

# Thinger Io Open Source IoT Platform

Industrial Internet of Things  
 Industry 4.0 for SMEs  
 Artificial Intelligence in IoT and Cyborgization  
 Innovation and Research - A Driving Force for Socio-Econo-Technological Development  
 Advances in Computing, Informatics, Networking and Cybersecurity  
 Inventive Communication and Computational Technologies  
 Unmanned Aerial Systems in Agriculture  
 Modern IoT Onboarding Platforms for Advanced Applications  
 Applications of Computational Intelligence in Multi-Disciplinary Research  
 Intelligent Systems in Healthcare and Disease Identification using Data Science  
 Cybersecurity in the Age of Smart Societies  
 Artificial Intelligence and Its Practical Applications in the Digital Economy  
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## ANNA YAZMIN

*Industrial Internet of Things* Academic Press

This book covers essential topics in the architecture and design of Internet of Things (IoT) systems. The authors provide state-of-the-art information that enables readers to design systems that balance functionality, bandwidth, and power consumption, while providing secure and safe operation in the face of a wide range of threat and fault models. Coverage includes essential topics in system modeling, edge/cloud architectures, and security and safety, including cyberphysical systems and industrial control systems.

**Industry 4.0 for SMEs** Academic Press

This book gathers selected papers presented at the Inventive Communication and Computational Technologies conference (ICICT 2019), held on 29–30 April 2019 at Gnanamani College of Technology, Tamil Nadu, India. The respective contributions highlight recent research efforts and advances in a new paradigm called ISMAC (IoT in Social, Mobile, Analytics and Cloud contexts). Topics covered include the Internet of Things, Social Networks, Mobile Communications, Big Data Analytics, Bio-inspired Computing and Cloud Computing. The book is chiefly intended for academics and practitioners working to resolve practical issues in this area.

*Artificial Intelligence in IoT and Cyborgization* Springer Nature

Blockchain technology allows value exchange without the need for a central authority and ensures trust powered by its decentralized architecture. As such, the growing use of the internet of things (IoT) and the rise of artificial intelligence (AI) are to be benefited immensely by this technology that can offer devices and applications data security, decentralization, accountability, and reliable authentication. Bringing together blockchain technology, AI, and IoT can allow these tools to complement the strengths and weaknesses of the others and make systems more efficient. Multidisciplinary Functions of Blockchain Technology in AI and IoT Applications deliberates upon prospects of blockchain technology using AI and IoT devices in various application domains. This book contains a comprehensive collection of chapters on machine learning, IoT, and AI in areas that include security issues of IoT, farming, supply chain management, predictive analytics, and natural languages processing. While highlighting these areas, the book is ideally intended for IT industry professionals, students of computer science and software engineering, computer scientists, practitioners, stakeholders, researchers, and academicians interested in updated and advanced research surrounding the

functions of blockchain technology in AI and IoT applications across diverse fields of research.

**Innovation and Research - A Driving Force for Socio-Econo-Technological Development** IGI Global

This book presents the proceedings of the 2nd International Congress on Innovation and Research—A Driving Force for Socio-Econo-Technological Development (CI3 2021). CI3 was held on September 1–3, 2021. It was organized by the Instituto Tecnológico Superior Rumiñahui and GDEON, in co-organization with Higher Institutes: Bolivariano de Tecnología, Central Técnico, Espíritu Santo, José Chiriboga Grijalva, ISMAC, Policía Nacional del Ecuador Vida Nueva; and sponsored by the Universidad Nacional Mayor de San Marcos (Peru), Universidade Federal de Goiás (Brazil) and City University of New York (United States). CI3 aims to disseminate the research project results that are being carried out in different Higher Education Institutions, research centers, and the business sector.

*Advances in Computing, Informatics, Networking and Cybersecurity* Springer Nature

This book presents an in-depth description of the Arrowhead Framework and how it fosters interoperability between IoT devices at service level, specifically addressing application. The Arrowhead Framework utilizes SOA technology and the concepts of local clouds to provide required automation capabilities such as: real time control, security, scalability, and engineering simplicity. Arrowhead Framework supports the realization of collaborative automation; it is the only IoT Framework that addresses global interoperability across multiplet SOA technologies. With these features, the Arrowhead Framework enables the design, engineering, and operation of large automation systems for a wide range of applications utilizing IoT and CPS technologies. The book provides application examples from a wide number of industrial fields e.g. airline maintenance, mining maintenance, smart production, electro-mobility, automative test, smart cities—all in response to EU societal challenges. Features Covers the design and implementation of IoT based automation systems. Industrial usage of Internet of Things and Cyber Physical Systems made feasible through Arrowhead Framework. Functions as a design cookbook for building automation systems using IoT/CPS and Arrowhead Framework. Tools, templates, code etc. described in the book will be accessible through open sources project Arrowhead Framework Wiki at [forge.soa4d.org/](https://forge.soa4d.org/) Written by the leading experts in the European Union and around the globe.

*Inventive Communication and Computational Technologies* Springer Nature

Industrial Internet of Things: Technologies, Design, and Applications addresses the complete functional framework

workflow in IoT technology. It explores basic and high-level concepts, thus serving as a manual for those in the industry while also helping beginners. The book incorporates the working methodology of Industrial IoT works, is based on the latest technologies, and will cover the major challenges, issues, and advances while exploring data-based intelligent and automated systems and their implications to the real world. The book discusses data acquisition, security, learning, intelligent data analysis, and case studies related to Industrial IoT-based applications.

**Unmanned Aerial Systems in Agriculture** Springer Nature

This book constitutes the refereed post-conference proceedings of the 5th International Conference on Future Access Enablers for Ubiquitous and Intelligent Infrastructures, FABULOUS 2021, held in May 2021. Due to COVID-19 pandemic the conference was held virtually. This year's conference topic covers security of innovative services and infrastructure in traffic, transport and logistic ecosystems. The 30 revised full papers were carefully reviewed and selected from 60 submissions. The papers are organized in thematic sessions on: Internet of things and smart city; smart environment applications; information and communications technology; smart health applications; sustainable communications and computing infrastructures.

**Modern IoT Onboarding Platforms for Advanced Applications** MDPI

*Inorganic Pollutants in Water* provides a clear understanding of inorganic pollutants and the challenges they cause in aquatic environments. The book explores the point of source, how they enter water, the effects they have, and their eventual detection and removal. Through a series of case studies, the authors explore the success of the detection and removal techniques they have developed. Users will find this to be a single platform of information on inorganic pollutants that is ideal for researchers, engineers and technologists working in the fields of environmental science, environmental engineering and chemical engineering/ sustainability. Through this text, the authors introduce new researchers to the problem of inorganic contaminants in water, while also presenting the current state-of-the-art in terms of research and technologies to tackle this problem. - Presents existing solutions to pollution problems, along with their challenges - Includes case studies that detail success stories, challenges and the implementation of these tools - Provides solutions that are both economically and ecologically sustainable

*Applications of Computational Intelligence in Multi-Disciplinary Research* CRC Press

The Industry 4.0 paradigm has led to the creation of new opportunities for taking advantage of a set of diverse

technologies in the manufacturing domain. This book touches on a series of advanced technologies and research fields, including Internet of Things, Augmented and Virtual Reality, Machine Learning, Advanced Robotics, Additive Manufacturing, System and Process Simulation, Computer-Aided Design/Engineering/Manufacturing/Process Planning Systems as well as Product Lifecycle Management Platforms. The topics covered span a series of diverse areas related to a) product design and development, b) manufacturing systems and operations, c) process engineering, and d) Industry 4.0 technologies review and realization.

#### **Intelligent Systems in Healthcare and Disease**

##### **Identification using Data Science** Springer Nature

This book presents select proceedings of the Virtual International Conference on Futuristic Communication and Network Technologies (VICFCNT 2021). It covers various domains in communication engineering and networking technologies. This volume comprises recent research in areas like cyber-physical systems, acoustics, speech & video signal processing, and IoT. This book is a collated work of academicians, researchers, and industry personnel from the international arena. This book will be useful for researchers, professionals, and engineers working in the core areas of electronics and communication.

##### **Cybersecurity in the Age of Smart Societies** Springer Nature

Applications of Computational Intelligence in Multi-Disciplinary Research provides the readers with a comprehensive handbook for applying the powerful principles, concepts, and algorithms of computational intelligence to a wide spectrum of research cases. The book covers the main approaches used in computational intelligence, including fuzzy logic, neural networks, evolutionary computation, learning theory, and probabilistic methods, all of which can be collectively viewed as soft computing. Other key approaches included are swarm intelligence and artificial immune systems. These approaches provide researchers with powerful tools for analysis and problem-solving when data is incomplete and when the problem under consideration is too complex for standard mathematics and the crisp logic approach of Boolean computing. - Provides an overview of the key methods of computational intelligence, including fuzzy logic, neural networks, evolutionary computation, learning theory, and probabilistic methods - Includes case studies and real-world examples of computational intelligence applied in a variety of research topics, including bioinformatics, biomedical engineering, big data analytics, information security, signal processing, machine learning, nanotechnology, and optimization techniques - Presents a thorough technical explanation on how computational intelligence is applied that is suitable for a wide range of multidisciplinary and interdisciplinary research

#### **Artificial Intelligence and Its Practical Applications in the Digital Economy** IGI Global

This open access book explores the concept of Industry 4.0, which presents a considerable challenge for the production and service sectors. While digitization initiatives are usually integrated into the central corporate strategy of larger companies, smaller firms often have problems putting Industry 4.0 paradigms into practice. Small and medium-sized enterprises (SMEs) possess neither the human nor financial resources to systematically investigate the potential and risks of introducing Industry 4.0. Addressing this obstacle, the international team of authors focuses on the development of smart manufacturing concepts, logistics solutions and managerial models specifically for SMEs. Aiming to provide methodological frameworks and pilot solutions for SMEs during their digital transformation, this innovative and timely book will be of great use to scholars researching technology management, digitization and small business, as well as practitioners within manufacturing companies.

#### **Inorganic Pollutants in Water** Springer Nature

The Department of Electronics and Communication Engineering of KIET Group of Institutions, Delhi-NCR organized the 4th International Conference ICCE-2020 during November 28-29, 2020. Information compiled in this book is based on the 114

research papers of excellent quality covering different domains of Electronics and Communication Engineering, Computer Science Engineering, Information Technology, Electrical Engineering, Electronics and Instrumentation Engineering. The subject areas treated in the book are: Satellite, Radar and Microwave Techniques, Secure, Smart, and Reliable Networks, Next Generation Networks, Devices & Circuits, Signal & Image Processing, New Emerging Technologies, having the central focus on Recent Trends in Communication & Electronics (ICCE-2020). In addition, a few themes based on Special Sessions have also been conducted in ICCE-2020. The objective of the book resulting from the 4th International Conference on Recent Trends in Communication & Electronics (ICCE-2020) is to provide a resource for the study and research work for an interested audience comprising of researchers, students, audience, and practitioners in the areas of Communications & Computing Systems.

##### **Proceedings of Eighth International Congress on Information and Communication Technology** CRC Press

The Internet of Things (IoT) is a closed-loop system in which a set of sensors is connected to servers via a network. The data from sensors are stored in a database and then analysed by IoT analytics. The results are usually employed by either humans, machines, or software to make decisions about the operation of the system. This book provides an interface between the main disciplines of engineering/technology and the organizational, administrative, and planning capabilities of managing the IoT.

##### **Vehicular Ad Hoc Networks** Springer Nature

This is an open access book. The book starts with an introductory IoT overview related to its selected scope of applications. There is no doubt that digitalization solutions from Industry 4.0 and the Internet of Things (IoT) can be perceived as excellent candidate strategies capable of handling the above-stated issues concerning measurements and transparency. However, IoT tools themselves can provide appropriate data only, while their efficient integration and application are possible using a dedicated onboarding platform only. To settle this issue, the book undertakes the problem of modern IoT onboarding platforms for the advanced applications pertaining to manufacturing and logistics. In particular, instead of deliberating about a possible hypothetical platforms, an existing and efficient one is employed, which is called KIS.ME. KIS.ME (Keep It Simple. Manage Everything) is a complete IoT solution for a simple integration in manufacturing and logistics. It is composed of a set of hardware devices (KIS.BOX, KIS.IO and KIS.LIGHT), which are intuitively integrated with the cloud platform called KIS.MANAGER. Moreover, the entire platform is an open one, and hence, it enables communication with external services using KIS.API architecture. The application range of KIS.ME is extensive. This is due to the intuitive implementation and visualization of a user-defined key performance indicators (KPIs), which constitute effective optimization measures. Thus, the potential areas of application of KIS.ME are, e.g., manufacturing, warehouse management and logistics. Indeed, triggering and/or ordering various tasks can be immediately and efficiently implemented with KIS.ME. Such an approach translates directly to the savings of the time and energy. Subsequently, a gradual introduction to KIS.ME platform is presented, which constitutes the base for further advanced applications including logistics, control and maintenance of various processes. Finally, the potential of KIS.API communication framework is utilized for an efficient communication with external services.

##### **Internet-of-Things (IoT) Systems** CRC Press

The advancements in artificial intelligence and machine learning have significantly affected the way financial services are offered and adopted today. Important financial decisions such as investment decision making, macroeconomic analysis, and credit evaluation are becoming more complex within the field of finance. Artificial intelligence and machine learning, with their spectacular success accompanied by unprecedented accuracies, have become increasingly important in the finance world. Advanced Machine Learning Algorithms for Complex Financial Applications

provides innovative research on the roles of artificial intelligence and machine learning algorithms in financial sectors with special reference to complex financial applications such as financial risk management in big data environments. In addition, the book addresses broad challenges in both theoretical and application aspects of artificial intelligence in the field of finance. Covering essential topics such as secure transactions, financial monitoring, and data modeling, this reference work is crucial for financial specialists, researchers, academicians, scholars, practitioners, instructors, and students.

##### **HCI International 2021 - Late Breaking Posters** Elsevier

This book discusses the use of converged technology, a rapidly growing area that enhancements smart devices, communication, Internet of things (IoT), and augmented reality (AR). The book also explores the need for convergence of IoT and AR for various purposes, like personalized services, context awareness, and bridging the gap between the physical and digital world. Furthermore, it examines the implementation of IoT and AR in use cases to define pathways that allow application developers to design modern solutions to satisfy requirements like scalability, abstraction and security. Featuring an introduction, and covering sensing techniques, and effective architecture in AR-based IoT real-time use cases, the book also addresses the issues and challenges in designing standard architecture and middleware to support diverse applications. Given its scope, it is a valuable resource for teachers and students in engineering, as well as researchers, developers, and users working in multi-disciplinary areas.

##### **Sensors for Health Monitoring** Springer Nature

The conference aims at creating synergies of "practice and research" increasing the potential and commercial viability of research and development in the field of innovative technologies in management of manufacturing systems, Industry 4.0, logistics and traffic/transport system. The ambition of the MMS 2018 conference is to establish channels of communication and disseminate knowledge among stakeholders in mentioned ecosystem. Therefore, we cordially invite experts, researchers, academicians and practitioners in relevant fields to share their knowledge from the field of innovative ecosystem for management of manufacturing systems, Industry 4.0, logistics and traffic/transport system.

##### **Recent Trends in Communication and Electronics** MDPI

This book features high-quality papers presented at the International Conference on Computational Intelligence and Informatics (ICCI 2018), which was held on 28-29 December 2018 at the Department of Computer Science and Engineering, JNTUH College of Engineering, Hyderabad, India. The papers focus on topics such as data mining, wireless sensor networks, parallel computing, image processing, network security, MANETS, natural language processing and Internet of things.

##### **Proceedings of the Future Technologies Conference (FTC) 2024, Volume 2** European Alliance for Innovation

This book constitutes the refereed proceedings of the 11 workshops co-located with the 16th International Conference on Practical Applications of Agents and Multi-Agent Systems, PAAMS 2018, held in Toledo, Spain, in June 2018. The 47 full papers presented were carefully reviewed and selected from 72 submissions. The volume presents the papers that have been accepted for the following workshops: Workshop on Agents and Multi-agent Systems for AAL and e-HEALTH; Workshop on Agent based Applications for Air Transport; Workshop on Agent-based Artificial Markets Computational Economics; Workshop on Agent-Based Solutions for Manufacturing and Supply Chain; Workshop on MAS for Complex Networks and Social Computation; Workshop on Intelligent Systems and Context Information Fusion; Workshop on Multi-agent based Applications for Energy Markets, Smart Grids and Sustainable Energy Systems; Workshop on Multiagent System based Learning Environments; Workshop on Smart Cities and Intelligent Agents; Workshop on Swarm Intelligence and Swarm Robotics; Workshop on Multi-Agent Systems and Simulation.

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