



**CALL FOR PAPERS
SPECIAL SESSION ON
Learning-Based Modeling, Optimization and Control of Engineering Systems
for ICCAD 2026
July 7-9, 2026, Lisbon, Portugal**

Session Co-Chairs:

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Session description:

This special session deals with the problem of the problem of designing, modeling, analyzing, and optimizing engineering systems using machine learning techniques. Modern engineering systems are increasingly complex, data-driven, and dynamic, requiring advanced computational methods capable of handling uncertainty, nonlinearity, and large-scale data. Traditional model-based approaches often face limitations when dealing with high-dimensional systems, real-time decision-making, and incomplete knowledge of system dynamics.

This session focuses on the integration of machine learning methods into engineering applications, aiming to enhance system performance, reliability, adaptability, and autonomy across various engineering domains.

The goal is to explore recent advances in machine learning theory and methodologies and highlight their practical applications in engineering problems. The session aims to bring together researchers and practitioners working on intelligent modelling, predictive analytics, optimization, and control of engineering systems.

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

- Machine learning methods for modeling and identification of engineering systems
- Deep learning for complex and high-dimensional engineering problems
- Reinforcement learning for control and decision-making in engineering systems
- Predictive maintenance and fault diagnosis
- Data-driven optimization and scheduling
- Intelligent monitoring and anomaly detection
- Hybrid modeling: combining physics-based models and machine learning
- Digital twins and smart engineering systems
- AI for industrial automation and smart manufacturing
- Uncertainty quantification and robust learning in engineering applications

SUBMISSION

Papers must be submitted electronically via: <https://www.iccad-conf.com/submission/>

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).