

# [PDF] Comparison Of Ethereum Hyperledger Fabric And Corda

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Advanced Applications of Blockchain Technology-Shiho Kim 2019-09-24 This contributed volume discusses diverse topics to demystify the rapidly emerging and evolving blockchain technology, the emergence of integrated platforms and hosted third-party tools, and the development of decentralized applications for various business domains. It presents various applications that are helpful for research scholars and scientists who are working toward identifying and pinpointing the potential of as well as the hindrances to this technology.

Intelligent Computing and Applications-Subhransu Sekhar Dash

The Future of Finance-Henri Arslanian 2019-07-15 This book, written jointly by an engineer and artificial intelligence expert along with a lawyer and banker, is a glimpse on what the future of the financial services will look like and the impact it will have on society. The first half of the book provides a detailed yet easy to understand educational and technical overview of FinTech, artificial intelligence and cryptocurrencies including the existing industry pain points and the new technological enablers. The second half provides a practical, concise and engaging overview of their latest trends and their impact on the future of the financial services industry including numerous use cases and practical examples. The book is a must read for any professional currently working in finance, any student studying the topic or anyone curious on how the future of finance will look like.

Emerging Technologies for Developing Countries-Rafik Zitouni 2018-12-13 This book constitutes the refereed proceedings of the Second International EAI Conference on Emerging Technologies for Developing Countries, AFRICATEK 2018, held in Cotonou, Benin, in May 2018. The 12 revised full papers and 4 short papers were selected from 27 submissions. The papers are organized thematically in tracks, starting with ITS and security, applications and IT services, gaming and user experience.

Information Systems-Marinos Themistocleous 2020-11-20 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.

Advances in Data Science, Cyber Security and IT Applications-Auhoud Alfaries 2019-12-22 This book constitutes the refereed proceedings of the First International Conference on Intelligent Cloud Computing, ICC 2019, held in Riyadh, Saudi Arabia, in December 2019. The two-volume set presents 53 full papers, which were carefully reviewed and selected from 174 submissions. The papers are organized in topical sections on Cyber Security; Data Science; Information Technology and Applications; Network and IoT.

Intelligent Communication Technologies and Virtual Mobile Networks-S. Balaji 2019-08-12 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.

Oracle Blockchain Quick Start Guide-Vivek Acharya 2019-09-06 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

Architecting Enterprise Blockchain Solutions-Joseph Holbrook 2020-02-11 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!

Mastering Bitcoin-Andreas M. Antonopoulos 2014-12-03 Want to join the technological revolution that's taking the world of finance by storm? Mastering Bitcoin is your guide through the seemingly complex world of bitcoin, providing the requisite knowledge to help you participate in the internet of money. Whether you're building the next killer app, investing in a startup, or simply curious about the technology, this practical book is essential reading. Bitcoin, the first successful decentralized digital currency, is still in its infancy and it's already spawned a multi-billion dollar global economy. This economy is open to anyone with the knowledge and passion to participate. Mastering Bitcoin provides you with the knowledge you need (passion not included). This book includes: A broad introduction to bitcoin—ideal for non-technical users, investors, and business executives An explanation of the technical foundations of bitcoin and cryptographic currencies for developers, engineers, and software and systems architects Details of the bitcoin decentralized network, peer-to-peer architecture, transaction lifecycle, and security principles Offshoots of the bitcoin and blockchain inventions, including alternative chains, currencies, and applications User stories, analogies, examples, and code snippets illustrating key technical concepts

Open Problems in Network Security-Jan Camenisch 2016-04-30 This book constitutes the thoroughly refereed post-conference proceedings of the IFIP WG 11.4 International Workshop on Open Problems in Network Security, iNetSec 2015, held in Zurich, Switzerland, in October 2015. iNetSec is the main workshop of the IFIP working group WG 11.4; its objective is to present and discuss open problems and new research directions on all aspects related to network security. The 9 revised full papers presented in this volume were carefully reviewed and selected from 13 submissions. They were organized in topical sections named: network security; intrusion detection; anonymous communication; and cryptography.

Blockchain for Enterprise-Narayan Prusty 2018-09-26 Implement blockchain principles in your choice of domain using Ethereum Key Features Build permissioned enterprise-grade blockchain applications from scratch Implement Blockchain-as-a-Service to enterprises in terms of deployment and security Achieve privacy in blockchains using proxy re-encryption algorithms Book Description The increasing growth in blockchain use is enormous, and it is changing the way business is done. Many leading organizations are already exploring the potential of blockchain. With this book, you will learn to build end-to-end enterprise-level decentralized applications and scale them across your organization to meet your company's needs. This book will help you understand what DApps are and how the blockchain ecosystem works, via real-world examples. This extensive end-to-end book covers every blockchain aspect for business and for developers. You will master process flows and incorporate them into your own enterprise. You will learn how to use J.P. Morgan's Quorum to build blockchain-based applications. You will also learn how to write applications that can help communicate enterprise blockchain solutions. You will learn how to write smart contracts that run without censorship and third-party interference. Once you've grasped what a blockchain is and have learned about Quorum, you will jump into building real-world practical blockchain applications for sectors such as payment and money transfer, healthcare, cloud computing, supply chain management, and much more. What you will learn Learn how to set up Raft/RAFT Quorum networks Implement Quorum's privacy and security features Write, compile, and deploy smart contracts Learn to interact with Quorum using the web3.js JavaScript library Learn how to execute atomic swaps between different networks Build a secured Blockchain-as-a-Service for efficient business processes Achieve data privacy in blockchains using proxy re-encryption Who this book is for This book is for innovators, digital transformers, and blockchain developers who want to build end-to-end, decentralized applications using the blockchain technology. If you want to scale your existing blockchain system across the enterprise, you will find this book useful, too. It adopts a practical approach to solving real problems in enterprises using a blend of theory and practice.

Mastering Blockchain-Imran Bashir 2018-03-30 Learn about cryptography and cryptocurrencies, so you can build highly secure, decentralized applications and conduct trusted in-app transactions. Key Features Get to grips with the underlying technical principles and implementations of blockchain Build powerful applications using Ethereum to secure transactions and create smart contracts Explore cryptography, mine cryptocurrencies, and solve scalability issues with this comprehensive guide Book Description A blockchain is a distributed ledger that is replicated across multiple nodes and enables immutable, transparent and cryptographically secure record-keeping of transactions. The blockchain technology is the backbone of cryptocurrencies, and it has applications in finance, government, media and almost all other industries. Mastering Blockchain, Second Edition has been thoroughly updated and revised to provide a detailed description of this leading technology and its implementation in the real world. This book begins with the technical foundations of blockchain, teaching you the fundamentals of cryptography and how it keeps data secure. You will learn about the mechanisms behind cryptocurrencies and how to develop applications using Ethereum, a decentralized virtual machine. You will also explore different other blockchain solutions and get an introduction to business blockchain frameworks under Hyperledger, a collaborative effort for the advancement of blockchain technologies hosted by the Linux Foundation. You will also be shown how to implement blockchain solutions beyond currencies, Internet of Things with blockchain, blockchain scalability, and the future scope of this fascinating and powerful technology. What you will learn Master the theoretical and technical foundations of the blockchain technology Understand the concept of decentralization, its impact, and its relationship with blockchain technology Master how cryptography is used to secure data - with practical examples Grasp the inner workings of blockchain and the mechanisms behind bitcoin and alternative cryptocurrencies Understand the theoretical foundations of smart contracts Learn how Ethereum blockchain works and how to develop decentralized applications using Solidity and relevant development frameworks Identify and examine applications of the blockchain technology - beyond currencies Investigate alternative blockchain solutions including Hyperledger, Corda, and many more Explore research topics and the future scope of blockchain technology Who this book is for This book will appeal to those who wish to build fast, highly secure, transactional applications. It targets people who are familiar with the concept of blockchain and are comfortable with a programming language.

Hands-On Blockchain with Hyperledger-Nitin Gaur 2018-06-21 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.

Mastering Blockchain-Imran Bashir 2017-03-17 Distributed ledgers, decentralization and smart contracts explained About This Book Get to grips with the underlying technical principles and implementations of blockchain. Build powerful applications using Ethereum to secure transactions and create smart contracts. Explore cryptography, mine cryptocurrencies, and solve scalability issues with this comprehensive guide. Who This Book Is For This book appeals to those who wish to build fast, highly secure, transactional applications. This book is for those who are familiar with the concept of blockchain and are comfortable with a programming language. What You Will Learn Master the theoretical and technical foundations of blockchain technology Fully comprehend the concept of decentralization, its impact and relationship with blockchain technology Experience how cryptography is used to secure data with practical examples Grasp the inner workings of blockchain and relevant mechanisms behind Bitcoin and alternative cryptocurrencies Understand theoretical foundations of smart contracts Identify and examine applications of blockchain technology outside of currencies Investigate alternate blockchain solutions including Hyperledger, Corda, and many more Explore research topics and future scope of blockchain technology In Detail Blockchain is a distributed database that enables permanent, transparent, and secure storage of data. The blockchain technology is the backbone of cryptocurrency - in fact, it's the shared public ledger upon which the entire Bitcoin network relies - and it's gaining popularity with people who work in finance, government, and the arts. Blockchain technology uses cryptography to keep data secure. This book gives a detailed description of this leading technology and its implementation in the real world. This book begins with the technical foundations of blockchain, teaching you the fundamentals of cryptography and how it keeps data secure. You will learn about the mechanisms behind cryptocurrencies and how to develop applications using Ethereum, a decentralized virtual machine. You will explore different blockchain solutions and get an exclusive preview into Hyperledger, an upcoming blockchain solution from IBM and the Linux Foundation. You will also be shown how to implement blockchain beyond currencies, scability with blockchain, and the future scope of this fascinating and powerful technology. Style and approach This comprehensive guide allows you to build smart blockchain applications and explore the power of this database. The book will let you quickly brush up on the basics of the blockchain database, followed by advanced implementations of blockchain in currency, smart contracts, decentralization, and so on.

Can Blockchain Revolutionize International Trade?-World Trade Organization Wto 2019 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.

Understanding the Blockchain Economy-Chris Berg 2019 Blockchains are the distributed ledger technology that powers Bitcoin and other cryptocurrencies. But blockchains can be used for more than the transfer of tokens - they are a significant new economic infrastructure. This book offers the first scholarly analysis of the economic nature of blockchains and the shape of the blockchain economy. By applying the institutional economics of Ronald Coase and Oliver Williamson, this book shows how blockchains are poised to reshape the nature of firms, governments, markets, and civil society.

Ethereum for Architects and Developers-Debjani Mohanty 2018-10-30 Explore the Ethereum ecosystem step by step with extensive theory, labs, and live use cases. This book takes you through BlockChain concepts; decentralized applications; Ethereum's architecture; Solidity smart contract programming with examples; and testing, debugging, and deploying smart contracts on your local machine and on the cloud. You'll cover best practices for writing contracts with ample examples to allow you to write high-quality contracts with optimal usage of fuel. In later chapters, Ethereum for Architects and Developers covers use cases from different business areas, such as finance, travel, supply-chain, insurance, and land registry. Many of these sectors are explained with flowcharts, diagrams, and sample code that you can refer to and further enhance in live projects. By the end of the book, you will have enough information to use Ethereum to create value for your business processes and build foolproof data storage for smoother execution of business. What You Will Learn Discover key BlockChain concepts Master the architecture, building blocks, and ecosystem of Ethereum Develop smart contracts from scratch Debug, test, and deploy to test Take advantage of Ethereum in your business area Who This Book Is For BlockChain developers and architects wanting to develop decentralized Ethereum applications or learn its architecture.

Blockchain for Distributed Systems Security-Sachin S. Shetty 2019-03-05 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.

Blockchain By Example-Bellaj Badr 2018-11-30 Implement decentralized blockchain applications to build scalable Dapps Key Features Understand the blockchain ecosystem and its terminologies Implement smart contracts, wallets, and consensus protocols Design and develop decentralized applications using Bitcoin, Ethereum, and Hyperledger Book Description The Blockchain is a revolution promising a new world without middlemen. Technically, it is an immutable and tamper-proof distributed ledger of all transactions across a peer-to-peer network. With this book, you will get to grips with the Blockchain ecosystem to build real-world projects. This book will walk you through the process of building multiple blockchain projects with different complexity levels and hurdles. Each project will teach you just enough about the field's leading technologies, Bitcoin, Ethereum, Quorum, and Hyperledger in order to be productive from the outset. As you make your way through the chapters, you will cover the major challenges that are associated with blockchain ecosystems such as scalability, integration, and distributed file management. In the concluding chapters, you'll learn to build blockchain projects for business, run your ICO, and even create your own cryptocurrency. Blockchain by Example also covers a range of projects such as Bitcoin payment systems, supply chains on Hyperledger, and developing a Tontine Bank Where is using Ethereum. By the end of this book, you will not only be able to tackle common issues in the blockchain ecosystem, but also design and build reliable and scalable distributed systems. What you will learn Grasp decentralized technology fundamentals to master blockchain principles Build blockchain projects on Bitcoin, Ethereum, and Hyperledger Create your currency and a payment application using Bitcoin Implement decentralized apps and supply chain systems using Hyperledger Write smart contracts, run your ICO, and build a Tontine decentralized app using Ethereum Implement distributed file management with blockchain Integrate blockchain into existing systems in your organization Who this book is for If you are keen on learning how to build your own blockchain decentralized applications from scratch, then this book is for you. It explains all the basic concepts required to develop intermediate projects and will teach you to implement the building blocks of a blockchain ecosystem.

Blockchain: The Untold Story-Srinivas Mahankali 2019-09-19 Designed to provide an insight into the blockchain in depth concept DESCRIPTION Insightful & Conceptual coverage of Internet & Blockchain evolution, Bitcoin, Etheral, Hyper-ledger, R3 Cora, Auxledger, GDPR, Cybersecurity, Consensus, Mechanisms, Enterprise applications, Global Developments, BAAS platforms, Disruptions across various countries, functional areas along with solution architectures. KEY FEATURES Book provide the in depth and up to date information about the technology. Learn about Blockchain 1.0 to Blockchain 4.0 To Trace and link the DNA of Blockchain paradigm to real world entities. To discuss comprehensively the relation of Blockchain to the cutting edge technologies today To discuss the role of the leading global technology organizations in promoting the blockchain ecosystem Focus on the impact of blockchain technology on the human resources function through a comprehensive case study. Trace the origin of internet to Blockchain of the future & written like a story to make the Blockchain concept well understood in the right perspective and context of digital world's challenges WHAT WILL YOU LEARN Learn about Blockchain 1.0 to Blockchain 4.0 DAOs & ICOs-Facilitating Entrepreneurship Birth of Enterprise Blockchain Malware Attacks and the Cyberthreat. IoT, DMADV, Blockchain as a Service. WHO THIS BOOK IS FOR This book unfolds "Blockchain" in its true essence with no proflexes to it. Right sized for everyone who wants to hit the first mile on Blockchain. This book will surely be a treasure for all those who are eager to know the disruptive impact & possibilities of this amazing paradigm. Table of Contents 1. Introduction- How it started. Rise of Blockchain Religion 2. Whodunnit- Unravelling the Mystery of bitcoin's Origin 3. Blockchain - Some FAQs What is Blockchain? Some fundamentals 4. Its 'Data' Stupid! - The Rising Power of Data Exponents 5. The Rise of Digital Marketing: How it all Started 6. Customer Relationship Management (CRM) 7. Big Data Analytics & its Implications to organisations 8. Machine Learning & Artificial Intelligence: Automating the Future 9. Internet of Things- The booming penetration 10. Malware attacks and the cyberthreats 11. Risks of centralization & single points of failure 12. General Data Protection Regulations and their Implications 13. Blockchain- An introduction 14. Bitcoin & The Blockchain - The inception of the 'BigBang' 15. Key features and benefits of Blockchain 16. Ethereum- The State Machine 17. DAOs & ICOs- Facilitating Entrepreneurship 18. Blockchain Certified LLPs to Boost Entrepreneurship 19. Blockchain Platforms for Web 2.0 Applications 20. The Birth of Enterprise Blockchain 21. Hyperledger Project - Fabric, Sawtooth - Versatile and Empowering 22. Enterprise Blockchain Platforms- A brief look at options 23. DMADV: Lean Six Sigma inspired approach to architect a BCT Solution 24. Scaling up the Blockchain Project 25. Blockchain as a Service- Various platforms available 26. Blockchain Applications in Action- Case study 27. Blockchain use cases- Enterprises, Government, NGOs 28. Blockchainified Future- A Vision for progressive enterprises 29. Maneuvering in the World of GDPR 30. A safer and secure world with Blockchain based solutions 31. Annexure 1: Blockchain Glossary 32. Annexure 2: Big Data Analytics - Applications Across Global Enterprises 33. Annexure 3: Prominent Blockchain Based Applications and DAOs 34. Annexure 4: Consensus Models- A Practical Comparison 35. Annexure 5: Enterprise Blockchain Applications- Top use cases x Blockchain The Untold Story 36. Annexure 6: Corda Key Concepts 37. Annexure 7: Example of a Blockchain Technical White paper 38. Annexure 8: More on 3 Cs of Blockchain-Consensus, CIA & CAP. 39. Annexure 9: Concepts addressed in the book 40. Testimonials Role of Blockchain Technology in IoT Applications-Peng Zhang 2019-09-02 Role of Blockchain Technology in IoT Applications, Volume 115 in the Advances in Computers series, reviews the latest information on this topic that promises many applications in human life. According to forecasts made by various market research/survey agencies, there will be around 50 Billion connected devices (IoT) by 2020. Updates in this new release include chapters on the Technical Aspects of Blockchain and IoT, Integrated Platforms for Blockchain-Enablement, Intersections Between IoT and Distributed Ledger, Blockchain and Artificial Intelligence: How and Why Combining These Two Groundbreaking Technologies, Blockchain Applications in Health Care and Opportunities and Advancements Due to New Information Technology Frameworks, and more. Explores blockchain technology research trends in secured device to device communication Includes updates on secure vehicular communication (VANET) using blockchain technology Provides the latest on secure IoT communication using blockchain technology Presents use cases of blockchain technology in healthcare, the food chain, ERP and other emerging areas Applications and Techniques in Information Security-V. S. Shankar Sriram 2019-12-12 This book constitutes the refereed proceedings of the 10th International Conference on Applications and Techniques in Information Security, ATIS 2019, held in Tamil Nadul, India, in November 2019. The 22 full papers and 2 short papers presented in the volume were carefully reviewed and selected from 50 submissions. The papers are organized in the following topical sections: information security; network security; intrusion detection system; authentication and key management system; security centric applications.

The Truth Machine-Paul Vigna 2018-02-27 "Views differ on bitcoin, but few doubt the transformative potential of Blockchain technology. The Truth Machine is the best book so far on what has happened and what may come along. It demands the attention of anyone concerned with our economic future." —Lawrence H. Summers, Charles W. Eliot University Professor and President Emeritus at Harvard, Former Treasury Secretary From Michael J. Casey and Paul Vigna, the authors of The Age of Cryptocurrency, comes the definitive work on the Internet's Next Big Thing: The Blockchain. Big banks have grown bigger and more entrenched. Privacy exists only until the next hack. Credit card fraud is a fact of life. Many of the "legacy systems" once designed to make our lives easier and our economy more efficient are no longer up to the task. Yet there is a way past all this—a new kind of operating system with the potential to revolutionize vast swaths of our economy: the blockchain. In The Truth Machine, Michael J. Casey and Paul Vigna demystify the blockchain and explain why it can restore personal control over our data, assets, and identities; grant billions of excluded people access to the global economy; and shift the balance of power to revive society's faith in itself. They reveal the disruption it promises for industries including finance, tech, legal, and shipping. Casey and Vigna expose the challenge of replacing trusted (and not-so-trusted) institutions on which we've relied for centuries with a radical model that bypasses them. The Truth Machine reveals the empowerment possible when self-interested middlemen give way to the transparency of the blockchain, while highlighting the job losses, assertion of special interests, and threat to social cohesion that will accompany this shift. With the same balanced perspective they brought to The Age of Cryptocurrency, Casey and Vigna show why we all must care about the path that blockchain technology takes—moving humanity forward, not backward.

Blockchain: Capabilities, Economic Viability, and the Socio-Technical Environment-Nils Braun-Dubler 2020-06-16 Blockchain is widely considered a new key technology. The Foundation for Technology Assessment (TA-SWISS) has proposed a comprehensive assessment of blockchain technologies. With this publication, TA-SWISS provides the much-needed social contextualisation of blockchain. The first, more technical part of the study takes an in-depth look at how blockchain functions and examines the economic potential of this technology. By analysing multiple real-world applications, the study sheds light on where the blockchain has advantages over traditional applications and where existing technologies continue to be the better solution. The second part of the study examines how blockchain became mainstream. It explores the origins of contextualisation in the early history of information technology and computer networks. The study also reveals the impact blockchain has on industrial and public spaces. Finally, it discusses the social implications and challenges of blockchain against the background of a new socio-technical environment.

R3 Corda for Architects and Developers-Debjani Mohanty 2019-06-24 Explore the entire R3 Corda ecosystem using theory, labs, and use cases. This book introduces distributed ledger technology, Corda architecture, and smart contract programming in Java, guiding you through testing and deployment. Further, you will explore various business problems in finance, insurance, healthcare, travel, and agriculture and discover how Corda can solve these issues through its unique and efficient distributed ledger technology. These business scenarios come with flowcharts, diagrams, and sample code that stakeholders can refer to and further enhance during live projects. After reading R3 Corda for Architects and Developers, you will understand how efficient usage of Corda can create value for your business processes by making business intelligence more readily available, user friendly, and interactive. What You Will Learn Work with distributed ledger technology Discover Corda's differentiators Develop smart contracts, states, and business flows on Corda Take advantage of Corda in your business by going through case studies in various domains Who This Book Is For Blockchain developers and architects who wish to learn Corda.

Architecture for Blockchain Applications-Xiwei Xu 2019-03-15 This book addresses what software architects and developers need to know in order to build applications based on blockchain technology, by providing 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 focuses 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-Daniel Drescher 2017-03-14 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

The Blockchain Developer-Elad Elrom 2019-07-23 Become a Blockchain developer and design, build, publish, test, maintain and secure scalable decentralized Blockchain projects using Bitcoin, Ethereum, NEO, EOS and Hyperledger. This book helps you understand Blockchain beyond development and crypto to better harness its power and capability. You will learn tips to start your own project, and best practices for testing, security, and even compliance. Immerse yourself in this technology and review key topics such as cryptocconomics, coding your own Blockchain P2P network, different consensus mechanisms, decentralized ledger, mining, wallets, blocks, and transactions. Additionally, this book provides you with hands-on practical tools and examples for creating smart contracts and dApps for different blockchains such as Ethereum, NEO, EOS, and Hyperledger. Aided by practical, real-world coding examples, you'll see how to build dApps with Angular utilizing typescript from start to finish, connect to the blockchain network locally on a test network, and publish on the production mainnet environment. Don't be left out of the next technology revolution - become a Blockchain developer using The Blockchain Developer today. What You'll Learn Explore the Blockchain ecosystem is and the different consensus mechanisms Create miners, wallets, transactions, distributed networks and DApps Review the main features of Bitcoin: Ethereum, NEO and EOS, and Hyperledger are Interact with popular node clients as well as implementing your own Blockchain Publish and test your projects for security and scalability Who This Book Is For Developers, architects and engineers who are interested in learning about Blockchain or implementing Blockchain into a new greenfield project or integrating Blockchain into a brownfield project. Technical entrepreneurs, technical investors or even executives who want to better understand Blockchain technology and its potential.

Blockchain-Melanie Swan 2015-01-24 Bitcoin is starting to come into its own as a digital currency, but the blockchain technology behind it could prove to be much more significant. This book takes you beyond the currency ("Blockchain 1.0") and smart contracts ("Blockchain 2.0") to demonstrate how the blockchain is in position to become the fifth disruptive computing paradigm after mainframes, PCs, the Internet, and mobile/social networking. Author Melanie Swan, Founder of the Institute for Blockchain Studies, explains that the blockchain is essentially a public ledger with potential as a worldwide, decentralized record for the registration, inventory, and transfer of all assets—not just finances, but property and intangible assets such as votes, software, health data, and ideas. Topics include: Concepts, features, and functionality of Bitcoin and the blockchain Using the blockchain for automated tracking of all digital endeavors Enabling censorship/Resistant organizational models Creating a decentralized digital repository to verify identity Possibility of cheaper, more efficient services traditionally provided by nations Blockchain for science: making better use of the data-mining network Personal health record storage, including access to one's own genomic data Open access academic publishing on the blockchain This book is part of an ongoing O'Reilly series. Mastering Bitcoin: Unlocking Digital Crypto-Currencies introduces Bitcoin and describes the technology behind Bitcoin and the blockchain. Blockchain: Blueprint for a New Economy considers theoretical, philosophical, and societal impact of cryptocurrencies and blockchain technologies.

Transforming Climate Finance and Green Investment with Blockchains-Alastair Marke 2018-06-28 Transforming Climate Finance and Green Investment with Blockchains establishes and analyzes the connection between this revolutionary technology and global efforts to combat climate change. The benefits of blockchain come through various profound alterations, such as the adoption of smart contracts that are set to redefine governance and regulatory structures and transaction systems in coming decades. Each chapter contains a problem statement that describes the challenges blockchain technology can address. The book brings together original visions and insights from global members of the Blockchain Climate Institute, comprising thought leaders, financial professionals, international development practitioners, technology entrepreneurs, and more. This book will help readers understand blockchain technology and how it can facilitate the implementation of the Paris Agreement and accelerate the global transition to a green economy. Provides an authoritative examination of this emerging digital technology and its implications on global climate change governance Includes detailed proposals and thorough discussions of implementation issues that are specific to green economy sectors Relates innovative proposals to existing applications to demonstrate the value add of blockchain technology Covers blockchain for the smarter energy sector, for fraud-free emissions management, to streamline climate investments, and legal frameworks for blockchain-based climate finance

Business Process Management: Blockchain and Central and Eastern Europe Forum-Claudio Di Ciccio 2019-08-26 This book constitutes the contributions presented at the Blockchain Forum and the Central and Eastern Europe Forum (CEE Forum) held at the 17th International Conference on Business Process Management, BPM 2019, which took place in Vienna, Austria, in September 2019. The Blockchain Forum deals with the use of blockchain for collaborative information systems.

Conceptual, technical and application-oriented contributions are pursued within the scope of this theme. The Blockchain Forum received a total of 31 submissions; 10 full and 1 short paper were accepted for publication in this book. The objective of the CEE Forum is to foster discussion for BPM academics from Central and Eastern Europe to disseminate their research, compare results and share experiences. For the CEE Forum 16 submissions were received and 6 full and 2 short papers were accepted for publication. The book also contains one invited talk in full-paper length and 6 poster papers from the CEE Forum.

Blockchain and Distributed Ledger Technology Use Cases-Horst Treiblmaier 2020-06-05 Blockchain and other trustless systems have gone from being relatively obscure technologies, which were only known to a small community of computer scientists and cryptologists, to mainstream phenomena that are now considered powerful game changers for many industries. This book explores and assesses real-world use cases and case studies on blockchain and related technologies. The studies describe the respective applications and address how these technologies have been deployed, the rationale behind their application, and finally, their outcomes. The book shares a wealth of experiences and lessons learned regarding financial markets, energy, SCM, healthcare, law and compliance. Given its scope, it is chiefly intended for academics and practitioners who want to learn more about blockchain applications.

Blockchain Technology and Application-Xueming Si 2020-02-13 This book constitutes the refereed proceedings of the Second CCF China Blockchain Conference, CBCC 2019, held in Chengdu, China, in October 2019. The 16 revised full papers presented were carefully reviewed and selected from 112 submissions. The papers deal with research results and development activities in all aspects of blockchain science and technology.

Proceedings of the 18th International Conference on Computing in Civil and Building Engineering-Eduardo Toledo Santos

Blockchain - ICBC 2019-James Joshi 2019-06-18 This book constitutes the refereed proceedings of the Second International Conference on Blockchain, ICBC 2019, held as part of the Services Conference Federation, SCF 2019, in San Diego, CA, USA, in June 2019. The 13 full papers and 2 short papers presented were carefully reviewed and selected from 29 submissions. The papers cover a wide range of topics in blockchain technologies, platforms, solutions and business models such as new blockchain architecture, platform constructions, blockchain development and blockchain services technologies, as well as standards, and blockchain services innovation lifecycle including enterprise modeling, business consulting, solution creation, services orchestration, services optimization, services management, services marketing, business process integration and management.

The Business Blockchain-William Mougayar 2016-04-26 The definitive pioneering blueprint covering the what, why and how of the blockchain. Blockchains are new technology layers that rewire the Internet and threaten to side-step older legacy constructs and centrally served businesses. At its core, a blockchain injects trust into the network, cutting off some intermediaries from serving that function and creatively disrupting how they operate. Metaphorically, blockchains are the ultimate non-stop computers. Once launched, they never go down, and offer an incredible amount of resiliency, making them dependable and attractive for running a new generation of decentralized services and software applications. The Business Blockchain charts new territory in advancing our understanding of the blockchain by unpacking its elements like no other before. William Mougayar anticipates a future that consists of thousands, if not millions of blockchains that will enable not only frictionless value exchange, but also a new flow of value, redefining roles, relationships, power and governance. In this book, Mougayar makes two other strategic assertions. First, the blockchain has polymorphic characteristics: its application will result in a multiplicity of effects. Second, we shouldn't ask ourselves what problems the blockchain solves, because that gives us a narrow view on its potential. Rather, we should imagine new opportunities, and tackle even more ambitious problems that cross organizational, regulatory and mental boundaries. Drawing on 34 years of technology industry experience as an executive, analyst, consultant, entrepreneur, startup mentor, author, blogger, educator, thought leader and investor, William Mougayar describes a future that is influenced by fundamental shifts brought by blockchain technology as the catalyst for change. William Mougayar has been described as the most sophisticated blockchain business thinker. He is a blockchain industry insider whose work has already shaped and influenced the understanding of blockchain for people around the world, via his generous blogging and rigorous research insights. He is a direct participant in the crypto-technology market, working alongside startups, entrepreneurs, pioneers, leaders, innovators, creators, enterprise executives and practitioners; in addition to being an investor, advisor, and board member in some of the leading organizations in this space, such as the Ethereum Foundation, OpenBazaar and Coin Center. Just as the Internet created new possibilities that we didn't foresee in its early years, the blockchain will give rise to new business models and ideas that may still be invisible. Following an engaging Foreword by Vitalik Buterin, this book is organized along these 7 chapters: 1. What is the Blockchain? 2. How Blockchain Trust Infiltrates 3. Obstacles, Challenges & Mental Blocks 4. Blockchain in Financial Services 5. Lighthouse Industries & New Intermediaries 6. Implementing Blockchain Technology 7. Decentralization as the Way Forward The Business Blockchain is an invitation for technologists to better understand the business potential of the blockchain, and for business minded people to grasp the many facets of blockchain technology. This book teaches you how to think about the blockchain.

Introducing Ethereum and Solidity-Chris Dannen 2017-03-16 Learn how to use Solidity and the Ethereum project - second only to Bitcoin in market capitalization. Blockchain protocols are taking the world by storm, and the Ethereum project, with its Turing-complete scripting language Solidity, has rapidly become a front-runner. This book presents the blockchain phenomenon in context; then situates Ethereum in a world pioneered by Bitcoin. See why professionals and non-professionals alike are honing their skills in smart contract patterns and distributed application development. You'll review the fundamentals of programming and networking, alongside its introduction to the new discipline of crypto-economics. You'll then deploy smart contracts of your own, and learn how they can serve as a back-end for JavaScript and HTML applications on the Web. Many Solidity tutorials out there today have the same flaw: they are written for "advanced" JavaScript developers who want to transfer their skills to a blockchain environment. Introducing Ethereum and Solidity is accessible to technology professionals and enthusiasts of all levels. You'll find exciting sample code that can move forward real world assets in both the academic and the corporate arenas. Find out now why this book is a powerful gateway for creative technologists of all types, from concept to deployment. What You'll Learn See how Ethereum (and other cryptocurrencies) work Compare distributed apps (dapps) to web apps Write Ethereum smart contracts in Solidity Connect Ethereum smart contracts to your HTML/CSS/JavaScript web applications Deploy your own dapp, coin, and blockchain Work with basic and intermediate smart contracts Who This Book Is For Anyone who is curious about Ethereum or has some familiarity with computer science Product managers, CTOs, and experienced JavaScript programmers Experts will find the advanced sample projects in this book rewarding because of the power of Solidity

Advances in Practical Applications of Agents, Multi-Agent Systems, and Complexity: The PAAMS Collection-Yves Demazeau 2018-08-11 This book constitutes the proceedings of the 16th International Conference on Practical Applications of Agents and Multi-Agent Systems, PAAMS 2018, held in Toledo, Spain, in June 2018. The 20 regular and 19 demo papers presented in this volume were carefully reviewed and selected from 57 submissions. They deal with the application and validation of agent-based models, methods, and technologies in a number of key applications areas, such as: energy and security; engineering and tools; evaluation and ethics; negotiation and organisations; personalization and learning; simulation applications; simulation platforms; social networks and humans. The book also contains two invited talks in full paper length.

Blockchain Technology for Industry 4.0-Rodrigo da Rosa Righi 2020-01-03 This book explores recent advances in blockchain technology and its impact on Industry 4.0 via advanced technologies. It provides an in-depth analysis of the step by step evolution of Industry 4.0 and blockchain technologies for creating the next-generation, secure, decentralized, distributed and trusted industry environment and enhancing the productivity of industries. The book describes how blockchain technology makes the industrial internet (Industry 4.0) a transparent, reliable and secure environment for people, processes, systems, and services, presenting a strong, technological and conceptual framework and roadmap for decision-makers involved in the transformation of any area of industry.

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