

Collaborative Internet Of Things C lot Book By John Wiley Sons

This book presents recent trends and enhancements in the convergence of immersive technology and smart cities. The authors discuss various domains such as medical education, construction, brain interface, interactive storytelling, edification, and journalism in relation to combining smart cities, IoT and immersive technologies. The book sets up a medium to promulgate insights and in depth understanding among experts in immersive technologies, IoT, HCI and associated establishments. The book also includes case studies, survey, models, algorithms, frameworks and implementations in storytelling, smart museum, medical education, journalism and more. Various practitioners, academicians and researchers in the domain contribute to the book. Discusses the convergence of immersive technologies and smart cities from a variety of perspectives; Includes how augmented reality, mixed, and virtual reality in smart cities can aid in disaster administration, urban arrangement, direction-finding, and edification; Presents the latest trends for all academicians, researchers, business professionals studying smart cities and related fields.

The book provides the reader with a quick overview of the evolution of Internet of Things and its impact on Smart Connected Digital Life and emerging Cloud Services comparing trials in the 1990s with current solutions offering and future trends. The underline drivers of innovative change are the scalability of Internet, advancement of wireless technology and accelerated growth of mobility. Broadly, the book is organized into eight chapters and provides a comprehensive overview on emerging cloud services and IoT networking paradigms.

This book constitutes the proceedings of the 17th IFIP WG 6.2 International Conference on Wired/Wireless Internet Communications, WWIC 2019, held in Bologna, Italy, in June 2019. The 20 full papers presented were carefully reviewed and selected from 35 submissions. The papers address various aspects of next generation data networks, such as design and evaluation of protocols, dynamics of integration, performance tradeoffs, the need for new performance metrics, and cross-layer interactions. They are organized in the following topical sections: the Internet of Things and WLANs; security and network management; 5G and beyond 5G networks; forwarding and congestion control; and distributed applications.

This book constitutes the refereed proceedings of the International Conference on Trusted Systems, INTRUST 2012, held in London, UK, in December 2012. The 6 revised full papers presented together with 3 short invited papers and a short paper which formed the basis for a panel session were carefully reviewed and selected from 19 submissions. The papers are organized in topical section on automated analysis, security and trust, mobile trust, security of distributed systems, evaluation and analysis, and embedded security.

This book constitutes the proceedings of the 17th International Conference on Cooperative Design, Visualization, and Engineering, CDVE 2020, held in Bangkok, Thailand, in October 2020.* The 33 full papers and 7 short papers presented were carefully reviewed and selected from 74 submissions. The achievement, progress and future challenges are reported in areas such as health care, industrial design, banking IT systems, cultural activities support, operational maritime cybersecurity assurance, emotion communication, and social network data analytics. * The conference was held virtually due to the COVID-19 pandemic.

Concurrent Engineering (CE) is based on the premise that different phases of a product's lifecycle should be conducted concurrently and initiated as early as possible within the Product Creation Process (PCP). It has become the substantive basic methodology in many industries, including automotive, aerospace, machinery, shipbuilding, consumer goods, process industry and environmental engineering. CE aims to increase the efficiency of the PCP and reduce errors in later phases while incorporating considerations for full lifecycle and through-life operations. This book presents the proceedings of the 22nd ISPE Inc. (International Society for Productivity Enhancement) International Conference on Concurrent Engineering (CE2015) entitled 'Transdisciplinary Lifecycle Analysis of Systems', and held in Delft, the Netherlands, in July 2015. It is the second in the series 'Advances in Transdisciplinary Engineering'. The book includes 63 peer reviewed papers and 2 keynote speeches arranged in 10 sections: keynote speeches; systems engineering; customization and variability management; production oriented design, maintenance and repair; design methods and knowledge-based engineering; multidisciplinary product management; sustainable product development; service oriented design; product lifecycle management; and trends in CE. Containing papers ranging from the theoretical and conceptual to the highly pragmatic, this book will be of interest to all engineering professionals and practitioners; researchers, designers and educators.

This two-volume set LNCS 12784 and 12785 constitutes the refereed proceedings of the 8th International Conference on Learning and Collaboration Technologies, LCT 2021, held as Part of the 23rd International Conference, HCI International 2021, which took place in July 2021. Due to COVID-19 pandemic the conference was held virtually. The total of 1276 papers and 241 posters included in the 39 HCII 2021 proceedings volumes was carefully reviewed and selected from 5222 submissions. The papers of LCT 2021, Part II, focus on Games and Gamification in Learning; Chatbots in Learning; AR, VR and Robots in Learning.

As an important enabler for changing people's lives, advances in artificial intelligence (AI)-based applications and services are on the rise, despite being hindered by efficiency and latency issues. By focusing on deep learning as the most representative technique of AI, this book provides a comprehensive overview of how AI services are being applied

to the network edge near the data sources, and demonstrates how AI and edge computing can be mutually beneficial. To do so, it introduces and discusses: 1) edge intelligence and intelligent edge; and 2) their implementation methods and enabling technologies, namely AI training and inference in the customized edge computing framework. Gathering essential information previously scattered across the communication, networking, and AI areas, the book can help readers to understand the connections between key enabling technologies, e.g. a) AI applications in edge; b) AI inference in edge; c) AI training for edge; d) edge computing for AI; and e) using AI to optimize edge. After identifying these five aspects, which are essential for the fusion of edge computing and AI, it discusses current challenges and outlines future trends in achieving more pervasive and fine-grained intelligence with the aid of edge computing. This book constitutes the refereed proceedings of the 16th IFIP WG 5.5 Working Conference on Virtual Enterprises, PRO-VE 2015, held in Albi, France, in October 2015. The 61 revised papers were carefully selected from 126 submissions. They provide a comprehensive overview of identified challenges and recent advances in various collaborative network (CN) domains and their applications, with a strong focus on the following areas: risks in collaborative networks; agility and resilience in collaborative networks; collaboration frameworks; logistics and transportation; innovation networks; governance in collaborative networks; collaborative communities; information and assets sharing; business processes; performance and optimization; and network formation.

The ubiquitous nature of the Internet of Things allows for enhanced connectivity between people in modern society. When applied to various industries, these current networking capabilities create opportunities for new applications. Internet of Things and Advanced Application in Healthcare is a critical reference source for emerging research on the implementation of the latest networking and technological trends within the healthcare industry. Featuring in-depth coverage across the broad scope of the Internet of Things in specialized settings, such as context-aware computing, reliability, and healthcare support systems, this publication is an ideal resource for professionals, researchers, upper-level students, practitioners, and technology developers seeking innovative material on the Internet of Things and its distinct applications.

"This book studies how daily life operates using many objects with Internet connections such as smartphones, tablets, Smart TVs, micro-controllers, Smart Tags, computers, laptops, cars, cheaper sensors, and more, commonly referred to as the Internet of Things. To accommodate this new connected structure, readers will learn how improved wireless strategies drive the need for a better IoT network"--

This book discusses several exciting research topics and applications in the intelligent Heterogenous Networks (Het-Net) and Internet of Things (IoT) era. We are resolving significant issues towards realizing the future vision of the Artificial Intelligence (AI) in IoT-enabled spaces. Such AI-powered IoT solutions will be employed in satisfying critical conditions towards further advances in our daily smart life. This book overviews the associated issues and proposes the most up to date alternatives. The objective is to

pave the way for AI-powered IoT-enabled spaces in the next generation Het-Net technologies and open the door for further innovations. The book presents the latest advances and research into heterogeneous networks in critical IoT applications. It discusses the most important problems, challenges, and issues that arise when designing real-time intelligent heterogeneous networks for diverse scenarios. Includes fundamentals and advances in intelligent heterogeneous network studies and practical applications; Presents important problems, challenges and issues that arise when designing real-time heterogeneous networks for diverse scenarios; Provides an overview of real-time performance issues in heterogeneous networks, specifically about multi-tasking, multi-level scheduling, localization and security issues. .

This book provides a holistic perspective on Digital Twin (DT) technologies, and presents cutting-edge research in the field. It assesses the opportunities that DT can offer for smart cities, and covers the requirements for ensuring secure, safe and sustainable smart cities. Further, the book demonstrates that DT and its benefits with regard to: data visualisation, real-time data analytics, and learning leading to improved confidence in decision making; reasoning, monitoring and warning to support accurate diagnostics and prognostics; acting using edge control and what-if analysis; and connection with back-end business applications hold significant potential for applications in smart cities, by employing a wide range of sensory and data-acquisition systems in various parts of the urban infrastructure. The contributing authors reveal how and why DT technologies that are used for monitoring, visualising, diagnosing and predicting in real-time are vital to cities' sustainability and efficiency. The concepts outlined in the book represents a city together with all of its infrastructure elements, which communicate with each other in a complex manner. Moreover, securing Internet of Things (IoT) which is one of the key enablers of DT's is discussed in details and from various perspectives. The book offers an outstanding reference guide for practitioners and researchers in manufacturing, operations research and communications, who are considering digitising some of their assets and related services. It is also a valuable asset for graduate students and academics who are looking to identify research gaps and develop their own proposals for further research.

This book presents real-world problems and pioneering research in computational statistics, mathematical modeling, artificial intelligence and software engineering in the context of intelligent systems. It gathers the peer-reviewed proceedings of the 2nd Computational Methods in Systems and Software 2018 (CoMeSySo 2018), a conference that broke down traditional barriers by being held online. The goal of the event was to provide an international forum for discussing the latest high-quality research results.

This volume constitutes the refereed proceedings of the Third International Conference on Computational Intelligence, Security and Internet of Things, ICCISIoT 2020, held in Agartala, India, in December 2020. Due to the COVID-19 pandemic the conference was held online. The 23 full papers and 4 short papers were carefully reviewed and selected from 113 submissions. The papers are organised according to the following topics: computational intelligence, security, and internet of things. .

"This book offers a collection of the latest research, trends, future developments, and case studies pertaining to collaborative

learning"--Provided by publisher.

Provides the authoritative and up-to-date information required for securing IoT architecture and applications The vast amount of data generated by the Internet of Things (IoT) has made information security vital for not only personal privacy, but also for the sustainability of the IoT itself. Security and Privacy in the Internet of Things brings together high-quality research on IoT information security models, architectures, techniques, and application domains. This concise yet comprehensive volume explores state-of-the-art mitigations in IoT security while addressing important privacy challenges across different IoT layers. Divided into three parts, the book provides timely coverage of IoT architecture, security technologies and mechanisms, and applications. The authors outline emerging trends in IoT security and privacy with a focus on areas such as smart homes and cities, e-health, critical infrastructure, and industrial applications. Topics include authentication and access control, the use of blockchains for IoT transactions, attack detection and prevention, energy-efficient management of IoT objects, and secure integration of IoT and Cloud computing. Presenting the current body of knowledge in a single volume, Security and Privacy in the Internet of Things: Discusses a broad range of IoT architectures and applications Covers both the logical and physical security of IoT devices Examines IoT security and privacy standards, protocols, and approaches Addresses the secure integration of IoT and social networks Describes privacy preserving techniques, intrusion detection systems, and threat and vulnerability analyses Security and Privacy in the Internet of Things: Architectures, Techniques, and Applications is essential reading for researchers, industry practitioners, and students involved in IoT development and deployment.

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

This book constitutes the revised selected papers of the scientific satellite events that were held in conjunction with the 16th International Conference on Service-Oriented Computing, ICSOC 2018, held in Hangzhou, China, in November 2018. The ICSOC 2018 workshop track consisted of six workshops on a wide range of topics that fall into the general area of service computing. A special focus this year was on Internet of Things, Data Analytics, and Smart Services: First International Workshop on Data-Driven Business Services (DDBS) First International Workshop on Networked Learning Systems for Secured IoT Services and Its Applications (NLS4IoT) 8th International Workshop on Context-Aware and IoT Services (CIoTS) Third International Workshop on Adaptive Service-oriented and Cloud Applications (ASOCA2018) Third International Workshop on IoT Systems for Context-aware Computing (ISyCC) First International Workshop on AI and Data Mining for Services (ADMS)

The industrial internet is a new and upcoming technology that is changing the practices of organizations and corporations everywhere. Through research and application, opportunities can arise from implementing these new systems and devices. The Internet of Things in the Modern Business Environment is an essential reference source for the latest scholarly research on varying aspects of the interworking of smart devices within a business setting and explores the impact of these devices on company operations and models. Featuring extensive coverage on a broad range of topics such as supply chain management, information sharing, and data analytics, this publication is ideally designed for researchers, managers, and students seeking current research on the expansion of technology in commerce.

Advancements in medical and healthcare technologies pave the way to improving treatments and diagnoses while also streamlining processes to ensure the highest quality care is given to patients. In the last few decades, revolutionary technology has radically progressed the healthcare industry by increasing life expectancy and reducing human error. Advanced Methodologies and Technologies in Medicine and Healthcare provides emerging research on bioinformatics, medical ethics, and clinical science in modern applications and settings. While highlighting the challenges medical practitioners and healthcare professionals face when treating patients and striving to optimize their processes, the book shows how revolutionary technologies and methods are vastly improving how healthcare is implemented globally. This book is an important resource for medical researchers, healthcare administrators, doctors, nurses, biomedical engineers, and students looking for comprehensive research on the advancements in healthcare technologies.

This book examines the Internet of Things (IoT) and Data Analytics from a technical, application, and business point of view. Internet of Things and Data Analytics Handbook describes essential technical knowledge, building blocks, processes, design principles, implementation, and marketing for IoT projects. It provides readers with knowledge in planning, designing, and implementing IoT projects. The book is written by experts on the subject matter, including international experts from nine countries in the consumer and enterprise fields of IoT. The text starts with an overview and anatomy of IoT, ecosystem of IoT, communication protocols, networking, and available hardware, both present and future applications and transformations, and business models. The text also addresses big data analytics, machine learning, cloud computing, and consideration of sustainability that are essential to be both socially responsible and successful. Design and implementation processes are illustrated with best practices and case studies in action. In addition, the book: Examines cloud computing, data analytics, and sustainability and how they relate to IoT over the scope of consumer, government, and enterprise applications Includes best practices, business model, and real-world case studies Hwaiyu Geng, P.E., is a consultant with Amica Research (www.AmicaResearch.org, Palo Alto, California), promoting green planning, design, and construction projects. He has had over 40 years of manufacturing and management experience, working with Westinghouse, Applied Materials, Hewlett Packard, and Intel on multi-million high-tech projects. He has written and

presented numerous technical papers at international conferences. Mr. Geng, a patent holder, is also the editor/author of Data Center Handbook (Wiley, 2015).

This book constitutes the thoroughly refereed post conference papers of the First International Conference on Blockchain and Trustworthy Systems, Blocksys 2019, held in Guangzhou, China, in December 2019. The 50 regular papers and the 19 short papers were carefully reviewed and selected from 130 submissions. The papers are focus on Blockchain and trustworthy systems can be applied to many fields, such as financial services, social management and supply chain management.

This book provides practical knowledge on different aspects of information and knowledge management in businesses. For enterprises/businesses those intend to remain prosperous and prolific, it is critically important to share best practices, ensure efficient information flow across company, capturing shared knowledge centrally, and communicate compliance rules, i.e. managing competently information in general. It enables faster and better decisions by helping employees' to build a strong expertise and by avoiding duplicated projects. Thus, the second volume of this series subline continues to explore different aspects of information and knowledge handling as well as doing business with information. We survey further the key aspects of managerial implications of the informational business. The novel methodologies and practices for the business information processing as well as application of mathematical models to the business analytics and efficient management are examined.

This book highlights state-of-the-art research on big data and the Internet of Things (IoT), along with related areas to ensure efficient and Internet-compatible IoT systems. It not only discusses big data security and privacy challenges, but also energy-efficient approaches to improving virtual machine placement in cloud computing environments. Big data and the Internet of Things (IoT) are ultimately two sides of the same coin, yet extracting, analyzing and managing IoT data poses a serious challenge. Accordingly, proper analytics infrastructures/platforms should be used to analyze IoT data. Information technology (IT) allows people to upload, retrieve, store and collect information, which ultimately forms big data. The use of big data analytics has grown tremendously in just the past few years. At the same time, the IoT has entered the public consciousness, sparking people's imaginations as to what a fully connected world can offer. Further, the book discusses the analysis of real-time big data to derive actionable intelligence in enterprise applications in several domains, such as in industry and agriculture. It explores possible automated solutions in daily life, including structures for smart cities and automated home systems based on IoT technology, as well as health care systems that manage large amounts of data (big data) to improve clinical decisions. The book addresses the security and privacy of the IoT and big data technologies, while also revealing the impact of IoT technologies on several scenarios in smart cities design. Intended as a comprehensive introduction, it offers in-depth analysis and provides scientists, engineers and professionals the latest techniques, frameworks and strategies used in IoT and big data technologies.

This book considers all aspects of managing the complexity of Multimedia Big Data Computing (MMBD) for IoT applications and develops a comprehensive taxonomy. It also discusses a process model that addresses a number of research challenges associated with MMBD, such as scalability, accessibility, reliability, heterogeneity, and Quality of Service (QoS) requirements, presenting case studies to demonstrate its application. Further, the book examines the layered architecture of MMBD computing and compares the life cycle of both big data and MMBD. Written by leading experts, it also includes numerous solved examples, technical descriptions, scenarios, procedures, and algorithms.

This book examines cross-chain control centers (4C), an ambitious concept in supply chain management and logistics that is intended to

foster collaboration between different supply chains to increase efficiency. It provides an overview of the main results, insights, and other developments in the academic field of horizontal collaboration. Furthermore, it gives recommendations to governments, commercial companies, and academia on how to proceed with horizontal logistics collaboration in the years to come. To link research with practice, the book takes the Dutch project on cross-chain collaboration centers (4Cs) and identifies a typology of existing patterns for horizontal collaboration in supply chains. Finally, the book zooms in on the Netherlands as a case-study of intense public-private partnerships to develop 4C as a mature logistics value proposition. It provides an overview of the accomplishments in the government supported 4C projects and offers a critical reflection of why some more ambitious and structural solutions have not found solid ground yet. The book is of value to researchers and professionals in the supply chain domain.

The amount of data shared and stored on the web and other document repositories is steadily on the rise. Unfortunately, this growth increases inefficiencies and difficulties when trying to find the most relevant and up-to-date information due to unstructured data. Advanced Metaheuristic Methods in Big Data Retrieval and Analytics examines metaheuristic techniques as an important alternative model for solving complex problems that are not treatable by deterministic methods. Recent studies suggest that IR and biomimicry can be used together for several application problems in big data and internet of things, especially when conventional methods would be too expensive or difficult to implement. Featuring coverage on a broad range of topics such as ontology, plagiarism detection, and machine learning, this book is ideally designed for engineers, graduate students, IT professionals, and academicians seeking an overview of new trends in information retrieval in big data.

This edited book provides techniques which address various aspects of big data collection and analysis from social media platforms and beyond. It covers efficient compression of large networks, link prediction in hashtag graphs, visual exploration of social media data, identifying motifs in multivariate data, social media surveillance to enhance search and rescue missions, recommenders for collaborative filtering and safe travel plans to high risk destinations, analysis of cyber influence campaigns on YouTube, impact of location on business rating, bibliographical and co-authorship network analysis, and blog data analytics. All these trending topics form a major part of the state of the art in social media and big data analytics. Thus, this edited book may be considered as a valuable source for readers interested in grasping some of the most recent advancements in this high trending domain.

This book constitutes the refereed proceedings of the 20th International Conference on Information and Software Technologies, ICIST 2014, held in Druskininkai, Lithuania, in October 2014. The 34 papers presented were carefully reviewed and selected from 68 submissions. The papers are organized in topical sections such as information systems; business intelligence for information and software systems; software engineering; information technology applications.

In recent years, our world has experienced a profound shift and progression in available computing and knowledge sharing innovations. These emerging advancements have developed at a rapid pace, disseminating into and affecting numerous aspects of contemporary society. This has created a pivotal need for an innovative compendium encompassing the latest trends, concepts, and issues surrounding this relevant discipline area. During the past 15 years, the Encyclopedia of Information Science and Technology has become recognized as one of the landmark sources of the latest knowledge and discoveries in this discipline. The Encyclopedia of Information Science and Technology, Fourth Edition is a 10-volume set which includes 705 original and previously unpublished research articles covering a full range of perspectives, applications, and techniques contributed by thousands of experts and researchers from around the globe. This authoritative

encyclopedia is an all-encompassing, well-established reference source that is ideally designed to disseminate the most forward-thinking and diverse research findings. With critical perspectives on the impact of information science management and new technologies in modern settings, including but not limited to computer science, education, healthcare, government, engineering, business, and natural and physical sciences, it is a pivotal and relevant source of knowledge that will benefit every professional within the field of information science and technology and is an invaluable addition to every academic and corporate library.

This book constitutes the proceedings of the 10th International IFIP WG 8.9 Working Conference on Research and Practical Issues of Enterprise Information Systems, CONFENIS 2016, held in Vienna, Austria, in December 2016. The conference provided an international forum for the broader IFIP community to discuss the latest research findings in the area of EIS and specifically aimed at facilitating the exchange of ideas and advances on all aspects and developments of EIS. The 25 papers presented in this volume were carefully reviewed and selected from 63 submissions. They were organized in topical sections on: semantic concepts and open data; customer relationship management; security and privacy issues; advanced manufacturing and management aspects; business intelligence and big data; decision support in EIS; and EIS-practices.

This book constitutes the refereed proceedings of the First International Conference for Industry and Academia on the Internet of Things, IOT 2008, held in Zurich, Switzerland, in March 2008. The 23 revised full papers presented were carefully reviewed and selected from 92 initial submissions. The papers are organized in topical sections on EPC network, middleware, business aspects, RFID technology and regulatory issues, applications, and sensing systems.

This book constitutes the refereed proceedings of the 18th IFIP WG 5.5 Working Conference on Virtual Enterprises, PRO-VE 2017, held in Vicenza, Italy, in September 2017. The 68 revised full papers were carefully reviewed and selected from 159 submissions. They provide a comprehensive overview of identified challenges and recent advances in various collaborative network (CN) domains and their applications, with a strong focus on the following areas: collaborative models, platforms and systems for data-rich worlds; manufacturing ecosystem and collaboration in Industry 4.0; big data analytics and intelligence; risk, performance, and uncertainty in collaborative data-rich systems; semantic data/service discovery, retrieval, and composition in a collaborative data-rich world; trust and sustainability analysis in collaborative networks; value creation and social impact of collaboration in data-rich worlds; technology development platforms supporting collaborative systems; collective intelligence and collaboration in advanced/emerging applications: collaborative manufacturing and factories of the future, e-health and care, food and agribusiness, and crisis/disaster management.

The popularity and reduced cost of low-power multi-sensor Internet of Things (IoT) devices provide many opportunities for human-centered ubiquitous computing. These personal and environmental embedded systems continuously collect the context information about the user activity or the environment, and provide digital assistance (e.g., turn up the A/C, unlock a door). While many existing always-connected IoT solutions rely on the success of cloud computing, there is a growing interest in discovering the benefits of utilizing local resources and on-device processing. To make the IoT applications work without global connectivity, we need to overcome the limitation of the IoT devices in terms of sensor equipment and energy consumption. On the other hand,

the manners of device interactions have changed with advances in wireless communication. Today nearly all mobile devices are capable of short-range wireless communication (e.g., via Bluetooth, Zigbee, etc). This provides a great opportunity for allowing the co-located IoT devices to communicate and interact free of user intrusion. In this thesis, I advocate that we utilize the pervasive and opportunistic connections around us for facilitating collaboration in the internet of things. With the help from IoT proximity networks, the costly sensing tasks can be distributed to improve sustainability. Heterogeneous devices can leverage each other's capability in the spontaneous context neighborhoods. This dissertation details the technical solutions to the following challenges: A key enabler of collaboration in IoT proximity networks is the ability to continuously identify nearby resources. We develop a low duty cycle protocol BLEnd to let the IoT hosts automatically discover neighboring devices in range of wireless communication. To effectively coordinate context sensing tasks among the IoT devices via device-to-device (D2D) communication, we propose a generic collaborative sensing framework SCENTS which enables application-transparent collaboration for context sharing. SCENTS incorporates an active request-response model to let devices in proximity sense context information as a fleet, while balancing sensing fulfillment and the fairness of energy consumption. In complement to the request-response approach of SCENTS we architect the PINCH framework, which proactively distributes the context information in local network based on various context demand models. To further optimize the sensing task assignment in an ad hoc grouping of devices, we develop the Stacon system. It entails a distributed algorithm that quickly adjusts the neighborhood's sensing task assignments based on the heterogeneity and dynamics of resources in proximity. To exhibit the real world implications of the proposed solutions, we deploy a IoT sensor testbed and acquire a data collection from user-carried mobile devices. In the end, we evaluate the sensing collaboration with this rich-context, real-life dataset

This book tackles the latest research trends in technology acceptance models and theories. It presents high-quality empirical and review studies focusing on the main theoretical models and their applications across various technologies and contexts. It also provides insights into the theoretical and practical aspects of different technological innovations that assist decision-makers in formulating the required policies and procedures for adopting a specific technology.

The ubiquity of modern technologies has allowed for increased connectivity between people and devices across the globe. This connected infrastructure of networks creates numerous opportunities for applications and uses. The Internet of Things: Breakthroughs in Research and Practice is an authoritative reference source for the latest academic material on the interconnectivity of networks and devices in the digital era and examines best practices for integrating this advanced connectivity across multiple fields. Featuring extensive coverage on innovative perspectives, such as secure computing, regulatory standards, and trust management, this book is ideally designed for engineers, researchers, professionals, graduate students, and practitioners seeking scholarly insights on the Internet of Things.

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