

Indoor Location Sensing Using Geo Magnetism Cell Phone Tower Location Map

This book constitutes the refereed proceedings of the 7th International Conference on Ubiquitous Computing and Ambient Intelligence, UCAmI 2013, held in Guanacaste, Costa Rica, in December 2013. The 46 research papers presented together with 8 papers of the workshop UrbAI 2013 were carefully reviewed and selected from numerous submissions. The papers are grouped in topical sections on human interaction in ambient intelligence, ICT instrumentation and middleware support for smart environments and objects, adding intelligence for environment adaption and key application domains for ambient intelligence.

This text discusses how to find the location of mobile devices in the wireless Internet, specifically those that involve the determination of the geographic location of mobile devices. It offers exclusive coverage of the technical aspects of privacy such as linkability, anonymity and identity management.

Geographical and Fingerprinting Data for Positioning and Navigation Systems: Challenges, Experiences and Technology Roadmap explores the state-of-the-art software tools and innovative strategies to provide better understanding of positioning and navigation in indoor environments using fingerprinting techniques. The book provides the different problems and challenges of indoor positioning and navigation services and shows how fingerprinting can be used to address such necessities. This advanced publication provides the useful references educational institutions, industry, academic researchers, professionals, developers and practitioners need to apply, evaluate and reproduce this book's contributions. The readers will learn how to apply the necessary infrastructure to provide fingerprinting services and scalable environments to deal with fingerprint data. Provides the current state of fingerprinting for indoor positioning and navigation, along with its challenges and achievements Presents solutions for using WIFI signals to position and navigate in indoor environments Covers solutions for using the magnetic field to position and navigate in indoor environments Contains solutions of a modular positioning system as a solution for seamless positioning Analyzes geographical and fingerprint data in order to provide indoor/outdoor location and navigation systems

As the first volume of World Scientific Encyclopedia with Semantic Computing and Robotic Intelligence, this volume is designed to lay the foundation for the understanding of the Semantic Computing (SC), as a core concept to study Robotic Intelligence in the subsequent volumes. This volume aims to provide a reference to the development of Semantic Computing, in the terms of "meaning", "context", and "intention". It brings together a series of technical notes, in average, no longer than 10 pages in length, each focuses on one topic in Semantic Computing; being review article or research paper, to explain the fundamental concepts, models or algorithms, and possible applications of the technology concerned. This volume will address three core areas in Semantic Computing: Understanding the (possibly naturally-expressed) intentions (semantics) of users and expressing them in a machine-processable format: Semantics description languages, ontology integration, interoperability Understanding the meanings (semantics) of computational content (of various sorts, including, but is not limited to, text, video, audio, process, network, software and hardware) and expressing them in a machine-processable format in Multimedia, IoT, SDN, wearable computing, interfaced with mobile computing, search engines, question answering, web services, to support applications in biomedicine, healthcare, manufacturing, engineering, education, finance, entertainment, business, science and humanity Mapping the semantics of the user in context for content retrieval, management, creation in the form of structured data, image and video, audio and speech, big data, natural language, deep learning.

Geographical Information Systems is a computer system used to capture, store, analyze and display information related to positions on the Earth's surface. It has the ability to show multiple types of information on multiple geographical locations in a single map, enabling users to assess patterns and relationships between different information points, a crucial component for multiple aspects of modern life and industry. This 3-volumes reference provides an up-to date account of this growing discipline through in-depth reviews authored by leading experts in the field. VOLUME EDITORS Thomas J. Cova The University of Utah, Salt Lake City, UT, United States Ming-Hsiang Tsou San Diego State University, San Diego, CA, United States Georg Bareth University of Cologne, Cologne, Germany Chunqiao Song University of California, Los Angeles, CA, United States Yan Song University of North Carolina at Chapel Hill, Chapel Hill, NC, United States Kai Cao National University of Singapore, Singapore Elisabete A. Silva University of Cambridge, Cambridge, United Kingdom Covers a rapidly expanding discipline, providing readers with a detailed overview of all aspects of geographic information systems, principles and applications Emphasizes the practical, socioeconomic applications of GIS Provides readers with a reliable, one-stop comprehensive guide, saving them time in searching for the information they need from different sources

Geographic Location in the Internet

Robot Intelligence Technology and Applications 2

Using Mobile Technology to Deliver Library Services

Challenges, Experiences and Technology Roadmap

Handbook of Smart Antennas for RFID Systems

Geographic Information Systems (GIS) for Disaster Management

A Crowdsourcing Approach

The three volume set LNCS 13155, 13156, and 13157 constitutes the refereed proceedings of the 21st International Conference on Algorithms and Architectures for Parallel Processing, ICA3PP 2021, which was held online during December 3–5, 2021. The total of 145 full papers included in these proceedings were carefully reviewed and selected from 403 submissions. They cover the many dimensions of parallel algorithms and architectures including fundamental theoretical approaches, practical experimental projects, and commercial components and systems. The papers were organized in topical sections as follows: Part I, LNCS 13155: Deep learning models and applications; software systems and efficient algorithms; edge computing and edge intelligence; service dependability

and security algorithms; data science; Part II, LNCS 13156: Software systems and efficient algorithms; parallel and distributed algorithms and applications; data science; edge computing and edge intelligence; blockchain systems; deep learning models and applications; IoT; Part III, LNCS 13157: Blockchain systems; data science; distributed and network-based computing; edge computing and edge intelligence; service dependability and security algorithms; software systems and efficient algorithms.

This book presents an overview of the field of multimodal location estimation. The authors' aim is to describe the research results in this field in a unified way. The book describes fundamental methods of acoustic, visual, textual, social graph, and metadata processing as well as multimodal integration methods used for location estimation. In addition, the book covers benchmark metrics and explores the limits of the technology based on a human baseline. The book also outlines privacy implications and discusses directions for future research in the area.

Written by experts in the field, this book describes the Personal Network architecture and its various components. This book focuses on networking and security aspects of Personal Networks (PNs). Given a single user, the authors propose an architecture for PNs in which devices are divided into one of two types of nodes: personal nodes and foreign nodes. Furthermore, the authors demonstrate the ways in which PNs can be formed in a self-organized and secure way, how they can be interconnected using infrastructure networks, how multiple PNs can be connected, and how their services and resources can be shared. In addition, the book shows how security and ease-of-use can be achieved through automatic configuration and how mobility can be supported through adaptability and self-organization. The motivations for the PN concept, the PN architecture, its functionalities and features, as well as future challenges are covered in depth. Finally, the authors consider the potential applications for PNs and briefly discuss additional support systems for PN applications. The latter includes service discovery and context information management among others. Key Features: Describes the PN network architecture and its various components in-depth. Written by experts who developed this concept. Discusses the newer topic of federations of PNs. Considers potential PN applications, and demonstrates how applications support systems, such as service discovery and context management, can assist the applications. Provides an insight into the challenges of future personal networking, architectures for PNs, potential and important solutions, and their implications. This book will serve as an invaluable reference for researchers, developers, and standardization experts in mobile and wireless communication systems and services. It will also be of interest to postgraduate students in the field of telecommunications.

This book provides a comprehensive and in-depth understanding of wireless indoor localization for ubiquitous applications. The past decade has witnessed a flourishing of WiFi-based indoor localization, which has become one of the most popular localization solutions and has attracted considerable attention from both the academic and industrial communities. Specifically focusing on WiFi fingerprint based localization via crowdsourcing, the book follows a top-down approach and explores the three most important aspects of wireless indoor localization: deployment, maintenance, and service accuracy. After extensively reviewing the state-of-the-art literature, it highlights the latest advances in crowdsourcing-enabled WiFi localization. It elaborated the ideas, methods and systems for implementing the crowdsourcing approach for fingerprint-based localization. By tackling the problems such as: deployment costs of fingerprint database construction, maintenance overhead of fingerprint database updating, floor plan generation, and location errors, the book offers a valuable reference guide for technicians and practitioners in the field of location-based services. As the first of its kind, introducing readers to WiFi-based localization from a crowdsourcing perspective, it will greatly benefit and appeal to scientists and researchers in mobile and ubiquitous computing and related areas.

This book presents selected examples of digitalization in the age of digital change. It is divided into two sections: "Digital Innovation," which features new technologies that stimulate and enable new business opportunities; and "Digital Business Transformation," comprising business and management concepts that employ specific technological solutions for their practical implementation. Combining new insights from research, teaching and management, including digital transformation, e-business, knowledge representation, human-computer interaction, and business optimization, the book highlights the breadth of research as well as its meaningful and relevant transfer into practice. It is intended for academics seeking inspiration, as well as for

leaders wanting to tap the potential of the latest trends to take society and their business to the next level.

Geographical and Fingerprinting Data for Positioning and Navigation Systems

Smartphone-Based Indoor Map Construction

Results from the 2nd International Conference on Robot Intelligence Technology and Applications

Internet of Things and Artificial Intelligence in Transportation Revolution

Observations, Modeling and Systems Analysis in Geomagnetic Data Interpretation

21st International Conference, ICA3PP 2021, Virtual Event, December 3–5, 2021, Proceedings, Part I

Device-Free Object Tracking Using Passive Tags

This book focuses on ubiquitous indoor localization services, specifically addressing the issue of floor plans. It combines computer vision algorithms and mobile techniques to reconstruct complete and accurate floor plans to provide better location-based services for both humans and vehicles via commodity smartphones in indoor environments (e.g., a multi-layer shopping mall with underground parking structures). After a comprehensive review of scene reconstruction methods, it offers accurate geometric information for each landmark from images and acoustics, and derives the spatial relationships of the landmarks and rough sketches of accessible areas with inertial and WiFi data to reduce computing overheads. It then presents the authors' recent findings in detail, including the optimization and probabilistic formulations for more solid foundations and better robustness to combat errors, several new approaches to promote the current sporadic availability of indoor location-based services, and a holistic solution for floor plan reconstruction, indoor localization, tracking, and navigation. The novel approaches presented are designed for different types of indoor environments (e.g., shopping malls, office buildings and labs) and different users. A valuable resource for researchers and those in start-ups working in the field, it also provides supplementary material for students with mobile computing and networking backgrounds.

The advent of Internet of Things offers a scalable and seamless connection of physical objects, including human beings and devices. This, along with artificial intelligence, has moved transportation towards becoming intelligent transportation. This book is a collection of eleven articles that have served as examples of the success of internet of things and artificial intelligence deployment in transportation research. Topics include collision avoidance for surface ships, indoor localization, vehicle authentication, traffic signal control, path-planning of unmanned ships, driver drowsiness and stress detection, vehicle density estimation, maritime vessel flow forecast, and vehicle license plate recognition. High-performance computing services have become more affordable in recent years, which triggered the adoption of deep-learning-based approaches to increase the performance standards of artificial intelligence models. Nevertheless, it has been pointed out by various researchers that traditional shallow-learning-based approaches usually have an advantage in applications with small datasets. The book can provide information to government officials, researchers, and practitioners. In each article, the authors have summarized the limitations of existing works and offered valuable information on future research directions.

This book constitutes the refereed post-conference proceedings of the 18th International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services, MobiQuitous 2021, which was held in November 2021. The conference was held virtually due to the COVID-19 pandemic. The 37 full papers were carefully reviewed and selected from 79 submissions and present discussions, interaction and exchange of experiences that will designate future research efforts and directions. Topics addressed by the conference include systems, applications, social networks, middleware, networking, sensing, data management, data processing and services, all with special focus on mobile and ubiquitous computing.

In recent years, rapid development in robotics, mobile, and communication technologies has encouraged many studies in the field of localization and navigation in indoor environments. An accurate localization system that can operate in an indoor environment has considerable practical value, because it can be built into autonomous mobile systems or a personal navigation system on a smartphone for guiding people through airports, shopping malls, museums and other public institutions, etc. Such a system would be particularly useful for blind people. Modern smartphones are equipped with numerous sensors (such as inertial sensors, cameras, and barometers) and communication modules (such as WiFi, Bluetooth, NFC, LTE/5G, and UWB capabilities), which enable the implementation of various localization algorithms, namely, visual localization, inertial navigation system, and radio localization. For the mapping of indoor environments and localization of autonomous mobile systems, LIDAR sensors are also frequently used in addition to smartphone sensors. Visual localization and inertial navigation systems are sensitive to external disturbances; therefore, sensor fusion approaches can be used for the implementation of robust localization algorithms. These have to be optimized in order to be computationally efficient, which is essential for realtime processing and low energy consumption on a smartphone or robot.

Now in its second edition, Geographic Information Systems (GIS) for Disaster Management has been completely updated to take account of new developments in the field. Using a hands-on approach grounded in relevant GIS and disaster management theory and practice, this textbook continues the tradition of the benchmark first edition, providing coverage of GIS fundamentals applied to disaster management. Real-life case studies demonstrate GIS concepts and their applicability to the full disaster management cycle. The learning-by-example approach helps readers see how GIS for disaster management operates at local, state, national, and international scales through government, the private sector, non-governmental organizations, and volunteer groups. New in the second edition: a chapter on allied

technologies that includes remote sensing, Global Positioning Systems (GPS), indoor navigation, and Unmanned Aerial Systems (UAS); thirteen new technical exercises that supplement theoretical and practical chapter discussions and fully reinforce concepts learned; enhanced boxed text and other pedagogical features to give readers even more practical advice; examination of new forms of world-wide disaster faced by society; discussion of new commercial and open-source GIS technology and techniques such as machine learning and the Internet of Things; new interviews with subject-matter and industry experts on GIS for disaster management in the US and abroad; new career advice on getting a first job in the industry. Learned yet accessible, Geographic Information Systems (GIS) for Disaster Management continues to be a valuable teaching tool for undergraduate and graduate instructors in the disaster management and GIS fields, as well as disaster management and humanitarian professionals. Please visit <http://gisfordisastermanagement.com> to view supplemental material such as slides and hands-on exercise video walkthroughs. This companion website offers valuable hands-on experience applying concepts to practice.

Proceedings of Sixth International Congress on Information and Communication Technology

Applications in Electronics Pervading Industry, Environment and Society

Volume I

European Conference, Aml 2014, Eindhoven, The Netherlands, November 11-13, 2014. Revised Selected Papers

A handbook

Proceedings of the International Conference on Wireless Communication and Sensor Network (WCSN 2015)

Spatial Information Theory

These proceedings present selected research papers from CSNC 2018, held during 23rd-25th May in Harbin, China. The theme of CSNC 2018 is Location, Time of Augmentation. 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 12 topics to match the corresponding sessions in CSNC 2018, 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.

This book gathers selected high-quality research papers presented at the Sixth International Congress on Information and Communication Technology, held at Brunel University, London, on February 25-26, 2021. It discusses emerging topics pertaining to information and communication technology (ICT) for managerial applications, e-governance, e-agriculture, e-education and computing technologies, the Internet of things (IoT) and e-mining. Written by respected experts and researchers working on ICT, the book offers a valuable asset for young researchers involved in advanced studies. The book is presented in four volumes.

A revision of Openshaw and Abrahart's seminal work, GeoComputation, Second Edition retains influences of its originators while also providing updated, state-of-the-art information on changes in the computational environment. In keeping with the field's development, this new edition takes a broader view and provides comprehensive coverage across the

This proceedings volume collects the most up-to-date, comprehensive and state-of-the-art knowledge on wireless communication, sensor network, network technologies, services and application. Written by world renowned researchers, each chapter is original in content, featuring high-impact presentations and late-breaking contributions. Researchers and practitioners will find this edition a useful resource material and an inspirational read. Contents: Wireless Communications Network Technologies Services and Application Readership: Researchers, academics, professionals and graduate students in neural networks/networking, electrical & electronic engineering, and condensed matter physics.

Geomagnetic field penetrates through all shells of the solid Earth, hydrosphere and atmosphere, spreading into space. The Earth Magnetic Field plays a key-role in major natural processes. Geomagnetic field variations in time and space provide important information about the state of the solid Earth, as well as the solar-terrestrial relationships and space weather conditions. The monograph presents a set of fundamental and, at the same time, urgent scientific problems of modern geomagnetic studies, as well as describes the results of the authors' developments. The new technique introduced in the book can be applied far beyond the limits of Earth sciences. Requirements to corresponding data models are formulated. The conducted experimental investigations are combined with development and implementation of new methods of mathematical modeling, artificial intelligence, systems analysis and data science to solve the fundamental problems of geomagnetism. At that, formalism of Big Data and its application to Earth Sciences is presented as essential part of systems analysis. The book is intended for research scientists, tutors, students, postgraduate students and engineers working in geomagnetism and Earth sciences in general, as well as in other relevant scientific disciplines.

GeoComputation

New Trends in Business Information Systems and Technology

International Conference of Young Computer Scientists, Engineers and Educators, ICYCSEE 2015, Harbin, China, January 10-12, 2015, Proceedings

Ubiquitous Computing and Ambient Intelligence. Sensing, Processing, and Using Environmental Information
Comprehensive Geographic Information Systems
China Satellite Navigation Conference (CSNC) 2018 Proceedings
Principles and Applications

The Handbook of Smart Antennas for RFID Systems is a single comprehensive reference on the smart antenna technologies applied to RFID. This book will provide a timely reference book for researchers and students in the areas of both smart antennas and RFID technologies. It is the first book to combine two of the most important wireless technologies together in one book. The handbook will feature chapters by leading experts in both academia and industry offering an in-depth description of terminologies and concepts related to smart antennas in various RFID systems applications. Some topics are: adaptive beamforming for RFID smart antennas, multiuser interference suppression in RFID tag reading, phased array antennas for RFID applications, smart antennas in wireless systems and market analysis and case studies of RFID smart antennas. This handbook will cover the latest achievements in the designs and applications for smart antennas for RFID as well as the basic concepts, terms, protocols, systems architectures and case studies in smart antennas for RFID readers and tags.

We are facing a new technological challenge on how to store and retrieve knowledge and manipulate intelligence for autonomous services by intelligent systems which should be capable of carrying out real world tasks autonomously. To address this issue, robot researchers have been developing intelligence technology (InT) for “robots that think” which is in the focus of this book. The book covers all aspects of intelligence from perception at sensor level and reasoning at cognitive level to behavior planning at execution level for each low level segment of the machine. It also presents the technologies for cognitive reasoning, social interaction with humans, behavior generation, ability to cooperate with other robots, ambience awareness and an artificial genome that can be passed on to other robots. These technologies are to materialize cognitive intelligence, social intelligence, behavioral intelligence, collective intelligence, ambient intelligence and genetic intelligence. The book aims at serving researchers and practitioners with a timely dissemination of the recent progress on robot intelligence technology and its applications, based on a collection of papers presented at the at the 2nd International Conference on Robot Intelligence Technology and Applications (RiTA), held in Denver, USA, December 18-20, 2013.

This is an essential practical guide for all information professionals who want to get to grips with or improve their use of mobile services. Packed with easy to implement ideas, practical examples and international case studies, this provides you with the ultimate toolkit, exploring ideas as simple as renewals and reminders to the more complex such as access to e-books and virtual worlds. Jargon-free coverage of the background and context to mobile delivery will enable you to fully understand the challenges and embrace the opportunities, getting to grips with critical issues such as what sort of services users really want. Key topics covered include: • context including market penetration, range and functionality of devices • texting • apps vs. mobile websites • mobile information literacy vs. other information literacies • mobiles in teaching • linking the physical and virtual worlds via mobile devices • E-books for mobiles • the future of mobile delivery. Readership: This is an essential practical guide for all information professionals who want to get to grips with or improve their use of mobile services. It would also be invaluable for museum staff facing the same challenges. Library and information students and academics will find it a useful introduction to the topic.

This book discusses topics in mission-oriented sensor networks and systems research and practice, enabling readers to understand the major technical and application challenges of these networks, with respect to their architectures, protocols, algorithms, and application design. It also presents novel theoretical and practical ideas, which have led to the development of solid foundations for the design, analysis, and implementation of energy-efficient, reliable, and secure mission-oriented sensor network applications. Covering various topics, including sensor node architecture, sensor deployment, mobile coverage, mission assignment, detection, localization, tracking, data dissemination, data fusion, topology control, geometric routing, location privacy, secure communication, and cryptograph, it is a valuable resource for computer scientists, researchers, and practitioners in academia and industry.

In the age of automation the ability to navigate persons and devices in indoor environments has become increasingly important for a rising number of applications. However, we are still far away from achieving cheap provision of global indoor positioning with an accuracy of 1 meter or better. With the emergence of global satellite positioning systems, the performance of outdoor positioning has become excellent, but many mass market applications require seamless positioning capabilities in all environments. Therefore indoor positioning has become a focus of research and development during the past decade. This book categorizes all sighted indoor positioning approaches into 13 distinct technologies and describes the measuring principles of each. Individual approaches are characterized and key performance parameters are quantified.

Wireless Algorithms, Systems, and Applications

Multimodal Location Estimation of Videos and Images

Ambient Intelligence

RFID Technology Integration for Business Performance Improvement

11th International Conference, COSIT 2013, Scarborough, UK, September 2-6, 2013, Proceedings

Indoor Positioning Technologies

9th International Conference, UCAMI 2015, Puerto Varas, Chile, December 1-4, 2015, Proceedings

This paper describes a novel method to locate and track entities in the absence of conventional navigation systems like Global Positioning Systems "GPS". The goal of this project is to develop low cost mobile platforms for Army Tactical Engagement Simulation training exercises that can demonstrate alternate and innovative tracking methods in urban combat areas. These platforms will play a crucial role in the Future Combat Force "FCS", as a soldier, linked to these platforms and sensors will have access to data that can provide a much more accurate picture of his surroundings. We are researching and testing schemes that will enable us to locate and track entities inside buildings, caves and dense foliage where GPS signals cannot be received. A host of sensors including Inertial Measurement Unit, GPS receiver, wireless video, Sonar, and rotary Optical encoders is used to extrapolate

the GPS data as the entity loses the GPS signal when moving into an indoor location. A tablet PC acts as the central control and command terminal to receive sensor data and also to control and monitor the platform. A live wireless video from an on-board infra-red camera mounted on the platform is also displayed on the PC. To ensure constant communication with the mobile platform, we are using a Mobile Ad-hoc routing protocol "MAR" to "hop" the sensor and control data between the platforms and the central control station through other platforms on the field. We used a 1/6 scale model of an off-road vehicle to mount on-board a small form factor computer, microprocessors and sensors. Software routines in Java are used to control and collect data from the sensors through the microprocessor.

Mobile context-awareness is a popular research trend in the field of ubiquitous computing. Advances in mobile device sensory hardware and the rise of 'virtual' sensors such as web application programming interfaces (APIs) mean that the mobile user is exposed to a vast range of data that can be used for new advanced applications. Mobile Context Awareness presents work from industrial and academic researchers, focusing on novel methods of context acquisition in the mobile environment - particularly through the use of physical and virtual sensors - along with research into new applications utilising this context. In addition, the book provides insights into the technical and usability challenges involved in mobile context-awareness, as well as observations on current and future trends in the field.

This book constitutes the proceedings of the 12th International Conference on Wireless Algorithms, Systems, and Applications, WASA 2017, held in Guilin, China, in June 2017. The 70 full papers and 9 short papers presented in this book were carefully reviewed and selected from 238 submissions. The papers cover various topics such as cognitive radio networks; wireless sensor networks; cyber-physical systems; distributed and localized algorithm design and analysis; information and coding theory for wireless networks; localization; mobile cloud computing; topology control and coverage; security and privacy; underwater and underground networks; vehicular networks; internet of things; information processing and data management; programmable service interfaces; energy-efficient algorithms; system and protocol design; operating system and middle-ware support; and experimental test-beds, models and case studies.

This book discusses human-computer interaction (HCI) which is a multidisciplinary field of study which aims at developing and implementing tools and techniques to attain an effective and efficient interaction between the humans (the users) and computers. In recent years, there is an increase of interest of HCI researchers and practitioners in the inclusion of gaze gestures which can greatly enhance the communication between the human user and the computer, as well as other more "physical" communication involving all what can be learned from movements of the human body, from face, hand, leg, foot, etc., to the whole body movement, even extending to the involvement of groups of agents, even society. These explicitly human-centric issues in the development, design, analysis, and implementation of the HCI systems are discussed in the book. A comprehensive state of the art is given complemented with original own proposals. As opposed to more traditional formal and IT based analyses, the discussion is here more focused on relevant research results from psychology and psychophysiology, and other soft, cognitive, etc., sciences. Remarks on the relevance of affective computing are also mentioned.

The International Conference on Wired/Wireless Internet Communications (WWIC) was held for the second time, following a successful start in 2002, in Las Vegas. The goal of the conference was to present high-quality results in the field, and to provide a framework for research collaboration through focused discussions that designated future research efforts and directions. The number and the quality of submissions indicate that we are well on the way to establishing WWIC as a major event in the field of wired/wireless internet communications. We received around 60 competitive submissions from Europe, North America, the Middle East and the Far East. Each submission was reviewed by at least two experts, although the majority received three or more reviews. Based on this rigorous reviewing procedure, the International Program Committee selected 26 submissions for presentation and publication in the proceedings. Therefore, we should all expect the quality of a selective conference in this volume. We hope you will enjoy it. The papers selected for presentation at WWIC 2004 were stimulating and of utmost interest. They were organized into eight sessions: 1. Protocol engineering and energy efficiency in wireless networks 2. Mobility management and mobile devices 3. Transport layer and congestion control 4. Architecture, implementation and experimentation 5. Network and protocol modeling 6. Wireless network scheduling and analysis 7. Multimedia distribution and group communication 8. Service discovery. We would like to thank the authors for choosing WWIC 2004 to submit their results. We would also like to thank all the members of the Technical Program Committee, as well as the additional reviewers, for their effort to provide detailed and constructive reviews.

Ubiquitous Computing and Ambient Intelligence: Context-Awareness and Context-Driven Interaction

Visible Light Communication Based Indoor Localization

Urban Informatics

A Survey

18th EAI International Conference, MobiQuitous 2021, Virtual Event, November 8-11, 2021, Proceedings

Location Systems

Wireless Indoor Localization

This book constitutes the proceedings of the 11th International Conference on Spatial Information Theory, COSIT 2013, held in Scarborough, UK, in September 2013. The 28 papers presented in this book were carefully reviewed and selected from 62 full paper submissions. The following topics are addressed: spatial change, wayfinding and assistance, representing spatial data, handling language data, spatial

language and computation, spatial ontology, spatial reasoning and representation.

This SpringerBrief examines the use of cheap commercial passive RFID tags to achieve accurate device-free object-tracking. It presents a sensitive detector, named Twins, which uses a pair of adjacent passive tags to detect uncooperative targets (such as intruders). Twins leverages a newly observed phenomenon called critical state that is caused by interference among passive tags. The author expands on the previous object tracking methods, which are mostly device-based, and reveals a new interference model and their extensive experiments for validation. A prototype implementation of the Twins-based intrusion detection scheme with commercial off-the-shelf reader and tags is also covered in this SpringerBrief. Device-Free Object Tracking Using Passive Tags is designed for researchers and professionals interested in smart sensing, localization, RFID and Internet of Things applications. The content is also useful for advanced-level students studying electrical engineering and computer science.

This book constitutes the refereed proceedings of the International Conference of Young Computer Scientists, Engineers and Educators, ICYCSEE 2015, held in Harbin, China, in January 2015. The 61 revised full papers presented were carefully reviewed and selected from 200 submissions. The papers cover a wide range of topics related to intelligent computation in Big Data era, such as artificial intelligence, machine learning, algorithms, natural language processing, image processing, MapReduce, social network.

Advances in electronic location technology and the coming of age of mobile computing have opened the door for location-aware applications to permeate all aspects of everyday life. Location is at the core of a large number of high-value applications ranging from the life-and-death context of emergency response to serendipitous social meet-ups. For example, the market for GPS products and services alone is expected to grow to US\$200 billion by 2015. Unfortunately, there is no single location technology that is good for every situation and exhibits high accuracy, low cost, and universal coverage. In fact, high accuracy and good coverage seldom coexist, and when they do, it comes at an extreme cost. Instead, the modern localization landscape is a kaleidoscope of location systems based on a multitude of different technologies including satellite, mobile telephony, 802.11, ultrasound, and infrared among others. This lecture introduces researchers and developers to the most popular technologies and systems for location estimation and the challenges and opportunities that accompany their use. For each technology, we discuss the history of its development, the various systems that are based on it, and their trade-offs and their effects on cost and performance. We also describe technology-independent algorithms that are commonly used to smooth streams of location estimates and improve the accuracy of object tracking. Finally, we provide an overview of the wide variety of application domains where location plays a key role, and discuss opportunities and new technologies on the horizon. Table of Contents: Introduction / The Global Positioning System / Infrared and Ultrasonic Systems / Location Estimation with 802.11 / Cellular-Based Systems / Other Approaches / Improving Localization Accuracy / Location-Based Applications and Services / Challenges and Opportunities / References

This book constitutes the refereed proceedings of the 9th International Conference on Ubiquitous Computing and Ambient Intelligence, UCAmI 2015, held in Puerto Varas, Chile, in December 2015. The 36 full papers presented together with 11 short papers were carefully reviewed and selected from 62 submissions. The papers are grouped in topical sections on adding intelligence for environment adaption; ambient intelligence for transport; human interaction and ambient intelligence; and ambient intelligence for urban areas.

Algorithms and Architectures for Parallel Processing

APPLEPIES 2020

Intelligent Computation in Big Data Era

Digital Innovation and Digital Business Transformation

12th International Conference, WASA 2017, Guilin, China, June 19-21, 2017, Proceedings

Wireless Networking for Personal Devices

Volume 1: Foundations

This book provides a thorough overview of cutting-edge research on electronics applications relevant to industry, the environment, and society at large. It covers a broad spectrum of application domains, from automotive to space and from health to security, while devoting special attention to the use of embedded devices and sensors for imaging, communication and control. The book is based on the 2020 ApplePies Conference, held online in November 2020, which brought together researchers and stakeholders to consider the most significant current trends in the field of applied electronics and to debate visions for the future. Areas addressed by the conference included information communication technology; biotechnology and biomedical imaging; space; secure, clean and efficient energy; the environment; and smart, green and integrated transport. As electronics technology continues to develop apace, constantly meeting previously unthinkable targets, further attention needs to be directed toward the electronics applications and the

development of systems that facilitate human activities. This book, written by industrial and academic professionals, represents a valuable contribution in this endeavor.

Visible Light Communication Based Indoor LocalizationCRC Press

The development of radio-frequency electromagnetic fields for wireless data transmission has presented several new opportunities for sharing, tracking, and reading digital information in various industries. RFID Technology Integration for Business Performance Improvement presents emerging research surrounding the use and value of Radio Frequency Identification (RFID) technology for cost reduction, supply chain improvement, inventory management, and partner relationship management. This publication is ideal for use by business managers, researchers, academics, and advanced-level students seeking research on the management strategies, operational techniques, opportunities, and challenges of implementing and using this new technology in a business setting.

This book constitutes the refereed proceedings of the 5th International Joint Conference of Ambient Intelligence, Aml 2014, held in Eindhoven, The Netherlands, in November 2014. The 21 revised full papers presented together with 5 short papers and 4 workshop papers were carefully reviewed and selected from 59 submissions. The papers are organized along a set of thematic tracks: ambient assisted living; internet of things; ambient play and learning; smart buildings and cities; intelligent driving; data science; smart healthcare and healing environments; ambient persuasion; and new and emerging themes.

This open access book is the first to systematically introduce the principles of urban informatics and its application to every aspect of the city that involves its functioning, control, management, and future planning. It introduces new models and tools being developed to understand and implement these technologies that enable cities to function more efficiently - to become 'smart' and 'sustainable'. The smart city has quickly emerged as computers have become ever smaller to the point where they can be embedded into the very fabric of the city, as well as being central to new ways in which the population can communicate and act. When cities are wired in this way, they have the potential to become sentient and responsive, generating massive streams of 'big' data in real time as well as providing immense opportunities for extracting new forms of urban data through crowdsourcing. This book offers a comprehensive review of the methods that form the core of urban informatics from various kinds of urban remote sensing to new approaches to machine learning and statistical modelling. It provides a detailed technical introduction to the wide array of tools information scientists need to develop the key urban analytics that are fundamental to learning about the smart city, and it outlines ways in which these tools can be used to inform design and policy so that cities can become more efficient with a greater concern for environment and equity.

Wired/Wireless Internet Communications

Semantic Computing

Mission-Oriented Sensor Networks and Systems: Art and Science

7th International Conference, UCAml 2013, Carrillo, Costa Rica, December 2-6, 2013, Proceedings

ICICT 2021, London, Volume 3

Mobile Context Awareness

This book demonstrates the research on VLC based indoor localization in four aspects: first, it constructs the concept and model of the system; second, positioning algorithms, as the main issue in indoor localization, are detailed; third, many approaches are proposed to further improve the positioning performance; fourth, challenges will be detailed. Impulse response with multipath reflections are analyzed. Orthogonal frequency division multiplexing (OFDM) is proposed, and positioning performance is largely improved compared to On-off-keying (OOK) modulation. The readers will get a broad view of VLC based indoor localization from the background to the future challenges.

An Introduction to the Technology Behind Location Awareness

Mobile and Ubiquitous Systems

Wireless Communication and Sensor Network

Development of Low Cost Mobile Platforms for Indoor Tracking, Navigation and Geo-Location

Second International Conference, WWIC 2004, Frankfurt/Oder, Germany, February 4-6, 2004, Proceedings

Personal Networks

Indoor Positioning and Navigation