



INNOVATIONS IN INTELLIGENT INTERNET OF EVERYTHING (IOE)

# AIoT

## Artificial Intelligence of Things

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and Suganyadevi S.

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# Preface

Artificial Intelligence of Things (AIoT) refers to the integration of Artificial Intelligence (AI) capabilities into everyday objects and devices, allowing them to analyze data, make decisions, and communicate with each other, leading to improved efficiency, convenience, and new possibilities in various aspects of our lives.

The book *AIoT: Artificial Intelligence of Things* provides a comprehensive exploration of the intersection between AI and the Internet of Things (IoT), offering readers an in-depth understanding of this rapidly evolving field. The book provides insight into the integration of AI capabilities into everyday objects and devices, enabling them to become more intelligent, autonomous, and responsive.

The scope of the book is wide-ranging, covering various aspects of AIoT from fundamental concepts to advanced applications. It begins with an introduction to AI, IoT, and their synergistic relationship, explaining how AI technologies enhance the capabilities of IoT devices. Further, the book explores the key components of AIoT, including sensors, connectivity, data processing, and machine learning algorithms.

Readers are introduced to different AIoT architectures, such as cloud-based, edge-based, and hybrid systems, along with their advantages and challenges. The book explores the role of big data analytics in AIoT, highlighting how large-scale data collection and analysis can drive intelligent decision-making and predictive insights.

Furthermore, the book delves into the various AI techniques employed in AIoT systems, such as natural language processing, computer vision, deep learning, and reinforcement learning, elucidating how these techniques enable IoT devices to perceive, reason, and make intelligent decisions.

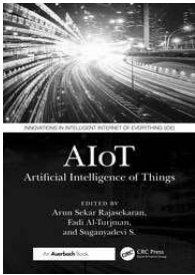
The authors discuss the challenges and considerations in developing AIoT solutions, including privacy, security, ethics, and regulatory implications. They also examine the potential applications of AIoT across different domains, including smart homes, healthcare, transportation, manufacturing, agriculture, and energy management, providing real-world examples and case studies to illustrate the transformative impact of AIoT in these areas.

In addition, the book explores emerging trends and future directions in AIoT, such as the integration of blockchain technology, edge computing, and swarm intelligence. It also discusses the societal implications of AIoT, including its impact on the job market, privacy concerns, and ethical considerations.

Overall, *AIoT: Artificial Intelligence of Things* serves as a comprehensive guide for researchers, practitioners, and enthusiasts interested in understanding the concepts, technologies, and applications of AIoT, offering valuable insights into the transformative potential of this burgeoning field. This book completely focuses on various applications of AIoT but not limited to the following:

1. Edge computing and AIoT
2. Privacy and security in AIoT
3. AIoT in healthcare
4. Smart cities and AIoT

Chapter



Fusion of Blockchain and Artificial Intelligence of Things in E-Healthcare

By Soumik Podder ([/search?contributorName=Soumik Podder&contributorRole=author&redirectFromPDP=true&context=ubx](/search?contributorName=Soumik+Podder&contributorRole=author&redirectFromPDP=true&context=ubx)), Vinayak Raj Gupta ([/search?contributorName=Vinayak Raj Gupta&contributorRole=author&redirectFromPDP=true&context=ubx](/search?contributorName=Vinayak+Raj+Gupta&contributorRole=author&redirectFromPDP=true&context=ubx)), Srikant Khator ([/search?contributorName=Srikant Khator&contributorRole=author&redirectFromPDP=true&context=ubx](/search?contributorName=Srikant+Khator&contributorRole=author&redirectFromPDP=true&context=ubx)), Rosmi Koley ([/search?contributorName=Rosmi Koley&contributorRole=author&redirectFromPDP=true&context=ubx](/search?contributorName=Rosmi+Koley&contributorRole=author&redirectFromPDP=true&context=ubx)), S. Rupkatha Goswami ([/search?contributorName=S. Rupkatha Goswami&contributorRole=author&redirectFromPDP=true&context=ubx](/search?contributorName=S.+Rupkatha+Goswami&contributorRole=author&redirectFromPDP=true&context=ubx))

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ABSTRACT

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