Blockchain And Smart Card Technology

Bitcoin became a buzzword overnight. A cyber-enigma with an enthusiastic following, it pops up in headlines and fuels endless media debate. You can apparently use it to buy anything from coffee to cars, yet few people seem to truly understand what it is. This raises the question: Why should anyone care about bitcoin? In The Age of Cryptocurrency, Wall Street journalists Paul Vigna and Michael J. Casey deliver the definitive answer to this question. Cybermoney is poised to launch a revolution, one that could reinvent traditional financial and social structures while bringing the world's billions of "unbanked" individuals into a new global economy. Cryptocurrency holds the promise of a financial system without a middleman, one owned by the people who use it and one safeguarded from the devastation of a 2008-type crash. But bitcoin, the most famous of the cybermonies, carries a reputation for instability, wild fluctuation, and illicit business; some fear it has the power to eliminate jobs and to upend the concept of a nation-state. It implies, above all, monumental and wide-reaching change—for better and for worse. But it is here to stay, and you ignore it at your peril. Vigna and Casey demystify cryptocurrency—its origins, its function, and what you need to know to navigate a cyber-economy. The digital currency world will look very different from the paper currency world; The Age of Cryptocurrency will teach you how to be ready.

Businesses in today's world are adopting technology-enabled operating models that aim to improve growth, revenue, and identify emerging markets. However, most of these businesses are not suited to defend themselves from the cyber risks that come with these data-driven practices. To further prevent these threats, they need to have a complete understanding of modern network security solutions and the ability to manage, address, and respond to security breaches. The Handbook of Research on Intrusion Detection Systems provides emerging research exploring the theoretical and practical aspects of prominent and effective techniques used to detect and contain breaches within the fields of data science and cybersecurity. Featuring coverage on a broad range of topics such as botnet detection, cryptography, and access control models, this book is ideally designed for security analysts, scientists, researchers, programmers, developers, IT professionals, scholars, students, administrators, and faculty members seeking research on current advancements in network security technology.

The growth of Islamic finance today is significant, making it timely to meet the market demand across the world and particularly for Muslim countries by producing a cryptocurrency model under the Shari'ah ethical principles. This book addresses core components of cryptocurrency within the Maqasid al-Shari'ah in enabling students, academics, users, traders, issuers, promoters, facilitators, managers, regulators, decision makers, blockchain technology providers, financial authorities, and other relevant professionals to understand Shari'ah cryptocurrency and its practical mechanisms. Among the issues covered are corporate understanding, global phenomena and world view, the Shari'ah model, SWOT analysis, innovation, conventional practices and the Halal dichotomy, regulatory standards, blockchain and its technological paradigm, practicality, establishment, and operational mechanisms, Zakat and Waqf through cryptocurrency, risk factors, and a takafal solution. This book establishes a Halal alternative model of cryptocurrency management within the Maqasid al-Shari'ah to meet the contemporary global market demand.
Do you want to finally get a grip on Fintech today? or do you see everyone else making money with cryptocurrency? Are you tempted to start learning finally see why Fintech matters? Do you feel ignorant, unclear what big data is, and why it can change your life? Are you terrified of ending up old having wasted years not taking part in the data revolution right from the start? If you stay ignorant of Fintech, you will be passed by. Is this positive for you? Fintech: Hacking, Blockchain, Big Data, Cryptocurrency gets you up to speed fast, including an exploration of the history and future of cryptocurrency. This is a book of knowledge and doesn't just tell you to try harder. Life rewards those who take matters into their own hands, and this book is where to start. Fintech is full of real-life examples of how big data impacts people just like you. These examples are backed up by countless data expert studies, all of which will arm you with a knowledge primed for success with using Big Data immediately. Easy-to-implement small changes and practical takeaways for immediate action. What happens if you ignore cryptocurrency? - Learn the history of cryptocurrency. - Why should you care about becoming an expert in cryptocurrency? - What could you achieve with tips in the right direction - The consequences of ignoring cryptocurrency in your business How will you learn to compete in this data-driven age? - Identify the keys to mastering Fintech - Which tools are used to win at this game - Tricks for getting your feet on the ground today - How to develop the competency you are lacking What happens when you don't let life pass you by? - Never wonder "what if" you could have made millions with cryptocurrency! - Wake up every day with high energy and desire - Inspire yourself and others to become experts at Fintech. - Fulfill your destiny and start getting paid for this knowledge. Find out how to let go of your lack of knowledge and take flight towards being a Hacking expert, period. Create the business of your dreams around this Data Revolution. Try Fintech: Hacking, Blockchain, Big Data, Cryptocurrency today by clicking the BUY NOW button at the top right of this page! P.S. You'll be on your way to being part of the Fintech revolution within 24 hours.

Recent innovations have created significant developments in data storage and management. These new technologies now allow for greater security in databases and other applications. Decentralized Computing Using Blockchain Technologies and Smart Contracts: Emerging Research and Opportunities is a concise and informative source of academic research on the latest developments in block chain innovation and their application in contractual agreements. Highlighting pivotal discussions on topics such as cryptography, programming techniques, and decentralized computing, this book is an ideal publication for researchers, academics, professionals, students, and practitioners seeking content on utilizing block chains with smart contracts.

By 2020, experts forecast that up to 28 billion devices will be connected to the Internet with only one third of them being computers, smartphones and tablets. The remaining two thirds will be other "devices"-sensors, terminals, household appliances, thermostats, televisions, automobiles, production machinery, urban infrastructure and many other "things"-which traditionally have not been Internet enabled. This "Internet of Things" (IoT) represents a remarkable transformation of the way in which our world will soon interact. Much like the World Wide Web connected computers to networks, and the next evolution connected people to the Internet and other people, IoT looks poised to interconnect devices, people, environments, virtual objects and machines in ways that only science fiction writers could have imagined. In a nutshell, the Internet of Things (IoT) is the convergence of connecting people, things, data and processes. It is transforming our life, business and everything in between. Secure and Smart Internet of Things explores many aspects of the Internet of Things and explains many of the completed principles of IoT and the new advances in IoT including the use of Fog Computing, AI, and Blockchain technology. The topics discussed in the book include: - Internet of Things (IoT) - Industrial Internet of Things (IIoT) - Fog Computing - Artificial Intelligence - Blockchain Technology - Network Security - Zero-Trust Model - Data Analytics - Digital Transformation - DDoS - Smart Devices

As technology continues to advance and the interconnection of various devices makes our lives easier, it also puts us at further risk of privacy and security threats. Phones can connect to household devices to help set alarms, turn on or off the lights, and even preheat ovens. The Internet of Things (IoT) is this symbiotic interplay of smart devices that collect data and make intelligent decisions. However, the lack of an intrinsic security measure within IoT makes it especially vulnerable to privacy and security threats. Blockchain and IoT Integration highlights how Blockchain, an encrypted, distributed computer filing system, can be used to help protect IoT against such privacy and security breaches. The merger of IoT and blockchain technology is a step towards creating a verifiable, secure, and permanent method of recording data processed by "smart" machines. The text explores the platforms and applications of blockchain-enabled IoT as well as helps clarify how to strengthen the IoT security found in healthcare systems as well as private homes. Other highlights of the book include: Overview of the blockchain architecture Blockchain to secure IoT data Blockchain to secure drug supply chain and combat counterfeits Blockchain IoT concepts for smart grids, smart cities, and smart homes A biometric-based blockchain enabled payment system IoT for smart healthcare monitoring systems
Quantum information and contemporary smart network domains are so large and complex as to be beyond the reach of current research approaches. Hence, new theories are needed for their understanding and control. Physics is implicated as smart networks are physical systems comprised of particle-many items interacting and reaching criticality and emergence across volumes of macroscopic and microscopic states. Methods are integrated from statistical physics, information theory, and computer science. Statistical neural field theory and the AdS/CFT correspondence are employed to derive a smart network field theory (SNFT) and a smart network quantum field theory (SNQFT) for the orchestration of smart network systems. Specifically, a smart network field theory (conventional or quantum) is a field theory for the organization of particle-many systems from a characterization, control, criticality, and novelty emergence perspective. This book provides insight as to how quantum information science as a paradigm shift in computing may influence other high-impact digital transformation technologies, such as blockchain and machine learning. Smart networks refer to the idea that the internet is no longer simply a communications network, but rather a computing platform. The trajectory is that of communications networks becoming computing networks (with self-executing code), and perhaps ultimately quantum computing networks. Smart network technologies are conceived as autonomous self-operating computing networks. This includes blockchain economies, deep learning neural networks, autonomous supply chains, self-piloting driving fleets, unmanned aerial vehicles, industrial robotics cloudminds, real-time bidding for advertising, high-frequency trading networks, smart city IoT sensors, and the quantum internet.

Big Data Analytics is on the rise in the last years of the current decade. Data are overwhelming the computation capacity of high performance servers. Cloud, grid, edge and fog computing are a few examples of the current hype. Computational Intelligence offers two faces to deal with the development of models: on the one hand, the crisp approach, which considers for every variable an exact value and, on the other hand, the fuzzy focus, which copes with values between two boundaries. This book presents 114 papers from the 4th International Conference on Fuzzy Systems and Data Mining (FSDM 2018), held in Bangkok, Thailand, from 16 to 19 November 2018. All papers were carefully reviewed by program committee members, who took into consideration the breadth and depth of the research topics that fall within the scope of FSDM. The acceptance rate was 32.85%. Offering a state-of-the-art overview of fuzzy systems and data mining, the publication will be of interest to all those whose work involves data science.

This key textbook examines the financial growth and success of digital assets in the contemporary economy. As digital assets and other blockchain applications mature, and regulatory authorities work hard to keep pace, three leading attorneys in the field invite students to consider the legal frameworks pertinent to regulating this new method of exchange. In this, the first textbook of its kind, the authors explore the growth of smart contracts, the application of securities laws to token sales, the regulation of virtual currency businesses, the taxation of digital assets and the intersection of digital assets and criminal law.

The Blockchain Technology for Secure and Smart Applications across Industry Verticals, Volume 121, presents the latest information on a type of distributed ledger used for maintaining a permanent and tamper-proof record of transactional data. The book presents a novel compendium of existing and budding Blockchain technologies for various smart applications. Chapters in this new release include the Basics of Blockchain, The Blockchain History, Architecture of Blockchain, Core components of Blockchain, Blockchain 2.0: Smart Contracts, Empowering Digital Twins with Blockchain, Industrial Use Cases at the Cusp of the IoT and Blockchain Paradigms, Blockchain Components and Concepts, Digital Signatures, Accumulators, Financial Systems, and more. This book is a unique effort to illuminate various techniques to represent, improve, and authorize multi-institutional and multidisciplinary research in a different type of smart applications, like the financial system, smart grid, transportation system, etc. Readers in identity-privacy, traceability, immutability, transparency, auditability, and security will find it to be a valuable resource. Provides a snapshot of the state of current research based on the decentralized system that provides security and privacy to the smart applications. Chapters cover the fundamental concepts of the newly emerged Blockchain technology along with, the various smart applications Helps to elucidate new trading platforms that provides business benefits like efficiency, auditability, traceability, transparency, feedback, and security.

Handbook of Research on Blockchain Technology presents the latest information on the adaptation and implementation of Blockchain technologies in real world business, scientific, healthcare and biomedical applications. The book's editors present the rapid advancements in existing business models by applying Blockchain techniques. Novel architectural solutions in the deployment of Blockchain comprise the core aspects of this book. Several use cases with IoT, biomedical engineering, and smart cities are also incorporated. As Blockchain is a relatively new technology that exploits decentralized networks and is used in many sectors for reliable, cost-effective and rapid business transactions, this book is a welcomed addition on existing knowledge. Financial services, retail, insurance, logistics, supply chain, public sectors and biomedical industries are now investing in Blockchain research and technologies for their business growth. Blockchain prevents double spending in financial transactions without the need of a trusted authority or central server. It is a decentralized ledger platform that
facilitates verifiable transactions between parties in a secure and smart way. Presents the evolution of blockchain, from fundamental theories, to present forms Explains the concepts of blockchain related to cloud/edge computing, smart healthcare, smart cities and Internet of Things (IoT) Provides complete coverage of the various tools, platforms and techniques used in blockchain Explores smart contract tools and consensus algorithms Covers a variety of applications with real world case studies in areas such as biomedical engineering, supply chain management, and tracking of goods and delivery

Even though blockchain technology was originally created as a ledger system for bitcoin to operate on, using it for areas other than cryptocurrency has become increasingly popular as of late. The transparency and security provided by blockchain technology is challenging innovation in a variety of businesses and is being applied in fields that include accounting and finance, supply chain management, and education. With the ability to perform such tasks as tracking fraud and securing the distribution of medical records, this technology is key to the advancement of many industries.

The Research Anthology on Blockchain Technology in Business, Healthcare, Education, and Government is a vital reference source that examines the latest scholarly material on trends, techniques, and uses of blockchain technology applications in a variety of industries, and how this technology can further transparency and security. Highlighting a range of topics such as cryptography, smart contracts, and decentralized blockchain, this multi-volume book is ideally designed for academics, researchers, industry leaders, managers, healthcare professionals, IT consultants, engineers, programmers, practitioners, government officials, policymakers, and students.

Blockchain has great potential to create new foundations for our socio-economic systems by efficiently establishing trust among people and machines, reducing cost, and increasing utilization of resources. This book presents how blockchain can be applied in a wide variety of applications, including finance, healthcare, power grid, transportation, supply chain management, artificial intelligence, cloud/edge/fog computing and others. In addition, mathematical modeling of blockchain is presented from the aspects of scalability, decentralization, latency and security. Moreover, this book presents a performance optimization framework for blockchain systems to improve the performance of data security and efficiency, where the four-way trade-off, i.e., scalability, decentralization, latency and security, is considered.

Smart Card Security: Applications, Attacks, and Countermeasures provides an overview of smart card technology and explores different security attacks and countermeasures associated with it. It covers the origin of smart cards, types of smart cards, and how they work. It discusses security attacks associated with hardware, software, data, and users that are a part of smart card–based systems. The book starts with an introduction to the concept of smart cards and continues with a discussion of the different types of smart cards in use today, including various aspects regarding their configuration, underlying operating system, and usage. It then discusses different hardware- and software-level security attacks in smart card–based systems and applications and the appropriate countermeasures for these security attacks. It then investigates the security attacks on confidentiality, integrity, and availability of data in smart card–based systems and applications, including unauthorized remote monitoring, communication protocol exploitation, denial of service (DoS) attacks, and so forth, and presents the possible countermeasures for these attacks. The book continues with a focus on the security attacks against remote user authentication mechanisms in smart card–based applications and proposes a possible countermeasure for these attacks. Then it covers different communication standards for smart card–based applications and discusses the role of smart cards in various application areas as well as various open-source tools for the development and maintenance of smart card–based systems and applications. The final chapter explains the role of blockchain technology for securing smart card–based transactions and quantum cryptography for designing secure smart card–based algorithms. Smart Card Security: Applications, Attacks, and Countermeasures provides you with a broad overview of smart card technology and its various applications.

An authoritative introduction to the exciting new technologies of digital money Bitcoin and Cryptocurrency Technologies provides a comprehensive introduction to the revolutionary yet often misunderstood new technologies of digital currency. Whether you are a student, software developer, tech entrepreneur, or researcher in computer science, this authoritative and self-contained book tells you everything you need to know about the new global money for the Internet age. How do Bitcoin and its block chain actually work? How secure are your bitcoins? How anonymous are their users? Can cryptocurrencies be regulated? These are some of the many questions this book answers. It begins by tracing the history and development of Bitcoin and cryptocurrencies, and then gives the conceptual and practical foundations you need to engineer secure software that interacts with the Bitcoin network as well as to integrate ideas from Bitcoin into your own projects. Topics include decentralization, mining, the politics of Bitcoin, altcoins and the cryptocurrency ecosystem, the future of Bitcoin, and more. An
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.

FinTech is encouraging various new practices, such as diminishing the use of cash in different countries, increasing rate of mobile payments, and introducing new algorithms for high-frequency trading across national boundaries. It is paving the way for new technologies emerging in the information technology scene that allow financial service firms to automate existing business processes and offer new products, including crowdfunding or peer-to-peer insurance. These new products cater to hybrid client interaction and customer self-services, changing the ecosystem by increasing outsourcing for focused specialization by reserving and leading to new ecosystems and new regulations for encouraging FinTech. However, such new ecosystems are also accompanied by new challenges. Innovative Strategies for Implementing FinTech in Banking provides emerging research exploring the theoretical and practical aspects of technology inclusion in the financial sector and applications within global financing. It provides a clear direction for the effective implementation of FinTech initiatives/programs for improving banking financial processes, financial organizational learning, and performance excellence. Featuring coverage on a broad range of topics such as artificial intelligence, social financing, and customer satisfaction, this book encourages the management of the financial industry to take a proactive attitude toward FinTech, resulting in a better decision-making capability that will support financial organizations in their journey towards becoming FinTech-based organizations. As such, this book is ideally designed for financial analysts, finance managers, finance administrators, banking professionals, IT consultants, researchers, academics, students, and practitioners.

Handbook of Digital Finance and Financial Inclusion: Cryptocurrency, FinTech, InsurTech, Regulation, ChinaTech, Mobile Security, and Distributed Ledger explores recent advances in digital banking and cryptocurrency, emphasizing mobile technology and evolving uses of cryptocurrencies as financial assets. Contributors go beyond summaries of standard models to describe new banking business models that will be sustainable and likely to dictate the future of finance. The book not only emphasizes the financial opportunities made possible by digital banking, such as financial inclusion and impact investing, but also looks at engineering theories and developments that encourage innovation. Its ability to illuminate present potential and future possibilities make it a unique contribution to the literature. A companion Volume Two of The Handbook of Digital Banking and Financial Inclusion: ChinaTech, Mobile
Security, Distributed Ledger, and Blockchain emphasizes technological developments that introduce the future of finance. Descriptions of recent innovations lay the foundations for explorations of feasible solutions for banks and startups to grow. The combination of studies on blockchain technologies and applications, regional financial inclusion movements, advances in Chinese finance, and security issues delivers a grand perspective on both changing industries and lifestyles. Written for students and practitioners, it helps lead the way to future possibilities. Explains the practical consequences of both technologies and economics to readers who want to learn about subjects related to their specialties. Encompasses alternative finance, financial inclusion, impact investing, decentralized consensus ledger and applied cryptography. Provides the only advanced methodical summary of these subjects available today.

This book focuses on the fundamentals of blockchain technology along with the means and methods of its integration with Internet of Things (IoT). The book allows the reader to have a deeper understanding of blockchain technology, IoT and various application areas wherein both technologies can be implemented. The book serves the purpose of providing knowledge about the fundamentals of blockchain and IoT to a common reader along with allowing a research scholar to identify some futuristic problem areas that emerge from the convergence of both technologies. Furthermore, the authors discuss relevant application areas such as smart city, e-healthcare, smart travel, etc. throughout the course of the book. The book also talks through a few case studies illustrating the implementation and benefits of using blockchain and IoT. Provides a comprehensive view of blockchain technology and its integration with IoT. Facilitates in having a valuable understanding of various application areas pertaining to blockchain and IoT; Assists the reader in exploring new research areas wherein blockchain and IoT can find their applicability based upon their list of benefits.

This book highlights the recent research on hybrid intelligent systems and their various practical applications. It presents 34 selected papers from the 18th International Conference on Hybrid Intelligent Systems (HIS 2019) and 9 papers from the 15th International Conference on Information Assurance and Security (IAS 2019), which was held at VIT Bhopal University, India, from December 10 to 12, 2019. A premier conference in the field of artificial intelligence, HIS - IAS 2019 brought together researchers, engineers and practitioners whose work involves intelligent systems, network security and their applications in industry. Including contributions by authors from 20 countries, the book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering.

Blockchain technology is powering our future. As the technology behind cryptocurrencies like bitcoin and Facebook's Libra, open software platforms like Ethereum, and disruptive companies like Ripple, it's too important to ignore. In this revelatory book, Don Tapscott, the bestselling author of Wikinomics, and his son, blockchain expert Alex Tapscott, bring us a brilliantly researched, highly readable, and essential book about the technology driving the future of the economy. Blockchain is the ingeniously simple, revolutionary protocol that allows transactions to be simultaneously anonymous and secure by maintaining a tamperproof public ledger of value. Though it's best known as the technology that drives bitcoin and other digital currencies, it also has the potential to go far beyond currency, to record virtually everything of value to humankind, from birth and death certificates to insurance claims, land titles, and even votes. Blockchain is also essential to understand if you're an artist who wants to make a living off your art, a consumer who wants to know where that hamburger meat really came from, an immigrant who's tired of paying big fees to send money home to your loved ones, or an entrepreneur looking for a new platform to build a business. And those examples are barely the tip of the iceberg. As with major paradigm shifts that preceded it, blockchain technology will create winners and losers. This book shines a light on where it can lead us in the next decade and beyond.

Instead of talking about investing, this book will focus on how blockchain technology works and how it might be used in the future. Topics you can expect to see in this book include: What problem does blockchain solve? How can technology make our institutions faster and less expensive? Could technology replace our institutions (like governments, banks, etc) altogether? How does blockchain build trust between strangers? How does blockchain increase security for transactions and contracts? Can blockchain be used outside of finance? What is a block? What is the chain and why do we need it? What's a technical explanation of what happens in the blockchain? What is mining and why do we need it? Are there alternatives to mining to create a blockchain? What's the story of Bitcoin? Does Bitcoin have any problems? What is Ethereum, and what is a smart contract? Are there other blockchain technologies I should know about? How are companies adopting blockchain? What regulatory hurdles might slow blockchain adoption? Whew, that's a lot of questions. If you're ready to tackle them, I'm ready.

The only guide you need to understand mechanics behind blockchain technology Today only, get this Amazon bestseller for just $15.38. Regularly priced at $17.38! What the book can offer: This book will help you better understand blockchain, a new computer technology that is changing everything from how financial transactions are made to financial systems.
themselves. Unlike many other new technologies that emerge on the market, blockchain does not build on pre-existing technology. It actually created an entirely new model for how computer programs can run: in a decentralized, peer-to-peer, open-source manner that is not only virtually impenetrable but also does not require trusted mediaries to authorize transactions. Blockchain's origins go back to the early 1990s, the time when the Internet was beginning to become more accessible to the public. The full concept was laid out in 2008 with Satoshi Nakamoto's white paper on his proposed cryptocurrency, Bitcoin. He developed the blockchain concept into a fully operational program that provides the best security features in all of cyber security. Some programmers saw that blockchain could be used for programs other than Bitcoin. They went on to develop powerful networks such as Ethereum and Blockstack, while other programmers began to experiment with other practical applications that blockchain had. The potential of blockchain is enormous. It enables highly secure transactions that cannot be tampered with. One feature of blockchain, the smart contract, even ensures that all parties involved in a contract carry out their prescribed duties - without the need for any trusted third party or middleman! Thus, there is no need for haggling, disputing claims, or going back and forth on each party's responsibility. Adoption of this technology by insurance, financial, and other institutions carries the potential to save on administrative costs. Blockchain smart contracts could even be used in elections by enabling voters to cast their votes from home and automatically tally them in such a way that the final numbers are indisputable; this has the potential to eliminate voter fraud, reverse low-voter turnout, and the margin of error in counting votes. Even so, the potential that blockchain technology has is only beginning to be recognized. In this book, you will find accurate, detailed information that will help you understand what blockchain is, how it is currently being used, and how you can use it. Here Is A Preview Of What You'll Learn The history of blockchain technology Other technologies spawned from blockchain The mechanics behind how blockchain works Applications for blockchain Limitations and challenges of blockchain How to profit from blockchain How to build a mining rig Much, much more! Get your copy today! Take action today and buy this book for a limited time discount of only $15.38 Scroll up and click the buy button now!

Smart Card Security: Applications, Attacks, and Countermeasures provides an overview of smart card technology and explores different security attacks and countermeasures associated with it. It covers the origin of smart cards, types of smart cards, and how they work. It discusses security attacks associated with hardware, software, data, and users that are a part of smart card–based systems. The book starts with an introduction to the concept of smart cards and continues with a discussion of the different types of smart cards in use today, including various aspects regarding their configuration, underlying operating system, and usage. It then discusses different hardware- and software-level security attacks in smart card–based systems and applications and the appropriate countermeasures for these security attacks. It then investigates the security attacks on confidentiality, integrity, and availability of data in smart card–based systems and applications, including unauthorized remote monitoring, communication protocol exploitation, denial of service (DoS) attacks, and so forth, and presents the possible countermeasures for these attacks. The book continues with a focus on the security attacks against remote user authentication mechanisms in smart card–based applications and proposes a possible countermeasure for these attacks. Then it covers different communication standards for smart card–based applications and discusses the role of smart cards in various application areas as well as various open-source tools for the development and maintenance of smart card–based systems and applications. The final chapter explains the role of blockchain technology for securing smart card–based transactions and quantum cryptography for designing secure smart card–based algorithms. Smart Card Security: Applications, Attacks, and Countermeasures provides you with a broad overview of smart card technology and its various applications.

Today, cloud computing, big data, and the internet of things (IoT) are becoming indubitable parts of modern information and communication systems. They cover not only information and communication technology but also all types of systems in society including within the realms of business, finance, industry, manufacturing, and management. Therefore, it is critical to remain up-to-date on the latest advancements and applications, as well as current issues and challenges. The Handbook of Research on Cloud Computing and Big Data Applications in IoT is a pivotal reference source that provides relevant theoretical frameworks and the latest empirical research findings on principles, challenges, and applications of cloud computing, big data, and IoT. While highlighting topics such as fog computing, language interaction, and scheduling algorithms, this publication is ideally designed for software developers, computer engineers, scientists, professionals, academicians, researchers, and students.

Handbook of Blockchain, Digital Finance, and Inclusion, Volume 2: ChinaTech, Mobile Security, and Distributed Ledger emphasizes technological developments that introduce the future of finance. Descriptions of recent innovations lay the foundations for explorations of feasible solutions for banks and startups to grow. The combination of studies on blockchain technologies and applications, regional financial inclusion movements, advances in Chinese finance, and security issues delivers a grand perspective on both changing industries and lifestyles. Written for students and practitioners, it helps lead the way to future possibilities. Explains the practical consequences of both technologies and economics to readers who want to learn about subjects related to their specialties Encompasses alternative finance, financial inclusion, impact investing, decentralized consensus ledger and applied cryptography Provides the only advanced methodical summary of these subjects available today.
Innovative as it is, the blockchain technology is getting more and more attention and an increasing number of applications have emerged. This book elaborates on both the design thinking ideas and technical details in blockchain and smart contracts to help readers delve into the conceptual framework and understand why blockchain is designed as such and how it makes the current system decentralised yet effective. Having this understanding lays the ground for further analysis of blockchain-based solutions and innovative fintech applications. Topics covered in this book include blockchain structure, blockchain ecosystem, design thinking for blockchain, smart contract, fintech and financial services, solution-based problem solving, fintech valuation, and current issues faced such as privacy protection and solution selection, with the aid of real-life examples and hands-on exercises. Blockchain and Smart Contracts serves as a valuable guide for researchers and practitioners who have interests in the blockchain, smart contract, fintech innovation and applications, design thinking, and technical details. This book is particularly written for anyone who has no technical background and is searching for an initiation into the deep end of blockchain. Those with business, finance and economic interests will find this interesting and easy to digest.

Blockchain is emerging as a powerful technology, which has attracted the wider attention of all businesses across the globe. In addition to financial businesses, IT companies and business organizations are keenly analyzing and adapting this technology for improving business processes. Security is the primary enterprise application. There are other crucial applications that include creating decentralized applications and smart contracts, which are being touted as the key differentiator of this pioneering technology. The power of any technology lies in its ecosystem. Product and tool vendors are building and releasing a variety of versatile and robust toolsets and platforms in order to speed up and simplify blockchain application development, deployment and management. There are other infrastructure-related advancements in order to streamline blockchain adoption. Cloud computing, big data analytics, machine and deep learning algorithm, and connected and embedded devices all are driving blockchain application development and deployment. Blockchain Technology and Applications illustrates how blockchain is being sustained through a host of platforms, programming languages, and enabling tools. It examines: Data confidential, integrity, and authentication Distributed consensus protocols and algorithms Blockchain systems design criteria and systems interoperability and scalability Integration with other technologies including cloud and big data It also details how blockchain is being blended with cloud computing, big data analytics and IoT across all industry verticals. The book gives readers insight into how this path-breaking technology can be a value addition in several business domains ranging from healthcare, financial services, government, supply chain and retail.

Blockchain In 2008, work began on one of the most ambitious and liberating software projects to date. Satoshi Yakamoto put forward a paper detailing something called a cryptocurrency and how digital currencies could be created and given to one another without a central authority in the middle keeping track of every transaction. These technologies, bitcoin and blockchain, have changed the face of the web - and the world - forever. This book is going to teach you all about blockchain and its potential to change the world. This technology, though new, is baffling experts and has people making bold, bold predictions about the future. Why? Because blockchain is changing the game. Things that were previously convoluted bureaucratic messes now have the potential to be clear as day. Unscrupulous or downright dirty banking practices no longer have to be a concern. Blockchain offers the people the power to control the destiny of whatever they want to do and removes the need for any other person or party in various different applications. Within this book, I'm going to tell you about blockchain, cryptocurrencies, and the massive impact of blockchain so far. After that, we're going to go through various scenarios and uses for blockchain and the myriad ways that this technology is changing everything and could completely alter the paradigm for pretty much everything that we know in our society - should we let it. By the end of this book, you're going to feel like you can tackle the topic of blockchain with ease as you go forward. You may invest in cryptocurrencies, or you may get to work on the next great application of the blockchain technology. You may join a blockchain or bitcoin community so that you can talk about this technology with other people who care about it. You may just go to sleep, satisfied with the fact that you know more about this technology that's taking society by storm. But one thing is absolutely for certain: you're going to understand blockchain, everything that it symbolizes, and the million beautiful things that it could be. FinTech Did you know we're in the middle of a revolution? No, not the post-election fervor. We're in the middle of the FinTech revolution, and it's a big one. Everything that we know about the world of finance is changing before us. Innovation is constantly happening. This book is going to help you get up to speed on all of the change that's happened and the things that are important right now. This book is going to teach you about several things, including: The financial technology sector (FinTech) and its impact on traditional banking, on the global economy, and on the world at large. Cryptocurrencies such as bitcoin, blockchain technology, and why the two matter. (Pro-tip: They do. A lot.) Using robo-advisors to make sound investments. Peer-to-peer lending and the art of getting a good loan with a low interest rate without going through a bank. Crowdfunding projects to turn your idea into a beautiful reality. The state of FinTech and where it's headed. There are quite a few books out there on the topic, but there's one very simple reason that you should choose this one: I don't treat you like a kid, but I don't treat you like you've got a master's degree either. By the end of this book, I'll have taught you a lot of the important jargon in the world of FinTech, and you'll feel up-to-date and up-to-speed on everything there is to know about the current state of finance. Tags: Blockchain, Hidden Economy, Smart Contracts, Bitcoin, Financial Technology, Technical Implementation, History, Mechanics of Blockchain.
Blockchain is an emerging technology that can radically improve security in transaction network. It provides the basis for a dynamic distributed ledger that can be applied to save time when recording transactions between parties, remove costs associated with intermediaries, and reduce risks of fraud and tampering. This book explores the fundamentals and applications of Blockchain technology—the transparent, secure, immutable and distributed database used currently as the underlying technology for Cryptocurrency. Topics covered in this book: Blockchain technology, Smart contracts, Hashing, SHA-256 Hash, Verification, Validation, Consensus models, Digital Mining, Hard fork, Soft fork, Bitcoin, Ethereum, Proof of work, Proof of stack, Myths about Blockchain, Decentralized peer-to-peer network, Types of Blockchain networks, Hot and Cold Wallets, Double Spend, Decentralized Applications, Transaction networks, Sidechains, 51% attack, Cryptocurrency, Digital transformation, Internet of Things (IoT), Artificial Intelligence (AI), Cybersecurity and the Future of Blockchain.

This book gathers the proceedings of the 9th International Conference on Frontier Computing, held in Kyushu, Japan on July 9–12, 2019, and provides comprehensive coverage of the latest advances and trends in information technology, science and engineering. It addresses a number of broad themes, including communication networks, business intelligence and knowledge management, web intelligence, and related fields that inspire the development of information technology. The respective contributions cover a wide range of topics: database and data mining, networking and communications, web and internet of things, embedded systems, soft computing, social network analysis, security and privacy, optical communication, and ubiquitous/pervasive computing. Many of the papers outline promising future research directions, and the book will benefit students, researchers and professionals alike. Further, it offers a useful reference guide for newcomers to the field.

Find out what Blockchain is, how it works, and what it can do for you Blockchain is the technology behind Bitcoin, the revolutionary 'virtual currency' that's changing the way people do business. While Bitcoin has enjoyed some well-deserved hype, Blockchain may be Bitcoin's most vital legacy. Blockchain For Dummies is the ideal starting place for business pros looking to gain a better understanding of what Blockchain is, how it can improve the integrity of their data, and how it can work to fundamentally change their business and enhance their data security. Blockchain For Dummies covers the essential things you need to know about this exciting technology's promise of revolutionizing financial transactions, data security, and information integrity. The book covers the technologies behind Blockchain, introduces a variety of existing Blockchain solutions, and even walks you through creating a small but working Blockchain-based application. Blockchain holds the promise to revolutionize a wide variety of businesses. Get in the know about Blockchain now with Blockchain For Dummies and be ready to make the changes to business that your colleagues and competitors will later wish they'd done. Discover ten ways Blockchain can change business Find out how to apply a Blockchain solution See how to make data more secure Learn how to work with vendors Filled with vital information and tips on how this paradigm-changing technology can transform your business for the better, this book will not only show you Blockchain's full potential, but your own as well!

There is a broad consensus amongst law firms and in-house legal departments that next generation “Legal Tech”—particularly in the form of Blockchain-based technologies and Smart Contracts—will have a profound impact on the future operations of all legal service providers. Legal Tech startups are already revolutionizing the legal industry by increasing the speed and efficiency of traditional legal services or replacing them altogether with new technologies. This on-going process of disruption within the legal profession offers significant opportunities for all business. However, it also poses a number of challenges for practitioners, trade associations, technology vendors, and regulators who often struggle to keep up with the technologies, resulting in a widening regulatory “gap.” Many uncertainties remain regarding the scope, direction, and effects of these new technologies and their integration with existing practices and legacy systems. Adding to the challenges is the growing need for easy-to-use contracting solutions, on the one hand, and for protecting the users of such solutions, on the other. To respond to the challenges and to provide better legal communications, systems, and services Legal Tech scholars and practitioners have found allies in the emerging field of Legal Design. This collection brings together leading scholars and practitioners working on these issues from diverse jurisdictions. The aim is to introduce Blockchain and Smart Contract technologies, and to examine their on-going impact on the legal profession, business and regulators.

Take advantage of Bitcoin's underlying technology, the blockchain, to build massively scalable, decentralized applications known as dapps. In this practical guide, author Siraj Raval explains why dapps will become more widely used—and profitable—than today's most popular web apps. You'll learn how the blockchain's cryptographically stored ledger, scarce-asset model, and peer-to-peer (P2P) technology provide a more flexible, better-incentivized structure than current software models. Once you understand the theory behind dapps and what a thriving dapp ecosystem looks like, Raval shows you how to use existing tools to create a working dapp. You'll then take a deep dive into the OpenBazaar decentralized market, and examine two case studies of successful dapps currently in use. Learn advances in distributed-system technology that make distributed data, wealth, identity, computing, and bandwidth possible Build a Twitter clone with the Go language, distributed architecture, decentralized messaging app, and peer-to-peer data store Learn about OpenBazaar's decentralized market.
and its structure for supporting transactions. Explore Lighthouse, a decentralized crowdfunding project that rivals sites such as Kickstarter and IndieGogo. Take an in-depth look at La Zooz, a P2P ridesharing app that transmits data directly between riders and drivers.