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Coastal Acoustic Tomography - Arata Kaneko 2020-02-05

Coastal Acoustic Tomography begins with the specifics required for designing a Coastal Acoustic Tomography (CAT) experiment and operating the CAT system in coastal seas. Following sections discuss the procedure for data analyses and various application examples of CAT to coastal/shallow seas (obtained in various locations). These sections are broken down into four kinds of methods: horizontal-slice inversion, vertical-slice inversion, modal expansion method and data assimilation. This book emphasizes how dynamic phenomena occurring in coastal/shallow seas can be analyzed using the standard method of inversion and data assimilation. The book is relevant for physical oceanographers, ocean environmentalists and ocean dynamists, focusing on the event being observed rather than the intrinsic details of observational processes. Application examples of successful dynamic phenomena measured by coastal acoustic tomography are also included. Provides the information needed for researchers and graduate students in physical oceanography, ocean-fluid dynamics and ocean environments to apply Ocean Acoustic Tomography (OAT) to their own fields Presents the benefits of using acoustic tomography, including less disturbance to aquatic environments vs. other monitoring methods Includes the assimilation of CAT data into a coastal sea circulation model, a powerful tool to predict coastal-sea environmental changes

[China Satellite Navigation Conference \(CSNC 2021\) Proceedings](#) -

Changfeng Yang 2021-06-10

China Satellite Navigation Conference (CSNC 2021) Proceedings presents selected research papers from CSNC 2021 held during 22nd-25th May, 2021 in Nanchang, China. These papers discuss the technologies and applications of the Global Navigation Satellite System (GNSS), and the latest progress made in the China BeiDou System (BDS) especially. They are divided into 10 topics to match the corresponding sessions in CSNC2021 which broadly covered key topics in GNSS. Readers can learn about the BDS and keep abreast of the latest advances in GNSS techniques and applications.

Let's Get IoT-fied! - Anudeep Juluru 2022-09-27

Internet of Things (IoT) stands acclaimed as a widespread area of research and has definitely enticed the interests of almost the entire globe. IoT appears to be the present as well as the future technology. This book attempts to inspire readers to explore and become accustomed to IoT. Presented in a lucid and eloquent way, this book adopts a clear and crisp approach to impart the basics as expeditiously as possible. It kicks off with the very fundamentals and then seamlessly advances in such a way that the step-by-step unique approach, connection layout, and the verified codes provided for every project can enhance the intuitive learning process and will get you onboard to the world of product building. We can assure that you will be definitely raring to start developing your own IoT solutions and to get yourself completely lost in

the charm of IoT. Let's start connecting the unconnected! It's time to get IoT-fied.

Global Positioning System - Pratap Misra 2011

Accompanying CD-ROM contains a number of GPS data sets from several sites. A set of homework problems requires the student to write simple MATLAB code to analyze these data.

Track and Trace Management System for Dementia and Intellectual Disabilities - Suresh Merugu 2022

Mobile Computing, Applications, and Services - Martin Griss 2012-04-23

This book constitutes the thoroughly refereed post-conference proceedings of the Second International Conference on Mobile Computing, Applications, and Services (MobiCASE 2010) held in Santa Clara, CA, USA, during October 25-28, 2010. The 15 revised full papers presented were carefully selected from numerous submissions. Conference papers are organized in six technical sessions, covering the topics of mobile Web and mash-ups, software engineering and development tools, cross-layer approaches, location-based services, mobile healthcare, and mobile social networking. Furthermore the volume includes two workshops on mobile computing and mobile security as well as four poster papers.

Advanced Sensors for Real-Time Monitoring Applications - Olga Korostynska 2021-03-09

It is impossible to imagine the modern world without sensors, or without real-time information about almost everything—from local temperature to material composition and health parameters. We sense, measure, and process data and act accordingly all the time. In fact, real-time monitoring and information is key to a successful business, an assistant in life-saving decisions that healthcare professionals make, and a tool in research that could revolutionize the future. To ensure that sensors address the rapidly developing needs of various areas of our lives and activities, scientists, researchers, manufacturers, and end-users have established an efficient dialogue so that the newest technological achievements in all aspects of real-time sensing can be implemented for

the benefit of the wider community. This book documents some of the results of such a dialogue and reports on advances in sensors and sensor systems for existing and emerging real-time monitoring applications.

Analysis and Application of Analog Electronic Circuits to Biomedical Instrumentation, Second Edition - Robert B. Northrop 2012-03-02

Analysis and Application of Analog Electronic Circuits to Biomedical Instrumentation, Second Edition helps biomedical engineers understand the basic analog electronic circuits used for signal conditioning in biomedical instruments. It explains the function and design of signal conditioning systems using analog ICs—the circuits that enable ECG, EEG, EMG, ERG, tomographic images, biochemical spectrograms, and other crucial medical applications. This book demonstrates how op amps are the keystone of modern analog signal conditioning system design and illustrates how they can be used to build instrumentation amplifiers, active filters, and many other biomedical instrumentation systems and subsystems. It introduces the mathematical tools used to describe noise and its propagation through linear systems, and it looks at how signal-to-noise ratios can be improved by signal averaging and linear filtering. Features Analyzes the properties of photonic sensors and emitters and the circuits that power them Details the design of instrumentation amplifiers and medical isolation amplifiers Considers the modulation and demodulation of biomedical signals Examines analog power amplifiers, including power op amps and class D (switched) PAs Describes wireless patient monitoring, including Wi-Fi and Bluetooth communication protocols Explores RFID, GPS, and ultrasonic tags and the design of fractal antennas Addresses special analog electronic circuits and systems such as phase-sensitive rectifiers, phase detectors, and IC thermometers By explaining the "building blocks" of biomedical systems, the author illustrates the importance of signal conditioning systems in the devices that gather and monitor patients' critical medical information. Fully revised and updated, this second edition includes new chapters, a glossary, and end-of-chapter problems. What's New in This Edition Updated and revised material throughout the book A chapter on the

applications, circuits, and characteristics of power amplifiers A chapter on wireless patient monitoring using UHF telemetry A chapter on RFID tags, GPS tags, and ultrasonic tags A glossary to help you decode the acronyms and terms used in biomedical electronics, physiology, and biochemistry New end-of-chapter problems and examples
Global Navigation Satellite Systems, Inertial Navigation, and Integration - Mohinder S. Grewal 2015-03-11

An updated guide to GNSS, and INS, and solutions to real-world GNSS/INS problems with Kalman filtering Written by recognized authorities in the field, this third edition of a landmark work provides engineers, computer scientists, and others with a working familiarity of the theory and contemporary applications of Global Navigation Satellite Systems (GNSS), Inertial Navigational Systems, and Kalman filters. Throughout, the focus is on solving real-world problems, with an emphasis on the effective use of state-of-the-art integration techniques for those systems, especially the application of Kalman filtering. To that end, the authors explore the various subtleties, common failures, and inherent limitations of the theory as it applies to real-world situations, and provide numerous detailed application examples and practice problems, including GNSS-aided INS (tightly and loosely coupled), modeling of gyros and accelerometers, and SBAS and GBAS. Drawing upon their many years of experience with GNSS, INS, and the Kalman filter, the authors present numerous design and implementation techniques not found in other professional references. The Third Edition includes: Updates on the upgrades in existing GNSS and other systems currently under development Expanded coverage of basic principles of antenna design and practical antenna design solutions Expanded coverage of basic principles of receiver design and an update of the foundations for code and carrier acquisition and tracking within a GNSS receiver Expanded coverage of inertial navigation, its history, its technology, and the mathematical models and methods used in its implementation Derivations of dynamic models for the propagation of inertial navigation errors, including the effects of drifting sensor compensation parameters Greatly expanded coverage of GNSS/INS

integration, including derivation of a unified GNSS/INS integration model, its MATLAB® implementations, and performance evaluation under simulated dynamic conditions The companion website includes updated background material; additional MATLAB scripts for simulating GNSS-only and integrated GNSS/INS navigation; satellite position determination; calculation of ionosphere delays; and dilution of precision.
Computer Safety, Reliability, and Security. SAFECOMP 2021 Workshops - Ibrahim Habli 2021-08-25

This book constitutes the proceedings of the Workshops held in conjunction with SAFECOMP 2021, the 40th International Conference on Computer Safety, Reliability and Security, which took place in York, UK, in September 2021. The 26 regular papers included in this volume were carefully reviewed and selected from 34 submissions. The workshops included in this volume are: DECSoS 2021: 16th Workshop on Dependable Smart Embedded and Cyber-Physical Systems and Systems-of-Systems WAISE 2021: Fourth International Workshop on Artificial Intelligence Safety Engineering DepDevOps 2021: Second International Workshop on Dependable Development-Operation Continuum Methods for Dependable Cyber-Physical Systems USDAI 2021: Second International Workshop on Underpinnings for Safe Distributed AI MAPSOD 2021: First International Workshop on Multi-concern Assurance Practices in Software Design
[China Satellite Navigation Conference \(CSNC\) 2012 Proceedings](#) - Jiadong Sun 2012-04-02

Proceedings of the 3rd China Satellite Navigation Conference (CSNC2012) presents selected research papers from CSNC2012, held on 15-19 May in Guanzhou, China. These papers discuss the technologies and applications of the Global Navigation Satellite System (GNSS), and the latest progress made in the China BeiDou system especially. They are divided into 9 topics to match the corresponding sessions in CSNC2012, which broadly covered key topics in GNSS. Readers can learn about the BeiDou system and keep abreast of the latest advances in GNSS techniques and applications. SUN Jiadong is the Chief Designer of the Compass/BeiDou system, and the Academician of Chinese Academy of

Sciences; LIU Jingnan is a professor at Wuhan University, and the Academician of Chinese Academy of Engineering; YANG Yuanxi is a professor at China National Administration of GNSS and Applications, and the Academician of Chinese Academy of Sciences; FAN Shiwei is a researcher on satellite navigation.

Proceedings of the 3rd International Conference on Sustainability in Civil Engineering - Thanh Bui-Tien 2021-04-27

This book contains the proceedings of the 3rd International Conference on Sustainability in Civil Engineering, ICSCE 2020, held on 26–27 November 2020, in Hanoi, Vietnam. It presents the expertise of scientists and engineers in academia and industry in the field of bridge and highway engineering, construction materials, environmental engineering, engineering in industry 4.0, geotechnical engineering, structural damage detection and health monitoring, structural engineering, geographic information system engineering, traffic, transportation and logistics engineering, water resources, estuary and coastal engineering.

Building a Dedicated GSM GPS Module Tracking System for Fleet Management - Franjeh El Khoury 2018-01-31

This book shows how to build a "INFelecPHY GPS Unit" (IEP-GPS) tracking system for fleet management that is based on 3G and GPRS modules. This model should provide reliability since it deals with several protocols: 1) HTTP and HTTPS to navigate, download and upload in real time the information to a web server, 2) FTTP and FTTPS to handle in a non-real time the files to the web application, and 3) SMTP and POP3 to send and receive email directly from the unit in case of any alert. Similar to a mobile device, but without screen for display, it is multifunctional because it links to a GPRS module, a camera, a speaker, headphone, a keypad and screen.

Geographical Information Systems Theory, Applications and Management - Cédric Grueau 2017-07-08

This book constitutes extended, revised and selected contributions from the Second International Conference on Geographical Information Systems Theory, Applications and Management, GISTAM 2016, held in Rome, Italy, in April 2016. The 10 papers presented in this volume were

carefully reviewed and selected from a total of 33 submissions. They contribute to the understanding of relevant trends of current research on the topic, including urban and regional planning; water information systems; geospatial information and technologies; spatio-temporal database management; decision support systems; energy information systems; GPS, and location detection.

Internet of Things, Smart Spaces, and Next Generation Networks and Systems - Olga Galinina 2016-09-19

This book constitutes the joint refereed proceedings of the 16th International Conference on Next Generation Wired/Wireless Advanced Networks and Systems, NEW2AN 2016, and the 9th Conference on Internet of Things and Smart Spaces, ruSMART 2016, held in St. Petersburg, Russia, in September 2016. The 69 revised full papers were carefully reviewed and selected from 204 submissions. The 12 papers selected for ruSMART are organized in topical sections on new generation of smart services; smart services serving telecommunication networks; role of context for smart services; and smart services in automotive industry. The 57 papers from NEW2AN deal with the following topics: cooperative communications; wireless networks; wireless sensor networks; security issues; IoT and industrial IoT; NoC and positioning; ITS; network issues; SDN; satellite communications; signals and circuits; advanced materials and their properties; and economics and business.

Arduino Project Handbook, Volume 2 - Mark Geddes 2017-08-29

This second volume of the Arduino Project Handbook delivers 25 more - beginner-friendly electronics projects. Get up and running with a crash course on the Arduino, and then pick any project that sparks your interest and start making! Each project includes cost and time estimates, simple instructions, colorful photos and circuit diagrams, a troubleshooting section, and the complete code to bring your build to life. With just the Arduino board and a handful of components, you'll make gadgets like a rainbow light display, noise-level meter, digital piano, GPS speedometer, and fingerprint scanner. This collection of projects is a fast and fun way to get started with microcontrollers that's

perfect for beginners, hobbyists, parents, and educators. 25 Step-by-Step Projects LED Light Bar Light-Activated Night-Light Seven-Segment LED Countdown Timer LED Scrolling Marquee Mood Light Rainbow Strip Light NeoPixel Compass Arduino Piano Audio LED Visualizer Old-School Analog Dial Stepper Motor Temperature-Controlled Fan Ultrasonic Range Finder Digital Thermometer Bomb Decoder Game Serial LCD Screen Ultrasonic People Counter Nokia 5110 LCD Screen Pong Game OLED Breathalyzer Ultrasonic Soaker Fingerprint Scanner Ultrasonic Robot Internet-Controlled LED Voice-Controlled LED GPS Speedometer Uses the Arduino Uno board

Introduction to Instrumentation and Measurements - Robert B. Northrop
2018-09-03

Weighing in on the growth of innovative technologies, the adoption of new standards, and the lack of educational development as it relates to current and emerging applications, the third edition of *Introduction to Instrumentation and Measurements* uses the authors' 40 years of teaching experience to expound on the theory, science, and art of modern instrumentation and measurements (I&M). What's New in This Edition: This edition includes material on modern integrated circuit (IC) and photonic sensors, micro-electro-mechanical (MEM) and nano-electro-mechanical (NEM) sensors, chemical and radiation sensors, signal conditioning, noise, data interfaces, and basic digital signal processing (DSP), and upgrades every chapter with the latest advancements. It contains new material on the designs of micro-electro-mechanical (MEMS) sensors, adds two new chapters on wireless instrumentation and microsensors, and incorporates extensive biomedical examples and problems. Containing 13 chapters, this third edition: Describes sensor dynamics, signal conditioning, and data display and storage Focuses on means of conditioning the analog outputs of various sensors Considers noise and coherent interference in measurements in depth Covers the traditional topics of DC null methods of measurement and AC null measurements Examines Wheatstone and Kelvin bridges and potentiometers Explores the major AC bridges used to measure inductance, Q, capacitance, and D Presents a survey of sensor

mechanisms Includes a description and analysis of sensors based on the giant magnetoresistive effect (GMR) and the anisotropic magnetoresistive (AMR) effect Provides a detailed analysis of mechanical gyroscopes, clinometers, and accelerometers Contains the classic means of measuring electrical quantities Examines digital interfaces in measurement systems Defines digital signal conditioning in instrumentation Addresses solid-state chemical microsensors and wireless instrumentation Introduces mechanical microsensors (MEMS and NEMS) Details examples of the design of measurement systems Introduction to Instrumentation and Measurements is written with practicing engineers and scientists in mind, and is intended to be used in a classroom course or as a reference. It is assumed that the reader has taken core EE curriculum courses or their equivalents.

Hazardous Waste Management - Zarook Shareefdeen 2022-04-22

This book provides readers with the most current knowledge on hazardous waste management practices. It addresses the rapidly changing advances in waste stream characterization and the discovery of new chemicals - which have led to new hazardous wastes, technological innovation, stringent environmental regulations, changes in transport and dispersion modelling of hazardous pollutants, and new waste management techniques. *Hazardous Waste Management: Advances in Chemical and Industrial Waste Treatment and Technologies* is an invaluable reference for waste management and treatment professionals, chemical engineers and technicians, medical professionals, and environmental regulators, as well as students taking courses on hazardous waste management, environmental engineering, and environmental science.

Advances in Multi-Sensor Information Fusion: Theory and Applications 2017 - Xue-Bo Jin 2018-06-26

This book is a printed edition of the Special Issue "Advances in Multi-Sensor Information Fusion: Theory and Applications 2017" that was published in *Sensors*

UAV-Based Remote Sensing Volume 2 - Felipe Gonzalez Toro
2018-04-27

This book is a printed edition of the Special Issue "UAV-Based Remote Sensing" that was published in *Sensors* VIII Hotine-Marussi Symposium on Mathematical Geodesy - Nico Sneeuw 2016-05-18

This book contains a selection of peer-reviewed papers presented at the VIII Hotine-Marussi Symposium on Mathematical Geodesy in Rome, 17-21 June, 2013. The scientific sessions focused on global reference systems, geodetic data analysis, geopotential modelling, gravity field mapping as well as digital terrain modelling. A special chapter is dedicated to understand the generation of Flash.

Nonlinear Kalman Filter for Multi-Sensor Navigation of Unmanned Aerial Vehicles - Jean-Philippe Condomines 2018-11-14

Nonlinear Kalman Filter for Multi-Sensor Navigation of Unmanned Aerial Vehicles covers state estimation development approaches for Mini-UAV. The book focuses on Kalman filtering technics for UAV design, proposing a new design methodology and case study related to inertial navigation systems for drones. Both simulation and real experiment results are presented, thus showing new and promising perspectives. Gives a state estimation development approach for mini-UAVs Explains Kalman filtering techniques Introduce a new design method for unmanned aerial vehicles Introduce cases relating to the inertial navigation system of drones

Remote Sensing of Snow and Its Applications - Ali Nadir Arslan 2021-03-17

The reprint book of the "Remote Sensing of Snow and Its Applications" Special Issue provides recent studies on all aspects of remote sensing of snow, from retrieving the data to the application. These studies mainly address the following: (a) New opportunities (Copernicus Sentinels) and emerging remote sensing methods, (b) use of snow data in modeling, and (c) characterization of snowpack.

Reliability, Safety and Hazard Assessment for Risk-Based Technologies - Prabhakar V. Varde 2019-08-30

This volume presents selected papers from the International Conference on Reliability, Safety, and Hazard. It presents the latest developments in

reliability engineering and probabilistic safety assessment, and brings together contributions from a diverse international community and covers all aspects of safety, reliability, and hazard assessment across a host of interdisciplinary applications. This book will be of interest to researchers in both academia and the industry.

Emergent Trends in Personal, Mobile, and Handheld Computing Technologies - Hu, Wen-Chen 2012-04-30

"This book offers a vital research within the field of personal computing, highlighting the latest trends in research and development of personal technology"--Provided by publisher.

Smart Computational Intelligence in Biomedical and Health Informatics - Amit Kumar Manocha 2021-09-27

Smart Computational Intelligence in Biomedical and Health Informatics presents state-of-the-art innovations; research, design, and implementation of methodological and algorithmic solutions to data processing problems, including analysis of evolving trends in health informatics and computer-aided diagnosis. This book describes practical, applications-led research regarding the use of methods and devices in clinical diagnosis, disease prevention, and patient monitoring and management. It also covers simulation and modeling, measurement and control, analysis, information extraction and monitoring of physiological data in clinical medicine and the biological sciences. FEATURES Covers evolutionary approaches to solve optimization problems in biomedical engineering Discusses IoT, Cloud computing, and data analytics in healthcare informatics Provides computational intelligence-based solution for diagnosis of diseases Reviews modelling and simulations in designing of biomedical equipment Promotes machine learning-based approaches to improvements in biomedical engineering problems This book is for researchers, graduate students in healthcare, biomedical engineers, and those interested in health informatics, computational intelligence, and machine learning.

R3 in Geomatics: Research, Results and Review - Claudio Parente 2020-12-11

This book constitutes the refereed proceedings of the First International

Workshop in memory of Prof. Raffaele Santamaria on R3 in Geomatics: Research, Results and Review, R3GEO 2019, held in Naples, Italy*, in October 2019. The 27 full papers along with the 2 short papers presented were carefully reviewed and selected from 39 submissions. The papers are organized in topical sections on: GNSS and geodesy; photogrammetry and laser scanning; GIS and remote sensing.

Multi-Sensor Information Fusion - Xue-Bo Jin 2020-03-23

This book includes papers from the section "Multisensor Information Fusion", from Sensors between 2018 to 2019. It focuses on the latest research results of current multi-sensor fusion technologies and represents the latest research trends, including traditional information fusion technologies, estimation and filtering, and the latest research, artificial intelligence involving deep learning.

Robotics Research - Masayuki Inaba 2016-04-22

This volume presents a collection of papers presented at the 16th International Symposium of Robotic Research (ISRR). ISRR is the biennial meeting of the International Foundation of Robotic Research (IFRR) and its 16th edition took place in Singapore over the period 16th to 19th December 2013. The ISRR is the longest running series of robotics research meetings and dates back to the very earliest days of robotics as a research discipline. This 16th ISRR meeting was held in the 30th anniversary year of the very first meeting which took place in Bretton Woods (New Hampshire, USA) in August 1983., and represents thirty years at the forefront of ideas in robotics research. As for the previous symposia, ISRR 2013 followed up on the successful concept of a mixture of invited contributions and open submissions. 16 of the contributions were invited contributions from outstanding researchers selected by the IFRR officers and the program committee, and the other contributions were chosen among the open submissions after peer review. This selection process resulted in a truly excellent technical program which featured some of the very best of robotic research. These papers were presented in a single-track interactive format which enables real conversations between speakers and the audience. The symposium contributions contained in this volume report on a variety of new robotics

research results covering a broad spectrum organized into traditional ISRR categories: control; design; intelligence and learning; manipulation; perception; and planning.

Computer and Computing Technologies in Agriculture - Daoliang Li 2012-01-12

The three-volume set IFIP AICT 368-370 constitutes the refereed post-conference proceedings of the 5th IFIP TC 5, SIG 5.1 International Conference on Computer and Computing Technologies in Agriculture, CCTA 2011, held in Beijing, China, in October 2011. The 189 revised papers presented were carefully selected from numerous submissions. They cover a wide range of interesting theories and applications of information technology in agriculture, including simulation models and decision-support systems for agricultural production, agricultural product quality testing, traceability and e-commerce technology, the application of information and communication technology in agriculture, and universal information service technology and service systems development in rural areas. The 62 papers included in the first volume focus on decision support systems, intelligent systems, and artificial intelligence applications.

Engineering Satellite-Based Navigation and Timing - John W. Betz 2015-12-03

This book describes the design and performance analysis of satnav systems, signals, and receivers, with a general approach that applies to all satnav systems and signals in use or under development. It also provides succinct descriptions and comparisons of each satnav system. Clearly structured, and comprehensive depiction of engineering satellite-based navigation and timing systems, signals, and receivers GPS as well as all new and modernized systems (SBAS, GLONASS, Galileo, BeiDou, QZSS, IRNSS) and signals being developed and fielded Theoretical and applied review questions, which can be used for homework or to obtain deeper insights into the material Extensive equations describing techniques and their performance, illustrated by MATLAB plots New results, novel insights, and innovative descriptions for key approaches and results in systems engineering and receiver design If you are an

instructor and adopted this book for your course, please email ieeeproposals@wiley.com to get access to the instructor files for this book.

Advances in Neural Information Processing Systems 19 - Bernhard Schölkopf 2007

The annual Neural Information Processing Systems (NIPS) conference is the flagship meeting on neural computation and machine learning. This volume contains the papers presented at the December 2006 meeting, held in Vancouver.

Computer Networks and Inventive Communication Technologies - S. Smys 2021-06-02

This book is a collection of peer-reviewed best selected research papers presented at 3rd International Conference on Computer Networks and Inventive Communication Technologies (ICCNCT 2020). The book covers new results in theory, methodology, and applications of computer networks and data communications. It includes original papers on computer networks, network protocols and wireless networks, data communication technologies, and network security. The proceedings of this conference is a valuable resource, dealing with both the important core and the specialized issues in the areas of next generation wireless network design, control, and management, as well as in the areas of protection, assurance, and trust in information security practice. It is a reference for researchers, instructors, students, scientists, engineers, managers, and industry practitioners for advance work in the area.

Internet of Things Projects with ESP32 - Agus Kurniawan 2019-03-30
Create and program Internet of Things projects using the Espressif ESP32. Key Features Getting to know the all new powerful EPS32 boards and build interesting Internet of Things projects Configure your ESP32 to the cloud technologies and explore the networkable modules that will be utilised in your IoT projects A step-by-step guide that teaches you the basic to advanced IoT concepts with ESP32 Book Description ESP32 is a low-cost MCU with integrated Wi-Fi and BLE. Various modules and development boards-based on ESP32 are available for building IoT applications easily. Wi-Fi and BLE are a common network stack in the

Internet of Things application. These network modules can leverage your business and projects needs for cost-effective benefits. This book will serve as a fundamental guide for developing an ESP32 program. We will start with GPIO programming involving some sensor devices. Then we will study ESP32 development by building a number of IoT projects, such as weather stations, sensor loggers, smart homes, Wi-Fi cams and Wi-Fi wardriving. Lastly, we will enable ESP32 boards to execute interactions with mobile applications and cloud servers such as AWS. By the end of this book, you will be up and running with various IoT project-based ESP32 chip. What you will learn Understand how to build a sensor monitoring logger Create a weather station to sense temperature and humidity using ESP32 Build your own W-iFi wardriving with ESP32. Use BLE to make interactions between ESP32 and Android Understand how to create connections to interact between ESP32 and mobile applications Learn how to interact between ESP32 boards and cloud servers Build an IoT Application-based ESP32 board Who this book is for This book is for those who want to build a powerful and inexpensive IoT projects using the ESP32. Also for those who are new to IoT, or those who already have experience with other platforms such as Arduino, ESP8266, and Raspberry Pi.

Computational Intelligence in Data Science - Lekshmi Kalinathan 2022-09-28

This book constitutes the refereed post-conference proceedings of the Fifth IFIP TC 12 International Conference on Computational Intelligence in Data Science, ICCIDS 2022, held virtually, in March 2022. The 28 revised full papers presented were carefully reviewed and selected from 96 submissions. The papers cover topics such as computational intelligence for text analysis; computational intelligence for image and video analysis; blockchain and data science.

Remote Sensing of Precipitation - Silas Michaelides 2019-07-23
Precipitation is a well-recognized pillar in global water and energy balances. An accurate and timely understanding of its characteristics at the global, regional, and local scales is indispensable for a clearer understanding of the mechanisms underlying the Earth's

atmosphere-ocean complex system. Precipitation is one of the elements that is documented to be greatly affected by climate change. In its various forms, precipitation comprises a primary source of freshwater, which is vital for the sustainability of almost all human activities. Its socio-economic significance is fundamental in managing this natural resource effectively, in applications ranging from irrigation to industrial and household usage. Remote sensing of precipitation is pursued through a broad spectrum of continuously enriched and upgraded instrumentation, embracing sensors which can be ground-based (e.g., weather radars), satellite-borne (e.g., passive or active space-borne sensors), underwater (e.g., hydrophones), aerial, or ship-borne.

Exploring Raspberry Pi - Derek Molloy 2016-06-13

Expand Raspberry Pi capabilities with fundamental engineering principles Exploring Raspberry Pi is the innovators guide to bringing Raspberry Pi to life. This book favors engineering principles over a 'recipe' approach to give you the skills you need to design and build your own projects. You'll understand the fundamental principles in a way that transfers to any type of electronics, electronic modules, or external peripherals, using a "learning by doing" approach that caters to both beginners and experts. The book begins with basic Linux and programming skills, and helps you stock your inventory with common parts and supplies. Next, you'll learn how to make parts work together to achieve the goals of your project, no matter what type of components you use. The companion website provides a full repository that structures all of the code and scripts, along with links to video tutorials and supplementary content that takes you deeper into your project. The Raspberry Pi's most famous feature is its adaptability. It can be used for thousands of electronic applications, and using the Linux OS expands the functionality even more. This book helps you get the most from your Raspberry Pi, but it also gives you the fundamental engineering skills you need to incorporate any electronics into any project. Develop the Linux and programming skills you need to build basic applications Build your inventory of parts so you can always "make it work" Understand interfacing, controlling, and communicating with almost any component

Explore advanced applications with video, audio, real-world interactions, and more Be free to adapt and create with Exploring Raspberry Pi.

The 1st International Workshop on the Quality of Geodetic Observation and Monitoring Systems (QuGOMS'11) - Hansjörg Kutterer 2014-12-06

These proceedings contain 25 papers, which are the peer-reviewed versions of presentations made at the 1st International Workshop on the Quality of Geodetic Observation and Monitoring (QuGOMS'11), held 13 April to 15 April 2011 in Garching, Germany. The papers were drawn from five sessions which reflected the following topic areas: (1) Uncertainty Modeling of Geodetic Data, (2) Theoretical Studies on Combination Strategies and Parameter Estimation, (3) Recursive State-Space Filtering, (4) Sensor Networks and Multi Sensor Systems in Engineering Geodesy, (5) Multi-Mission Approaches With View to Physical Processes in the Earth System.

Pervasive Computing - Patrik Floréen 2010-05-06

Welcome to the proceedings of the 8 International Conference on Pervasive Computing (Pervasive 2010). After Toronto, Sydney and Nara, the conference has now returned to Europe. Pervasive is one of the most important conferences in the area of pervasive and ubiquitous computing.

As in the previous year, we had two categories of technical papers: Full Papers and Notes. Pervasive attracted 157 valid submissions, from which the Technical Program Committee (TPC) accepted 24 full papers and one note, resulting in an overall acceptance rate of 16%. The submissions included 628 authors from 27 countries representing all the continents (except Antarctica). As we can see from these figures, Pervasive is a truly global highly competitive conference. A major conference such as Pervasive requires a rigorous and objective process for selecting papers. This starts with the selection of a high-quality TPC. We were fortunate to be able to draw on the wisdom and experience of our 28 TPC members, from the most prestigious universities and research labs in Europe, North America, and Asia. This committee was aided by the input of no less than 238 external reviewers chosen on the basis of their domain knowledge

and relevance to pervasive computing. The papers were selected using a double-blind review, with four peer reviews per paper, a discussion phase among the reviewers, and a discussion of the papers in the TPC meeting, which was held in Palo Alto during December 12-13, 2009. We thank Nokia Research Center for hosting the meeting.

Intelligent Communication, Control and Devices - Sushabhan Choudhury 2019-08-28

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.