CALL FOR PAPERS - SPECIAL SESSION

"Advances in Artificial Intelligence and Digital Twin Technologies for Sustainable Systems"

for CODIT 2026

July 13-16, 2026 ▪ Bari, Italy

Session Co-Chairs:

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Session description:

This special session deals with the problem of modelling, monitoring, and optimizing complex modern systems that require high levels of efficiency and environmental sustainability. As global systems face increasing pressure to reduce resource consumption while maintaining high performance, traditional analytical methods often fall short in handling multidimensional data and dynamic environments. The complexity of modern infrastructures necessitates a transition toward autonomous decision-making processes that can adapt to real-time fluctuations and unforeseen stresses. This session specifically addresses the challenge of bridging the gap between theoretical data models and practical, real-world applications in rapidly evolving technological landscapes.

The goal is to provide a multidisciplinary platform for researchers and practitioners to showcase innovative methodologies, from pure AI-driven predictive modelling to advanced Digital Twin simulations. By bringing together diverse perspectives from engineering, data science, and system optimization, this session aims to foster the development of scalable, energy-efficient, and intelligent solutions that bridge the gap between virtual representations and real-world physical outcomes. Furthermore, it seeks to explore how the convergence of these technologies can enhance system resilience and promote ethical, data-driven governance in various industrial and urban sectors. We aim to highlight groundbreaking research that contributes to a more sustainable future by optimizing the synergy between digital intelligence and physical assets.

The topics of interest include, but are not limited to:

- AI-Driven Predictive Modeling and Machine Learning
- High-Fidelity Digital Twin Architectures
- Sustainable Resource Management and Optimization
- Multimodal Data Fusion and IoT Integration

- Real-time Monitoring and Adaptive Feedback Systems
- Scalable and Lightweight AI Architectures
- Case Studies in Smart Infrastructure and Industrial Systems
- Ethical AI and Data Privacy in Digital Twin Technologies
- Predictive Maintenance and Diagnostics
- Autonomous Systems and Intelligent Automation
- Digital Twins in Healthcare and Biomedical Data Analytics
- AI-Based Diagnostics and Personalized Medicine Frameworks
- Simulation of Complex Biological Systems and Healthcare Operations

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SUBMISSION

Papers must be submitted electronically for peer review through PaperCept by **February 07, 2026:** **http://controls.papercept.net/conferences/scripts/start.pl**. In PaperCept, click on the **CoDIT 2026 link "Submit a Contribution to CoDIT 2026" and follow the steps.**

IMPORTANT: All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double column format).

DEADLINES

February 07, 2026: deadline for paper submission

April 30, 2026: notification of acceptance/reject

May 20, 2026: deadline for final paper and registration