THE INTELLIGENT CONVERGENCE:
IoT Meets Generative AI for a Smarter Future

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PREFACE

The rapid advancement of digital technologies has led to a new era where intelligent systems are no longer isolated but interconnected and adaptive. Among these developments, the integration of the Internet of Things (IoT) with Generative Artificial Intelligence has emerged as a powerful paradigm, enabling systems that are not only data-driven but also capable of reasoning, learning, and generating actionable intelligence. This book, ***The Intelligent Convergence: IoT Meets Generative AI for a Smarter Future***, is an effort to capture and present this evolving technological landscape.

The primary objective of this volume is to explore how Generative AI enhances IoT ecosystems by enabling intelligent automation, predictive decision-making, and optimized resource utilization. The chapters included in this book address both foundational concepts and practical applications across diverse domains such as healthcare, smart wearables, energy optimization, manufacturing, retail analytics, fraud detection and human–robot collaboration. Each contribution reflects current research trends while highlighting real-world relevance and implementation challenges.

A key focus of this book is sustainability and efficiency in intelligent systems. By emphasizing energy-aware designs, responsible AI practices, and optimized IoT architectures, the book aligns technological innovation with global sustainability goals. The interdisciplinary nature of the chapters encourages collaboration between researchers, academicians, and industry professionals working at the intersection of IoT and Artificial Intelligence.

This edited volume is intended for researchers, postgraduate students, educators, and practitioners seeking insights into next-generation intelligent systems. We hope that the ideas, methodologies, and case studies presented here will inspire further research and innovation in building smarter, sustainable, and human-centric technological solutions.

The editors sincerely acknowledge the contributions of all authors and reviewers whose efforts have made this publication possible.

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