How Blockchain And Energy Monitors Will Create The

As we enter the Industrial Revolution 4.0, demands for an increasing degree of trust and privacy protection continue to be voiced. The development of blockchain technology is very important because it can help frictionless and transparent financial transactions and improve the business experience, which in turn has far-reaching effects for economic, psychological, educational and organizational improvements in the way we work, teach, learn and care for ourselves and each other. Blockchain is an eccentric technology, but at the same time, the least understood and most disruptive technology of the day. This book covers the latest technologies of cryptocurrencies and blockchain technology and their applications. This book discusses the blockchain and cryptocurrencies related issues and also explains how to provide the security differently through an algorithm, framework, approaches, techniques and mechanisms. A comprehensive understanding of what blockchain is and how it works, as well as insights into how it will affect the future of your organization and industry as a whole and how to integrate blockchain technology into your business strategy. In addition, the book explores the blockchain and its with other technologies like Internet of Things, big data and artificial intelligence, etc.

Industrial internet of things (IIoT) is changing the face of industry by completely redefining the way stakeholders, enterprises, and machines connect and interact with each other in the industrial digital ecosystem. Smart and connected factories, in which all the machinery transmits real-time data, enable industrial data analytics for improving operational efficiency, productivity, and industrial processes, thus creating new business opportunities, asset utilization, and connected services. IIoT leads factories to step out of legacy environments and arcane processes towards open digital industrial ecosystems. Innovations in the Industrial Internet of Things (IIoT) and Smart Factory is a pivotal reference source that discusses the development of models and algorithms for predictive control of industrial operations and focuses on optimization of industrial operational efficiency, rationalization, automation, and maintenance. While highlighting topics such as artificial intelligence, cyber security, and data collection, this book is ideally designed for engineers, manufacturers, industrialists, managers, IT consultants, practitioners, students, researchers, and industrial industry professionals.

This two-volume set of LNCS 12736-12737 constitutes the refereed proceedings of the 7th International Conference on Artificial Intelligence and Security, ICAIS 2021, which was held in Dublin, Ireland, in July 2021. The conference was formerly called "International Conference on Cloud Computing and Security" with the acronym ICCCS. The total of 93 full papers and 29 short papers presented in this two-volume proceedings was carefully reviewed and selected from 1013 submissions. Overall, a total of 224 full and 81 short papers were accepted for ICAIS 2021; the other accepted papers are presented in CCIS 1422-1424. The papers were organized in topical sections as follows: Part I: Artificial intelligence; and big data Part II: Big data; cloud computing and security; encryption and cybersecurity; information hiding; IoT security; and multimedia forensics

Business Purpose Design is an essential guide for a human-centric and holistic purpose for businesses. Discontinuity, uncertainty, complexity, and ambiguity are driving forces of our world. Entire markets, industries, departments, and specialist areas interact and correlate with each other - unplanned and open-ended. In our world, orientation and a common driver is key to navigate, to distinguish relevant information from irrelevant, to take decisions and lead companies to create a positive future. Together with 32 outstanding personalities, from thought leaders, executives, founders, designers, and scientists, Monika looks at the 30 most relevant topics für purpose entrepreneurship. Bonus: Many examples, trend outlooks, and conceptional images inspire new thoughts and ideas - and reassure existing developments. Furthermore, takeaways for every topic offer a hands-on guide to act right away. With the Business Purpose Design model, organizations of any size can design, build, and grow their business towards becoming impact-driven. It provides a toolkit, and over 90 practical tips to design or and implement purpose within an organization right away. It allows for many perspectives. Co-created by over 32 practitioners from 30 disciplines. Illustrated with a critical eye by one of Europe's most sophisticated graphic-recording duo. Specially designed for executives, consultants, entrepreneurs, coaches, managers, designers and leaders of all types of organizations. www.business-purpose.com

The blockchain revolution has drastically impacted global economics and the strategic practices within different industries. Cryptocurrency specifically has forever changed the face of business and the implementation of business online. While innovative, people are still in the early stages of building and developing blockchain technology and its applications, and it is critical that researchers and practitioners obtain a better understanding of this global phenomenon. Architectures and Frameworks for Developing and Applying Blockchain Technology is an essential reference source that presents the technological foundation, recent research findings, developments, and critical issues associated with blockchain technology from both computer science and social science perspectives. Featuring topics such as artificial intelligence, digital economy, and network technology, this book is ideally designed for academics, researchers, industry leaders, IT consultants, engineers, programmers, practitioners, government officials, policymakers, and students.

Digital Nations and Smart Cities are rapidly evolving, and the resulting digitalization is leading to several benefits while also exposing the citizens to unforeseen risks. Technologies like Blockchain are enabling risk management for secured automation. The book takes a close look at various paradigms of Smart cities' & Digital Nations' Governance while relating to the application of these principles in real life through the case study of Singapore, which is one of the world's top 3 densest, but also, is one of the most sustainable cities. This book will be a useful resource for professionals, consultants, government servants, and students who wish to come to grip with the emerging technologies and to understand their applications in governance and play an active role in community-building activities. The book explores the emergence, evolution, and adoption of advanced digital technologies like IoT, Analytics and Blockchain for improved governance, sustainable development, and better quality of life and happiness for citizens across the world.

This book focuses on emerging issues following the integration of artificial intelligence systems in our daily lives. It focuses on the cognitive, visual, social and analytical aspects of computing and intelligent technologies, highlighting ways to improve technology acceptance, effectiveness, and efficiency. Topics such as responsibility, integration and training are discussed throughout. The book also reports on the latest advances in systems engineering, with a focus on societal challenges and next-generation systems and applications for meeting them. It also discusses applications in smart grids and infrastructures, systems engineering education as well as defense and aerospace. The book is based on both the AHFE 2018 International Conference on Human Factors in Artificial Intelligence and Social Computing, Software and Systems Engineering, The Human Side of Service Engineering and Human Factors in Energy, July 21–25, 2018, Loews Sapphire Falls Resort at Universal Studios, Orlando, Florida, USA.

"This book presents updated research trends in energy harvesting, energy management and green technology as well as highlighting new product and application developments towards a wider acceptance of smart and green energy and what additions of ICT such as WSN and smart applications have contributed toward green technology"--

This book looks at the growing segment of Internet of Things technology (IoT) known as Internet of Medical Things (IoMT), an automated system that aids in bridging the gap between isolated and rural communities and the critical healthcare services that are available in more populated and urban areas. Many technological aspects of IoMT are still

being researched and developed, with the objective of minimizing the cost and improving the performance of the overall healthcare system. This book focuses on innovative IoMT methods and solutions being developed for use in the application of healthcare services, including post-surgery care, virtual home assistance, smart real-time patient monitoring, implantable sensors and cameras, and diagnosis and treatment planning. It also examines critical issues around the technology, such as security vulnerabilities, IoMT machine learning approaches, and medical data compression for lossless data transmission and archiving. Internet of Medical Things is a valuable reference for researchers, students, and postgraduates working in biomedical, electronics, and communications engineering, as well as practicing healthcare professionals.

The Network Society is the essential guide to the past, consequences and future of digital communication, and forms a comprehensive introduction to how new media functions in contemporary society. New to this edition: Renewed focus on the digital media economy, including examples, cases and real-world applications New coverage of disinformation and fake news, including deep fake videos Expanded treatment of the data economy, artificial intelligence, big data, robotics, and the economy and regulation of the Internet Updates to the story of digital youth culture, as a foreshadow of future new media use Clear and engaging, this is a vital guide for digital and new media students seeking to understand a diverse, fast-moving field.

This book constitutes the refereed proceedings of the 14th International Conference on Evaluation of Novel Approaches to Software Engineering, ENASE 2019, held in Heraklion, Crete, Greece, in May 2019. The 19 revised full papers presented were carefully reviewed and selected from 102 submissions. The papers included in this book contribute to the understanding of relevant trends of current research on novel approaches to software engineering for the development and maintenance of systems and applications, specially with relation to: model-driven software engineering, requirements engineering, empirical software engineering, service-oriented software engineering, business process management and engineering, knowledge management and engineering, reverse software engineering, software process improvement, software change and configuration management, software metrics, software patterns and refactoring, application integration, software architecture, cloud computing, and formal methods.

This book covers advances in system, control and computing. This book gathers selected high-quality research papers presented at the International Conference on Advances in Systems, Control and Computing (AISCC 2020), held at MNIT Jaipur during February 27–28, 2020. The first part is advances in systems and it is dedicated to applications of the artificial neural networks, evolutionary computation, swarm intelligence, artificial immune systems, fuzzy system, autonomous and multi-agent systems, machine learning, other intelligent systems and related areas. In the second part, machine learning and other intelligent algorithms for design of control/control analysis are covered. The last part covers advancements, modifications, improvements and applications of intelligent algorithms.

A one-of-a-kind examination of the latest developments in machine control In Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances, accomplished electronics researcher and engineer Alessandro Massaro delivers a comprehensive exploration of the latest ways in which people have achieved machine control, including automated vision technologies, advanced electronic and micro-nano sensors, advanced robotics, and more. The book is composed of nine chapters, each containing examples and diagrams designed to assist the reader in applying the concepts discussed within to common issues and problems in the real-world. Combining electronics and mechatronics to show how they can each be implemented in production line systems, the book presents insightful new ways to use artificial intelligence in production line machines. The author explains how facilities can upgrade their systems to an Industry 5.0 environment. Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances also provides: A thorough introduction to the state-of-the-art in a variety of technological areas, including flexible technologies, scientific approaches, and intelligent automatic systems Comprehensive explorations of information technology infrastructures that support Industry 5.0 facilities, including production process simulation Practical discussions of human-machine interfaces, including mechatronic machine interface architectures integrating sensor systems and machine-to-machine (M2M) interfaces In-depth examinations of internet of things (IoT) solutions in industry, including cloud computing IoT Perfect for professionals working in electrical industry sectors in manufacturing, production line manufacturers, engineers, and members of R&D industry teams, Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances will also earn a place in libraries of technicians working in the process industry.

The objective of this book is to teach what IoT is, how it works, and how it can be successfully utilized in business. This book helps to develop and implement a powerful IoT strategy for business transformation as well as project execution. Digital change, business creation/change and upgrades in the ways and manners in which we work, live, and engage with our clients and customers, are all enveloped by the Internet of Things which is now named "Industry 5.0" or "Industrial Internet of Things. The sheer number of IoT(a billion+), demonstrates the advent of an advanced business society led by sustainable robotics and business intelligence. This book will be an indispensable asset in helping businesses to understand the new technology and thrive.

Blockchain and artificial intelligence (AI) in industrial internet of things is an emerging field of research at the intersection of information science, computer science, and electronics engineering. The radical digitization of industry coupled with the explosion of the internet of things (IoT) has set up a paradigm shift for industrial and manufacturing companies. There exists a need for a comprehensive collection of original research of the best performing methods and state-of-the-art approaches in this area of blockchain, AI, and the industrial internet of things in this new era for industrial and manufacturing companies. Blockchain and AI Technology in the Industrial Internet of Things compares different approaches to the industrial internet of things and explores the direct impact blockchain and AI technology have on the betterment of the human life. The chapters

provide the latest advances in the field and provide insights and concerns on the concept and growth of the industrial internet of things. While including research on security and privacy, supply chain management systems, performance analysis, and a variety of industries, this book is ideal for professionals, researchers, managers, technologists, security analysts, executives, practitioners, researchers, academicians, and students looking for advanced research and information on the newest technologies, advances, and approaches for blockchain and AI in the industrial internet of things.

The electrical demands in several countries around the world are increasing due to the huge energy requirements of prosperous economies and the human activities of modern life. In order to economically transfer electrical powers from the generation side to the demand side, these powers need to be transferred at high-voltage levels through suitable transmission systems and power substations. To this end, high-voltage transmission systems and power substations are in demand. Actually, they are at the heart of interconnected power systems, in which any faults might lead to unsuitable consequences, abnormal operation situations, security issues, and even power cuts and blackouts. In order to cope with the ever-increasing operation and control complexity and security in interconnected high-voltage power systems, new architectures, concepts, algorithms, and procedures are essential. This book aims to encourage researchers to address the technical issues and research gaps in high-voltage transmission systems and power substations in modern energy systems.

The interest in Blockchain technology and its ability of creating consensus in decentralized networks is significantly increasing. This book provides a detailed consideration of the Blockchain technology and its possible implementations within the scope of energy management. Before investigating the functionality of a Blockchain, the basic mathematical problem that Blockchain solves, known as the Byzantine Generals Problem, is examined. Furthermore, this book describes the Ethereum platform, as most Blockchain energy applications are based on Smart Contracts stored in the Ethereum Blockchain. Afterwards, a descriptive insight into ongoing projects in the field of energy management is given. Conclusively, it is illustrated how a local peer-to-peer energy market can be implemented, based on the Ethereum Blockchain.

This volume deals with recent advances in and applications of computational intelligence and advanced machine learning methods in power systems, heating and cooling systems, and gas transportation systems. The optimal coordinated dispatch of the multi-energy microgrids with renewable generation and storage control using advanced numerical methods is discussed. Forecasting models are designed for electrical insulator faults, the health of the battery, electrical insulator faults, wind speed and power, PV output power and transformer oil test parameters. The loads balance algorithm for an offshore wind farm is proposed. The information security problems in the energy internet are analyzed and attacked using information transmission contemporary models, based on blockchain technology. This book will be of interest, not only to electrical engineers, but also to applied mathematicians who are looking for novel challenging problems to focus on.

Wireless communication is continuously evolving to improve and be a part of our daily communication. This leads to improved quality of services and applications supported by networking technologies. We are now able to use LTE, LTE-Advanced, and other emerging technologies due to the enormous efforts that are made to improve the quality of service in cellular networks. As the future of networking is uncertain, the use of deep learning and big data analytics is a point of focus as it can work in many capacities at a variety of levels for wireless communications. Implementing Data Analytics and Architectures for Next Generation Wireless Communications addresses the existing and emerging theoretical and practical challenges in the design, development, and implementation of big data algorithms, protocols, architectures, and applications for next generation wireless communications and their applications in smart cities. The chapters of this book bring together academics and industrial practitioners to exchange, discuss, and implement the latest innovations and applications of data analytics in advanced networks. Specific topics covered include key encryption techniques, smart home appliances, fog communication networks, and security in the internet of things. This book is valuable for technologists, data analysts, networking experts, practitioners, researchers, academicians, and students.

This book is a practical guide to the evolving landscape of finance, highlighting how it's changing our relationship with money and how financial technology, together with macroeconomic and societal change, is rewriting the story of how business is done in developing economies. Financial services companies are trying to become more customer focused, but struggling to help huge customer segments, particularly in developing economies. Alternative financial models and tools are emerging, which are being embraced by consumers and incumbents. In large parts of the developing world, alternative services are leapfrogging traditional finance, meaning more and more people have access to finance without ever needing a bank. Meanwhile, the barriers around financial services companies are crumbling, as they become more reliant on integration with new providers and alternative types of service. Financial products can no longer be viewed in isolation, but as part of a service landscape that supports how people do life. This means rethinking how our businesses are designed, motivated and organised, and letting go of the old ways of thinking about supply and demand. With practical steps businesses and, in particular, financial services organisations need to take to participate in a global service ecosystem, this book will be of interest to financial professionals who work in banking, financial technology, and development finance.

This book, with contributions by both leading scholars and industry experts, provides a coherent framework for understanding complex determinants and patterns of industry competitiveness. Divided into eight parts, it covers both quantitative and qualitative research on the following topics: technologies, economic development, and human resources in Industry 4.0; management in the digital economy; artificial intelligence and knowledge management approaches; drivers of sustainable and innovative development in corporations; resilient and competitive systems in the energy sector; compliance and anti-corruption mechanisms; and competence networks and technological integration. Thanks to its highly stimulating discussions on the determinants and patterns of industry competitiveness, this book appeals to a wide readership.

This reference presents information about different facets of IoT and blockchain systems that have been recently proposed for practical situations. Chapters provide knowledge about how these technologies are applied in functions related to trust management, identity management, security threats, access control and privacy. Key Features: - Introduces the reader to

fundamental concepts of IoT and blockchain technology - reports advances in the field of IoT, ubiquitous computing and blockchain computing - includes the applications of different frameworks - explains the role of blockchains in improving IT security - provides examples of smart grids, data transmission models, digital business platforms, agronomics and big data solutions - Includes references for further reading Blockchain Applications for Secure IoT Frameworks Technologies Shaping the Future is a handy reference for information technology professionals and students who want updated information about applications of IoT and blockchains in secure operational and business processes.

In order to meet global emissions targets, Renewable Energy Sources (RES) will have to be exploited. The subsequent decentralisation of the electrical grid, caused in large parts by residential rooftop Photovoltaic (PV) systems, in turn presents a challenge to existing infrastructure, markets, and business models. Households which only consumed electric energy can now invest into a private PV system and produce their own electricity, thus becoming prosumers. During the day prosumers can generate more electric energy than they consume, requiring them to feed the extra energy back into the grid. The concept of Local Energy Markets (LEMs) encompasses the peer-to-peer (P2P) exchange of energy between prosumers and neighbouring consumers and represents a novel remuneration model for investors in residential PV. The progressing roll-out of smart meters and the subsequent availability of high-frequent energy data holds the opportunity to realise new control schemes and business models for the smart grid. However, billing is still based on regular readouts, which are often done by hand, and data available from deployed smart meters is commonly restrictive, and suffers from infrequent collection, reduced sampling intervals, and limited value range. Blockchain-technology has gained popularity as the underpinning mechanism that has enabled the pseudonymous and decentralised electronic cash system Bitcoin. The technology has spurred the development of a whole ecosystem of blockchain platforms, which, as of August 2019, hold a market capitalisation over USD 200 billion in total. Blockchain-technology enables untrusted or semi-trusted parties to engage in transactions carrying financial value and arbitrary data, which can replace mediating third parties. Combining LEMs and blockchain-technology allows prosumers and consumers to trade energy directly without having to go through the authority of a utility company. The exchange of local energy based.

This book embodies principles and applications of advanced soft computing approaches in engineering, healthcare and allied domains directed toward the researchers aspiring to learn and apply intelligent data analytics techniques. The first part covers AI, machine learning and data analytics tools and techniques and their applications to the class of several hospital and health real-life problems. In the later part, the applications of AI, ML and data analytics shall be covered over the wide variety of applications in hospital, health, engineering and/or applied sciences such as the clinical services, medical image analysis, management support, quality analysis, bioinformatics, device analysis and operations. The book presents knowledge of experts in the form of chapters with the objective to introduce the theme of intelligent data analytics and discusses associated theoretical applications. At last, it presents simulation codes for the problems included in the book for better understanding for beginners.

For business managers, the biggest question surrounding the Internet of Things is what to do with it. This book examines the way IoT is being used today -- and will be used in the future -- to help you craft a robust plan for your organization. Focusing on the business implications of Internet of Things, Kranz describes the sheer impact, spread, and opportunities arising every day, and how business leaders can implement Internet of Things today to realize tangible business advantages.

This report analyses international case studies of innovative business models and regulatory arrangements and provides recommendations for a truly smart energy system. "Active consumers who have access to distributed energy resources, such as solar photovoltaics, storage, electric vehicles and heating appliances will play a crucial role in the challenging transition to a low carbon energy system", explains Monica Giulietti, one of the report's authors. For fairer prices: use tariffs based on capacity rather than on volume The current network tariff regime is not optimal for a smart energy system. Researchers recommend that tariffs be more directly linked to costs. A more advanced tariff structure is feasible in a smart electricity network: tariffs can be dependent on time and location and adapt to local network congestion. "A shift towards tariffs based on capacity will also reduce the subsidisation of the energy system by poorer consumers to the richer ones, thereby improving the fairness of the tariff structure", says Bert Willems, co-author of the report. The DSO-TSO interaction models are to be enhanced The report highlights different proposals for DSO-TSO interactions that allow the trade of flexible services provided by distributed energy resources under different regulatory and market contexts, in the United Kingdom, Australia, New York and Europe. "While we've observed that in all cases an expansion of the DSO's roles, capabilities and coordination with the TSO is required, our analysis also shows that most jurisdictions have not yet identified their preferred organisational set-up. The European Commission should systematically take into account the differences of Member States, such as the number, size and independence of DSOs, in future studies or impact assessments", says Karim Anaya, co-author of the study. Both price and non-price factors are required for consumers to engage Bringing together smart meter technology, blockchain and apps can help consumers to take part in energy transactions by informing them about the advantages provided by distributed energy resources at a given time. However, these technologies can only help if the costs for consumers are low. Otherwise, non-price factors such as climate activism or environmental preferences will be the sole drivers for consumers to participate in this system. Although financial benefits only cannot motivate consumers' engagement in a complex system, they are significant signals. And we need strong signals if we want consumers to modify longstanding habits. Going off-grid: the risk of death spiral The authors warn that, in the long run, when the costs of storage and local generation are expected to drop, local energy communities might decide to disconnect from the distribution network and operate on a stand-alone basis. The cost of the distribution network will then have to be covered by the remaining network users who, as a result, will see their energy bills increase. This could lead to a "death spiral" where more customers leave the distribution network (though unlikely in northern Europe), making these obsolete. Networks would go bankrupt and only small island grids would remain. "Smart consumers are highly dependent on the ecosystem they are operating in. We can learn from international experiences that Europe needs to develop innovative regulatory models and be ready to test new institutional schemes that involve consumers to support the energy transition. The work ahead goes beyond monitoring what the Clean Energy Package can deliver, we have to anticipate new trends and take action to give more clarity to what DSOs and TSOs can do together and avoid new bottlenecks", concludes Chloé Le Coq.

This books provides a comprehensive platform to the scientific, education and research communities working on various fields related to sustainable energy. It covers the exploration, generation and application of this area to meet societal needs as well as addressing global issues related to the environment. The content of this book presents research related to energy and

how to tackle climate change as a comprehensive framework based on the success of the Millennium Development Goals (MDGs). The authors use the scientific method to analyze and deliver viable technical solutions, demonstrating how chemistry and engineering can be combined to solve technically challenging problems. While maintaining high scientific rigor, a quantitative approach is offered in select chapters to the study of energy related to our societies increasing need for electrical and chemical energy feedstocks.

In recent years, intelligent cities, also known as smart cities or cognitive cities, have become a perceived solution for improving the quality of life of citizens while boosting the efficiency of city services and processes. This new vision involves the integration of various sectors of society through the use of the internet of things. By continuing to enhance research for the better development of the smart environments needed to sustain intelligent cities, citizens will be empowered to provision the e-services provided by the city, city officials will have the ability to interact directly with the community as well as monitor digital environments, and smart communities will be developed where citizens can enjoy improved quality of life.

Developing and Monitoring Smart Environments for Intelligent Cities compiles the latest research on the development, management, and monitoring of digital cities and intelligent environments into one complete reference source. The book contains chapters that examine current technologies and the future use of internet of things frameworks as well as device connectivity approaches, communication protocols, security challenges, and their inherent issues and limitations. Including unique coverage on topics such as connected vehicles for smart transportation, security issues for smart homes, and building smart cities for the blind, this reference is ideal for practitioners, urban developers, urban planners, academicians, researchers, and students.

The convergence of Artificial Intelligence (AI) in blockchain creates one of the world's most reliable technology-enabled decision-making systems that is virtually tamper-proof and provides solid insights and decisions. The integration of AI and Blockchain affects many aspects from food supply chain logistics and healthcare record sharing to media royalties and financial security. It is imperative that regulatory standards are emphasized in order to support positive outcomes from the integration of AI in blockchain technology. Regulatory Aspects of Artificial Intelligence on Blockchain provides relevant legal and security frameworks and the latest empirical research findings in blockchain and AI. Through the latest research and standards, the book identifies and offers solutions for overcoming legal consequences that pertain to the application of AI into the blockchain system, especially concerning the usage of smart contracts. The chapters, while investigating the legal and security issues associated with these applications, also include topics such as smart contacts, network vulnerability, cryptocurrency, machine learning, and more. This book is essential for technologists, security analysts, legal specialists, privacy and data security practitioners, IT consultants, standardization professionals, researchers, academicians, and students interested in blockchain and AI from a legal and security viewpoint.

This book constitutes the refereed proceedings of the 32nd International Conference on Advanced Information Systems Engineering, CAiSE 2020, held in Grenoble, France, in June 2020.* The 33 full papers presented in this volume were carefully reviewed and selected from 185 submissions. The book also contains one invited talk in full paper length. The papers were organized in topical sections named: distributed applications; AI and big data in IS; process mining and analysis; requirements and modeling; and information systems engineering. Abstracts on the CAiSE 2020 tutorials can be found in the back matter of the volume. *The conference was held virtually due to the COVID-19 pandemic.

Blockchain-Based Smart Grids presents emerging applications of blockchain in electrical system and looks to future developments in the use of blockchain technology in the energy market. Rapid growth of renewable energy resources in power systems and significant developments in the telecommunication systems has resulted in new market designs being employed to cover unpredictable and distributed generation of electricity. This book considers the marriage of blockchain and grid modernization, and discusses the transaction shifts in smart grids, from centralized to peer-to-peer structures. In addition, it addresses the effective application of these structures to speed up processes, resulting in more flexible electricity systems. Aimed at moving towards blockchain-based smart grids with renewable applications, this book is useful to researchers and practitioners in all sectors of smart grids, including renewable energy providers, manufacturers and professionals involved in electricity generation from renewable sources, grid modernization and smart grid applications.

As technology continues to saturate modern society, agriculture has started to adopt digital computing and data-driven innovations. This emergence of "smart" farming has led to various advancements in the field, including autonomous equipment and the collection of climate, livestock, and plant data. As connectivity and data management continue to revolutionize the farming industry, empirical research is a necessity for understanding these technological developments. Artificial Intelligence and IoT-Based Technologies for Sustainable Farming and Smart Agriculture provides emerging research exploring the theoretical and practical aspects of critical technological solutions within the farming industry. Featuring coverage on a broad range of topics such as crop monitoring, precision livestock farming, and agronomic data processing, this book is ideally designed for farmers, agriculturalists, product managers, farm holders, manufacturers, equipment suppliers, industrialists, governmental professionals, researchers, academicians, and students seeking current research on technological applications within agriculture and farming.

The four-volume set LNCS 11746–11749 constitutes the proceedings of the 17th IFIP TC 13 International Conference on Human-Computer Interaction, INTERACT 2019, held in Paphos, Cyprus, in September 2019. The total of 111 full papers presented together with 55 short papers and 48 other papers in these books was carefully reviewed and selected from 385 submissions. The contributions are organized in topical sections named: Part I: accessibility design principles; assistive technology for cognition and neurodevelopment disorders; assistive technology for mobility and rehabilitation; assistive technology for visually impaired; co-design and design methods; crowdsourcing and collaborative work; cyber security and e-voting systems; design methods; design principles for safety/critical systems. Part II: e-commerce; education and HCI curriculum I;

education and HCI curriculum II; eye-gaze interaction; games and gamification; human-robot interaction and 3D interaction; information visualization; information visualization and augmented reality; interaction design for culture and development I. Part III: interaction design for culture and development II; interaction design for culture and development III; interaction in public spaces; interaction techniques for writing and drawing; methods for user studies; mobile HCI; personalization and recommender systems; pointing, touch, gesture and speech-based interaction techniques; social networks and social media interaction. Part IV: user modelling and user studies; user experience; users' emotions, feelings and perception; virtual and augmented reality I; virtual and augmented reality II; wearable and tangible interaction; courses; demonstrations and installations; industry case studies; interactive posters; panels; workshops.

This comprehensive overview of IoT systems architecture includes in-depth treatment of all key components: edge, communications, cloud, data processing, security, management, and uses. Internet of Things: Concepts and System Design provides a reference and foundation for students and practitioners that they can build upon to design IoT systems and to understand how the specific parts they are working on fit into and interact with the rest of the system. This is especially important since IoT is a multidisciplinary area that requires diverse skills and knowledge including: sensors, embedded systems, real-time systems, control systems, communications, protocols, Internet, cloud computing, large-scale distributed processing and storage systems, AI and ML, (preferably) coupled with domain experience in the area where it is to be applied, such as building or manufacturing automation. Written in a reader-minded approach that starts by describing the problem (why should I care?), placing it in context (what does this do and where/how does it fit in the great scheme of things?) and then describing salient features of solutions (how does it work?), this book covers the existing body of knowledge and design practices, but also offers the author's insights and articulation of common attributes and salient features of solutions such as IoT information modeling and platform characteristics.

This 2-volume book covers the state-of-the-art of the research and practices on eco-design. It covers the latest topics in the field: e.g. global eco-design management, big data in eco-design, social perspectives in eco-design; as well as emphasizing the developments in emerging economies such as Asian countries. Eco-design of products and product-related services are indispensable to realize the circular economy and to increase resource efficiencies of our society. Eco-design practices are necessary both in developed countries and developing countries. The book chapters are contributed by the worldwide authors, especially authors from East Asian countries, European countries, and Southeast Asian countries, and contains selected presentations at the EcoDesign2017 symposium (10th International Symposium on Environmentally Conscious Design and Inverse Manufacturing). The first volume highlights products and services, the chapters include the product life cycle design and business strategy, technologies for the future and sustainability, as well as social perspectives in eco-design.

Cryptocurrencies and Blockchain Technology ApplicationsJohn Wiley & Sons

The seven volumes LNCS 12249-12255 constitute the refereed proceedings of the 20th International Conference on Computational Science and Its Applications, ICCSA 2020, held in Cagliari, Italy, in July 2020. Due to COVID-19 pandemic the conference was organized in an online event. Computational Science is the main pillar of most of the present research, industrial and commercial applications, and plays a unique role in exploiting ICT innovative technologies. The 466 full papers and 32 short papers presented were carefully reviewed and selected from 1450 submissions. Apart from the general track, ICCSA 2020 also include 52 workshops, in various areas of computational sciences, ranging from computational science technologies, to specific areas of computational sciences, such as software engineering, security, machine learning and artificial intelligence, blockchain technologies, and of applications in many fields.

Effective transaction monitoring begins with proper implementation Anti-Money Laundering Transaction Monitoring Systems Implementation provides comprehensive guidance for bank compliance and IT personnel tasked with implementing AML transaction monitoring. Written by an authority on data integration and anti-money laundering technology, this book offers both high-level discussion of transaction monitoring concepts and direct clarification of practical implementation techniques. All transaction monitoring scenarios are composed of a few common elements, and a deep understanding of these elements is the critical factor in achieving your goal; without delving into actual code, this guide provides actionable information suitable for any AML platform or solution to help you implement effective strategies and ensure regulatory compliance for your organization. Transaction monitoring is increasingly critical to banking and business operations, and the effectiveness of any given solution is directly correlated to its implementation. This book provides clear guidance on all facets of AML transaction monitoring, from conception to implementation, to help you: Detect anomalies in the data Handle known abnormal behavior Comply with regulatory requirements Monitor transactions using various techniques Regulators all over the world are requiring banks and other companies to institute automated systems that combat money laundering. With many variables at play on both the transaction side and the solution side of the equation, a solid understanding of AML technology and its implementation is the most critical factor in successful detection. Anti-Money Laundering Transaction Monitoring Systems Implementation is an invaluable resource for those tasked with putting these systems in place, providing clear discussion and practical implementation guidance.

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