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Hands-On IoT Solutions with Blockchain

Discover how converging IoT and blockchain can help you build effective solutions

Packt Publishing Ltd *Integrate an end-to-end logistic chain using IBM Blockchain and IoT platforms Key Features Explore practical implementation of ledger technology in the IoT architecture Study security best practices for your smart devices Understand Blockchain implementation for end-to-end IoT solutions Book Description Blockchain has been the hot topic of late thanks to cryptocurrencies. To make matters more interesting, the financial market is looking for ways to reduce operational costs and generate new business models, and this is where blockchain solutions come into the picture. In addition to this, with Internet of Things (IoT) trending and Arduino, Raspberry Pi, and other devices flooding the market, you can now create cheap devices even at home. Hands-*

On IoT Solutions with Blockchain starts with an overview of IoT concepts in the current business scenario. It then helps you develop your own device on the IBM Watson IoT platform and create your fi rst IoT solution using Watson and Intel Edison.Once you are familiar with IoT, you will learn about Blockchain technology and its use cases. You will also work with the Hyperledger framework and develop your own Blockchain network. As you progress through the chapters, you'll work with problem statements and learn how to design your solution architecture so that you can create your own integrated Blockchain and IoT solution. The next set of chapters will explain how to implement end-to-end Blockchain solutions with IoT using the IBM Cloud platform. By the end of this book, you will have mastered the convergence of IoT and Blockchain technology and exploited the best practices and drivers to develop a bulletproof integrated solution. What you will learn Understand the key roles of IoT in the current market Study the different aspects of IBM Watson IoT platform Create devices, gateways, and applications connected to the platform Explore the fundamentals of Blockchain Define good use cases for Blockchain Discover the Hyperledger Fabric and Composer frameworks Develop an IBM Watson IoT application using a Intel Edison Integrate IoT with the Blockchain platform Who this book is for Hands-On IoT Solutions with Blockchain is for you if you are an Internet of Things (IoT) analyst, architect, engineer, or any stakeholder responsible for security mechanisms on an IoT infrastructure. This book is also for IT professionals who want to start developing solutions using Blockchain and IoT on the IBM Cloud platform. Basic understanding of IoT will assist you in understanding key concepts covered in the book.

Blockchain with Hyperledger Fabric

Build decentralized applications using Hyperledger Fabric 2, 2nd Edition

Packt Publishing Ltd *This book provides a comprehensive view of blockchain business models, governance structure, technology landscape, and architecture considerations. It will speed up your understanding and concept development for distributed ledgers.*

Mastering Hyperledger Fabric

Master The Art of Hyperledger Fabric on Kubernetes

Narendranath Reddy *Mastering Hyperledger Fabric. A one-stop solution to become Master in the Hyperledger Fabric Key Features Detailed Explanation of One way TLS and mutual TLS Detailed Explanation of docker sockets (docker.sock) Exposed functionalities of Fabric CLI's and SDK's Enterprise-level chaincode development A glimpse of Hyperledger Fabric 2.0 Advanced examples of Node and golang Fabric SDK Onboard new organization using Node.js SDK (No more CLI) CI/CD for chaincode (Install chaincode directly onto peers from GitHub using Node.js) Fabric setup explanation with Different real-time use cases Deployment of Hyperledger Fabric using docker swarm and Kubernetes Setup and configure caliper to check benchmarks Monitor consortium with Prometheus and grafana Monitor docker and docker swarm using swarmpit and logspout Logging consortium with ELK/EFK stack Some interesting open-source tools and some Bonus concepts Table of Contents Chapter1: Introduction to the Hyperledger Landscape Chapter2: The Disruptive Potential of TLS Chapter3: All about docker sockets Chapter4: Installation Guide Of Prerequisites Chapter5: All about fabric CLI Chapter6: All about SDK's (go lang and Node.js) Chapter7: Advanced Chaincode Development Chapter8: End to End fabric consortium with Solo consensus using docker with one use case Chapter9: End to End fabric Consortium with Kafka consensus using docker swarm with one use case Chapter10: End to End fabric Consortium with Raft consensus using Kubernetes with one use case Chapter11: Private Data Concepts, Consortium level ACL(Access Control Lists) and raft consensus mechanism Chapter12: Setup and Benchmark Blockchain Consortium Using Caliper Chapter13: Monitoring Consortium with Prometheus and grafana Chapter14: Logging Consortium with ELK Stack Chapter15: Glimpse of Hyperledger fabric 2.0 Chapter16: Some Interesting tools Who this Book is For This Book benefits Software Engineers who are ready to shift their focus to distributed technologies and Blockchain. This book provides a comprehensive view of Solution Architecture, so it will be easy for architects to architect their solution. CTO's around the world want to add hyperledger fabric to their technology stack. Managers to cope up with the latest trend. Faculty Professors in order to get industry insights. Even Engineering Students who want to be ready with the latest technologies. Book Description Mastering Hyperledger Fabric is a craving topic for all Hyperledger Fabric Developers around the world. Hyperledger Fabric is an open-source project that helps organizations create and maintain permissioned distributed Blockchain consortiums. This book is for readers who are looking for Hyperledger offerings to build end-to-end projects with growing complexity and functionalities. This book will be a one-stop solution for all developers who want to build blockchain consortiums using Hyperledger Fabric. Topics include TLS, Unix sockets, caliper(Benchmark tool), raft consensus, advanced chaincode development, key collision and MVCC, chaincode access controls, chaincode encryption, node.js SDK, golang SDK, docker daemon API, private data concepts, onboarding organizations using node.js SDK, deploy hyperledger fabric using Kubernetes, deploy hyperledger fabric using docker swarm, monitoring hyperledger fabric,*

monitoring Kubernetes, monitoring docker swarm, logging hyperledger fabric. After reading this book the reader will be able to set up Production grade hyperledger fabric consortium using raft consensus mechanisms with monitoring using Prometheus and grafana, even logging. This book explains so many key concepts of hyperledger fabric including 2.0 and written with three years of hyperledger fabric production experience.

Architecting Enterprise Blockchain Solutions

John Wiley & Sons *Demystify architecting complex blockchain applications in enterprise environments Architecting Enterprise Blockchain Solutions helps engineers and IT administrators understand how to architect complex blockchain applications in enterprise environments. The book takes a deep dive into the intricacies of supporting and securing blockchain technology, creating and implementing decentralized applications, and incorporating blockchain into an existing enterprise IT infrastructure. Blockchain is a technology that is experiencing massive growth in many facets of business and the enterprise. Most books around blockchain primarily deal with how blockchains are related to cryptocurrency or focus on pure blockchain development. This book teaches what blockchain technology is and offers insights into its current and future uses in high performance networks and complex ecosystems. • Provides a practical, hands-on approach • Demonstrates the power and flexibility of enterprise blockchains such as Hyperledger and R3 Corda • Explores how blockchain can be used to solve complex IT support and infrastructure problems • Offers numerous hands-on examples and diagrams Get ready to learn how to harness the power and flexibility of enterprise blockchains!*

Hyperledger Fabric In-Depth

BPB Publications *Create real-world applications using Hyperledger Fabric with ease Key Features a- Understand the importance of Blockchain in an Enterprise. a- Master the core characteristics of Blockchain, i.e., Decentralization, Cryptography, and Consensus Algorithms. a- Get yourself acquainted with Hyperledger Fabric's core concepts and the design philosophy behind it. a- Learn how to work with network configurations, TLS, PDC, ACL, RAFT, monitoring using Prometheus, and Grafana. Description Hyperledger Fabric is an open-source Enterprise Blockchain project. It is best suited for Enterprise Solutions, where the aim is to deliver Blockchain ready solutions in a closed environment between multiple parties. This book aims to cover Hyperledger Fabric in-depth and its role in enterprise applications. This book is divided into two parts. The first part talks about Blockchain in general, decentralization, consensus algorithms, and various cryptographic primitives in Blockchain. It takes a cue from Bitcoin and Ethereum wherever required. This section aims to cement foundational concepts of Blockchain. The second section focuses on Hyperledger Fabric. It helps*

you to get a deep level understanding of its key core concepts, main constituents, architecture internals, and transaction flow. It is then followed by examples that will help you set up a network. A detailed explanation of Chaincode will help you understand how to write a Smart Contract, unit test, and deploy them in the dev network. This book also covers Network Configurations, ACLs, RAFT, and Monitoring so that you can start thinking about making production-grade applications. What will you learn a- Get familiar with the fundamentals of Blockchain. a- Understand the core concepts of Hyperledger's system architecture. a- Create Fabric based blockchain networks with different configurations. a- Learn to write, test and deploy smart contracts (chaincode) in Hyperledger a- Get familiar with the Security and Privacy aspect in Blockchain. Who this book is for This book is for anyone who wants to get started on blockchain. This book is for developers and architects who want to learn how to develop a fabric based blockchain application and apply advanced concepts that help them build enterprise grade applications. Table of Contents 1. Understanding Blockchain 2. World of Decentralization 3. Cryptography - a pillar 4. Consensus Algorithms 5. Blockchain in Enterprises 6. Hyperledger Fabric 7. Hyperledger Architecture and Transaction Flow 8. Setting up Fabric Network 9. Smart Contracts 10. Privacy and Security 11. Hyperledger Fabric v 2.0 About the Author Ashwani Kumar is a technologist by profession having 19+ years of experience working in large enterprise-grade solutions. He was instrumental in architecting, designing, developing, and delivering multiple solutions for numerous industry verticals. His area of expertise involves J2EE and cloud computing technologies. Ashwani holds a Bachelor of Engineering Degree in Computer Technology from Nagpur University. Though Ashwani has worked on several technologies throughout his tenure, however chancing upon Blockchain a couple of years ago brought up an interesting point in his zeal of learning new and emerging technologies. Blockchain and specifically Hyperledger Fabric was till then into nascent stages from understanding and application perspective. Ashwani has spent considerable time working and exploring Hyperledger Fabric, which is most sought after permissioned blockchain and has seen it evolve release after releases. Ashwani is a firm believer in sharing knowledge and believes sharing increases your own outlook and hence this book. Your Blog links: https://medium.com/@asharora78 Your LinkedIn Profile: https://www.linkedin.com/in/ashwani-kumar-719b722/

Blockchain Explained

A Pragmatic Approach

Notion Press *This book offers the most anticipated solution to the blockchain and digital financial questions that are present in the minds of many. It points us to where it all started, where we are at, and a careful and well-informed analysis of what the future holds*

regarding financial transactions and the growth of cryptocurrency and blockchain technology. The world is consciously taking giant strides into the digital aspect of accounting. With the advent of blockchain and various forms of digital money, it is pertinent for every enthusiastic young mind to understand the basics of the market. The book takes a sneak peek into the future of blockchain and financial technology tech with real-life examples, illustrations, and analysis to tailor the mind of the public to the right path. The industry's most important terminologies and concepts are broken down into bits for everyone. Every page of the book keeps you more informed about a particular subject matter.

Mobile Edge Computing

Springer Nature

Enabling Blockchain Technology for Secure Networking and Communications

IGI Global *In recent years, the surge of blockchain technology has been rising due to is proven reliability in ensuring secure and effective transactions, even between untrusted parties. Its application is broad and covers public and private domains varying from traditional communication networks to more modern networks like the internet of things and the internet of energy crossing fog and edge computing, among others. As technology matures and its standard use cases are established, there is a need to gather recent research that can shed light on several aspects and facts on the use of blockchain technology in different fields of interest. Enabling Blockchain Technology for Secure Networking and Communications consolidates the recent research initiatives directed towards exploiting the advantages of blockchain technology for benefiting several areas of applications that vary from security and robustness to scalability and privacy-preserving and more. The chapters explore the current applications of blockchain for networking and communications, the future potentials of blockchain technology, and some not-yet-prospected areas of research and its application. This book is ideal for practitioners, stakeholders, researchers, academicians, and students interested in the concepts of blockchain technology and the potential and pitfalls of its application in different utilization domains.*

Blockchain Development with Hyperledger

Build decentralized applications with Hyperledger Fabric and Composer

Packt Publishing Ltd *Learn quick and effective techniques for developing blockchain-based distributed ledgers with ease Key Features Discover why blockchain is a game changer in the technology landscape Set up blockchain networks using Hyperledger Fabric Write smart contracts at speed with Hyperledger Composer Book Description Blockchain and Hyperledger are open source technologies that power the development of decentralized applications. This Learning Path is your helpful reference for exploring and building blockchain networks using Ethereum, Hyperledger Fabric, and Hyperledger Composer. Blockchain Development with Hyperledger will start off by giving you an overview of blockchain and demonstrating how you can set up an Ethereum development environment for developing, packaging, building, and testing campaign-decentralized applications. You'll then explore the de facto language Solidity, which you can use to develop decentralized applications in Ethereum. Following this, you'll be able to configure Hyperledger Fabric and use it to build private blockchain networks and applications that connect to them. Toward the later chapters, you'll learn how to design and launch a network, and even implement smart contracts in chain code. By the end of this Learning Path, you'll be able to build and deploy your own decentralized applications by addressing the key pain points encountered in the blockchain life cycle. This Learning Path includes content from the following Packt products: Blockchain Quick Start Guide by Xun (Brian) Wu and Weimin Sun Hands-On Blockchain with Hyperledger by Nitin Gaur et al. What you will learn Understand why decentralized applications are necessary Develop and test a decentralized application with Hyperledger Fabric and Hyperledger Composer Write and test a smart contract using Solidity Design transaction models and chain code with Golang Deploy the Composer REpresentational State Transfer (REST) Gateway to access Composer transactions Maintain, monitor, and manage your blockchain solutions Who this book is for This Learning Path is designed for blockchain developers who want to build decentralized applications and smart contracts from scratch using Hyperledger. Basic familiarity with or exposure to any programming language will be useful to get started with this course.*

Architecture for Blockchain Applications

Springer *This book addresses what software architects and developers need to know in order to build applications based on blockchain technology, by offering an architectural view of software systems that make beneficial use of blockchains. It provides guidance on assessing the suitability of blockchain, on the roles blockchain can play in an architecture, on designing blockchain applications, and on assessing different architecture designs and tradeoffs. It also serves as a reference on blockchain design patterns and design analysis, and refers to practical examples of blockchain-based applications. The book is divided into four parts: Part I provides a general introduction to the topic and to existing blockchain platforms including Bitcoin, Ethereum, and Hyperledger Fabric, and offers examples of blockchain-based applications. Part II focuses on the functional aspects of software architecture, describing the main roles blockchain can play in an architecture, as well as its potential suitability and design process. It includes a catalogue of 15 design patterns and details how to use model-driven engineering to build blockchain-based applications. Part III covers the non-functional aspects of blockchain applications, which are cross-cutting concerns including cost, performance, security, and availability. Part IV then presents three detailed real-world use cases, offering additional insights from a practical perspective. An epilogue summarizes the book and speculates on the role blockchain and its applications can play in the future. This book focusses on the bigger picture for blockchain, covering the concepts and technical considerations in the design of blockchain-based applications. The use of mathematical formulas is limited to where they are critical. This book is primarily intended for developers, software architects and chief information officers who need to understand the basic technology, tools and methodologies to build blockchain applications. It also provides students and researchers new to this field an introduction to this hot topic.*

Blockchain Basics

A Non-Technical Introduction in 25 Steps

Apress *In 25 concise steps, you will learn the basics of blockchain technology. No mathematical formulas, program code, or computer science jargon are used. No previous knowledge in computer science, mathematics, programming, or cryptography is required. Terminology is explained through pictures, analogies, and metaphors. This book bridges the gap that exists between purely technical books about the blockchain and purely business-focused books. It does so by explaining both the technical concepts that make up the*

blockchain and their role in business-relevant applications. What You'll Learn What the blockchain is Why it is needed and what problem it solves Why there is so much excitement about the blockchain and its potential Major components and their purpose How various components of the blockchain work and interact Limitations, why they exist, and what has been done to overcome them Major application scenarios Who This Book Is For Everyone who wants to get a general idea of what blockchain technology is, how it works, and how it will potentially change the financial system as we know it

Information Systems

16th European, Mediterranean, and Middle Eastern Conference, EMCIS 2019, Dubai, United Arab Emirates, December 9–10, 2019, Proceedings

Springer Nature *This book constitutes selected papers from the 16th European, Mediterranean, and Middle Eastern Conference, EMCIS 2019, held in Dubai, UAE, in October 2019. EMCIS is dedicated to the definition and establishment of Information Systems as a discipline of high impact for the methodical community and IS professionals, focusing on approaches that facilitate the identification of innovative research of significant relevance to the IS discipline. The 48 full papers presented in this volume were carefully reviewed and selected from a total of 138 submissions. They were organized in topical sections named: Big Data and Analytics; Blockchain Technology and Applications; Cloud Computing; Digital Services and Social Media; e-Government; Enterprise Information Systems; Health-Care Information Systems; Information Systems Security and Information Privacy Protection; Innovative Research Projects; IT Governance; and Management and Organizational Issues in Information Systems.*

Trust Models for Next-Generation Blockchain Ecosystems

Springer Nature

Hands-On Smart Contract Development with Hyperledger Fabric V2

"O'Reilly Media, Inc." *Blockchain technology continues to disrupt a wide variety of organizations, from small businesses to the Fortune 500. Today hundreds of blockchain networks are in production, including many built with Hyperledger Fabric. This practical guide shows developers how the latest version of this blockchain infrastructure provides an ideal foundation for developing enterprise blockchain applications or solutions. Authors Matt Zand, Xun Wu, and Mark Anthony Morris demonstrate how the versatile design of Hyperledger Fabric 2.0 satisfies a broad range of industry use cases. Developers with or without previous Hyperledger experience will discover why no other distributed ledger technology framework enjoys such wide adoption by cloud service providers such as Amazon, Alibaba, IBM, Google, and Oracle. Walk through the architecture and components of Hyperledger Fabric 2.0 Migrate your current Hyperledger Fabric projects to version 2.0 Develop blockchain applications on the Hyperledger platform with Node.js Deploy and integrate Hyperledger on Amazon Managed Blockchain, IBM Cloud, and Oracle Cloud Develop blockchain applications with Hyperledger Aries, Avalon, Besu, and Grid Build end-to-end blockchain supply chain applications with Hyperledger*

Secure Edge Computing

Applications, Techniques and Challenges

CRC Press *The internet is making our daily life as digital as possible and this new era is called the Internet of Everything (IoE). Edge computing is an emerging data analytics concept that addresses the challenges associated with IoE. More specifically, edge computing facilitates data analysis at the edge of the network instead of interacting with cloud-based servers. Therefore, more and more devices need to be added in remote locations without any substantial monitoring strategy. This increased connectivity and the devices used for edge computing will create more room for cyber criminals to exploit the system's vulnerabilities. Ensuring cyber security at the edge should not be an afterthought or a huge challenge. The devices used for edge computing are not designed with traditional IT hardware protocols. There are diverse-use cases in the context of edge computing and Internet of Things (IoT) in remote locations. However, the cyber security configuration and software updates are often overlooked when they are most needed to fight*

cyber crime and ensure data privacy. Therefore, the threat landscape in the context of edge computing becomes wider and far more challenging. There is a clear need for collaborative work throughout the entire value chain of the network. In this context, this book addresses the cyber security challenges associated with edge computing, which provides a bigger picture of the concepts, techniques, applications, and open research directions in this area. In addition, the book serves as a single source of reference for acquiring the knowledge on the technology, process and people involved in next generation computing and security. It will be a valuable aid for researchers, higher level students and professionals working in the area.

Hands-On Smart Contract Development with Hyperledger Fabric V2

"O'Reilly Media, Inc." *Blockchain technology continues to disrupt a wide variety of organizations, from small businesses to the Fortune 500. Today hundreds of blockchain networks are in production, including many built with Hyperledger Fabric. This practical guide shows developers how the latest version of this blockchain infrastructure provides an ideal foundation for developing enterprise blockchain applications or solutions. Authors Matt Zand, Xun Wu, and Mark Anthony Morris demonstrate how the versatile design of Hyperledger Fabric 2.0 satisfies a broad range of industry use cases. Developers with or without previous Hyperledger experience will discover why no other distributed ledger technology framework enjoys such wide adoption by cloud service providers such as Amazon, Alibaba, IBM, Google, and Oracle. Walk through the architecture and components of Hyperledger Fabric 2.0 Migrate your current Hyperledger Fabric projects to version 2.0 Develop blockchain applications on the Hyperledger platform with Node.js Deploy and integrate Hyperledger on Amazon Managed Blockchain, IBM Cloud, and Oracle Cloud Develop blockchain applications with Hyperledger Aries, Avalon, Besu, and Grid Build end-to-end blockchain supply chain applications with Hyperledger*

Security and Trust Management

15th International Workshop, STM 2019, Luxembourg

City, Luxembourg, September 26–27, 2019, Proceedings

Springer Nature *This book constitutes the proceedings of the 15th International Workshop on Security and Trust Management, STM 2019, held in Luxembourg City, Luxembourg, in September 2019, and co-located with the 24th European Symposium Research in Computer Security, ESORICS 2019. The 9 full papers and 1 short paper were carefully reviewed and selected from 23 submissions. The papers present novel research on all theoretical and practical aspects of security and trust in ICTs.*

Handbook of Research on Disruptive Innovation and Digital Transformation in Asia

IGI Global *With new technologies constantly being created, implemented, and sold, it is a robust opportunity for companies to hop on board with the latest digital trends. With the business world undergoing rapid changes and advancements in current times, the transformation process has been rapid and the disruptions significant. This has created a culture of innovation and a plethora of available business opportunities, especially when focused on Central Asia, Southeast Asia, and East Asia. Along with these innovative technologies and new opportunities in the business world comes challenges and trends within the Asian region that require more attention and advanced research to fully understand this digital transformation era and the resulting impacts, challenges, and solutions. The Handbook of Research on Disruptive Innovation and Digital Transformation in Asia addresses key topics for understanding business opportunities in Asia, covering a variety of challenges and nations in the Asian region from technological disruption and innovation to connectivity and economic corridors in Asia, Islamic finance and tourism, and more. Due to its innovative topics and approaches, geographical focus, and methodologies, the chapters provide readers with a unique value in bringing new perspectives to understanding emerging businesses and challenges in Asia. This book is ideal for professors in academia, deans, students, politicians, policymakers, corporate heads of firms, senior general managers, managing directors, information technology directors and managers, and researchers.*

Programming Hyperledger Fabric

Creating Enterprise Blockchain Applications

Siddharth Jain *An enterprise blockchain or distributed ledger technology (DLT) is very much like a shared document stored on a cloud drive. There are just two differences. First, there is no master copy of this document stored with an escrow or arbiter, and second, any change to the document happens only after it has been signed off by all required stakeholders. This allows businesses to form a peer-to-peer network and establish a common ground of truth without giving up its control in hands of a single organization. The decentralized nature of the ledger combined with version control or immutability of the stored data is perfect for fast account reconciliation, secure tracking and tracing of products, and transparent records with no costly third-party auditing. This book teaches you how to build such decentralized applications.What's Inside:* Covers v2.0 of Fabric. Examples written in TypeScript and JavaScript* Deploying to production across multiple nodes using Docker* Securing communications with TLS* Handling Data Privacy* Comprehensive coverage of Fabric CA Server and Client* Bonus chapters on Bitcoin and LDAPThe author has done justice to it by really starting from the basics and explaining with wit the core concepts and taking the reader slowly to the core of Fabric.- Satej Sahu, Senior Enterprise Architect, HoneywellA very beginner friendly introduction to a massive amount of data needed to operate in the blockchain world.- Gregory Reshetniak, Product Owner, Ocado TechnologyA detailed bible about Hyperledger Fabric. This book is mandatory in the blockchain world. - Krzysztof Kamyczek, Architect Software Developer, Luxoft*

Global Risk and Contingency Management Research in Times of Crisis

IGI Global *Risks can be identified, evaluated, and mitigated, but the underlying uncertainty remains elusive. Risk is present across all industries and sectors. As a result, organizations and governments worldwide are currently experiencing higher levels of risk and have had to make risky decisions during times of crisis and instability, including the COVID-19 pandemic, economic and climate perils, and global tensions surrounding terrorism. It is essential that new studies are undertaken to understand strategies taken during these times to better equip business leaders to navigate risk management in the future. Global Risk and Contingency Management Research*

in Times of Crisis examines the impact of crises including the COVID-19 pandemic, which has tested organizational risk and contingency management plans. It provides significant insights that should benefit business leaders on risk and contingency management in times of crisis. It emphasizes strategies that leaders can undertake to identify potential future risks and examines decisions made in past crises that can act as examples of what to do and what not to do during future crisis events. Covering topics such as auditing theories, risk assessment, and educational inequality, this premier reference source is a crucial resource for business leaders, executives, managers, decision makers, policymakers, students, government officials, entrepreneurs, librarians, researchers, and academicians.

Handbook of Research on Driving Transformational Change in the Digital Built Environment

IGI Global *The construction industry is amidst a digital transformation that is focused on addressing well-documented issues and calls for significant improvements and changes through increased productivity, whole-life value, client focus, reduction of waste, and being more sustainable. The key aspect to driving change and transformation is the education and upskilling of the required workforce towards developing the required capacities. Various approaches can be taken to embed digital construction within education and through collaborative efforts in order to drive change and facilitate improvements. The Handbook of Research on Driving Transformational Change in the Digital Built Environment focuses on current developments in practice and education towards facilitating transformation in the built environment. This book provides insight, from a practice perspective, in relation to the client's understanding, digitally enabled collaboration, interoperability and open standards, and maturity/capability. Covering topics that include digital transformation and construction, digitally enabled infrastructure, building information modelling, collaborative digital education, and the digital built environment, this book is an ideal reference source for engineers, professionals, and researchers in the field of digital transformation as well as doctoral scholars, doctoral researchers, professionals, and academicians.*

Hyperledger Cookbook

Over 40 recipes implementing the latest Hyperledger blockchain frameworks and tools

Packt Publishing Ltd *Explore the entire Hyperledger blockchain family, including frameworks such as Fabric, Sawtooth, Indy, Burrow, and Iroha; and tools such as Composer, Explorer, and Caliper. Key FeaturesPlan, design, and create a full-fledged private decentralized application using Hyperledger services Master the ins and outs of the Hyperledger network using real-world examples Packed with problem-solution-based recipes to tackle pain areas in the blockchain development cycleBook Description Hyperledger is an open-source project and creates private blockchain applications for a range of domains. This book will be your desk reference as you explore common and not-so-common challenges faced while building blockchain networks using Hyperledger services. We'll work through all Hyperledger platform modules to understand their services and features and build end-to-end blockchain applications using various frameworks and tools supported by Hyperledger. This book's independent, recipe-based approach (packed with real-world examples) will familiarize you with the blockchain development cycle. From modeling a business network to integrating with various tools, you will cover it all. We'll cover common and not-so-common challenges faced in the blockchain life cycle. Later, we'll delve into how we can interact with the Hyperledger Fabric blockchain, covering all the principles you need to master, such as chaincode, smart contracts, and much more. We'll also address the scalability and security issues currently faced in blockchain development. By the end of this book, you will be able to implement each recipe to plan, design, and create a full-fledged, private, decentralized application to meet organizational needs. What you will learnCreate the most popular permissioned blockchain network with Fabric and ComposerBuild permissioned and permission-less blockchains using SawtoothUtilize built-in Iroha asset/account management with role-based permissionsImplement and run Ethereum smart contracts with Burrow Get to grips with security and scalability in HyperledgerExplore and view blockchain data using Hyperledger ExplorerProduce reports containing performance indicators and benchmarks using CaliperWho this book is for This book is for blockchain developers who want to understand how they can apply Hyperledger services in their day-to-day projects. This book uses a recipe-based approach to help you use Hyperledger to build powerful, decentralized autonomous applications. We assume the reader has a basic knowledge of the Blockchain technology and cryptography concepts*

Understanding Blockchain and Cryptocurrencies

A Primer for Implementing and Developing Blockchain Projects

CRC Press *Whether you are a project manager looking to lead blockchain projects, a developer who would like to create blockchain-based applications, or a student with an interest, this book will provide you with the foundational understanding that you need. You have probably noticed that blockchains are growing in popularity. Governments are investigating Digital Currencies, supply chains are adopting Digital Ledgers, games makers and artists are developing NFTs (Non-Fungible Tokens), and new use-cases are emerging regularly. With such growth, many people will find themselves needing to understand how these technologies work. There will be new project teams, with technical leads managing blockchain projects and developers creating distributed applications. This book is great for them as it explains the concepts on which blockchain technologies are based, in simple terms. We will discuss and explain topics such as hashing, Merkle trees, nodes, mining, proof of work and proof of stake, consensus mechanisms encryption, vulnerabilities, and much more. The structures and principles described will be relevant for developers and managers alike, and will be demonstrated through relevant examples throughout the text. If you are looking to understand this exciting new technology, this is the book for you.*

Blockchain and the Public Sector

Theories, Reforms, and Case Studies

Springer Nature *This book discusses blockchain technology and its potential applications in digital government and the public sector. With its robust infrastructure and append-only record system, blockchain technology is being increasingly employed in the public sector, specifically where trustworthiness and security are of importance. Written by leading scholars and practitioners, this edited volume presents challenges, benefits, regulations, frameworks, taxonomies, and applications of blockchain technology in the public domain. Specifically, the book analyzes the implementation of blockchain technologies in the public sector and the potential*

reforms it would bring. It discusses emerging technologies and their role in the implementation of blockchain technologies in the public sector. The book details the role of blockchain in the creation of public value in the delivery of public sector services. The book analyzes effects, impacts, and outcomes from the implementation of blockchain technologies in the public sector in select case studies. Providing up-to-date information on important developments regarding blockchain in government around the world, this volume will appeal to academics, researchers, policy-makers, public managers, international organizations, and technical experts looking to understand how blockchain can enhance public service delivery.

2019 10th International Conference on Computing, Communication and Networking Technologies (ICCCNT)

The 10th International Conference on Computing, Communication and Networking Technologies (ICCCNT) aims to provide a forum that brings together International researchers from academia and practitioners in the industry to meet and exchange ideas and recent research work on all aspects of Information and Communication Technologies including Computing, communication, IOT, LiDAR, Image Analysis, wireless communication and other new technologies

Advanced Information Networking and Applications

Proceedings of the 33rd International Conference on Advanced Information Networking and Applications (AINA-2019)

Springer *The aim of the book is to provide latest research findings, innovative research results, methods and development techniques from both theoretical and practical perspectives related to the emerging areas of information networking and applications. Networks of today are going through a rapid evolution and there are many emerging areas of information networking and their*

applications. Heterogeneous networking supported by recent technological advances in low power wireless communications along with silicon integration of various functionalities such as sensing, communications, intelligence and actuations are emerging as a critically important disruptive computer class based on a new platform, networking structure and interface that enable novel, low cost and high volume applications. Several of such applications have been difficult to realize because of many interconnections problems. To fulfill their large range of applications different kinds of networks need to collaborate and wired and next generation wireless systems should be integrated in order to develop high performance computing solutions to problems arising from the complexities of these networks. This book covers the theory, design and applications of computer networks, distributed computing and information systems.

Intelligent Communication Technologies and Virtual Mobile Networks

ICICV 2019

Springer *This book presents the outcomes of the Intelligent Communication Technologies and Virtual Mobile Networks Conference (ICICV 2019) held in Tirunelveli, India, on February 14–15, 2019. It presents the state of the art in the field, identifying emerging research topics and communication technologies and defining the future of intelligent communication approaches and virtual computing. In light of the tremendous growth ICT, it examines the rapid developments in virtual reality in communication technology and high-quality services in mobile networks, including the integration of virtual mobile computing and communication technologies, which permits new technologies based on the resources and services of computational intelligence, big data analytics, Internet of Things (IoT), 5G technology, automation systems, sensor networks, augmented reality, data mining, and vehicular ad hoc networks with massive cloud-based backend. These services have a significant impact on all areas of daily life, like transportation, e-commerce, health care, secure communication, location detection, smart home, smart city, social networks and many more.*

Blockchain Enabled Applications

Understand the Blockchain Ecosystem and How to Make it Work for You

Apress *Work with blockchain and understand its potential application beyond cryptocurrencies in the domains of healthcare, Internet of Things, finance, decentralized organizations, and open science. Featuring case studies and practical insights generated from a start-up spun off from the author's own lab, this book covers a unique mix of topics not found in others and offers insight into how to overcome real hurdles that arise as the market and consumers grow accustomed to blockchain based start-ups. You'll start with a review of the historical origins of blockchain and explore the basic cryptography needed to make the blockchain work for Bitcoin. You will then learn about the technical advancements made in the surrounded ecosystem: the Ethereum virtual machine, Solidity, Colored Coins, the Hyperledger Project, Blockchain-as-a-service offered through IBM, Microsoft and more. This book looks at the consequences of machine-to-machine transactions using the blockchain socially, technologically, economically and politically. Blockchain Enabled Applications provides you with a clear perspective of the ecosystem that has developed around the blockchain and the various industries it has penetrated. What You'll Learn Implement the code-base from Fabric and Sawtooth, two open source blockchain-efforts being developed under the Hyperledger Project Evaluate the benefits of integrating blockchain with emerging technologies, such as machine learning and artificial intelligence in the cloud Use the practical insights provided by the case studies to your own projects or start-up ideas Set up a development environment to compile and manage projects Who This Book Is For Developers who are interested in learning about the blockchain as a data-structure, the recent advancements being made and how to implement the code-base. Decision makers within large corporations (product managers, directors or CIO level executives) interested in implementing the blockchain who need more practical insights and not just theory.*

On the Move to Meaningful Internet Systems: OTM 2018

Workshops

Confederated International Workshops: EI2N, FBM, ICSP, and Meta4eS 2018, Valletta, Malta, October 22–26, 2018, Revised Selected Papers

Springer *This volume constitutes the refereed proceedings of the Confederated International International Workshop on Enterprise Integration, Interoperability and Networking (EI2N), Fact Based Modeling (FBM), Industry Case Studies Program (ICSP), and International Workshop on Methods, Evaluation, Tools and Applications for the Creation and Consumption of Structured Data for the e-Society (Meta4eS), held as part of OTM 2018 in October 2018 in Valletta, Malta. As the three main conferences and the associated workshops all share the distributed aspects of modern computing systems, they experience the application pull created by the Internet and by the so-called Semantic Web, in particular developments of Big Data, increased importance of security issues, and the globalization of mobile-based technologies.*

Blockchain for Distributed Systems Security

Wiley-IEEE Computer Society Press *AN ESSENTIAL GUIDE TO USING BLOCKCHAIN TO PROVIDE FLEXIBILITY, COST-SAVINGS, AND SECURITY TO DATA MANAGEMENT, DATA ANALYSIS, AND INFORMATION SHARING Blockchain for Distributed Systems Security contains a description of the properties that underpin the formal foundations of Blockchain technologies and explores the practical issues for deployment in cloud and Internet of Things (IoT) platforms. The authors—noted experts in the field—present security and privacy issues that must be addressed for Blockchain technologies to be adopted for civilian and military domains. The book covers a range of topics including data provenance in cloud storage, secure IoT models, auditing architecture, and empirical validation of permissioned Blockchain platforms. The book's security and privacy analysis helps with an understanding of the basics of Blockchain and it explores the quantifying impact of the new attack surfaces introduced by Blockchain technologies and platforms. In addition, the book contains relevant and current updates on the topic. This important resource: Provides an overview of Blockchain-based secure data*

management and storage for cloud and IoT Covers cutting-edge research findings on topics including invariant-based supply chain protection, information sharing framework, and trust worthy information federation Addresses security and privacy concerns in Blockchain in key areas, such as preventing digital currency miners from launching attacks against mining pools, empirical analysis of the attack surface of Blockchain, and more Written for researchers and experts in computer science and engineering, Blockchain for Distributed Systems Security contains the most recent information and academic research to provide an understanding of the application of Blockchain technology.

Hands-On Blockchain with Hyperledger

Building decentralized applications with Hyperledger Fabric and Composer

Packt Publishing Ltd *Leverage the power of Hyperledger Fabric to develop Blockchain-based distributed ledgers with ease Key Features Write your own chaincode/smart contracts using Golang on hyperledger network Build and deploy decentralized applications (DApps) Dive into real world blockchain challenges such as integration and scalability Book Description Blockchain and Hyperledger technologies are hot topics today. Hyperledger Fabric and Hyperledger Composer are open source projects that help organizations create private, permissioned blockchain networks. These find application in finance, banking, supply chain, and IoT among several other sectors. This book will be an easy reference to explore and build blockchain networks using Hyperledger technologies. The book starts by outlining the evolution of blockchain, including an overview of relevant blockchain technologies. You will learn how to configure Hyperledger Fabric and become familiar with its architectural components. Using these components, you will learn to build private blockchain networks, along with the applications that connect to them. Starting from principles first, you'll learn to design and launch a network, implement smart contracts in chaincode and much more. By the end of this book, you will be able to build and deploy your own decentralized applications, handling the key pain points encountered in the blockchain life cycle. What you will learn Discover why blockchain is a game changer in the technology landscape Set up blockchain networks using basic Hyperledger Fabric deployment Understand the considerations for creating decentralized applications Learn to integrate business networks with existing systems Write Smart Contracts quickly with Hyperledger Composer Design transaction model and chaincode with Golang Deploy Composer REST Gateway to access the Composer transactions Maintain, monitor, and govern your blockchain solutions Who this book*

is for The book benefits business leaders as it provides a comprehensive view on blockchain business models, governance structure, and business design considerations of blockchain solutions. Technology leaders stand to gain a lot from the detailed discussion around the technology landscape, technology design, and architecture considerations in the book. With model-driven application development, this guide will speed up understanding and concept development for blockchain application developers. The simple and well organized content will put novices at ease with blockchain concepts and constructs.

Blockchain with Hyperledger Fabric, Second Edition

Build Decentralized Applications Using Hyperledger Fabric 2

Learn to develop blockchain-based distributed ledgers and deploy a Hyperledger Fabric network with concrete exercises and examples Key features Updated with the latest features and additions that come with Hyperledger Fabric 2 Write your own smart contracts and services using Java and JavaScript on a Hyperledger Fabric network Dive into real-world blockchain challenges such as integration and scalability Book Description Blockchain with Hyperledger Fabric - Second Edition is a refreshed and extended version of the successful book on practical Hyperledger Fabric blockchain development. This edition includes many new chapters, alongside comprehensive updates and additions to the existing ones. Entirely reworked for Hyperledger Fabric version 2, this edition will bring you right up to date with the latest in blockchain. Using a real-world Trade Finance and Logistics example, with working code available on GitHub, you'll really understand both how and why Hyperledger Fabric can be used to maximum effect. This book is your comprehensive guide and reference to explore and build blockchain networks using Hyperledger Fabric version 2. This edition of the book begins by outlining the evolution of blockchain, including an overview of relevant blockchain technologies. Starting from first principles, you'll learn how to design and operate a permissioned blockchain network based on Hyperledger Fabric version 2. You will learn how to configure the main architectural components of a permissioned blockchain network including Peers, Orderers, Certificate Authorities, Channels, and Policies. You'll then learn how to design, develop, package, and deploy smart contracts, and how they are subsequently used by applications. This edition also contains chapters on DevOps, blockchain governance, and security, making this your go-to book for Hyperledger Fabric version 2. What you will learn Discover why blockchain is a technology and business game changer Set up blockchain networks using Hyperledger Fabric version 2 Understand how to create decentralized applications Learn

how to integrate blockchains with existing systems Write smart contracts and services quickly with Hyperledger Fabric and Visual Studio Code Design transaction models and smart contracts with Java, JavaScript, TypeScript, and Golang Deploy REST gateways to access smart contracts and understand how wallets maintain user identities for access control Maintain, monitor, and govern your blockchain solutions Who this book is for This book is designed in such a way that professionals from different areas including business leaders, technology leaders, blockchain application developers, and even beginners can benefit from it.

Building Blockchain Projects

Packt Publishing Ltd *Develop real-time practical DApps using Ethereum and JavaScript About This Book Create powerful, end-to-end applications for Blockchain using Ethereum Write your first program using the Solidity programming language Change the way you think and design your applications by using the all new database-Blockchain Who This Book Is For This book is for JavaScript developers who now want to create tamper-proof data (and transaction) applications using Blockchain and Ethereum. Those who are interested in cryptocurrencies and the logic and database empowering it will find this book extremely useful. What You Will Learn Walk through the basics of the Blockchain technology Implement Blockchain's technology and its features, and see what can be achieved using them Build DApps using Solidity and Web3.js Understand the geth command and cryptography Create Ethereum wallets Explore consortium blockchain In Detail Blockchain is a decentralized ledger that maintains a continuously growing list of data records that are secured from tampering and revision. Every user is allowed to connect to the network, send new transactions to it, verify transactions, and create new blocks, making it permission-less. This book will teach you what Blockchain is, how it maintains data integrity, and how to create real-world Blockchain projects using Ethereum. With interesting real-world projects, you will learn how to write smart contracts which run exactly as programmed without any chance of fraud, censorship, or third-party interference, and build end-to-end applications for Blockchain. You will learn about concepts such as cryptography in cryptocurrencies, ether security, mining , smart contracts, solidity, and more. You will also learn about web sockets, various API services for Ethereum, and much more. The blockchain is the main technical innovation of bitcoin, where it serves as the public ledger for bitcoin transactions. Style and approach This is a project-based guide that not only gets you up and running with Blockchain, but also lets you create intuitive real-world applications that will make you an independent Blockchain developer.*

Can Blockchain Revolutionize International Trade?

Trade has always been shaped by technological innovation. In recent times, a new technology, Blockchain, has been greeted by many as the next big game-changer. Can Blockchain revolutionize international trade? This publication seeks to demystify the Blockchain phenomenon by providing a basic explanation of the technology. It analyses the relevance of this technology for international trade by reviewing how it is currently used or can be used in the various areas covered by WTO rules. In doing so, it provides an insight into the extent to which this technology could affect cross-border trade in goods and services, and intellectual property rights. It discusses the potential of Blockchain for reducing trade costs and enhancing supply chain transparency as well as the opportunities it provides for small-scale producers and companies. Finally, it reviews various challenges that must be addressed before the technology can be used on a wide scale and have a significant impact on international trade.

Introducing Blockchain Applications

Understand and Develop Blockchain Applications Through Distributed Systems

Apress *Deepen your understanding of blockchain technology and develop your own blockchain applications. This book provides a thorough review of distribution-based systems on blockchain technology, starting from the fundamental concepts that underlie it, all the way through the implementation of a blockchain network for business purposes. Author Joseph Thachil George begins by introducing you to blockchain and some basic concepts of technology, including distributed systems, systems of systems, cyber-physical systems, the Byzantine Consensus, the CAP theorem, and cryptographic techniques. Next, he analyzes the structure of blocks and smart contracts and the mother of all blockchain platforms, Bitcoin. That sets the stage for an examination of transaction structure, validation, and flow, from creation to registration in the ledger and structure of the blocks, the Nakamoto consensus, and finally forks. From there, you'll experience a deep dive into Ethereum; including the concepts of Gas and Message, smart contracts and the Ethereum virtual machine. From there, you'll learn about the Ethereum consensus protocol, Ethereum Casper, and the Ethereum Proof-of-Stake algorithm. You'll then see how blockchain can be connected to a distributed system, followed by a*

demonstration of how you can model a distributed system using Blockly4SoS and Kilobots. The concluding chapters offer a practical example that combines distributed systems with blockchain technology. After reading this book, you will understand how to implement blockchain technology in a distributed system and be able to leverage this knowledge in your own projects. What You Will Learn Learn the concept of blockchains by way of a practical example Grasp the connection between distributed systems and blockchain technology Learn the design of blockchain with hyperledger fabric Learn the design of cyber-physical systems in a distributed environment Who Is This Book For Developers who are enthusiastic about the design and implementation of distributed systems.

Developing a Blockchain Business Network with Hyperledger Composer using the IBM Blockchain Platform Starter Plan

IBM Redbooks *Blockchain has emerged as a disruptive technology in the areas of trading assets and sharing information. It has the capability to transform many industries, professions, and aspects of life. The focus of this IBM® Redbooks® publication is to help developers build blockchain solutions and use IBM Blockchain Platform to start, test, and move applications into production. This publication covers some blockchain for business use cases. It also describes how to get started in defining, developing, and deploying a Hyperledger Composer business network to Hyperledger Fabric, both locally on a workstation and remotely on the IBM Blockchain Starter Plan.A fund clearing business network is used as an example scenario for blockchain and this source code is available for download, testing, and use. The Redpaper contains detailed information on how we put it together and more, so grab a copy of it via the download link on this page as well. This paper is part one of a series of papers and educational materials. Later materials will describe how to use IBM Blockchain Platform to test and scale your business network, to integrate more completely with a COBOL business application running in IBM CICS®, and to manage changes to your business network in a production environment.*

Formal Methods and Software Engineering

22nd International Conference on Formal Engineering Methods, ICFEM 2020, Singapore, Singapore, March 1–3, 2021, Proceedings

Springer Nature *This book constitutes the proceedings of the 22nd International Conference on Formal Engineering Methods, ICFEM 2020, held in Singapore, Singapore, in March 2021. The 16 full and 4 short papers presented together with 1 doctoral symposium paper in this volume were carefully reviewed and selected from 41 submissions. The papers cover theory and applications in formal engineering methods together with case studies. They also represent the recent development in the use and development of formal engineering methods for software and system development.*

Self-Sovereign Identity

Manning Publications *In Self-Sovereign Identity: Decentralized digital identity and verifiable credentials, you'll learn how SSI empowers us to receive digitally-signed credentials, store them in private wallets, and securely prove our online identities. Summary In a world of changing privacy regulations, identity theft, and online anonymity, identity is a precious and complex concept. Self-Sovereign Identity (SSI) is a set of technologies that move control of digital identity from third party "identity providers" directly to individuals, and it promises to be one of the most important trends for the coming decades. Personal data experts Drummond Reed and Alex Preukschat lay out a roadmap for a future of personal sovereignty powered by the Blockchain and cryptography. Cutting through technical jargon with dozens of practical cases, it presents a clear and compelling argument for why SSI is a paradigm shift, and how you can be ready to be prepared for it. About the technology Trust on the internet is at an all-time low. Large corporations and institutions control our personal data because we've never had a simple, safe, strong way to prove who we are online. Self-sovereign identity (SSI) changes all that. About the book In Self-Sovereign Identity: Decentralized digital identity and verifiable credentials, you'll learn how SSI empowers us to receive digitally-signed credentials, store them in private wallets, and securely prove*

our online identities. It combines a clear, jargon-free introduction to this blockchain-inspired paradigm shift with interesting essays written by its leading practitioners. Whether for property transfer, ebanking, frictionless travel, or personalized services, the SSI model for digital trust will reshape our collective future. What's inside The architecture of SSI software and services The technical, legal, and governance concepts behind SSI How SSI affects global business industry-by-industry Emerging standards for SSI About the reader For technology and business readers. No prior SSI, cryptography, or blockchain experience required. About the authors Drummond Reed is the Chief Trust Officer at Evernym, a technology leader in SSI. Alex Preukschat is the co-founder of SSIMeetup.org and AlianzaBlockchain.org. Table of Contents PART 1: AN INTRODUCTION TO SSI 1 Why the internet is missing an identity layer—and why SSI can finally provide one 2 The basic building blocks of SSI 3 Example scenarios showing how SSI works 4 SSI Scorecard: Major features and benefits of SSI PART 2: SSI TECHNOLOGY 5 SSI architecture: The big picture 6 Basic cryptography techniques for SSI 7 Verifiable credentials 8 Decentralized identifiers 9 Digital wallets and digital agents 10 Decentralized key management 11 SSI governance frameworks PART 3: DECENTRALIZATION AS A MODEL FOR LIFE 12 How open source software helps you control your self-sovereign identity 13 Cypherpunks: The origin of decentralization 14 Decentralized identity for a peaceful society 15 Belief systems as drivers for technology choices in decentralization 16 The origins of the SSI community 17 Identity is money PART 4: HOW SSI WILL CHANGE YOUR BUSINESS 18 Explaining the value of SSI to business 19 The Internet of Things opportunity 20 Animal care and guardianship just became crystal clear 21 Open democracy, voting, and SSI 22 Healthcare supply chain powered by SSI 23 Canada: Enabling self-sovereign identity 24 From eIDAS to SSI in the European Union

Oracle Blockchain Quick Start Guide

A practical approach to implementing blockchain in your enterprise

Packt Publishing Ltd *Get up and running with Oracle’s premium cloud blockchain services and build distributed blockchain apps with ease Key Features Discover Hyperledger Fabric and its components, features, qualifiers, and architecture Get familiar with the Oracle Blockchain Platform and its unique features Build Hyperledger Fabric-based business networks with Oracle’s premium blockchain cloud service Book Description Hyperledger Fabric empowers enterprises to scale out in an unprecedented way, allowing organizations to build and manage blockchain business networks. This quick start guide systematically takes you through distributed*

ledger technology, blockchain, and Hyperledger Fabric while also helping you understand the significance of Blockchain-as-a-Service (BaaS). The book starts by explaining the blockchain and Hyperledger Fabric architectures. You'll then get to grips with the comprehensive five-step design strategy - explore, engage, experiment, experience, and influence. Next, you'll cover permissioned distributed autonomous organizations (pDAOs), along with the equation to quantify a blockchain solution for a given use case. As you progress, you'll learn how to model your blockchain business network by defining its assets, participants, transactions, and permissions with the help of examples. In the concluding chapters, you'll build on your knowledge as you explore Oracle Blockchain Platform (OBP) in depth and learn how to translate network topology on OBP. By the end of this book, you will be well-versed with OBP and have developed the skills required for infrastructure setup, access control, adding chaincode to a business network, and exposing chaincode to a DApp using REST configuration. What you will learn Model your blockchain-based business network by defining its components, transactions, integrations, and infrastructure through use cases Develop, deploy, and test chaincode using shim and REST, and integrate it with client apps using SDK, REST, and events Explore accounting, blockchain, hyperledger fabric, and its components, features, qualifiers, architecture and structure Understand the importance of Blockchain-as-a-Service (BaaS) Experiment Hyperledger Fabric and delve into the underlying technology Set up a consortium network, nodes, channels, and privacy, and learn how to translate network topology on OBP Who this book is for If you are a blockchain developer, blockchain architect or just a cloud developer looking to get hands-on with Oracle Blockchain Cloud Service, then this book is for you. Some familiarity with the basic concepts of blockchain will be helpful to get the most out of this book

Information Systems

17th European, Mediterranean, and Middle Eastern Conference, EMCIS 2020, Dubai, United Arab Emirates, November 25–26, 2020, Proceedings

Springer Nature *This book constitutes the proceedings papers from the 17th European, Mediterranean, and Middle Eastern Conference on Information Systems, EMCIS 2020, held in Dubai, UAE, in November 2020. Due to the COVID-19 pandemic the*

conference took place virtually. EMCIS focuses on approaches that facilitate the identification of innovative research of significant relevance to the Information Systems discipline following sound research methodologies that lead to results of measurable impact. The 56 papers presented in this volume were carefully reviewed and selected from a total of 161 submissions to the main conference. They are grouped in section on Big Data and Analytics, Blockchain Technology and Applications, Digital Government, Digital Services and Social Media, Emerging Computing Technologies and Trends for Business Process Management, Enterprise Systems, Healthcare Information Systems, Information Systems Security and Information Privacy Protection, Innovative Research Projects, Management and Organisational Issues in Information Systems.