

**CFP of IEEE IoT Journal SI on
“Edge AI Models for Social Internet of Things”**

With the Internet of Things (IoT) providing the umbrella under which many heterogeneous technologies and objects are interacting and cooperating, the need to enhance its performance with characteristics from other more mature technologies is rising. Especially, the Social Internet of Things (SIoTT) that refers to the convergence of the Social Networks with the IoT paradigm, creates a “social network of intelligent objects”, where smart objects are capable of establishing social relationships between themselves. The SIoT paradigm achieves efficient and scalable network navigability for service and object discovery, by exploiting the analytics and statistical models used in social networks.

Even though the preliminary results on the aforementioned issues are encouraging, more examples and applications need to be studied to provide for a comprehensive study of the area. Issues related to the design of an efficient SIoT architecture, the cognition of objects especially to implement various and different social behavior characteristics, along with increasing social-based trustworthiness are areas where further study can provide results that could promote SIoT as one of the currently most pervasive and ubiquitous paradigms. Utilizing the edge computing capabilities to facilitate the fast development SIoT is considered as a promising solution. Artificial intelligence (AI) technologies can be deployed at the network edge to complement the analysis of social network and physical characteristics of the IoT. In this context, Foundation models, large language models (LLMs), generative adversarial networks (GAN) and diffusion models, and many others, which are pretrained on massive amounts of data, can be implemented via edge computing, and network edge can obtain the ability to learn complex relationships and patterns in data.

Drawing inspiration from these successes, this proposal seeks to unite researchers in the development of AI models, such as foundation models and LLM models, at network edge tailored for SIoT development. The objective is to enhance the efficiency, accuracy, and understanding of edge AI-enhanced SIoT systems, enabling the unified analysis of social network and IoT. Anticipated outcomes include improved accuracy in network analysis, network architecture development, efficient extraction of meaningful patterns, and enhanced adaptability for SIoT scenarios. Contributions are invited on diverse aspects of edge AI for SIoT, encompassing but not limited to:

- Performance evaluation for Edge AI models in SIoT
- Novel datasets and benchmarks for building domain-specific Edge AI models
- Edge AI models for social network analysis in SIoT
- Multimodal data analysis in the social context at network edge
- Architecture and framework for accommodating AI models in edge SIoT systems
- Edge AI-based real-time decision making in SIoT systems
- Edge AI energy-aware approaches in SIoT systems

- Edge AI-based Resource management for SIoT systems
- Edge AI-based Security and privacy-preserving approaches for SIoT systems
- Edge AI for semantic communications, integrated sensing and communications, and mobile offloading in the context of SIoT
- Use cases/applications highlighting the potential of edge AI in SIoT systems

We encourage researchers and practitioners to contribute their latest advancements and insights, collectively advancing the field of SIoT through the development and application of edge AI models.

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Important Data

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