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Artificial Intelligence, Big Data, IOT and Block Chain in Healthcare: From Concepts to Applications

Volume 1

 Springer

Editor

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Preface

“Artificial Intelligence, Big Data, IoT & Blockchain: From Concepts to Applications” is a groundbreaking exploration into the dynamic intersection of four transformative technologies: Artificial intelligence (AI), big data, Internet of things (IoT), and blockchain. In this comprehensive volume, readers are guided through an illuminating journey that spans from foundational concepts to real-world implementations, illuminating the profound impact these technologies have on various sectors, industries, and facets of everyday life.

The book serves as a beacon for both novices and experts alike, providing a clear and concise overview of each technology’s core principles and methodologies. Starting with artificial intelligence, readers are introduced to the diverse array of AI techniques, including machine learning, deep learning, natural language processing, and computer vision. Through elucidating examples and case studies, the book demonstrates how AI algorithms can analyze vast datasets, extract meaningful insights, and automate decision-making processes across domains such as healthcare, finance, transportation, and beyond.

Moving on to big data, the book explores the challenges and opportunities presented by the exponential growth of data in today’s digital age. Readers gain a deep understanding of big data architectures, tools, and analytics techniques that empower organizations to extract actionable intelligence from complex datasets. From predictive analytics to data mining and beyond, the book showcases how big data fuels innovation and drives business transformation across diverse industries.

In the realm of the Internet of things (IoT), readers are immersed in a world of interconnected devices, sensors, and systems that are revolutionizing the way we interact with our environment. Through compelling examples and use cases, the book elucidates how IoT technologies enable smart cities, intelligent transportation systems, precision agriculture, and a myriad of other applications that enhance efficiency, sustainability, and quality of life.

Finally, the book delves into the transformative potential of blockchain technology, which serves as the backbone of decentralized digital ecosystems. From cryptocurrencies to smart contracts and decentralized applications (DApps), readers discover how blockchain enables trustless transactions, immutable record-keeping, and secure data exchange in a variety of contexts, including finance, supply chain management, healthcare, and identity verification.

Throughout the book, emphasis is placed not only on theoretical concepts but also on practical applications and real-world case studies that illustrate the tangible benefits of integrating AI, big data, IoT, and blockchain technologies. Whether you’re a business leader seeking to drive innovation, a technologist exploring the frontiers of digital transformation, or simply an enthusiast intrigued by the possibilities of emerging technologies, “Artificial Intelligence, Big Data, IoT & Blockchain: From Concepts to Applications” serves as an indispensable guide to navigating the evolving landscape of the Fourth Industrial Revolution.

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