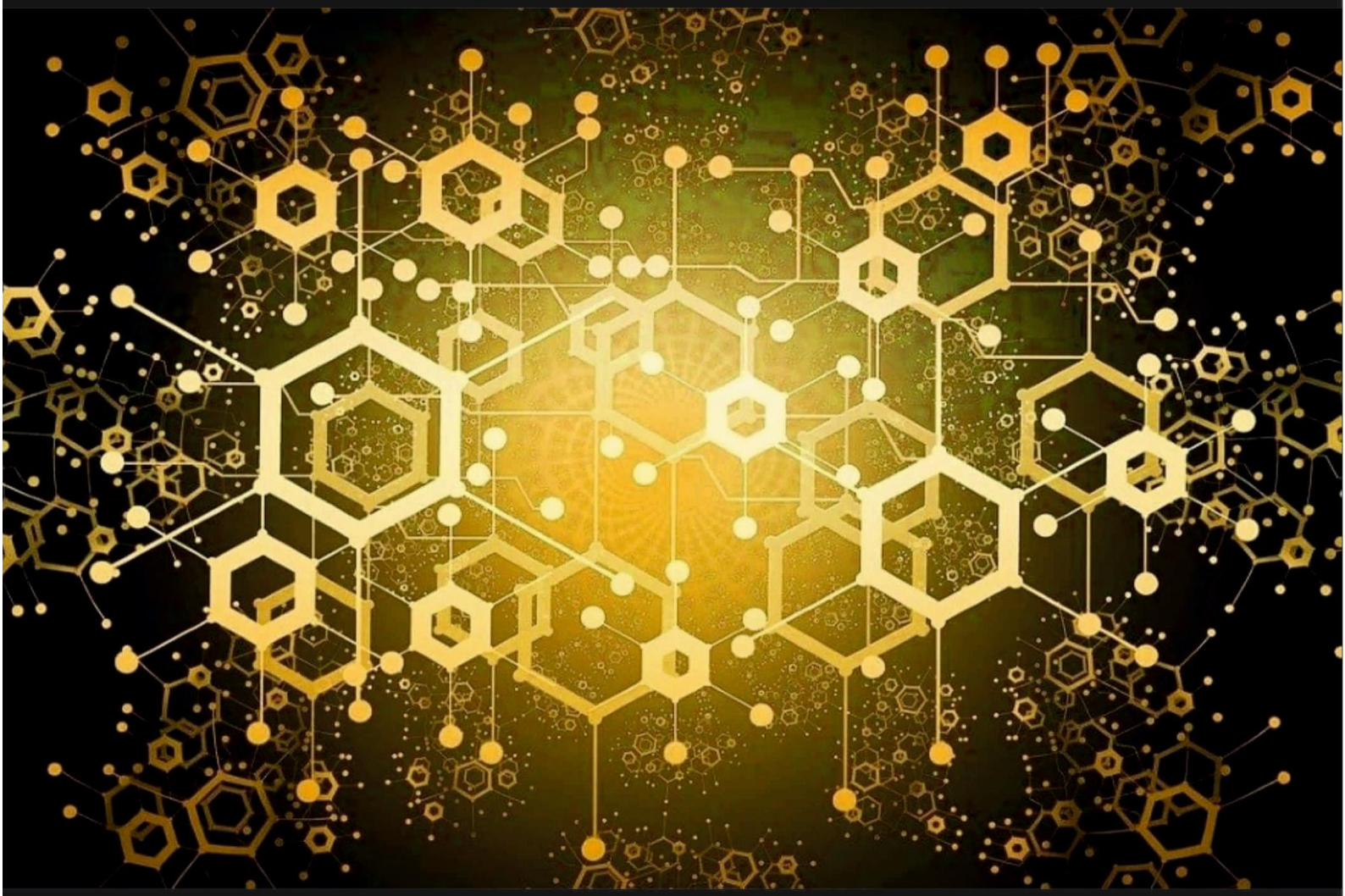
FUNDAMENTALS OF BLOCKCHAIN TECHNOLOGY



Dr. Sumangala Patil
Mukesh Bansal
Dr. Noorullah Shariff C.

Kripa Drishti Publications, Pune.

FUNDAMENTALS OF
BLOCKCHAIN TECHNOLOGY

Dr. Sumangala Patil
Professor,
Computer Science & Engineering Department,
Faculty of Engineering & Technology (Co-Education) Sharanabasva University, Kalaburagi, Karnataka.

Mukesh Bansal
Senior Director,
Head of CSP Sales,
MNC, UK.

Dr. Noorullah Shariff C.
Senior Professor,
Department of AI&ML,
Ballari Institute of Technology and Management,
Ballari.

Kripa-Drishti Publications, Pune.

Book Title: **Fundamentals of Blockchain Technology**

Authored By: **Dr. Sumangala Patil, Mukesh Bansal, Dr. Noorullah Shariff C.**

Price: ₹599

1st Edition

ISBN: **978-81-19149-22-3**

Published: **April 2023**

Publisher:

Kripa-Drishti Publications

A/ 503, Poorva Height, SNO 148/1A/1/1A,
Sus Road, Pashan- 411021, Pune, Maharashtra, India.
Mob: +91-8007068686
Email: editor@kdpublications.in
Web: https://www.kdpublications.in

PREFACE

The purpose of **Fundamentals of Blockchain Technology** book is to teach you about the theoretical aspects of blockchain technology. This book covers all the fundamentals of Blockchain technology that you need to know to become a Blockchain expert. This book is a vision to advance the technology behind this innovation, thus providing a fundamental explanation of this technology. With the help of this book, readers can learn the following topics in-depth in a very simple way: Introduction to Blockchain Cryptographic Primitives Blockchain Types Consensus Algorithms Challenges in Blockchain Technology.

This Book, equips you with an understanding of what blockchain is, how it works, and how it can enhance your business and the industry in which it operates. You learn the fundamentals of blockchain and how this technology will revolutionize transactions and business networks. You also discover the important difference between blockchain and block- chain for business and what makes blockchain an ideal solution for streamlining business networks. You will also discover Hyperledger, a Linux Foundation project, designed to help advance technology and thought leadership of cross-industry blockchain technologies. You learn about Hyperledger Fabric, an open source framework, and the instrumental role it plays in developing a blockchain for business. Finally, you find out everything you need to spin up a blockchain network today.

Abbreviations

Anti-Money Laundering (AML)

Application Binary Interface (ABI)

Bitcoin (BTC)

Bitcoin Cash (BCH)

Block Header (BH)

Byzantine Fault Tolerance (BFT)

Chain Virtual Machine (CVM),

Decentralised Applications (Dapps)

Decentralised Autonomous Organisations (DAOs)

Decentralized Autonomous Organization (DAO)

Denial of Service (DoS)

Digital Applications (DApps)

Directed Acyclic Graphs (DAG)

Distributed Denial of Service (DDoS)

Distributed Ledger Technologies (DLT)

Distributed Ledger Technology (DLT)

Domain Name System (DNS)

Domain Name System (DNS)

Ethereum Virtual computer (EVM)

Ethereum Virtual Machine (EVM)

Initial Coin Offerings (ICOs)

Initial Public Offering (IPO)

Internet of Things (IoT)

Know Your Customer (KYC)

Litecoin (LTC)

Machines as a Service (MaaS)

Man in The Middle (MITM)

Mobility Open Blockchain Initiative (MOBI)

Peer-To-Peer (P2P)

Progressive Web Apps (PWAs)

Proof of Activity (PoA)

Proof of Elapsed Time (PoET)

Proof of Stake (PoS)

Proof of Work (PoW)

Proof-Of-Work (PoW)

Pure Proof-Of-Stake (PPoS)

RACE Integrity Primitives Evaluation Message Digest (RIPEMD)

Responsible Sourcing Blockchain Network (RSBN)

Self-Sovereign Identification (SSI)

Supply Chain Management (SCM)

USD Coin (USDC)

Verifiable Random Functions (VRF)

Virtual Machine (EVM)

Zero-Knowledge Proofs (ZKPs)

INDEX

ABOUT THE EDITORS

Dr . Sumangala Patil *(B.E., M.Tech., Ph.D., MISTE)*

 # Currently working as a Professor in Computer Science & Engineering Department, Faculty of Engineering & Technology (Co-Education) Sharanabasva University, Kalaburagi, Karnataka State
 # Former Associate Professor @ Lingaraj Appa Engineering College, Bidar.
 # Former Associate Professor @ PVKK Institute of Technology, Ananthapur.
#Attended number of Faculty Development Program & Workshop.
 # Number of Workshops & Conferences are Organized
BE (E&CE) First Class passed out year 1993,
M.Tech (Computer Science & Engineering) First Class passed out year 2001.
Ph D in (Computer Science & Engineering) Awarded 2020, from JNT University Ananthapur (AP).
12 No of National & International Journal Research Paper are published.
Recognized by the Visvesvaraya Technological University, Belagavi for Ph.D. Recognized Guide.
#Total Teaching Experience is more than 25 years.

Mukesh Bansal *(B.E., MS, pursuing PhD)*

Currently working as senior director in Europe based MNC, he is an experienced I.T. / Telecommunication professional and executive with broad and well-balanced technical, commercial, business and people management skills. Former scientist in ISRO, and town councilor of Newbury (UK) Town Council, he has vast experience in the telecommunications and research industries managing complex transformational deals and advising clients on various strategic issues. He has authored various research and white papers in area of intelligent OSS, blockchain and Network Security domains. He is MSP, PRINCE2, ITIL, PRINCE2Agile, CEH, CISM, CISO certified and holds bachelor's degree from Engineering College Kota, Master's degree from BITS PILANI and currently pursuing PhD in cyber security.

Dr. Noorullah Shariff C. *received the B.Tech (ECE) degree from NITK, Surathkal in 1984, ME (Guided Missiles) from DIAT, Pune in 1986 and PhD(CSE) Degree from Monad University, Hapur in 2013. He is currently a Senior Professor at the Department of AI&ML, Ballari Institute of Technology and Management, Ballari. He has worked as Professor, HOD, Vice Principal (Academics) & Principal in various Engineering colleges with a total experience of 36 years. He has 30 research papers in national and international conferences and journals to his credit. He has conducted national and international conferences, FDP and workshops.*

KRIPA DRISHTI PUBLICATIONS

Kripa-Drishti Publications
A-503 Poorva Heights, Pashan-Sus Road, Near Sai Chowk,
Pune – 411021, Maharashtra, India.
Mob: +91 8007068686
Email: editor@kdpublications.in
Web: https://www.kdpublications.in

Price: ₹ 599

ISBN: 978-81-19149-22-3

9 788119 149223