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This book focuses on the human aspects of wearable technologies and game design, which are often neglected. It shows how user centered practices can optimize wearable experience, thus improving user acceptance, satisfaction and engagement towards novel wearable gadgets. It describes both research and best practices in the applications of human factors and ergonomics to sensors, wearable technologies and game design innovations, as well as results obtained upon integration of the wearability principles identified by various researchers for aesthetics, affordance, comfort, contextual-awareness, customization, ease of use, ergonomics, intuitiveness, obtrusiveness, information overload, privacy, reliability, responsiveness, satisfaction, subtlety, user friendliness and wearability. The book is based on the AHFE 2017 Conferences on Human Factors and Wearable Technologies and AHFE 2017 Conferences on Human Factors and Game Design, held on July 17-21, 2017, in Los Angeles, California, USA, and addresses professionals, researchers, and students dealing with the human aspects of wearable, smart and/or interactive technologies and game design research.

This book presents selected papers from International Conference on Intelligent and Efficient Electrical Systems (ICIEES'17). The volume brings together content from both industry and academia. The book focuses on energy efficiency in electrical systems and covers en trende topics such as control of renewable energy systems. The collaborative industry-academia perspective of the conference ensures that equal emphasis is laid on novel topics and practical applications. The contents of this volume will prove useful to researchers and practicing engineers alike.

The five volume set LNCS 10960 until 10964 constitutes the refereed proceedings of the 18th International Conference on Computational Science and Its Applications, ICCSA 2018, held in Melbourne, Australia, in July 2018. Apart from the general tracks, ICCSA 2018 also includes 34 international workshops in various areas of computational sciences, ranging from computational science technologies, to specific areas of computational sciences, such as computer graphics and virtual reality.

Introduction to state-space methods covers feedback control; state-space representation of dynamic systems and dynamics of linear systems; frequency-domain analysis; controllability and observability; shaping the dynamic response; more. 1986 edition.

This volume contains the papers selected for presentation at the fifth European Symposium on Programming (ESOP '94), which was held jointly with the 19th Colloquium on Trees in Algebra and Programming (CAAP '94) in Edinburgh in April 1994. ESOP is devoted to fundamental issues in the specification, design and implementation of programming languages and systems. The scope of the symposium includes work on: software analysis, specification, transformation, development and verification/certification; programming paradigms (functional, logic, object-oriented, concurrent, etc.) and their combinations; programming language concepts, implementation techniques and semantics; software design methodologies; typing disciplines and typechecking algorithms; and programming support tools.

This book constitutes the refereed proceedings of the 14th IFIP WG 6.2 International Conference on Wired/Wireless Internet Communications, WWIC 2016, held in Thessaloniki, Greece, in May 2016. The 27 papers presented in this volume were carefully reviewed and selected from 54 submissions. The topics addressed are: wireless technologies and systems, middleboxes and addressing, energy efficiency, network applications and tools, network protocols, network modeling, wireless sensor networks, and resource management and optimization.

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The Handbook of Human Factors in Web Design covers basic human factors issues relating to screen design, input devices, and information organization and processing, as well as addresses newer features which will become prominent in the next generation of Web technologies. These include multimodal interfaces, wireless capabilities, and agents that can improve convenience and usability. Written by leading researchers and/or practitioners in the field, this volume reflects the varied backgrounds and interests of individuals involved in all aspects of human factors and Web design and includes chapters on a full range of topics. Divided into 12 sections, this book covers: historical backgrounds and overviews of Human Factors and Ergonomics (HFE) specific subfields of HFE issues involved in content preparation for the Web information search and interactive information agents designing for universal access and specific user populations the importance of incorporating usability evaluations in the design process task analysis, meaning analysis, and performance modeling specific Web applications in academic and industrial settings Web psychology and information security emerging technological developments and applications for the Web the costs and benefits of incorporating human factors for the Web and the state of current guidelines The Handbook of Human Factors in Web Design is intended for researchers and practitioners concerned with all aspects of Web design. It could also be used as a text for advanced courses in computer science, industrial engineering, and psychology.

This book offers the latest research and new perspectives on Interactive Collaborative Learning and Engineering Pedagogy. We are currently witnessing a significant transformation in education, and in order to face today's real-world challenges, higher education has to find innovative ways to quickly respond to these new needs. Addressing these aspects was the chief aim of the 21st International Conference on Interactive Collaborative Learning (ICL2018), which was held on Kos Island, Greece from September 25 to 28, 2018. Since being founded in 1998, the conference has been devoted to new approaches in learning, with a special focus on collaborative learning. Today the ICL conferences offer a forum for exchanging information on relevant trends and research results, as well as sharing practical experiences in learning and engineering pedagogy. This book includes papers in the fields of: * New Learning Models and Applications * Pilot Projects: Applications * Project-based Learning * Real-world Experiences * Remote and Virtual Laboratories * Research in Engineering Pedagogy * Technical Teacher Training It will benefit a broad readership, including policymakers, educators, researchers in pedagogy and learning theory, school teachers, the learning industry, further education lecturers, etc.

This open access book constitutes the refereed proceedings of the 18th International Conference on String Processing and Information Retrieval, ICOST 2020, held in Hammamet, Tunisia, in June 2020.* The 17 full papers and 23 short papers presented in this volume were carefully reviewed and selected from 49 submissions. They cover topics such as: IoT and AI solutions for e-health; biomedical and health informatics; behavior and activity monitoring; behavior and activity monitoring; and wellbeing technology. *This conference was held virtually due to the COVID-19 pandemic.

This book presents high-quality peer-reviewed papers from the International Conference on Advanced Communication and Computational Technology (ICACCT) 2019 held at the National Institute of Technology, Kurukshetra, India. The contents are broadly divided into four parts: (i) Advanced Computing, (ii) Communication and Networking, (iii) VLSI and Embedded Systems, and (iv) Optimization Techniques. The major focus is on emerging computing technologies and their applications in the domain of

communication and networking. The book will prove useful for engineers and researchers working on physical, data link and transport layers of communication protocols. Also, this will be useful for industry professionals interested in manufacturing of communication devices, modems, routers etc. with enhanced computational and data handling capacities.

This book is a pioneering effort by two of the world's top researchers. The authors have fashioned a text which develops models, the basis for software tools for conceptual design. The book clearly addresses both analysis and design with sharp attention to supplying mathematical correctness and providing physical insight. A software supplement accompanies the text in a student version.

This book constitutes the refereed proceedings of the 8th International Conference on Ubiquitous Intelligence and Computing, UIC 2010, held in Banff, Canada, September 2011. The 44 papers presented together with two keynote speeches were carefully reviewed and selected from numerous submissions. The papers address all current issues in smart systems and services, smart objects and environments, cloud and services computing, security, privacy and trustworthy, P2P, WSN and ad hoc networks, and ubiquitous intelligent algorithms and applications.

This volume contains 73 papers, presenting the state of the art in computer-aided design in control systems (CADCS). The latest information and exchange of ideas presented at the Symposium illustrates the development of computer-aided design science and technology within control systems. The Proceedings contain six plenary papers and six special invited papers, and the remainder are divided into five themes: CADCS packages; CADCS software and hardware; systems design methods; CADCS expert systems; CADCS applications, with finally a discussion on CADCS in education and research.

The aim of the biennial series of symposia on Fusion Technology organized by the European Fusion Laboratories, is the exchange of information on the design, construction and operation of fusion experiments and on the technology being developed for the next-step devices and fusion reactors. The coverage of the volume includes the technological aspects of fusion reactors in relation to new developments, thus forming a guideline for the definition of future work. These proceedings comprise three volumes and contain both the invited lectures and contributed papers presented at the symposium, which was attended by 569 participants from around the globe. The 343 papers, including 12 invited papers, characterise the increasing interest of industry in the fusion programme, giving a broad and current overview on the progress and trends fusion technology is experiencing now, as well as indicating the future for fusion devices.

The foundation of linear systems theory goes back to Newton and has been followed over the years by many improvements such as linear operator theory, Laplace Transformation etc. After the World War II, feedback control theory has shown a rapid development, and standard elegant analysis and synthesis techniques have been discovered by control system workers, such as root-locus (Evans) and frequency response methods (Nyquist, Bode). These permitted a fast and efficient analysis of simple-loop control systems, but in their original "paper-and-pencil" form were not appropriate for multiple loop high-order systems. The advent of fast digital computers, together with the development of multivariable multi-loop system techniques, have eliminated these difficulties. Multivariable control theory has followed two

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main avenues; the optimal control approach, and the algebraic and frequency-domain control approach. An important key concept in the whole multivariable system theory is "observability and controllability" which revealed the exact relationships between transfer functions and the state variable representations. This has given new insight into the phenomenon of "hidden oscillations" and to the transfer function modelling of dynamic systems. The basic tool in optimal control theory is the celebrated matrix Riccati differential equation which provides the time-varying feedback gains in a linear-quadratic control system cell. Much theory presently exists for the characteristic properties and solution of this Riccati equation.

This volume provides a state-of-the-art review of the development and future use of man-machine systems in all aspects of business and industry. The papers cover such topics as human-computer interaction, system design, and the impact of automation in general, and also by the use of case studies describe a wide range of applications in such areas as office automation, transportation, power plants, machinery and manufacturing processes and defence systems. Contains 73 papers.

The three-volume set CCIS 1224, CCIS 1225, and CCIS 1226 contains the extended abstracts of the posters presented during the 21st International Conference on Human-Computer Interaction, HCII 2020, which took place in Copenhagen, Denmark, in July 2020.* HCII 2020 received a total of 6326 submissions, of which 1439 papers and 238 posters were accepted for publication in the pre-conference proceedings after a careful reviewing process. The 238 papers presented in these three volumes are organized in topical sections as follows: Part I: design and evaluation methods and tools; user characteristics, requirements and preferences; multimodal and natural interaction; recognizing human psychological states; user experience studies; human perception and cognition. -AI in HCI. Part II: virtual, augmented and mixed reality; virtual humans and motion modelling and tracking; learning technology. Part III: universal access, accessibility and design for the elderly; smartphones, social media and human behavior; interacting with cultural heritage; human-vehicle interaction; transport, safety and crisis management; security, privacy and trust; product and service design. *The conference was held virtually due to the COVID-19 pandemic.

"The fifth edition of this highly successful text, *An Introduction to Social Psychology* has been fully revised and updated. Accessibility for students has been improved, including better illustrations, greater use of colour and a more approachable format, as well as a wealth of online resources. Combining its traditional academic rigour with a contemporary level of cohesion, accessibility, pedagogy and instructor support, the fifth edition of *An Introduction to Social Psychology* provides the definitive treatment of social psychology"--

A summary is given of the anticipated performance of solar power systems over the next decade. This summary is based upon the analytical and empirical relationships describing component performance. Weight, cost, and reliability estimates are presented for photovoltaic power systems, and weight estimates are given for solar-thermal systems. Thermal converters include thermoelectric discs, thermionic emitters, turbo-generators, and the Stirling engine. (Author).

For more than 40 years, Computerworld has been the leading source of technology news and information for IT influencers worldwide. Computerworld's award-winning Web site (Computerworld.com), twice-monthly publication, focused conference series and custom research form the hub of the world's largest global IT media network.

With Bluetooth Low Energy (BLE), smart devices are about to become even smarter. This practical guide demonstrates how this exciting wireless technology helps developers build mobile apps that share data with external hardware, and how hardware engineers can gain easy and reliable access to mobile operating systems. This book provides a solid, high-level overview of how devices use BLE to communicate

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with each other. You'll learn useful low-cost tools for developing and testing BLE-enabled mobile apps and embedded firmware and get examples using various development platforms—including iOS and Android for app developers and embedded platforms for product designers and hardware engineers. Understand how data is organized and transferred by BLE devices Explore BLE's concepts, key limitations, and network topology Dig into the protocol stack to grasp how and why BLE operates Learn how BLE devices discover each other and establish secure connections Set up the tools and infrastructure for BLE application development Get examples for connecting BLE to iPhones, iPads, Android devices, and sensors Develop code for a simple device that transmits heart rate data to a mobile device

PREFACE OF THE BOOK This book is extensively designed for the second semester CSE/IT students as per Anna university syllabus R-2013. The following chapters constitute the following units Chapter 1 and 2 covers :-Unit 1 Chapter 3 and 8 covers :-Unit 2 Chapter 4 and 5 covers :-Unit 3 Chapter 6 covers :- Unit 4 Chapter 7 covers :- Unit 5 Chapter 8 covers the Verilog HDL:- Unit 2 and 3 **CHAPTER 1:** Introduces the Number System, binary arithmetic and codes. **CHAPTER 2:** Deals with Boolean algebra, simplification using Boolean theorems, K-map method , Quine McCluskey method, logic gates, implementation of switching function using basic Logical Gates and Universal Gates. **CHAPTER 3:** Describes the combinational circuits like Adder, Subtractor, Multiplier, Divider, magnitude comparator, encoder, decoder, code converters, Multiplexer and Demultiplexer. **CHAPTER 4:** Describes with Latches, Flip-Flops, Registers and Counters **CHAPTER 5:** Concentrates on the Analysis as well as design of synchronous sequential circuits, Design of synchronous counters, sequence generator and Sequence detector **CHAPTER 6:** Concentrates the Design as well as Analysis of Fundamental Mode circuits, Pulse mode Circuits, Hazard Free Circuits, ASM Chart and Design of Asynchronous counters. **CHAPTER 7:** Discussion on memory devices which includes ROM, RAM, PLA, PAL, Sequential logic devices and ASIC. **CHAPTER 8:** Introduction to Verilog HDL which was chosen as a basis for the high level description used in some parts of this book. We have taken enough care to present the definitions and statements of basic laws and theorems, problems with simple steps to make the students familiar with the fundamentals of Digital Design

Control of Distributed Parameter Systems 1982 covers the proceeding of the Third International Federation of Automatic Control (IFAC) Symposium on Control of Distributed Parameter Systems. The book reviews papers that tackle issues concerning the control of distributed parameter systems, such as modeling, identification, estimation, stabilization, optimization, and energy system. The topics that the book tackles include notes on optimal and estimation result of nonlinear systems; approximation of the parameter identification problem in distributed parameters systems; and optimal control of a punctually located heat source. This text also encompasses the stabilization of nonlinear parabolic equations and the decoupling approach to the control of large spaceborne antenna systems. Stability of Hilbert space contraction semigroups and the tracking problem in the fractional representation approach are also discussed. This book will be of great interest to researchers and professionals whose work concerns automated control systems.

This book presents innovative ideas, cutting-edge findings, and novel techniques, methods, and applications in a broad range of cybersecurity and cyberthreat intelligence areas. As our society becomes smarter, there is a corresponding need to be able to

secure our cyberfuture. The approaches and findings described in this book are of interest to businesses and governments seeking to secure our data and underpin infrastructures, as well as to individual users.

The five-volume set LNCS 12932-12936 constitutes the proceedings of the 18th IFIP TC 13 International Conference on Human-Computer Interaction, INTERACT 2021, held in Bari, Italy, in August/September 2021. The total of 105 full papers presented together with 72 short papers and 70 other papers in these books was carefully reviewed and selected from 680 submissions. The contributions are organized in topical sections named: Part I: affective computing; assistive technology for cognition and neurodevelopment disorders; assistive technology for mobility and rehabilitation; assistive technology for visually impaired; augmented reality; computer supported cooperative work. Part II: COVID-19 & HCI; crowdsourcing methods in HCI; design for automotive interfaces; design methods; designing for smart devices & IoT; designing for the elderly and accessibility; education and HCI; experiencing sound and music technologies; explainable AI. Part III: games and gamification; gesture interaction; human-centered AI; human-centered development of sustainable technology; human-robot interaction; information visualization; interactive design and cultural development. Part IV: interaction techniques; interaction with conversational agents; interaction with mobile devices; methods for user studies; personalization and recommender systems; social networks and social media; tangible interaction; usable security. Part V: user studies; virtual reality; courses; industrial experiences; interactive demos; panels; posters; workshops. The chapter 'Stress Out: Translating Real-World Stressors into Audio-Visual Stress Cues in VR for Police Training' is open access under a CC BY 4.0 license at link.springer.com. The chapter 'WhatsApp in Politics?! Collaborative Tools Shifting Boundaries' is open access under a CC BY 4.0 license at link.springer.com.

The First Complete Guide to Bluetooth Low Energy: How It Works, What It Can Do, and How to Apply It A radical departure from conventional Bluetooth technology, Bluetooth low energy (BLE) enables breakthrough wireless applications in industries ranging from healthcare to transportation. Running on a coin-sized battery, BLE can operate reliably for years, connecting and extending everything from personal area network devices to next-generation sensors. Now, one of the standard's leading developers has written the first comprehensive, accessible introduction to BLE for every system developer, designer, and engineer. Robin Heydon, a member of the Bluetooth SIG Hall of Fame, has brought together essential information previously scattered through multiple standards documents, sharing the context and expert insights needed to implement high-performance working systems. He first reviews BLE's design goals, explaining how they drove key architectural decisions, and introduces BLE's innovative usage models. Next, he thoroughly covers how the two main parts of BLE, the controller and host, work together, and then addresses key issues from security and profiles through testing and qualification. This knowledge has enabled the creation of Bluetooth Smart and Bluetooth Smart Ready devices. This guide is an indispensable companion to the official BLE standards documents and is for every technical professional and decision-maker considering BLE, planning BLE products, or transforming plans into working systems. Topics Include BLE device types, design goals, terminology, and core concepts Architecture: controller, host, applications, and stack splits Usage models: presence detection, data broadcasting, connectionless models, and gateways

Physical Layer: modulation, frequency band, radio channels, power, tolerance, and range Direct Test Mode: transceiver testing, hardware interfaces, and HCI Link Layer: state machine, packets, channels, broadcasting, encryption, and optimization HCI: physical/logical interfaces, controller setup, and connection management L2CAP: channels and packet structure, and LE signaling channels Attributes: grouping, services, characteristics, and protocols Security: pairing, bonding, and data signing Generic Access Profiles: roles, modes, procedures, security modes, data advertising, and services Applications, devices, services, profiles, and peripherals Testing/qualification: starting projects, selecting features, planning, testing, compliance, and more

This book constitutes the refereed proceedings of the 13th International Conference on Cooperative Design, Visualization, and Engineering, CDVE2016, held in Sydney, NSW, Australia, in October 2016. The 42 full papers and 9 short papers presented were carefully reviewed and selected from 89 submissions. The papers cover a broad range of topics in the field of cooperative visualization, visual analytics, cooperative engineering, and cooperative design and applications.

Data is at the center of many challenges in system design today. Difficult issues need to be figured out, such as scalability, consistency, reliability, efficiency, and maintainability. In addition, we have an overwhelming variety of tools, including relational databases, NoSQL datastores, stream or batch processors, and message brokers. What are the right choices for your application? How do you make sense of all these buzzwords? In this practical and comprehensive guide, author Martin Kleppmann helps you navigate this diverse landscape by examining the pros and cons of various technologies for processing and storing data. Software keeps changing, but the fundamental principles remain the same. With this book, software engineers and architects will learn how to apply those ideas in practice, and how to make full use of data in modern applications. Peer under the hood of the systems you already use, and learn how to use and operate them more effectively Make informed decisions by identifying the strengths and weaknesses of different tools Navigate the trade-offs around consistency, scalability, fault tolerance, and complexity Understand the distributed systems research upon which modern databases are built Peek behind the scenes of major online services, and learn from their architectures

The book is a collection of high-quality, peer-reviewed innovative research papers from the International Conference on Signals, Machines and Automation (SIGMA 2018) held at Netaji Subhas Institute of Technology (NSIT), Delhi, India. The conference offered researchers from academic and industry the opportunity to present their original work and exchange ideas, information, techniques and applications in the field of computational intelligence, artificial intelligence and machine intelligence. The book is divided into two volumes discussing a wide variety of industrial, engineering and scientific applications of the emerging techniques. SYSTEMS ANALYSIS AND DESIGN, TENTH EDITION offers a practical, visually appealing approach to information systems development. Throughout the book, real-world case studies emphasize critical thinking and IT skills in a dynamic, business-related environment. The new Tenth Edition will help prepare students for success in today's intensely competitive business world.

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Considers the application of modern control engineering on digital computers with a view to improving productivity and product quality, easing supervision of industrial processes and reducing energy consumption and pollution. The topics covered may be divided into two main subject areas: (1) applications of digital control - in the chemical and oil industries, in water turbines, energy and power systems, robotics and manufacturing, cement, metallurgical processes, traffic control, heating and cooling; (2) systems theoretical aspects of digital control - adaptive systems, control aspects, multivariable systems, optimization and reliability, modelling and identification, real-time software and languages, distributed systems and data networks. Contains 84 papers.

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