Special Session on

Impact of AI and Emerging Technologies in Sustainable Enterprise and Industrial Applications

The rapid advancement of Artificial Intelligence (AI) and emerging technologies is reshaping industries by enhancing productivity, minimizing environmental impact, and fostering sustainable development. Organizations are increasingly adopting AI, the Internet of Things (IoT), Digital Twins, Blockchain, Cloud Computing, Edge Computing, and Robotics to improve operational efficiency while achieving sustainability objectives. This special session will examine how these technologies can contribute to sustainable manufacturing, smart agriculture, intelligent energy management, supply chain optimization, and circular economy initiatives. By leveraging data-driven intelligence, automation, and advanced analytics, enterprises can enhance operational resilience, reduce their carbon footprint, and strengthen environmental compliance.

Rationale

Modern enterprises and industrial applications are under increasing pressure to achieve higher productivity, greater intelligence, and stronger environmental and social responsibility. To meet these demands, organizations are rapidly adopting advanced AI technologies, including Agentic AI, Generative AI, Explainable AI, and AI-driven cybersecurity, alongside emerging technologies such as Digital Twins, IoT, predictive maintenance, neuromorphic computing, and quantum computing. While these technologies offer significant benefits in terms of efficiency, innovation, and decision-making, they often require substantial computational resources, potentially leading to increased energy consumption and a larger carbon footprint.

At the same time, many AI-enabled solutions are being developed to address societal challenges, improve quality of life, and support sustainable development goals. This creates a critical need to understand the complex relationship between technological advancement and sustainability. In this context, the proposed special session aims to explore the impact of large-scale adoption of AI and emerging technologies on sustainability within enterprise and industrial environments. It will also discuss strategies, best practices, and innovative approaches to mitigate potential negative environmental effects while maximizing the social, economic, and ecological benefits of these technologies.

Given its broad scope and relevance, this special session adopts an interdisciplinary perspective, bringing together researchers, practitioners, policymakers, and industry experts to advance sustainable and responsible innovation in the age of intelligent technologies.

List of Topics (Not limited to):

- **AI-based Sustainability**: AI and Machine learning for sustainability, Reinforcement learning for industrial applications, Explainable AI for trustworthiness and interpretability, Federated learning in green AI, predictive maintenance for carbon footprint reduction, cognitive computing for sustainable enterprises and industry, Agentic AI, Generative AI.
- **Sustainable industry applications**: Digital twin integration in Industrial IoT (IIoT), Edge-AI for industrial sensor networks, Cyber-physical systems in manufacturing, Robotics,

computer vision and NLP (Natural Language Processing) based technologies in industry-based applications such as Renewable energy, Agri-food, Smart Building, Space, Sustainable technologies for smart manufacturing, Quantum computing for sustainable developments in industry based applications, sustainable human-robot collaboration in industrial applications., neuromorphic computing in industrial applications.

- **Sustainable Enterprise applications**: Responsible AI development for sustainable enterprises, Human AI collaboration in sustainable enterprise design, Digital Twin, AR/VR based development of enterprise applications, Quantum Computing for enterprise systems, Innovations in cyber security for sustainable business development, Integrating neuromorphic computing in green supply chain design, Business Intelligence framework for sustainable information management, Sustainable Enterprise resource planning system, ML/DL for sustainable Customer Relationship Management systems, Data Warehouse and Data Lake in enterprise data management.

Important Dates

Paper Submission Deadline: 30.06.2026
Notification of Acceptance: 31.07.2026
Camera Ready Submission: According to the notification
Conference Dates: 08-10.12.2026

Submission Information

Authors should submit their papers through the conference submission system. All accepted papers will be published in the proceedings of the 8th icSoftComp2026 conference.

Organizers:

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