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 2nd INTERNATIONAL CONFERENCE ON TRENDS IN TECHNOLOGY AND ENGINEERING
 Smart Buildings Digitalization, Two Volume Set

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JAYLIN BURGESS

Innovations in Computer Science and Engineering Springer Nature

This book gathers high-quality papers presented at the Fifth International Conference on Smart Trends in Computing and Communications (SmartCom 2021), organized by Global Knowledge Research Foundation (GR Foundation) from March 2 - 3, 2021. It covers the state of the art and emerging topics in information, computer communications, and effective strategies for their use in engineering and managerial applications. It also explores and discusses the latest technological advances in, and future directions for, information and knowledge computing and its applications.

Renewable Energy and AI for Sustainable Development Springer Nature

This book covers various streams of communication engineering like signal processing, VLSI design, embedded systems, wireless communications and electronics and communications in general. The book is a collection of best selected research papers presented at 9th International Conference on Innovations in Electronics and Communication Engineering at Guru Nanak Institutions Hyderabad, India. The book presents works from researchers, technocrats and experts about latest technologies in electronic and communication engineering. The authors have discussed the latest cutting edge technology, and the book will serve as a reference for young researchers.

Advances in Optical Science and

Engineering International Journal for Trends in Engineering and Technology (IJTET Journal)

International Conference on Trends in Technology and Engineering - ICTTE'15 is organized by in association with Arjun College of Technology and International Journal for Trends in Engineering & Technology (IJTET). . The conference theme concentrates to discover the latest technological innovation, trends in technology and engineering and that are experienced by the professionals with the present strict rules and to convert these complications into prospects. Authors are approved to post original research or system documents on any appropriate topics. These can either be frequent or brief documents.

Building Capacity for Teaching Engineering in K-12 Education Springer Nature

Engineering education is emerging as an important component of US K-12 education. Across the country, students in classrooms and after- and out-of-school programs are participating in hands-on, problem-focused learning activities using the engineering design process. These experiences can be engaging; support learning in other areas, such as science and mathematics; and provide a window into the important role of engineering in society. As the landscape of K-12 engineering education continues to grow and evolve, educators, administrators, and policy makers should consider the capacity of the US education system to meet current and anticipated needs for K-12 teachers of engineering. Building Capacity for Teaching Engineering in K-12 Education reviews existing curricula and programs as well as related research to understand current and anticipated future needs for engineering-literate K-12 educators in the United States and determine how these needs might be addressed. Key topics in this report include the preparation of K-12 engineering educators, professional pathways for K-12 engineering educators, and the role of higher education in preparing engineering educators. This report proposes steps that stakeholders - including professional development providers, postsecondary preservice education programs, postsecondary engineering and engineering technology programs, formal and informal educator credentialing organizations, and the education and learning sciences research communities - might take to increase the number, skill level, and confidence of K-12 teachers of engineering in the United States.

Photovoltaic Systems Academic Press
This book gathers the proceedings of the 8th International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA 2020), held at NIT Surathkal, Karnataka, India, on 4-5 January 2020. In these proceedings, researchers, scientists, engineers and practitioners share new ideas and lessons learned in the field of intelligent computing theories with prospective applications in various engineering disciplines. The respective papers cover broad areas of the information and decision sciences, and explore both the theoretical and practical aspects of data-intensive computing, data mining, evolutionary computation, knowledge management and networks, sensor networks, signal processing, wireless networks, protocols and architectures. Given its scope, the book offers a valuable

resource for graduate students in various engineering disciplines.

Implementation of Smart Healthcare Systems using AI, IoT, and Blockchain
Springer Nature

This book provides comprehensive insight into the fault detection techniques implemented for photovoltaic (PV) panels. It includes studies related to predictive maintenance needed to improve the performance of the solar PV systems using Artificial Intelligence (AI) techniques. The readers gain knowledge on the fault identification algorithm and the significance of all such algorithms in real-time power system applications. Gives detailed overview of fundamental concepts of fault diagnosis algorithm for solar PV system Explains AC and DC side of the solar PV system-based electricity generation with real-time examples Covers effective extraction of the energy from solar radiation Illustrates artificial intelligence techniques for detecting the faults occurring in the solar PV system Includes MATLAB® based simulations and results on fault diagnosis including case studies This book is aimed at researchers, professionals and graduate students in electrical engineering, artificial intelligence, control algorithms, energy engineering, photovoltaic systems, industrial electronics.

Future Farming: Advancing Agriculture with Artificial Intelligence
CRC Press

This comprehensive introduction will help elementary educators integrate engineering into their classroom, school, or district in age-appropriate, inclusive, and engaging ways. Building on the work of a Museum of Science team that has spent 15 years developing elementary engineering curricula, this book outlines how engineering can be integrated into a broader STEM curriculum, details its pedagogical benefits to students, and includes classroom examples to help educators tailor instruction to engage diverse students. Featuring vignettes, case studies, videos, research results, and assessments, this resource will help readers visualize high-quality elementary engineering and understand the theoretical principles in context. Book Features: Frameworks to help teachers create curricula and structure activities. A focus on engaging the diversity of learners in today's classrooms. Experiences from the nation's leading elementary education curriculum that has reached 13.3 million children and 165,000 educators. "Wondering how to infuse engineering into your teaching and curriculum? Here's the book for you!" —From the Foreword by

Richard A. Duschl, Penn State University
"Schools or districts looking to introduce engineering in ways that enhance science and mathematics learning can use the inclusive teaching strategies in this book."

—Linda Curtis-Bey, executive director of STEM, NYC Department of Education
"Dr. Cunningham lays out an innovative and achievable vision for elementary school engineering that engages all students."

—Heidi Carlone, The University of North Carolina at Greensboro
Control Instrumentation Systems Springer Nature

This volume contains selected papers which had been presented during CISCON 2018. The papers cover the latest trends in the fields of instrumentation, sensors and systems, industrial automation & control, image and signal processing, robotics, renewable energy, power systems and power drives, with focus on solving the current challenges faced in the field of instrumentation and control engineering. This volume will be of use to academic and industry researchers and students working in this field.

INTERNATIONAL CONFERENCE ON INNOVATIONS IN COMMUNICATIONS AND COMPUTER ENGINEERING - IICCE'15
Springer Nature

This book gives an overview of innovative approaches in telehealth and telemedicine. The Goal of the content is to inform readers about recent computer applications in e-health, including Internet of Things (IoT) and Internet of Medical Things (IoMT) technology. The 9 chapters will guide readers to determine the urgency to intervene in specific medical cases, and to assess risk to healthcare workers. The focus on telehealth along with telemedicine, encompasses a broader spectrum of remote healthcare services for the reader to understand. Chapters cover the following topics: - A COVID-19 care system for virus precaution, prevention, and treatment - The Internet of Things (IoT) in Telemedicine, - Artificial Intelligence for Remote Patient Monitoring systems - Machine Learning in Telemedicine - Convolutional Neural Networks for the detection and prediction of melanoma in skin lesions - COVID-19 virus contact tracing via mobile apps - IoT and Cloud convergence in healthcare - Lung cancer classification and detection using deep learning - Telemedicine in India This book will assist students, academics, and medical professionals in learning about cutting-edge telemedicine technologies. It will also inform beginner researchers in medicine about upcoming trends, problems, and future research paths in telehealth and telemedicine for

infectious disease control and cancer diagnosis.

Engineering in Elementary STEM Education IGI Global

The Proceedings of 3rd International Conference on Opto-Electronics and Applied Optics, OPTRONIX 2016 is an effort to promote and present the research works by scientists and researchers including students in India and abroad in the area of Green Photonics and other related areas as well as to raise awareness about the recent trends of research and development in the area of the related fields. The book has been organized in such a way that it will be easier for the readers to go through and find out the topic of their interests. The first part includes the Keynote addresses by Rajesh Gupta, Department of Energy Science and Engineering, Indian Institute of Technology, Bombay; P.T. Ajith Kumar, President and Leading Scientist Light Logics Holography and Optics, Crescent Hill, Trivandrum, Kerala; and K.K. Ghosh, Institute of Engineering & Management, Kolkata, India. The second part focuses on the Plenary and Invited Talks given by eminent scientists namely, Vasudevan Lakshminarayanan, University of Waterloo, Canada; Motoharu Fujigaki, University of Fukui, Japan; Takeo Sasaki, Tokyo University of Science, Japan; Kehar Singh, Former Professor, Indian Institute of Technology, Delhi, India; Rajpal S. Sirohi, Tezpur University, India; Ajoy Kumar Chakraborty, Institute of Engineering & Management, India; Lakshminarayan Hazra, Emeritus Professor, Calcutta University, India; S.K. Bhadra, Emeritus Scientist, Indian Institute of Chemical Biology, India; Partha Roy Chaudhuri, Department of Physics, Indian Institute of Technology, Kharagpur, India; Navin Nishchal, Indian Institute of Technology, Patna, India; Tarun Kumar Gangopadhyay, CSIR-Central Glass and Ceramic Research Institute, India; Samudra Roy, Department of Physics, Indian Institute of Technology, Kharagpur, India; Kamakhya Ghatak, University of Engineering & Management, India. The subsequent parts focus on contributory papers in : Green Photonics; Fibre and Integrated Optics; Lasers, Interferometry; Optical Communication and Networks; Optical and Digital Data and Image Processing; Opto-Electronic Devices, Terahertz Technology; Nano-Photonics, Bio-Photonics, Bio-Medical Optics; Lasers, Quantum Optics and Information Technology; E. M. Radiation Theory and Antenna; Cryptography; Quantum and Non-Linear Optics, Opto-Electronic Devices; Non-Linear Waveguides; Micro-Electronics and VLSI;

Interdisciplinary.

Innovations in Electronics and Communication Engineering CRC Press

This book focuses primarily on the nature-inspired approach for designing smart applications. It includes several implementation paradigms such as design and path planning of wireless network, security mechanism and implementation for dynamic as well as static nodes, learning method of cloud computing, data exploration and management, data analysis and optimization, decision taking in conflicting environment, etc. The book fundamentally highlights the recent research advancements in the field of engineering and science.

Biomedical and Clinical Engineering for Healthcare Advancement Academic Press

This is an open access book. The 2nd International Conference on Emerging Trends in Engineering (ICETE 2023) will be held in-person from April 28-30, 2023 at University College of Engineering, Osmania University, Hyderabad, India. Since its inception in 2019, The International Conference on Emerging Trends in Engineering (ICETE) has established to enhance the information exchange of theoretical research and practical advancements at national and international levels in the fields of Bio-Medical, Civil, Computer Science, Electrical, Electronics & Communication Engineering, Mechanical and Mining Engineering. This encourages and promotes professional interaction among students, scholars, researchers, educators, professionals from industries and other groups to share latest findings in their respective fields towards sustainable developments. ICETE 2023 promises to be an exciting and innovative event with keynote and invited talks, oral and poster presentations. We invite you to submit your latest research work to ICETE 2023 and look forward to welcoming you in-person to University College of Engineering, Osmania University, Hyderabad, India. We are closely monitoring the COVID-19 situation. We will be taking all necessary precautions and adhere to the COVID-19 guidelines issued by the Government of Telangana & Osmania University, India.

Technical Advancements of Machine Learning in Healthcare National Academies Press

This book focuses on various advanced technologies which integrate with machine learning to assist one of the most leading industries, healthcare. It presents recent research works based on machine learning approaches supported by medical and information communication technologies

with the use of data and image analysis.

The book presents insight about techniques which broadly deals in delivery of quality, accurate and affordable healthcare solutions by predictive, proactive and preventative methods. The book also explores the possible use of machine learning in enterprises, such as enhanced medical imaging/diagnostics, understanding medical data, drug discovery and development, robotic surgery and automation, radiation treatments, creating electronic smart records and outbreak prediction.

Extension Series - Engineering Extension Department Springer Nature

Electronic device usage has increased considerably in the past two decades. System configurations are continuously requiring upgrades; existing systems often become obsolete in a matter of 2-3 years. Green computing is the complete effective management of design, manufacture, use, and disposal, involving as little environmental impact as possible. This book intends to explore new and innovative ways of conserving energy, effective e-waste management, and renewable energy sources to harness and nurture a sustainable eco-friendly environment. This book: • Highlights innovative principles and practices using effective e-waste management and disposal • Explores artificial intelligence based sustainable models • Discovers alternative sources and mechanisms for minimizing environmental hazards • Highlights successful case studies in alternative sources of energy • Presents solid illustrations, mathematical equations, as well as practical in-the-field applications • Serves as a one-stop reference guide to stakeholders in the domain of green computing, e-waste management, renewable energy alternatives, green transformational leadership including theory concepts, practice and case studies • Explores cutting-edge technologies like internet of energy and artificial intelligence, especially the role of machine learning and deep learning in renewable energy and creating a sustainable ecosystem • Explores futuristic trends in renewable energy This book aims to address the increasing interest in reducing the environmental impact of energy as well as its further development and will act as a useful reference for engineers, architects, and technicians interested in and working with energy systems; scientists and engineers in developing countries; industries, manufacturers, inventors, universities, researchers, and interested consultants to explain the foundation to advanced concepts and

research trends in the domain of renewable energy and sustainable computing. The content coverage of the book is organized in the form of 11 clear and thorough chapters providing a comprehensive view of the global renewable energy scenario, as well as how science and technology can play a vital role in renewable energy.

Perspectives in Biomedical Engineering Springer

Bolstered by new standards and new initiatives to promote STEM education, engineering is making its way into the school curriculum. This comprehensive introduction will help elementary educators integrate engineering into their classroom, school, or district in age-appropriate, inclusive, and engaging ways. Building on the work of a Museum of Science team that has spent 15 years developing elementary engineering curricula, this book outlines how engineering can be integrated into a broader STEM curriculum, details its pedagogical benefits to students, and includes classroom examples to help educators tailor instruction to engage diverse students. Featuring vignettes, case studies, videos, research results, and assessments, this resource will help readers visualize high-quality elementary engineering and understand the theoretical principles in context. Book Features: Frameworks to help teachers create curricula and structure activities. A focus on engaging the diversity of learners in today's classrooms. Experiences from the nation's leading elementary education curriculum that has reached 13.3 million children and 165,000 educators. Go to eie.org/book for videos, assessment tools, reproducibles, and other instructional supports that enliven the text.

Recent Department of Education Publications in ERIC Springer

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.

Nature-Inspired Computing for Smart Application Design Springer Nature

This book facilitates the VLSI-interested individuals with not only in-depth knowledge, but also the broad aspects of it by explaining its applications in different fields, including image processing and biomedical. The deep understanding of basic concepts gives you the power to develop a new application aspect, which is very well taken care of in this book by using simple language in explaining the concepts. In the VLSI world, the importance of hardware description languages cannot be ignored, as the designing of such dense and complex circuits is not possible without them. Both Verilog and VHDL languages are used here for designing. The current needs of high-performance integrated circuits (ICs) including low power devices and new emerging materials, which can play a very important role in achieving new functionalities, are the most interesting part of the book. The testing of VLSI circuits becomes more crucial than the designing of the circuits in this nanometer technology era. The role of fault simulation algorithms is very well explained, and its implementation using Verilog is the key aspect of this book. This book is well organized into 20 chapters. Chapter 1 emphasizes on uses of FPGA on various image processing and biomedical applications. Then, the descriptions enlighten the basic understanding of digital design from the perspective of HDL in Chapters 2-5. The performance enhancement with alternate material or geometry for silicon-based FET designs is focused in Chapters 6 and 7. Chapters 8 and 9 describe the study of bimolecular interactions with biosensing FETs. Chapters 10-13 deal with advanced FET structures available in various shapes, materials such as nanowire, HFET, and their comparison in terms of device performance metrics calculation. Chapters 14-18 describe different application-specific VLSI design techniques and challenges for analog and digital circuit designs. Chapter 19 explains the VLSI testability issues with the description of simulation and its categorization into logic

and fault simulation for test pattern generation using Verilog HDL. Chapter 20 deals with a secured VLSI design with hardware obfuscation by hiding the IC's structure and function, which makes it much more difficult to reverse engineer. **Intelligent Data Engineering and Analytics** Springer

Authoritative resource describing the artificial intelligence and advanced technologies in smart power systems with simulation examples and case studies Artificial Intelligence-based Smart Power Systems presents advanced technologies used in various aspects of smart power systems, especially grid-connected and industrial evolution, covering many new topics such as distribution Phasor management, blockchain technologies for smart power systems, the application of deep learning and reinforced learning, and artificial intelligence techniques. The text also explores the potential consequences of artificial intelligence and advanced technologies in smart power systems in the forthcoming years. To enhance and reinforce learning, the highly qualified editors include many learning resources throughout the text, including MATLAB and HIL codes, end-of-chapter problems, end-of-book solutions, practical examples, and case studies. Artificial Intelligence-based Smart Power Systems includes specific information on topics such as: Modeling and analysis of smart power systems, covering steady state analysis, dynamic analysis, voltage stability, and more Recent advancement in power electronics for smart power systems, covering power electronic converters for renewable energy sources, electric vehicles, and HDVC/FACTS Distribution Phasor Measurement Units (PMU) in smart power systems, covering the need for PMU in distribution and automation of system reconfigurations Power and energy management systems for microgrids Engineering colleges and universities, along with industry research centers, can use the in-depth subject coverage and the extensive supplementary learning resources found in Artificial Intelligence-based Smart Power Systems to gain a holistic understanding of the subject and be able to harness that knowledge within a myriad of practical applications. **Artificial Intelligence-based Smart Power Systems** Teachers College Press The book focuses on the integration of intelligent communication systems, control systems, and devices related to all aspects of engineering and sciences. It includes high-quality research papers from the 3rd international conference, ICICCD 2018, organized by the Department of

Electronics, Instrumentation and Control Engineering at the University of Petroleum and Energy Studies, Dehradun on 21-22 December 2018. Covering a range of recent advances in intelligent communication, intelligent control and intelligent devices., the book presents original research and findings as well as researchers' and industrial practitioners' practical development experiences of. *Recent Trends in Communication, Computing, and Electronics* Springer Nature

Implementation of Smart Healthcare Systems using AI, IoT, and Blockchain provides imperative research on the

development of data fusion and analytics for healthcare and their implementation into current issues in a real-time environment. While highlighting IoT, bio-inspired computing, big data, and evolutionary programming, the book explores various concepts and theories of data fusion, IoT, and Big Data Analytics. It also investigates the challenges and methodologies required to integrate data from multiple heterogeneous sources, analytical platforms in healthcare sectors. This book is unique in the way that it provides useful insights into the implementation of a smart and intelligent healthcare system in a post-Covid-19 world using enabling technologies like

Artificial Intelligence, Internet of Things, and blockchain in providing transparent, faster, secure and privacy preserved healthcare ecosystem for the masses. Explains how IoT can be integrated into the healthcare ecosystem for better diagnostics, monitoring and treatment Includes AI for predictive and preventive healthcare Describes blockchain for managing healthcare data to provide transparency, security and distributed storage Offers effective remote diagnostics and telemedicine approaches Highlights the importance of gold standard medical datasets for improved modeling and analysis

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