



Fundamentals of Blockchain

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PREFACE

This book offers an introduction to and exploration of the fundamental concepts that form the backbone of blockchain. Whether a novice or technologist, I hope to help make this transformational topic accessible to those who study it, use it, learn it and dream about it.

The journey starts with a fundamental understanding of blockchain which shows how this algorithmic thinking banked off from the cryptic space of currency to rise as a sweeping methodology with pincers snipping finance, health, supply chain, governance, education, etc. From the cryptographic underpinnings that secure the data and the network, to the world of smart contracts and decentralized applications that are fast taking shape, this book will help you understand your place in the story of something that has the potential not only to change the world, but to remake it in a fairer, open, and inclusive image. The Structure of each chapter of this book take you deeper down the rabbit hole with the goal of helping you understand more about the next aspect of what blockchain is and does.

Through detailed explanations of Bitcoin and Ethereum, the audience get to know what blockchain platforms are really about. We cover the technical details, such as hashing algorithms, consensus mechanisms, and scalability challenges, as well as the broader societal impact of the blockchain scene, from privacy to ethics, decentralization to total global disruption. The trend will be to increasingly differentiate innovation from speculation and hype from reality as the blockchain ecosystem evolves. With a focus on practical applications, recent developments, and contemporary issues, the Handbook provides a comprehensive guide to the world of science and technology.

We really hope that this book will spark your curiosity and increase your understanding, as well as equip you with the knowledge to explore and engage in the rapidly evolving world of blockchain. This is a must read for those building decentralized systems or just getting started in the field, and

also for policymakers to regulate this emerging industry.

Your Sincerely,

Parijata Majumdar
Jayanta Das
Dipanjoy Majumder
Sanjoy Mitra

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