories and ideas. As a vital field of research that is highly relevant to current developments in a number of technological domains, the subjects it covered include intelligent computing, information processing, communication technology, automatic control, etc. The objective of the proceedings is to provide a major interdisciplinary forum for researchers, engineers, academicians, and industrial professionals to present the most innovative research and development in the field of rail transportation electrical and information technologies. Engineers and researchers in academia, industry, and government will also explore an insightful view of the solutions that combine ideas from multiple disciplines in this field. The volumes serve as an excellent reference work for researchers and graduate students working on rail transportation and electrical and information technologies.

Electrical Engineering and Intelligent Systems - Sio-Iong Ao 2012-08-01

The revised and extended papers collected in this volume represent the cutting-edge of research at the nexus of electrical engineering and intelligent systems. They were selected from well over 1000 papers submitted to the high-profile international World Congress on Engineering held in London in July 2011. The chapters cover material across the full spectrum of work in the field, including computational intelligence, control engineering, network management, and wireless networks. Readers will also find substantive papers on signal processing, Internet computing, high performance computing, and industrial applications. The Electrical Engineering and Intelligent Systems conference, as part of the 2011 World Congress on Engineering was organized under the auspices of the non-profit International Association of Engineers (IAENG). With more than 30 nations represented on the conference committees alone, the Congress features the best and brightest scientific minds from a multitude of disciplines related to engineering. These peer-reviewed papers demonstrate the huge strides currently being taken in this rapidly developing field and reflect the excitement of those at the frontiers of this research.

Future Information Technology - II - James J. (Jong Hyuk) Park 2015-01-29

The new multimedia standards (for example, MPEG-21) facilitate the seamless integration of multiple modalities into interoperable multimedia frameworks, transforming the way people work and interact with multimedia data. These key technologies and multimedia solutions interact and collaborate with each other in increasingly effective ways, contributing to the multimedia revolution and having a significant impact across a wide spectrum of consumer, business, healthcare, education, and governmental domains. This book aims to provide a complete coverage of the areas outlined and to bring together the researchers from academic and industry as well as practitioners to share ideas, challenges, and solutions relating to the multifaceted aspects of this field.

Computational Problems in Science and Engineering - Nikos Mastorakis
2015-10-26

This book provides readers with modern computational techniques for solving variety of problems from electrical, mechanical, civil and

chemical engineering. Mathematical methods are presented in a unified manner, so they can be applied consistently to problems in applied electromagnetics, strength of materials, fluid mechanics, heat and mass transfer, environmental engineering, biomedical engineering, signal processing, automatic control and more.