Beginning Blockchain

A Beginner's Guide to Building Blockchain Solutions

Bikramaditya Singhal
Gautam Dhameja
Priyansu Sekhar Panda

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Bikramaditya Singhal
Bangalore, Karnataka, India

Gautam Dhameja
Berlin, Berlin, Germany

Priyansu Sekhar Panda
Bangalore, Karnataka, India

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About the Authors

Bikramaditya Singhal is a Blockchain expert and AI practitioner with experience working in multiple industries. He is proficient in Blockchain, Bitcoin, Ethereum, Hyperledger, cryptography, cyber security, and data science. He has extensive experience in training and consulting on Blockchain and has designed many Blockchain solutions. He worked with companies such as WISeKey, Tech Mahindra, Microsoft India, Broadridge, and Chelsio Communications, and he also cofounded a company named Mund Consulting that focuses on big data analytics and artificial intelligence. He is an active speaker at various conferences, summits, and meetups. He has also authored a book entitled *Spark for Data Science*.

Gautam Dhameja is a Blockchain application consultant based out of Berlin, Germany. For most of this decade, he has been developing and delivering enterprise software including Web and Mobile apps, Cloud-based hyper-scale IoT solutions, and more recently, Blockchain-based decentralized applications (DApps). He possesses a deep understanding of the decentralized stack, cloud solutions architecture, and object-oriented design. His areas of expertise include Blockchain, Cloud-based enterprise solutions, Internet of Things, distributed systems, and native and hybrid mobile apps. He is also an active blogger and regularly speaks at tech conferences and events.

Priyansu Sekhar Panda is a research engineer at Underwriters Laboratories, Bangalore, India. He has worked with other IT companies such as Broadridge, Infosys Limited, and Tech Mahindra. His areas of expertise include Blockchain, Bitcoin, Ethereum, Hyperledger, game theory, IoT, and artificial intelligence. Priyansu's current research is on building next-gen applications leveraging Blockchain, IoT, and AI. His major research interests include building Decentralized Autonomous Organizations (DAO), and the security, scalability, and consensus of Blockchains.

About the Technical Reviewer

Navin K Manaswi has been developing AI solutions/products with the use of cutting-edge technologies and sciences related to artificial intelligence for many years. Having worked for consulting companies in Malaysia, Singapore, and the Dubai Smart City project, he has developed a rare skill of delivering end-to-end artificial intelligence solutions. He built solutions for video intelligence, document intelligence, and human-like chatbots in his own company. Currently, he solves B2B problems in verticals of healthcare, enterprise applications, industrial IoT, and retail in the Symphony AI incubator as Deep Learning-AI Architect. Through this book, he wants to democratize cognitive computing and services for everyone, especially developers, data scientists, software engineers, database engineers, data analysts, and CXOs.

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Introduction

Beginning Blockchain is a book for those willing to learn about the technical fundamentals of Blockchain, practical implications, and hands-on development aspects of Blockchain applications. Adequate history, background, and theoretical aspects are covered to help you build a solid foundation for your Blockchain journey, and appropriate development aspects are covered with coding examples to help you jumpstart on Blockchain assignments. The first chapter introduces you to the Blockchain world and sets the context. The second chapter dives deeper into the core components of Blockchain. The third chapter is focused on Bitcoin's technical concepts so what was discussed in the second chapter could be demonstrated with Bitcoin as a cryptocurrency use case of Blockchain. The fourth chapter is dedicated to the Ethereum Blockchain in an effort to demonstrate how Blockchain could be programmed for many more use cases and not limited to just cryptocurrencies. The fifth chapter is where you get the hang of Blockchain development with examples on basic transactions in both Bitcoin and Ethereum. The sixth chapter, as the final chapter, demonstrates the end-to-end development of a decentralized application (DApp). By the end of this chapter, you will have been equipped with enough tools and techniques to address many real-world business problems with applicable Blockchain solutions. Start your journey toward limitless possibilities.