



River Publishers

Blockchain and AI Amalgamation for IoT Applications Beyond 5G

Editors:

Sudeep Tanwar, Marwadi University, Rajkot, India

Maniklal Das, Dhirubhai Ambani Institute of Information and Communication Technology, India

Abderrahim Benslimane, Avignon University, France

Rajesh Gupta, Marwadi University, Rajkot, India

Blockchain and AI Amalgamation for IoT Applications Beyond 5G explores how blockchain, AI, and 5G converge to secure, scale, and transform IoT. Covering privacy, predictive security, edge devices, vehicles, and the metaverse, it offers both theory and real-world applications.

TABLE OF CONTENTS

Part 1 Laying the Foundation: Blockchain and AI Amalgamation in 5G-IoT

1. Introduction of Blockchain and 5G-enabled IoT Devices

R. Venkatesh

2. A Review on Blockchain-enabled Decentralized Architecture in a 5G-IoT Network

Keshini R Trivedi

3. Integrating Blockchain and IoT: Opportunities, Challenges, and Applications

N Rajkumar, C Viji, Balusamy Nachiappan, A Mohanraj, N Karthikeyan, and Judeson Antony Kovilpillai J

4. Case Studies and Prototypes for Blockchain and Artificial Intelligence (AI) Integration in 5G-Enabled (IoT) Systems: Towards Secure, Intelligent, and Efficient Paradigms

Khalid Aziz, Sakshi Dua, and Prabal Gupta

Part 2 Security and Privacy Enhancement in 5G-IoT Using Blockchain and AI

5. Enhancing Data Security and Privacy in 5G-IoT Using Blockchain Technology

Rohit Malik, Sakshi Dua, Preeti Shoran, Prabal Gupta

6. Interconnected Integrity: Securing IoT Networks with Blockchain Technology

Sartaj Singh, Shilpa, Sandeep Kaur, and Rishi Kumar

7. An Adaptive Approach for Cloud Security Using Cloud Service Tool, Blockchain, Protocols and Algorithms

Sheetal Kumar Dixit, Rahul Jain, Madhuri Bhavsar, and Preeti Kathiria

8. Blockchain-enabled VPN Security

Nidhi Bangar, Jaskeerat Kaur, and Nitin Rathore

Part 3 Intelligent Decision Making and Automation for 5G-IoT Systems Powered by Blockchain and AI

9. Smarter Security: Blockchain and AI-driven Identity Management for Next-Generation IoT

Neel Dedkawala, Priyal Bhinde, Rajesh Gupta, and Sudeep Tanwar

10. Enabling Automated Network Services Using Zero-touch Technology for Intelligent 5G-IoT Communication

Roshni Pankaj Kumar Rana, Nitin Rathore, and Aparna Kumari

11. Blockchain and AI Integration for Enhanced Security and Intelligence in 5G-IoT

Yash Koshti, Rahul Jain, Deepak Kumar Mehta, Sejal Mishra, and Nitin Varshney

12. Enhancing Environmental Monitoring and Sustainability through 5G-IoT Integration with AI and Blockchain

Heena Khanna, Sartaj Singh, Manik Mehra, and Akshay Sahnun

Part 4 Applications of Blockchain and AI in 5G-IoT

13. Exploration of Conditional Privacy Preserving and Authentication Protocols for Internet of Vehicles

Neha Bagga, Sheetal Kalra, Sartaj Singh, and Vinit Grewal

14. Solutions of Blockchain and Artificial Intelligence for 5G-Internet of Things in Agriculture

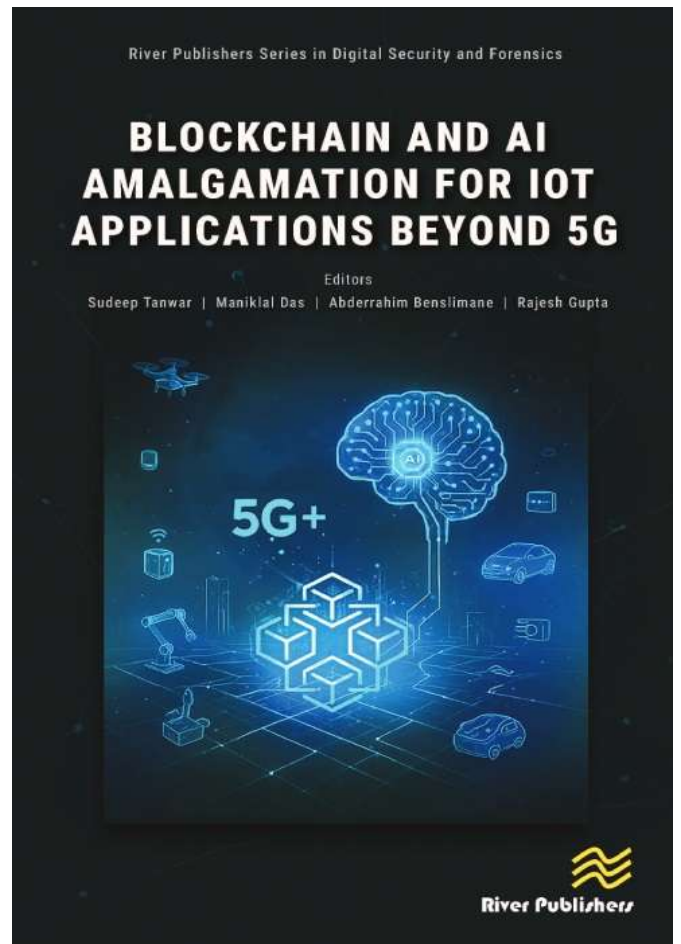
Isaac Oluwafemi Elesemoyo, Oyeyemi Temitayo Oyewole, Adekemi Joanne Olowu, Julius Olanmibo Ogunniyi, and Favour Oluchi Boi

15. Smart Travelling Bag: Leveraging Blockchain for Enhanced Travel Security and Efficiency with 5G Technology

Detroja Heli, Thakkar Mansi, Ayushi Shah, Keyaba Gohil, Rajesh Gupta, and Sudeep Tanwar

16. Transformation of Financial and Virtual Realms in the Metaverse: A Blockchain Technology Perspective

Sheetal Sharma, Rushina Singhi, Kiran Jindal, and Vijit Chaturvedi



River Publishers Series in Digital Security and Forensics

ISBN: 9788743809043

e-ISBN: 9788743809036

Available From: July 2026

Price: \$ 140.00

KEYWORDS:

Blockchain technology, 5G communication, Internet of Things, decentralized architecture, data security, privacy preservation, artificial intelligence, zero trust and zero touch networks, internet of vehicles (IoV), smart agriculture, environmental monitoring, secure identity management, VPN security, cloud security, sustainability, metaverse security, 5G-IoT security paradigms, predictive analytics, intelligent communication, integrity, distributed ledger technology (DLT), smart infrastructure.



www.riverpublishers.com
marketing@riverpublishers.com