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Issues in Transportation Research and Application: 2011 Edition - 2012-01-09
Issues in Transportation Research and Application: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Transportation Research and Application. The editors have built Issues in Transportation Research and Application: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Transportation Research and Application in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Transportation Research and Application: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.
Computational Intelligence for Unmanned Aerial Vehicles Communication Networks - Mariya Ouaissa 2022-05-03
This book aims to provide a vision that can combine the best of both

Artificial Intelligence (AI) and communication networks for designing the deployment trajectory to establish flexible Unmanned Aerial Vehicles (UAV) communication networks.This book will discuss the major challenges that can face deploying unmanned aerial vehicles in emergent networks. It will focus on possible applications of UAV in a Smart City environment where they can be supported by Internet of Things (IoT), wireless sensor networks, as well as 5G, and beyond. This book presents the possible problems and solutions, the network integration of the UAV and compare the communication technologies to be used.This book will be a collection of original contributions regarding state of the art AI/ML based solutions in UAV communication networks which can be used for routing protocol design, transport layer optimization, user/application behaviour prediction, communication network optimization, security, and anomaly detection.

Energy and Mechanical Engineering - Steven Y Liang 2016-03-03
The International Conference on Energy and Mechanical Engineering brought together scientists and engineers from energy and engineering sectors to share and compare notes on the latest development in energy science, automation, control and mechanical engineering. This proceedings compiled and selected 156 articles organized into Energy Science and Technology; Mechanical Engineering; Automation and

Control Engineering. Amongst them, are the results and development of Government sponsored research projects undertaken both in universities, research institutes, and across industry, reflecting the state-of-art technological know-how of Chinese scientists. Contents: Energy Science and TechnologyMechanical EngineeringAutomation and Control Engineering Readership: Graduate students and researcher interested in the topics of energy studies and mechanical engineering. Key Features:This book contains a large range of topics, from Energy Science and Technology, Mechanical Engineering to Automation and Control Engineering. It is an invaluable source for other researchers, engineers, and academicians, as well as industrial professionalsIt welcomes authors from universities, institutions, labs, etc., which means that it provides different information according to different readers and different needsThis book will not only serve as a reference to the readers, but also an important tool for the authors to re-examine their researches by comparing them to other similar ones shown in other papers

Outlook and Challenges of Nano Devices, Sensors, and MEMS - Ting Li 2017-02-22
This book provides readers with an overview of the design, fabrication, simulation, and reliability of nanoscale semiconductor devices, MEMS, and sensors, as they serve for realizing the next-generation internet of things. The authors focus on how the nanoscale structures interact with the electrical and/or optical performance, how to find optimal solutions to achieve the best outcome, how these apparatus can be designed via models and simulations, how to improve reliability, and what are the possible challenges and roadblocks moving forward.

Information Technology and Intelligent Transportation Systems - V.E. Balas 2017-08-18
Intelligent transport systems are on the increase. They employ a variety of technologies, from basic management systems to more advanced application systems, with information technology – including wireless communication, computational technologies, floating car data/cellular data such as sensing technologies and video vehicle detection – playing a major role. This book presents the proceedings of the 2nd International Conference on Information Technology and Intelligent Transportation Systems (ITITS 2017), held in Xi'an, People's Republic of China, in June 2017. The conference provides a platform for professionals and researchers from industry and academia to present and discuss recent advances in the field of information technology and intelligent transportation systems; organizations and researchers involved in these fields, including distinguished academics from around the world, explore theoretical and applied topics such as emergency vehicle notification systems, automatic road enforcement, collision avoidance systems and cooperative systems. ITITS 2017 received more than 200 papers from 4 countries, and the 65 accepted papers appear in this book, which will be of interest to all those involved with the development of intelligent transport systems.

Principles of GNSS, Inertial, and Multisensor Integrated Navigation Systems, Second Edition - Paul D. Groves 2013-04-01
This newly revised and greatly expanded edition of the popular Artech House book Principles of GNSS, Inertial, and Multisensor Integrated Navigation Systems offers you a current and comprehensive understanding of satellite navigation, inertial navigation, terrestrial radio navigation, dead reckoning, and environmental feature matching . It provides both an introduction to navigation systems and an in-depth treatment of INS/GNSS and multisensor integration. The second edition offers a wealth of added and updated material, including a brand new chapter on the principles of radio positioning and a chapter devoted to important applications in the field. Other updates include expanded treatments of map matching, image-based navigation, attitude determination, acoustic positioning, pedestrian navigation, advanced GNSS techniques, and several terrestrial and short-range radio positioning technologies .. The book shows you how satellite, inertial, and other navigation technologies work, and focuses on processing chains and error sources. In addition, you get a clear introduction to coordinate frames, multi-frame kinematics, Earth models, gravity, Kalman filtering, and nonlinear filtering. Providing solutions to common integration problems, the book describes and compares different

integration architectures, and explains how to model different error sources. You get a broad and penetrating overview of current technology and are brought up to speed with the latest developments in the field, including context-dependent and cooperative positioning.

Positioning and Navigation in Complex Environments - Yu, Kegen 2018-01-05

The limitations of satellites create a large gap in assistive directional technologies, especially indoors. The methods and advances in alternate directional technologies is allowing for new systems to fill the gaps caused by the limitations of GPS systems. Positioning and Navigation in Complex Environments is a critical scholarly resource that examines the methodologies and advances in technologies that allow for indoor navigation. Featuring insight on a broad scope of topics, such as multipath mitigation, Global Navigation Satellite System (GNSS), and multi-sensor integration, this book is directed toward data scientists, engineers, government agencies, researchers, and graduate-level students.

Intelligent Sensors for Positioning, Tracking, Monitoring, Navigation and Smart Sensing in Smart Cities - Tiancheng Li 2021-03-04

The rapid development of advanced, arguably, intelligent sensors and their massive deployment provide a foundation for new paradigms to combat the challenges that arise in significant tasks such as positioning, tracking, navigation, and smart sensing in various environments. Relevant advances in artificial intelligence (AI) and machine learning (ML) are also finding rapid adoption by industry and fan the fire. Consequently, research on intelligent sensing systems and technologies has attracted considerable attention during the past decade, leading to a variety of effective applications related to intelligent transportation, autonomous vehicles, wearable computing, wireless sensor networks (WSN), and the internet of things (IoT). In particular, the sensors community has a great interest in novel, intelligent information fusion, and data mining methods coupling AI and ML for substantial performance enhancement, especially for the challenging scenarios that

make traditional approaches inappropriate. This reprint book has collected 14 excellent papers that represent state-of-the-art achievements in the relevant topics and provides cutting-edge coverage of recent advances in sensor signal and data mining techniques, algorithms, and approaches, particularly applied for positioning, tracking, navigation, and smart sensing.

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.

2018 IEEE Sensors - IEEE Staff 2018-10-28

The IEEE Sensors Conference is a forum for presentation, discussion, and exchange of state of the art information including the latest research and development in sensors and their related fields It brings together researchers, developers, and practitioners from diverse fields including international scientists and engineers from academia, research institutes, and companies to present and discuss the latest results in the general field of sensors

Issues in Artificial Intelligence, Robotics and Machine Learning: 2012 Edition - 2013-01-10

Issues in Artificial Intelligence, Robotics and Machine Learning: 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Pattern Analysis. The editors have built Issues in Artificial Intelligence, Robotics and Machine Learning: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Pattern Analysis in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Artificial Intelligence, Robotics and Machine Learning: 2012 Edition has

been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Smart Sensors and MEMS - S Nihtianov 2018-03-09
Smart Sensors and MEMS: Intelligent Devices and Microsystems for Industrial Applications, Second Edition highlights new, important developments in the field, including the latest on magnetic sensors, temperature sensors and microreaction chambers. The book outlines the industrial applications for smart sensors, covering direct interface circuits for sensors, capacitive sensors for displacement measurement in the sub-nanometer range, integrated inductive displacement sensors for harsh industrial environments, advanced silicon radiation detectors in the vacuum ultraviolet (VUV) and extreme ultraviolet (EUV) spectral range, among other topics. New sections include discussions on magnetic and temperature sensors and the industrial applications of two smart micro-electro-mechanical systems (MEMS). The book is an invaluable reference for academics, materials scientists and electrical engineers working in the microelectronics, sensors and micromechanics industry. In addition, engineers looking for industrial sensing, monitoring and automation solutions will find this a comprehensive source of information. Contains new chapters that address key applications, such as magnetic sensors, microreaction chambers and temperature sensors Provides an in-depth information on a wide array of industrial applications for smart sensors and smart MEMS Presents the only book to discuss both smart sensors and MEMS for industrial applications

MEMS-based Integrated Navigation - Priyanka Aggarwal 2010
Due to their micro-scale size and low power consumption, Microelectromechanical systems (MEMS) are now being utilized in a variety of fields. This leading-edge resource focuses on the application of MEMS inertial sensors to navigation systems. The book shows you how to minimize cost by adding and removing inertial sensors. Moreover, this practical reference provides you with various integration strategies with examples from real field tests. From an introduction to MEMS navigation related applicationsOC to special topics on Alignment for MEMS-Based NavigationOC to discussions on the Extended Kalman Filter, this comprehensive book covers a wide range of critical topics in this fast-growing area."

Whole Angle MEMS Gyroscopes - Doruk Senkal 2020-05-11
Presents the mathematical framework, technical language, and control systems know-how needed to design, develop, and instrument micro-scale whole-angle gyroscopes This comprehensive reference covers the technical fundamentals, mathematical framework, and common control strategies for degenerate mode gyroscopes, which are used in high-precision navigation applications. It explores various energy loss mechanisms and the effect of structural imperfections, along with requirements for continuous rate integrating gyroscope operation. It also provides information on the fabrication of MEMS whole-angle gyroscopes and the best methods of sustaining oscillations. Whole-Angle Gyroscopes: Challenges and Opportunities begins with a brief overview of the two main types of Coriolis Vibratory Gyroscopes (CVGs): non-degenerate mode gyroscopes and degenerate mode gyroscopes. It then introduces readers to the Foucault Pendulum analogy and a review of MEMS whole angle mode gyroscope development. Chapters cover: dynamics of whole-angle coriolis vibratory gyroscopes; fabrication of whole-angle coriolis vibratory gyroscopes; energy loss mechanisms of coriolis vibratory gyroscopes; and control strategies for whole-angle coriolis vibratory gyro- scopes. The book finishes with a chapter on conventionally machined micro-machined gyroscopes, followed by one on micro-wineglass gyroscopes. In addition, the book: Lowers barrier to entry for aspiring scientists and engineers by providing a solid understanding of the fundamentals and control strategies of degenerate mode gyroscopes Organizes mode-matched mechanical gyroscopes based on three classifications: wine-glass, ring/disk, and mass spring mechanical elements Includes case studies on conventionally micro-machined and 3-D micro-machined gyroscopes Whole-Angle Gyroscopes is an ideal book

for researchers, scientists, engineers, and college/graduate students involved in the technology. It will also be of great benefit to engineers in control systems, MEMS production, electronics, and semi-conductors who work with inertial sensors.

Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2017 - Aboul Ella Hassanien 2017-08-30
This book gathers the proceedings of the 3rd International Conference on Advanced Intelligent Systems and Informatics 2017 (AISI2017), which took place in Cairo, Egypt from September 9 to 11, 2017. This international and interdisciplinary conference, which highlighted essential research and developments in the field of informatics and intelligent systems, was organized by the Scientific Research Group in Egypt (SRGE). The book's content is divided into five main sections: Intelligent Language Processing, Intelligent Systems, Intelligent Robotics Systems, Informatics, and the Internet of Things.

Trends in Computer Science, Engineering and Information Technology - Dhinaharan Nagamalai 2011-10-13
This book constitutes the refereed proceedings of the First International Conference on Computer Science, Engineering and Information Technology, CCSEIT 2011, held in Tirunelveli, India, in September 2011. The 73 revised full papers were carefully reviewed and selected from more than 400 initial submissions. The papers feature significant contributions to all major fields of the Computer Science and Information Technology in theoretical and practical aspects.

Advances in Aerospace Guidance, Navigation and Control - Qiping Chu 2013-11-18
Following the successful 1st CEAS (Council of European Aerospace Societies) Specialist Conference on Guidance, Navigation and Control (CEAS EuroGNC) held in Munich, Germany in 2011, Delft University of Technology happily accepted the invitation of organizing the 2nd CEAS EuroGNC in Delft, The Netherlands in 2013. The goal of the conference is to promote new advances in aerospace GNC theory and technologies for enhancing safety, survivability, efficiency, performance, autonomy and intelligence of aerospace systems using on-board sensing, computing and systems. A great push for new developments in GNC are the ever higher safety and sustainability requirements in aviation. Impressive progress was made in new research fields such as sensor and actuator fault detection and diagnosis, reconfigurable and fault tolerant flight control, online safe flight envelop prediction and protection, online global aerodynamic model identification, online global optimization and flight upset recovery. All of these challenges depend on new online solutions from on-board computing systems. Scientists and engineers in GNC have been developing model based, sensor based as well as knowledge based approaches aiming for highly robust, adaptive, nonlinear, intelligent and autonomous GNC systems. Although the papers presented at the conference and selected in this book could not possibly cover all of the present challenges in the GNC field, many of them have indeed been addressed and a wealth of new ideas, solutions and results were proposed and presented. For the 2nd CEAS Specialist Conference on Guidance, Navigation and Control the International Program Committee conducted a formal review process. Each paper was reviewed in compliance with good journal practice by at least two independent and anonymous reviewers. The papers published in this book were selected from the conference proceedings based on the results and recommendations from the reviewers.

Indoor Positioning - Nel Samama 2019-06-12
Provides technical and scientific descriptions of potential approaches used to achieve indoor positioning, ranging from sensor networks to more advanced radio-based systems This book presents a large technical overview of various approaches to achieve indoor positioning. These approaches cover those based on sensors, cameras, satellites, and other radio-based methods. The book also discusses the simplification of certain implementations, describing ways for the reader to design solutions that respect specifications and follow established techniques. Descriptions of the main techniques used for positioning, including angle measurement, distance measurements, Doppler measurements, and inertial measurements are also given. Indoor Positioning: Technologies

and Performance starts with overviews of the first age of navigation, the link between time and space, the radio age, the first terrestrial positioning systems, and the era of artificial satellites. It then introduces readers to the subject of indoor positioning, as well as positioning techniques and their associated difficulties. Proximity technologies like bar codes, image recognition, Near Field Communication (NFC), and QR codes are covered—as are room restricted and building range technologies. The book examines wide area indoor positioning as well as world wide indoor technologies like High-Sensitivity and Assisted GNSS, and covers maps and mapping. It closes with the author's vision of the future in which the practice of indoor positioning is perfected across all technologies. This text: Explores aspects of indoor positioning from both theoretical and practical points of view Describes advantages and drawbacks of various approaches to positioning Provides examples of design solutions that respect specifications of tested techniques Covers infra-red sensors, lasers, Lidar, RFID, UWB, Bluetooth, Image SLAM, LiFi, WiFi, indoor GNSS, and more Indoor Positioning is an ideal guide for technical engineers, industrial and application developers, and students studying wireless communications and signal processing.

Smart Sensors and Devices in Artificial Intelligence - Dan Zhang 2021-04-07
Sensors are the eyes or/and ears of an intelligent system, such as UAV, AGV and robots. With the development of material, signal processing, and multidisciplinary interactions, more and more smart sensors are proposed and fabricated under increasing demands for homes, the industry, and military fields. Networks of sensors will be able to enhance the ability to obtain huge amounts of information (big data) and improve precision, which also mirrors the developmental tendency of modern sensors. Moreover, artificial intelligence is a novel impetus for sensors and networks, which gets sensors to learn and think and feed more efficient results back. This book includes new research results from academia and industry, on the subject of "Smart Sensors and Networks", especially sensing technologies utilizing Artificial Intelligence. The topics include: smart sensors biosensors sensor network sensor data fusion artificial intelligence deep learning mechatronics devices for sensors applications of sensors for robotics and mechatronics devices
Global Navigation Satellite Systems - Shuanggen Jin 2012-02-03
Global Navigation Satellite System (GNSS) plays a key role in high precision navigation, positioning, timing, and scientific questions related to precise positioning. This is a highly precise, continuous, all-weather, and real-time technique. The book is devoted to presenting recent results and developments in GNSS theory, system, signal, receiver, method, and errors sources, such as multipath effects and atmospheric delays. Furthermore, varied GNSS applications are demonstrated and evaluated in hybrid positioning, multi-sensor integration, height system, Network Real Time Kinematic (NRTK), wheeled robots, and status and engineering surveying. This book provides a good reference for GNSS designers, engineers, and scientists, as well as the user market.

How to Design GPS/GNSS Receivers Books 2, 3, 4 & 5 - A. B. Lawal 2020-11-30
The objective of this book is to provide you the reader a complete systems engineering treatment of GNSS. I am an expert with practical experience in GPS/GNSS design and similar areas that are addressed within the book. I provide a thorough, in-depth treatment of each topic. In this book, updated information on GPS and GLONASS is presented. In particular, descriptions of new satellites, such as GPS III and GLONASS K2 and their respective signal sets (e.g., GPS III L1C and GLONASS L3OC), are included. In this combined volume I provide in-depth technical descriptions of each emerging satellite navigation system: BeiDou, Galileo, QZSS, and NavIC. Dedicated chapters cover each system's constellation configuration, satellites, ground control system and user equipment. Detailed satellite signal characteristics are also provided. Recently, I've heard from many engineers that they learned how GPS receivers work from this title. In this title, the design is included, and treatment of receivers is updated and expanded in several important ways. New material has been added on important receiver components, such as antennas and front-end electronics. The increased complexity of multiconstellation, multifrequency receivers, which are

rapidly becoming the norm today, is addressed in detail. Other added features of this title are the clear step-by-step design process and associated trades required to develop a GNSS receiver, depending on the specific receiver application. This subject will be of great value to those readers who need to understand these concepts, either for their own design tasks or to aid their satellite navigation system engineering knowledge. To round out the discussion of receivers, updated treatments of interference, ionospheric scintillation, and multipath are provided along with new material on blockage from foliage, terrain, and man-made structures. Now there has been major developments in GNSS augmentations, including differential GNSS (DGNSS) systems, Precise Point Positioning (PPP) techniques, and the use of external sensors/networks. The numerous deployed or planned satellite-based augmentation system (SBAS) networks are detailed, including WAAS, EGNOS, MSAS, GAGAN, and SDCM, as are groundbased differential systems used for various applications. The use of PPP techniques has greatly increased in recent years, and the treatment in this title has been expanded accordingly. Material addressing integration of GNSS with other sensors has been thoroughly revamped, as has the treatment of network assistance as needed to reflect the evolution from 2G/3G to 4G cellular systems that now rely on multiconstellation GNSS receiver engines. While this title has generally been written for the engineering/scientific community, one of the series is devoted to GNSS markets and applications. Marketing projections (and the challenge thereof) are enumerated and discussion of the major applications is provided. As in all the series, this book is structured such that a reader with a general science background can learn the basics of GNSS. The reader with a stronger engineering/scientific background will be able to delve deeper and benefit from the more in-depth technical material. It is this ramp-up of mathematical/technical complexity along with the treatment of key topics that enables this publication to serve as a student text as well as a reference source.

Energy, Environment and Green Building Materials - Ai Sheng 2015-05-29

The 2014 International Conference on Energy, Environment and Green Building Materials (EEGBM2014) was held November 28-30, 2014, in Guilin, Guangxi. EEGBM2014 provided a valuable opportunity for researchers, scholars and scientists to exchange their new ideas and application experiences face to face together, to establish business or research relat

Fundamentals of Inertial Navigation, Satellite-based Positioning and their Integration - Aboelmagd Noureldin 2012-10-26 Fundamentals of Inertial Navigation, Satellite-based Positioning and their Integration is an introduction to the field of Integrated Navigation Systems. It serves as an excellent reference for working engineers as well as textbook for beginners and students new to the area. The book is easy to read and understand with minimum background knowledge. The authors explain the derivations in great detail. The intermediate steps are thoroughly explained so that a beginner can easily follow the material. The book shows a step-by-step implementation of navigation algorithms and provides all the necessary details. It provides detailed illustrations for an easy comprehension. The book also demonstrates real field experiments and in-vehicle road test results with professional discussions and analysis. This work is unique in discussing the different INS/GPS integration schemes in an easy to understand and straightforward way. Those schemes include loosely vs tightly coupled, open loop vs closed loop, and many more.

Intelligent Information Processing for Inertial-Based Navigation Systems - Chong Shen 2021-01-04 This book introduces typical inertial devices and inertial-based integrated navigation systems, gyro noise suppression, gyro temperature drift error modeling compensation, inertial-based integrated navigation systems under discontinuous observation conditions, and inertial-based brain integrated navigation systems. Integrated navigation is the result of the development of modern navigation theory and technology. The inertial navigation system has the advantages of strong autonomy, high short-term accuracy, all-day time, all weather, and so on. And it has been applied in most integrated navigation systems. Among them, the

information processing of inertial-based integrated navigation system is the core technology. Due to the effect of the device mechanism and working environment, there are errors in the output information of the inertial-based integrated navigation system, including gyroscope noise, temperature drift, and discontinuous observations, which will seriously reduce the accuracy and robustness of the system. And the book helps readers to solve these problems. The intelligent information processing technology involved is equipped with simulation verification, which can be used as a reference for undergraduate, graduate, and Ph.D. students, and also scientific researchers or engineers engaged in navigation-related specialties.

Microsensors - Oleg Minin 2011-06-09
This book is planned to publish with an objective to provide a state-of-art reference book in the area of microsensors for engineers, scientists, applied physicists and post-graduate students. Also the aim of the book is the continuous and timely dissemination of new and innovative research and developments in microsensors. This reference book is a collection of 13 chapters characterized in 4 parts: magnetic sensors, chemical, optical microsensors and applications. This book provides an overview of resonant magnetic field microsensors based on MEMS, optical microsensors, the main design and fabrication problems of miniature sensors of physical, chemical and biochemical microsensors, chemical microsensors with ordered nanostructures, surface-enhanced Raman scattering microsensors based on hybrid nanoparticles, etc. Several interesting applications area are also discusses in the book like MEMS gyroscopes for consumer and industrial applications, microsensors for non invasive imaging in experimental biology, a heat flux microsensor for direct measurements in plasma surface interactions and so on.

2020 IEEE Sensors - IEEE Staff 2020-10-25
The IEEE Sensors Conference is a forum for presentation, discussion, and exchange of stateofthe art information including the latest research and development in sensors and their related fields It brings together researchers, developers, and practitioners from diverse fields including international scientists and engineers from academia, research institutes, and companies to present and discuss the latest results in the general field of sensors

2021 60th Annual Conference of the Society of Instrument and Control Engineers of Japan (SICE) - IEEE Staff 2021-09-08
Covering a broad range of fields from measurement and control to system analysis and design, from theory to application, and from software to hardware

Proceedings of 2021 International Conference on Autonomous Unmanned Systems (ICAUS 2021) - Meiping Wu 2022
This book includes original, peer-reviewed research papers from the ICAUS 2021, which offers a unique and interesting platform for scientists, engineers and practitioners throughout the world to present and share their most recent research and innovative ideas. The aim of the ICAUS 2021 is to stimulate researchers active in the areas pertinent to intelligent unmanned systems. The topics covered include but are not limited to Unmanned Aerial/Ground/Surface/Underwater Systems, Robotic, Autonomous Control/Navigation and Positioning/ Architecture, Energy and Task Planning and Effectiveness Evaluation Technologies, Artificial Intelligence Algorithm/Bionic Technology and Its Application in Unmanned Systems. The papers showcased here share the latest findings on Unmanned Systems, Robotics, Automation, Intelligent Systems, Control Systems, Integrated Networks, Modeling and Simulation. It makes the book a valuable asset for researchers, engineers, and university students alike.

Geographic Information Systems in Geospatial Intelligence - Rustam B. Rustamov 2020
Earth observation systems, by use of space science and technology advances, present a large-scale opportunity for applying remote sensing methods with geographical information system (GIS) developments. Integrating these two methods makes it possible to achieve high-accuracy satellite data processing. This book considers aspects of GIS technology applications with space science technology and innovation approaches. It examines the potential of Earth observation satellite systems as well as existing challenges and problems in the field.

Chapters cover topics such as RGB-D sensors for autonomous pothole detection, machine learning in GIS, interferometric synthetic aperture radar (InSAR) modeling, and others.

Advances in Intelligent Systems and Computing IV - Natalya Shakhovska 2019-11-01
This book reports on new theories and applications in the field of intelligent systems and computing. It covers computational and artificial intelligence methods, as well as advances in computer vision, current issues in big data and cloud computing, computation linguistics, and cyber-physical systems. It also reports on important topics in intelligent information management. Written by active researchers, the respective chapters are based on selected papers presented at the XIV International Scientific and Technical Conference on Computer Science and Information Technologies (CSIT 2019), held on September 17–20, 2019, in Lviv, Ukraine. The conference was jointly organized by the Lviv Polytechnic National University, Ukraine, the Kharkiv National University of Radio Electronics, Ukraine, and the Technical University of Lodz, Poland, under patronage of Ministry of Education and Science of Ukraine. Given its breadth of coverage, the book provides academics and professionals with extensive information and a timely snapshot of the field of intelligent systems, and is sure to foster new discussions and collaborations among different groups.

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.

2019 IEEE International Conference on Unmanned Systems (ICUS) - IEEE Staff 2019-10-17
The conference offers a unique and interesting platform for scientists, engineers and practitioners throughout the world to present and share their most recent research and innovative ideas in the areas of

unmanned systems, robotics, automation, and intelligent systems The aim of the IEEE ICUS 2019 is to stimulate researchers active in the areas pertinent to intelligent unmanned systems The topics of interests include, but are not limited to 1 Unmanned Aerial Vehicles 2 Unmanned Ground Vehicles 3 Unmanned Underwater Vehicles 4 Robotic Systems 5 Unmanned System Command and Control 6 Sensing, Navigation and Control 7 Inertial Sensors and Technologies for Unmanned Systems 8 Machine Vision, Semantic Recognition and Other Machine Cognition Technologies 9 Cooperative Control of Unmanned Systems 10 Space Air Ground Integrated Networks 11 5G Communica

Digital Advances in Medicine, E-Health, and Communication Technologies - Rodrigues, Joel J.P.C. 2013-01-31
Digital Advances in Medicine, E-Health, and Communication Technologies explores the developments and trends in medical informatics and its approaches toward telemedicine and e-health applications. This comprehensive collection of research brings together academia and industry by highlighting recent advances in electronic health, medical communications and applications for e-health and medicine.

Handbook of Position Location - Reza Zekavat 2019-03-06
A comprehensive review of position location technology — from fundamental theory to advanced practical applications Positioning systems and location technologies have become significant components of modern life, used in a multitude of areas such as law enforcement and security, road safety and navigation, personnel and object tracking, and many more. Position location systems have greatly reduced societal vulnerabilities and enhanced the quality of life for billions of people around the globe — yet limited resources are available to researchers and students in this important field. The Handbook of Position Location: Theory, Practice, and Advances fills this gap, providing a comprehensive overview of both fundamental and cutting-edge techniques and introducing practical methods of advanced localization and positioning. Now in its second edition, this handbook offers broad and in-depth coverage of essential topics including Time of Arrival (TOA) and

Direction of Arrival (DOA) based positioning, Received Signal Strength (RSS) based positioning, network localization, and others. Topics such as GPS, autonomous vehicle applications, and visible light localization are examined, while major revisions to chapters such as body area network positioning and digital signal processing for GNSS receivers reflect current and emerging advances in the field. This new edition: Presents new and revised chapters on topics including localization error evaluation, Kalman filtering, positioning in inhomogeneous media, and Global Positioning (GPS) in harsh environments Offers MATLAB examples to demonstrate fundamental algorithms for positioning and provides online access to all MATLAB code Allows practicing engineers and graduate students to keep pace with contemporary research and new technologies Contains numerous application-based examples including the application of localization to drone navigation, capsule endoscopy localization, and satellite navigation and localization Reviews unique applications of position location systems, including GNSS and RFID-based localization systems The Handbook of Position Location: Theory, Practice, and Advances is valuable resource for practicing engineers and researchers seeking to keep pace with current developments in the field, graduate students in need of clear and accurate course material, and university instructors teaching the fundamentals of wireless localization.

Computer Science and Engineering—Theory and Applications - Mauricio A. Sanchez 2018-02-05
This book presents a collection of research findings and proposals on computer science and computer engineering, introducing readers to essential concepts, theories, and applications. It also shares perspectives on how cutting-edge and established methodologies and techniques can be used to obtain new and interesting results. Each chapter focuses on a specific aspect of computer science or computer engineering, such as: software engineering, complex systems, computational intelligence, embedded systems, and systems engineering. As such, the book will bring students and professionals alike up to date on key advances in these areas.

China Satellite Navigation Conference (CSNC) 2014 Proceedings: Volume III - Jiadong Sun 2014-04-22
China Satellite Navigation Conference (CSNC) 2014 Proceedings presents selected research papers from CSNC2014, held on 21-23 May in Nanjing, China. The theme of CSNC2014 is 'BDS Application: Innovation, Integration and Sharing'. 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 9 topics to match the corresponding sessions in CSNC2014, 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. SUN Jiadong is the Chief Designer of the Compass/ BDS, and the Academician of Chinese Academy of Sciences (CAS); JIAO Wenhai is a researcher at China Satellite Navigation Office; WU Haitao is a professor at Navigation Headquarters, CAS; LU Mingquan is a professor at Department of Electronic Engineering of Tsinghua University.

Selected Papers from IEEE ICKII 2018 - TeenHang Meen 2019-08-02
This book is a printed edition of the Special Issue Selected Papers from IEEE ICKII 2018 that was published in Sensors

Robots, Drones, UAVs and UGVs for Operation and Maintenance - Diego Galar 2020-05-07
Industrial assets (such as railway lines, roads, pipelines) are usually huge, span long distances, and can be divided into clusters or segments that provide different levels of functionality subject to different loads, degradations and environmental conditions, and their efficient management is necessary. The aim of the book is to give comprehensive understanding about the use of autonomous vehicles (context of robotics) for the utilization of inspection and maintenance activities in industrial asset management in different accessibility and hazard levels. The usability of deploying inspection vehicles in an autonomous manner is explained with the emphasis on integrating the total process. Key Features Aims for solutions for maintenance and inspection problems provided by robotics, drones, unmanned air vehicles and unmanned

ground vehicles Discusses integration of autonomous vehicles for inspection and maintenance of industrial assets Covers the industrial approach to inspection needs and presents what is needed from the infrastructure end Presents the requirements for robot designers to design an autonomous inspection and maintenance system Includes practical case studies from industries

Advances in Computer Science and Information Technology. Networks and Communications - Natarajan Meghanathan 2012-04-23
The three volume set LNICST 84 - LNICST 86 constitute the refereed proceedings ofthe Second International Conference on Computer Science and InformationTechnology, CCSIT 2012, held in Bangalore, India, in January 2012. The 66 revised full papers presented in this volume were carefully reviewed andselected from numerous submissions. The papers are organized in topical sectionson networks and communications; wireless and mobile networks; and network security.

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.