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The rise of intelligence and computation within technology has created an eruption of potential applications in numerous professional industries. Techniques such as data analysis, cloud computing, machine learning, and others have altered the traditional processes of various disciplines including healthcare, economics, transportation, and politics. Information technology in today's world is beginning to uncover opportunities for experts in these fields that they are not yet aware of. The exposure of specific instances in which these devices are being implemented will assist other specialists in how to successfully utilize these transformative tools with the appropriate amount of discretion, safety, and awareness. Considering the level of diverse uses and practices throughout the globe, the fifth edition of the Encyclopedia of Information Science and Technology series continues the enduring legacy set forth by its predecessors as a premier reference that contributes the most cutting-edge concepts and methodologies to the research community. The Encyclopedia of Information Science and Technology, Fifth Edition is a three-volume set that includes 136 original and previously unpublished research chapters that present multidisciplinary research and expert insights into new methods and processes for understanding modern technological tools and their applications as well as emerging theories and ethical controversies surrounding the field of information science. Highlighting a wide range of topics such as natural language processing, decision support systems, and electronic government, this book offers strategies for implementing smart devices and analytics into various professional disciplines. The techniques discussed in this publication are ideal for IT professionals, developers, computer scientists, practitioners, managers, policymakers, engineers, data analysts, and programmers seeking to understand the latest developments within this field and who are looking to apply new tools and policies in their practice.

Additionally, academicians, researchers, and students in fields that include but are not limited to software engineering, cybersecurity, information technology, media and communications, urban planning, computer science, healthcare, economics, environmental science, data management, and political science will benefit from the extensive knowledge compiled within this publication.

Drought is a natural hazard characterized by lower than expected or lower than normal rainfall having slow but widespread impact. This book focus on drought management and mitigation in agriculture and allied sectors. The chapters cover Basic concepts, assessment, monitoring, forecasting, early warning, vulnerability and adaptation to drought and mitigation and management strategies. Management of different land use systems under drought and finally socio economic impact and livelihood issues of drought are also focussed. It would be useful to a wide range of stakeholders, i.e. planners, researchers, students and interested public. This will also serve as text book as well as supplementary reading for courses in agronomy, ecology, geography and agro meteorology besides administration and disaster management units.

This issue of Infectious Disease Clinics of North America, Guest Edited by Mary Anne Jackson, MD and Angela Myers, MD, is Part I of a 2-part issue devoted to Pediatric Infectious Diseases. Drs. Jackson and Myers have assembled a group of expert authors to review the following topics: Diagnosis and Management of Kawasaki Disease; Neonatal HSV Infection; Use of Newer Diagnostics for Pediatric Tuberculosis;

Recognition and Prompt Treatment for Tick Borne Infections; Prevention of Recurrent Staphylococcal Skin Infections; Evaluation and Management of the Febrile Young Infant; New Horizons for Pediatric Antimicrobial Stewardship; Pitfalls in Diagnosis of Pediatric Clostridium Difficile Diarrhea; The Changing Epidemiology of Pediatric Endocarditis; Neonatal Parechovirus Infection; Osteoarticular infections in Children; and Pediatric CMV Disease.

This volume discusses recent advances in Artificial Intelligence (AI) applications in smart, internet-connected societies, highlighting three key focus areas. The first focus is on intelligent sensing applications. This section details the integration of Wireless Sensing Networks (WSN) and the use of intelligent platforms for WSN applications in urban infrastructures, and discusses AI techniques on hardware and software systems such as machine learning, pattern recognition, expert systems, neural networks, genetic algorithms, and intelligent control in transportation and communications systems. The second focus is on AI-based Internet of Things (IoT) systems, which addresses applications in traffic management, medical health, smart homes and energy. Readers will also learn about how AI can extract useful information from Big Data in IoT systems. The third focus is on crowdsourcing (CS) and computing for smart cities. This section discusses how CS via GPS devices, GIS tools, traffic cameras, smart cards, smart phones and road deceleration devices enables citizens to collect and share data to make cities smart, and how these data can be applied to address urban issues including pollution, traffic congestion, public safety and increased energy consumption. This book will be of interest to academics, researchers and students studying AI, cloud computing, IoT and crowdsourcing in urban applications.

This book aims to provide the latest research developments and results in the domain of AI techniques for smart cyber ecosystems. It presents a holistic insight into AI-enabled theoretic approaches and methodology in IoT networking, security analytics using AI tools and network automation, which ultimately enable intelligent cyber space. This book will be a valuable resource for students, researchers, engineers and policy makers working in various areas related to cybersecurity and privacy for Smart Cities. This book includes chapters titled "An Overview of the Artificial Intelligence Evolution and Its Fundamental Concepts, and Their Relationship with IoT Security", "Smart City: Evolution and Fundamental Concepts", "Advances in AI-Based Security for Internet of Things in Wireless Virtualization Environment", "A Conceptual Model for Optimal Resource Sharing of Networked Microgrids Focusing Uncertainty: Paving Path to Eco-friendly Smart Cities", "A Novel Framework for a Cyber Secure Smart City", "Contemplating Security Challenges and Threats for Smart Cities", "Self-Monitoring Obfuscated IoT Network", "Introduction to Side Channel Attacks and Investigation of Power Analysis and Fault Injection Attack Techniques", "Collaborative Digital Forensic Investigations Model for Law Enforcement: Oman as a Case Study", "Understanding Security Requirements and Challenges in the Industrial Internet of Things: A Review", "5G Security and the Internet of Things", "The Problem of Deepfake Videos and How to Counteract Them in Smart Cities", "The Rise of Ransomware Aided by Vulnerable IoT Devices", "Security Issues in Self-Driving Cars within Smart Cities", and "Trust-Aware Crowd Associated Network-Based Approach for Optimal Waste Management in Smart Cities". This book provides state-of-the-art research results and discusses current issues, challenges, solutions and recent trends related to security and organization

within IoT and Smart Cities. We expect this book to be of significant importance not only to researchers and practitioners in academia, government agencies and industries, but also for policy makers and system managers. We anticipate this book to be a valuable resource for all those working in this new and exciting area, and a "must have" for all university libraries.

Artificial Intelligence Techniques in IoT Sensor Networks is a technical book which can be read by researchers, academicians, students and professionals interested in artificial intelligence (AI), sensor networks and Internet of Things (IoT). This book is intended to develop a shared understanding of applications of AI techniques in the present and near term. The book maps the technical impacts of AI technologies, applications and their implications on the design of solutions for sensor networks. This text introduces researchers and aspiring academicians to the latest developments and trends in AI applications for sensor networks in a clear and well-organized manner. It is mainly useful for research scholars in sensor networks and AI techniques. In addition, professionals and practitioners working on the design of real-time applications for sensor networks may benefit directly from this book. Moreover, graduate and master's students of any departments related to AI, IoT and sensor networks can find this book fascinating for developing expert systems or real-time applications. This book is written in a simple and easy language, discussing the fundamentals, which relieves the requirement of having early backgrounds in the field. From this expectation and experience, many libraries will be interested in owning copies of this work.

The use of digital images in today's modernized market is rapidly increasing throughout organizations due to the prevalence of social media and digital content. Companies who wish to distribute their content over the internet face numerous security risks such as copyright violation. Advanced methods for the protection and security of digital data are constantly emerging, and up-to-date research in this area is lacking. Advancements in Security and Privacy Initiatives for Multimedia Images is a collection of innovative research on the methods and applications of contemporary techniques for the security and copyright protection of images and their distribution. While highlighting topics including simulation-based security, digital watermarking protocols, and counterfeit prevention, this book is ideally designed for security analysts, researchers, developers, programmers, academicians, practitioners, students, executives, educators, and policymakers seeking current research on modern security improvements for multimedia images.

This practical, lab-based approach to nano- and microfluidics provides readers with a wealth of practical techniques, protocols, and experiments ready to be put into practice in both research and industrial settings. The practical approach is ideally suited to researchers and R&D staff in industry; additionally the interdisciplinary approach to the science of nano- and microfluidics enables readers from a range of different academic disciplines to broaden their understanding. Dr Rapp fully engages with the multidisciplinary nature of the subject. Alongside traditional fluid/transport topics, there is a wealth of coverage of materials and manufacturing techniques, chemical modification/surface functionalization, biochemical analysis, and the biosensors involved. As well as providing a clear and concise overview to get started into the multidisciplinary field of microfluidics and practical guidance on techniques, pitfalls and troubleshooting, this book supplies: A set of hands-on experiments and protocols that will help setting up lab experiments but which will also allow a quick start into practical work. A collection of microfluidic structures, with 3D-CAD and image data that can be used directly

(files provided on a companion website). A practical guide to the successful design and implementation of nano- and microfluidic processes (e.g. biosensing) and equipment (e.g., biosensors, such as diabetes blood glucose sensors). Provides techniques, experiments, and protocols ready to be put to use in the lab, in an academic, or industry setting. A collection of 3D-CAD and image files is provided on a companion website.

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

In this book, contributors provide insights into the latest developments of Edge Computing/Mobile Edge Computing, specifically in terms of communication protocols and related applications and architectures. The book provides help to Edge service providers, Edge service consumers, and Edge service developers interested in getting the latest knowledge in the area. The book includes relevant Edge Computing topics such as applications; architecture; services; inter-operability; data analytics; deployment and service; resource management; simulation and modeling; and security and privacy. Targeted readers include those from varying disciplines who are interested in designing and deploying Edge Computing. Features the latest research related to Edge Computing, from a variety of perspectives; Tackles Edge Computing in academia and industry, featuring a variety of new and innovative operational ideas; Provides a strong foundation for researchers to advance further in the Edge Computing domain.

Despite the length of time it has been around, its importance, and vast amounts of research, combustion is still far from being completely understood. Issues regarding the environment, cost, and fuel consumption add further complexity, particularly in the process and power generation industries. Dedicated to advancing the art and science of industr

This book comprehensively conveys the theoretical and practical aspects of IoT and big data analytics with the solid contributions from practitioners as well as academicians. This book examines and expounds the unique capabilities of the big data analytics platforms in capturing, cleansing and crunching IoT device/sensor data in order to extricate actionable insights. A number of experimental case studies and real-world scenarios are incorporated in this book in order to instigate our book readers. This book Analyzes current research and development in the domains of IoT and big data analytics Gives an overview of latest trends and transitions happening in the IoT data analytics space Illustrates the various platforms, processes, patterns, and practices for simplifying and streamlining IoT data analytics The Internet of Things and Big Data Analytics: Integrated Platforms and Industry Use Cases examines and accentuates how the multiple challenges at the cusp of IoT and big data can be fully met. The device ecosystem is growing steadily. It is forecast that there will be billions of connected

devices in the years to come. When these IoT devices, resource-constrained as well as resource-intensive, interact with one another locally and remotely, the amount of multi-structured data generated, collected, and stored is bound to grow exponentially. Another prominent trend is the integration of IoT devices with cloud-based applications, services, infrastructures, middleware solutions, and databases. This book examines the pioneering technologies and tools emerging and evolving in order to collect, pre-process, store, process and analyze data heaps in order to disentangle actionable insights.

This book provides an overview of modern sensing technologies and reflects the remarkable advances that have been made in the field of intelligent and smart sensors, environmental monitoring, health monitoring, and many other sensing and monitoring contexts in today's world. It addresses a broad range of aspects, from human health monitoring to the monitoring of environmental conditions, from wireless sensor networks and the Internet of Things to structural health monitoring. Given its breadth of scope, the book will benefit researchers, practitioners, technologists and graduate students involved in the monitoring of systems within the human body, functions and activities, healthcare technologies and services, the environment, etc.

Society is now completely driven by data with many industries relying on data to conduct business or basic functions within the organization. With the efficiencies that big data bring to all institutions, data is continuously being collected and analyzed. However, data sets may be too complex for traditional data-processing, and therefore, different strategies must evolve to solve the issue. The field of big data works as a valuable tool for many different industries. The Research Anthology on Big Data Analytics, Architectures, and Applications is a complete reference source on big data analytics that offers the latest, innovative architectures and frameworks and explores a variety of applications within various industries. Offering an international perspective, the applications discussed within this anthology feature global representation. Covering topics such as advertising curricula, driven supply chain, and smart cities, this research anthology is ideal for data scientists, data analysts, computer engineers, software engineers, technologists, government officials, managers, CEOs, professors, graduate students, researchers, and academicians.

The complexity and severity of the Distributed Denial of Service (DDoS) attacks are increasing day-by-day. The Internet has a highly inconsistent structure in terms of resource distribution. Numerous technical solutions are available, but those involving economic aspects have not been given much consideration. The book, DDoS Attacks – Classification, Attacks, Challenges, and Countermeasures, provides an overview of both types of defensive solutions proposed so far, exploring different dimensions that would mitigate the DDoS effectively and show the implications associated with them. Features: Covers topics that describe taxonomies of the DDoS attacks in detail, recent trends and classification of defensive mechanisms on the basis of deployment location, the types of defensive action, and the solutions offering economic incentives. Introduces chapters discussing the various types of DDoS attack associated with different layers of security, an attacker's motivations, and the importance of incentives and liabilities in any defensive solution. Illustrates the role of fair resource-allocation schemes, separate payment mechanisms for attackers and legitimate users, negotiation models on cost and types of resources, and risk assessments and transfer mechanisms. DDoS Attacks – Classification, Attacks, Challenges, and Countermeasures is designed for the readers who have an interest in the cybersecurity domain, including students and researchers who are exploring different dimensions associated with the DDoS attack, developers and security professionals who are focusing on developing defensive schemes and applications for detecting or mitigating the DDoS attacks, and faculty members across different universities. This issue of Orthopaedic Clinics will focus on infection. This issue will include articles on: Charcot Arthropathy versus Osteomyelitis: Evaluation and Management; Physical function, and

physical activity in obese adults after total knee arthroplasty; DVT and PE Considerations in Orthopaedic Surgery; The Impact of Negative Pressure Wound Therapy on Orthopaedic Infection; Role of Systemic and Local Antibiotics in the Treatment of Open Fractures; Acute Hematogenous Osteomyelitis in Children; and many more!

Offering unparalleled coverage of infectious diseases in children and adolescents, Feigin & Cherry's Textbook of Pediatric Infectious Diseases 8th Edition, continues to provide the information you need on epidemiology, public health, preventive medicine, clinical manifestations, diagnosis, treatment, and much more. This extensively revised edition by Drs. James Cherry, Gail J. Demmler-Harrison, Sheldon L. Kaplan, William J. Steinbach, and Peter J. Hotez, offers a brand-new full-color design, new color images, new guidelines, and new content, reflecting today's more aggressive infectious and resistant strains as well as emerging and re-emerging diseases. Features expanded information on infections in the compromised host; immunomodulating agents and their potential use in the treatment of infectious diseases; and Ebola virus. Contains hundreds of new color images throughout, as well as new guidelines, new resistance epidemiology, and new Global Health Milestones. Includes new chapters on Zika virus and Guillain-Barré syndrome.

This book highlights the emerging field of intelligent computing and developing smart systems. It includes chapters discussing the outcome of challenging research related to distributed computing, smart machines and their security related research, and also covers next-generation communication techniques and the networking technologies that have the potential to build the future communication infrastructure. Bringing together computing, communications and other aspects of intelligent and smart computing, it contributes to developing a roadmap for future research on intelligent systems.

With complete coverage appropriate for residents through experienced pediatric orthopaedic surgeons, Tachdjian's Pediatric Orthopaedics, 6th Edition, continues a 50-year tradition of excellence as the most comprehensive, authoritative guide to diagnosing and treating pediatric musculoskeletal disorders. Editor John Herring, MD, and experts from the Texas Scottish Rite Hospital for Children offer step-by-step instruction and detailed visual guidance on both surgical and non-surgical approaches. It's everything the orthopaedic surgeon needs to know to accurately treat the full spectrum of pediatric orthopaedic conditions and injuries. Presents complete coverage of the latest knowledge on etiology, imaging, differential diagnosis, growth instrumentation, and non-operative and surgical techniques for a wide range of pediatric orthopaedic conditions. Provides expert guidance on difficult diagnostic and clinical management issues for your most challenging cases. Covers today's most effective approaches for management of severe spinal deformities, early onset scoliosis, hip preservation methods, long-term follow-up of trauma conditions, and much more. Offers superb visual guidance with nearly 2,500 full-color illustrations and 70 videos (many are new!) of pediatric surgical procedures, including a number that highlight clinical examination and unusual clinical findings.

This book provides holistic yet concise information on what modern cognitive radio networks are, how they work, and the possible future directions for them. The authors first present the most generic models of modern cognitive radio networks while taking their different architectural designs and classifications into consideration. While the spectrum resource is shown to be the most important resource for the cognitive radio networks, the book exposes the importance of the other resources that are needed to help drive the technology. The book then discusses in-depth the key tools (such as optimization and queuing theory) and techniques (such as cooperative diversity and relaying) that are being employed to formulate resource problems, investigate solutions, and interpret such solutions for useful and practical modern cognitive radio networks realization. Further, the book studies the impact of modern cognitive radio networks on other emerging technologies such as 5G, Internet of Things, and

advanced wireless sensor networks and discusses the role that cognitive radio networks play in the evolution of smart cities and in the realization of a highly interconnected world. In discussing the future of the cognitive radio networks, the book emphasizes the need to advance new or improved tools, techniques, and solutions to address lingering problems in the aspects of resource realization and utilization, network complexity, network security, etc., which can potentially limit the cognitive radio networks in their stride to becoming one of the most promising technologies for the immediate and near future. Presents a concise yet detailed in study, interpretation, and evaluation of modern cognitive radio networks; Includes topics such as stochastic geometry approach and deep learning in cognitive radio networks; Provides direction for further research engagements and makes recommendations for practical cognitive radio network implementation.

The Johns Hopkins POC-IT Center ABX Guide, Second Edition continues to provide current, authoritative, comprehensive information on anti-microbial agents, infectious diseases, and commonly-encountered pathogens in one portable volume. Written by experts at the world-renowned Johns Hopkins University School of Medicine, this must-have resource features expert recommendations, clinical and diagnostic decision-making tools, and drug-to-drug interactions. Concise, thorough, and current, The Johns Hopkins ABX Guide, Second Edition is designed for quick reference and comprehension. Information is featured in an easy-to-access format that facilitates rapid application of knowledge at the point of care. Jones & Bartlett Learning is the Official Print and Mobile Provider of the Johns Hopkins ABX Guide.

In today's modernized market, many fields are utilizing internet technologies in their everyday methods of operation. The industrial sector is no different as these technological solutions have provided several benefits including reduction of costs, scalability, and efficiency improvements. Despite this, cyber security remains a crucial risk factor in industrial control systems. The same public and corporate solutions do not apply to this specific district because these security issues are more complex and intensive. Research is needed that explores new risk assessment methods and security mechanisms that professionals can apply to their modern technological procedures. Cyber Security of Industrial Control Systems in the Future Internet Environment is a pivotal reference source that provides vital research on current security risks in critical infrastructure schemes with the implementation of information and communication technologies. While highlighting topics such as intrusion detection systems, forensic challenges, and smart grids, this publication explores specific security solutions within industrial sectors that have begun applying internet technologies to their current methods of operation. This book is ideally designed for researchers, system engineers, managers, networkers, IT professionals, analysts, academicians, and students seeking a better understanding of the key issues within securing industrial control systems that utilize internet technologies.

To continue providing people with safe, comfortable, and affordable places to live, cities must incorporate techniques and technologies to bring them into the future. The integration of big data and interconnected technology, along with the increasing population, will lead to the necessary creation of smart cities. Big Data Analytics for Smart and Connected Cities is a pivotal reference source that provides vital research on the application of the integration of interconnected technologies and big data analytics into the creation of smart cities. While

highlighting topics such as energy conservation, public transit planning, and performance measurement, this publication explores technology integration in urban environments as well as the methods of planning cities to implement these new technologies. This book is ideally designed for engineers, professionals, researchers, and technology developers seeking current research on technology implementation in urban settings.

The book focuses on environment and conservation issues pertaining to the Himalayas, spanning Pakistan, Nepal, India, Bhutan and Myanmar.

Environmental degradation, changes in snow cover and glaciers in India-Bhutan, threats to protected areas, and biodiversity in this ecologically fragile region are assessed in twelve distinct, regional case studies.

Shelving Guide: Electrical Engineering In 1900 the great German theoretical physicist Max Planck formulated a correct mathematical description of blackbody radiation. Today, understanding the behavior of a blackbody is of importance to many fields including thermal and infrared systems engineering, pyrometry, astronomy, meteorology, and illumination. This book gives an account of the development of Planck's equation together with many of the other functions closely related to it. Particular attention is paid to the computational aspects employed in the evaluation of these functions together with the various aids developed to facilitate such calculations. The book is divided into three sections. Section I – Thermal radiation and the blackbody problem are introduced and discussed. Early developments made by experimentalists and theoreticians are examined as they strove to understand the problem of the blackbody. Section II – The development of Planck's equation is explained as are the all-important fractional functions of the first and second kinds which result when Planck's equation is integrated between finite limits. A number of theoretical developments are discussed that stem directly from Planck's law, as are the various computational matters that arise when numerical evaluation is required. Basic elements of radiometry that tie together and use many of the theoretical and computational ideas developed is also presented. Section III – A comprehensive account of the various computational aids such as tables, nomograms, graphs, and radiation slide rules devised and used by generations of scientists and engineers when working with blackbody radiation are presented as are more recent aids utilizing computers and digital devices for real-time computations. Scientists and engineers working in fields utilizing blackbody sources will find this book to be a valuable guide in understanding many of the computational aspects and nuances associated with Planck's equation and its other closely related functions. With over 700 references, it provides an excellent research resource.

Ice-Houses: Energy, Architecture and Sustainability presents new and novel technologies and approaches surrounding daily and seasonal ice storage, along with discussions on passive cooling and natural technologies using different methods, including heat pumps. The book covers different aspects of ice-houses and cold energy production, storage and utilization. By addressing various issues

connected to the technology and structure of traditional ice-houses and natural and artificial ice making, this reference looks at new technological approaches for the reduction of electrical energy consumption in buildings. Users will find this to be a comprehensive overview of ice house storage that includes worked examples and global case studies. It is an essential resource for researchers and engineers looking to advance their understanding of this method of thermal storage. Includes worked examples which calculate and determine the amounts of different parameters to help better understand the problem-solving process. Provides a comprehensive literature review on the history and architecture of ice-houses, along with different ice production and storage methods. Contains recent developments related to cold energy production and storage through ice making to reduce electricity demand.

Software methodologies, tools and techniques have become an ever more important part of our lives, and are crucial to the decision-making processes that affect us every day. This book presents papers from the 19th International Conference on New Trends in Intelligent Software Methodology Tools, and Techniques (SoMeT20), held in Kitakyushu, Japan from 22–24 September 2020. The SoMeT conferences bring together researchers and practitioners to share their original research results and experience of practical developments in software science and related new technologies, and this book explores new trends and theories that highlight the direction and development of intelligent software methodologies, tools and techniques. It covers newly developed techniques, enhanced methodologies, software related solutions and recently developed tools, as well as indicating the direction of future research, and the 40 revised papers included here have been selected by the SoMeT20 international reviewing committee on the basis of technical soundness, relevance, originality, significance, and clarity. The book is divided into 5 chapters: artificial intelligence techniques on software engineering, and requirement engineering; software methods for informatics, medical informatics and bio-medicine applications; applied software tools, techniques and related software engineering models; intelligent-software systems design, software quality, software evolution and validation techniques; and knowledge science and intelligent computing.

Providing an overview of the state-of-the-art in software science and its supporting technology, this book will be of interest to all those working in the field. Intended as a textbook for undergraduate courses in heat transfer for students of mechanical, chemical, aeronautical, and metallurgical engineering, or as a reference for professionals in industry, this book emphasizes the clear understanding of theoretical concepts followed by practical applications. Treating each subject analytically and then numerically, it provides step-by-step solutions of numerical problems through the use of systematic procedures by a prescribed format. With more than a million users in industry, MATLAB is the most popular computing programming language among engineers. This Second Edition has been updated to include discussions on how to develop programs that solve heat

transfer problems using MATLAB, which allows the student to rapidly develop programs that involve complex numerical and engineering heat transfer computations.

This book presents the proceedings of the 1st EAI International Conference on Technology, Innovation, Entrepreneurship and Education (TIE 2017), which took place at Canterbury Christ Church University on September 11-12, 2017. The central theme of the conference is creativity and innovation, especially in relation to technology, business, education, social and political needs that make modern society flourish. The proceedings feature papers from a cross-disciplinary audience that explore the process of creativity and innovation. The goal is that the various disciplines can learn from each other and see how they might benefit from the cross-fertilization of practices.

This book includes high-quality research papers presented at the 1st International Conference on Wireless Sensor Networks, Ubiquitous Computing and Applications (ICWSNUCA, 2021), which is held at Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India, during 26–27 February, 2021. This volume focuses on the applications, use-cases, architectures, deployments, and recent advances of wireless sensor networks as well as ubiquitous computing. Different research topics are illustrated in this book, like wireless sensor networks for the Internet of Things; IoT applications for eHealth; smart cities; architectures for WSNs and IoT, WSNs hardware and new devices; low-power wireless technologies; wireless ad hoc sensor networks; routing and data transfer in WSNs; multicast communication in WSNs; security management in WSNs and in IoT systems; and power consumption optimization in WSNs.

Despite the length of time it has been around, its importance, and vast amounts of research, combustion is still far from being completely understood. Environmental, cost, and fuel consumption issues add further complexity, particularly in the process and power generation industries. Dedicated to advancing the art and science of industrial combustion

This book combines comprehensive multi-angle discussions on fully connected and automated vehicle highway implementation. It covers the current progress of the works towards autonomous vehicle highway development, which encompasses the discussion on the technical, social, and policy as well as security aspects of Connected and Autonomous Vehicles (CAV) topics. This, in return, will be beneficial to a vast amount of readers who are interested in the topics of CAV, Automated Highway and Smart City, among many others.

Topics include, but are not limited to, Autonomous Vehicle in the Smart City, Automated Highway, Smart-Cities Transportation, Mobility as a Service, Intelligent Transportation Systems, Data Management of Connected and Autonomous Vehicle, Autonomous Trucks, and Autonomous Freight Transportation. Brings together contributions discussing the latest research in full automated highway implementation; Discusses topics such as autonomous vehicles, intelligent transportation systems, and smart highways; Features contributions from researchers, academics, and professionals from a broad perspective.

Advances in Computing, Communication, Automation and Biomedical Technology aims to bring together leading academic, scientists, researchers, industry representatives, postdoctoral fellows and research scholars around the world to share their knowledge and research expertise, to advances in the areas of Computing, Communication, Electrical, Civil, Mechanical and Biomedical Systems as well as to create a prospective collaboration and networking on various areas. It also provides a premier interdisciplinary platform for researchers, practitioners, and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered, and solutions adopted in the fields of innovation.

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