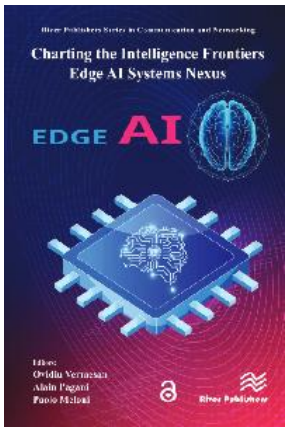

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Charting the Intelligence Frontiers Edge AI Systems Nexus

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Description:

This book is the result of the rich exchanges of ideas and presentations at the European Conference on EDGE AI Technologies and Applications (EEAI) held on 21-23 October 2024 in Cagliari, Sardinia, Italy, offering a panoramic snapshot and a technical deep dive into the contemporary landscape of edge AI. With twenty selected chapters, it encapsulates the convergence of fundamental concepts, technical advancements, and real-world deployments that define the edge AI continuum.

Collectively, the book serves as a reference for the field, capturing the current state-of-the-art and anticipating future trends in hyperautomation, generative AI, connectivity, autonomy, and security mesh architectures. Whether you are seeking in-depth technical knowledge, inspiration for novel applications, or a strategic overview of the edge AI landscape, you will find invaluable insights from thought researchers and practitioners at the forefront of the field of edge AI.

A brief overview of each of the twenty chapters is provided below, highlighting the research and applications of edge AI that underscore the book's commitment to both technological and societal impact.

Edge AI Systems Verification and Validation: This chapter explores the challenges of verifying and validating complex edge AI systems, which integrate hardware, software, and data. It proposes a structured framework that combines model- and data-driven engineering to ensure these systems are reliable, robust, and meet regulatory standards.

Keywords: Edge AI technologies, edge AI technology stack, micro-edge, deep-edge, and meta-edge, neuromorphic computing, artificial intelligence (AI), edge AI accelerators, deep learning (DL), machine learning (ML), federated learning (FL), Internet of Things (IoT), system-on-chip (SoC), autonomous systems, edge AI trustworthiness, AI explainability (XAI), AI interpretability (IAI).