Edge Intelligence and Systems
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Editorial

Inaugural Issue for Edge Intelligence and Systems

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Received: 31 December 2025; Accepted: 4 January 2026; Published: 12 January 2026

How To Cite: Guo, S. Message from the Editor-in-Chief. *Edge Intelligence and Systems* **2026**, *1*(1), 1.

It is with great enthusiasm that we announce the launch of *Edge Intelligence and Systems* (*EIS*), a peer-reviewed, open-access international journal dedicated to advancing research at the intersection of artificial intelligence, edge computing, and system design. The establishment of *EIS* reflects both the rapid evolution of intelligent technologies and a timely recognition that intelligence is undergoing a fundamental shift rather than a mere incremental evolution. Intelligence is no longer confined to abstract models or centralized infrastructures but increasingly manifests through systems that sense, reason, and act within deeply intertwined physical, digital, and social environments. As the center of intelligence shifts toward the network edge, intelligent behavior becomes inherently distributed, interactive, and situated in the real world. This paradigmatic reconfiguration fundamentally reshapes how intelligent systems are understood, designed, and evaluated.

The past decade has witnessed remarkable progress in artificial intelligence, primarily driven by centralized cloud computing and large-scale data aggregation. However, emerging applications such as autonomous systems, interactive robotics, wearable systems, industrial automation, smart cities, and on-device intelligent assistants are increasingly constrained by latency, privacy, energy efficiency, and contextual awareness. These challenges underscore the need for new paradigms that design, deploy, and optimize intelligence natively for edge environments with heightened autonomy, robustness, and situational awareness. These capabilities are no longer optional enhancements but foundational prerequisites for next-generation intelligent systems. It is precisely at this moment that a dedicated journal that represents a high level from the very beginning is needed to consolidate and propel research on *Edge Intelligence and Systems*.

The mission of *EIS* is to disseminate pioneering research and innovative practices that advance the capabilities, trustworthiness, and societal impact of artificial intelligence in pervasive edge scenarios. *EIS* promotes transformative research across algorithms, software, hardware, networking, architectures, systems, and applications, with an emphasis on work that shapes the evolution and future of edge-native intelligent, interactive, and autonomous technologies. The scope of *EIS* encompasses the entire technology stack for *Edge Intelligence and Systems*, from foundational intelligence and computing paradigms to high-level multidisciplinary applications. Beyond technical advancement, *EIS* aspires to foster the democratization of intelligent services by encouraging research that reduces dependence on centralized infrastructures, narrows persistent digital divides, and promotes more equitable access to the benefits of artificial intelligence. *EIS* welcomes original research articles, review papers, and short communications on topics including, but not limited to, the following thematic areas:

- Edge-Native AI. This area focuses on the development of AI models and algorithms designed for edge environments, including large language models and generative AI that enable efficient on-device inference, embodied and agentic intelligence, collaborative and decentralized learning, as well as efficient adaptation techniques such as model compression, quantization, neural architecture search, and continual learning. We welcome contributions that propose novel methods, architectures, or frameworks that advance the understanding and capabilities of edge-native AI.
- Systems and Hardware for Edge AI. This area addresses system architectures, hardware acceleration, and software–hardware co-design for distributed AI across devices, edge nodes, and cloud infrastructure. We welcome research on resource orchestration, neuromorphic and domain-specific accelerators, and strategies that enhance the performance, efficiency, and scalability of edge AI deployments.

- Networking for Distributed Intelligence. This area covers communication and networking technologies that support distributed AI and edge intelligence, encompassing low-latency protocols, intelligent routing, and AI-driven network management. We welcome studies that advance the design and optimization of networking solutions for real-time, reliable, and scalable distributed intelligence.
- Embodied AI and Advanced Use Cases. This area highlights embodied edge intelligence and advanced applications in complex real-world scenarios, enabling on-device intelligent systems to operate autonomously, collaboratively, and responsively. It includes embodied and agentic learning, interactive and collaborative robotics, autonomous systems, on-device intelligent assistants, and human–AI interaction, as well as industrial digital twins, cyber–physical systems, and industrial metaverse applications that enable seamless synchronization between physical and virtual environments.
- Trustworthy and Responsible Edge AI. This area emphasizes the development of edge AI systems that are secure, ethical, and reliable in complex real-world environments. It covers advanced cryptographic and privacy-preserving techniques for decentralized models and data, frameworks ensuring explainability, fairness, and accountability for real-world autonomous agents, and approaches to guarantee robustness and predictability in mission-critical applications.

On behalf of the editorial board, I extend our deepest gratitude to all those who have made, are making, and will make various forms of contributions to the establishment and continuous development of *EIS*. Our authors, whose outstanding contributions form the intellectual foundation of the journal, are especially appreciated. Our reviewers, whose expert and constructive evaluations safeguard the rigor and integrity of every article. Moreover, our readers, whose engagement and insightful feedback continually inspire improvements in the community's quality and impact. We also acknowledge the indispensable support of our institutional partners and sponsors, whose trust and steadfast commitment empower this endeavor with purpose and confidence. As stewards of the journal, we remain devoted to academic excellence, constructive critique, and inclusive engagement, guiding our decisions and fostering a culture of rigor, trust, and scientific vitality.

We envision *EIS* as a vibrant international journal shaping the future of edge-native intelligent systems and advancing the understanding of distributed intelligence in real-world environments. Meanwhile, our vision also extends beyond the publication of high-quality research articles. *EIS* seeks to cultivate an intellectual community that promotes multidisciplinary research, bridging foundational ideas with deployable systems and real-world impact, and advancing edge intelligence technologies that are both technically sound and societally meaningful. We warmly invite researchers and practitioners worldwide to contribute and join us in this exciting journey. Whether through advancing novel algorithms, designing robust architectures, or deploying edge AI in practical applications, contributions are vital to expanding knowledge and driving innovation. Together, we can collectively advance edge intelligence research, foster innovation, and enable technologies that benefit society.

Conflicts of Interest

The author declares no conflict of interest.

Use of AI and AI-Assisted Technologies

No AI tools were utilized for this paper.