CALL FOR PAPERS

SPECIAL SESSION ON

Autonomous Robotic Systems: From Perception to Intelligent Navigation

for ICCAD 2026

July 7-9, 2026, Lisbon, Portugal

Session Co-Chairs:

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Session description:

The Special Session on "Autonomous Robotic Systems: From Perception to Intelligent Navigation" aims to bring together cutting-edge research on integrated robotic systems that combine advanced perception, adaptive control, and intelligent decision-making. As robots move from controlled environments to dynamic real-world applications, the integration of robust perception, precise motion control, and efficient navigation becomes increasingly critical. This session will explore the synergy between AI-driven perception, reinforcement learning, and autonomous navigation strategies that enable robots to operate effectively in complex, unstructured environments.

We invite contributions that address the full autonomy stack—from low-level motion control to high-level strategic planning—with a focus on real-world deployment, efficiency, and robustness. Topics of interest include novel approaches to sensor fusion, AI-based detection and recognition, adaptive path planning, multi-robot coordination, and the application of reinforcement learning for autonomous behavior generation. The session will highlight both theoretical advances and practical implementations that push the boundaries of what autonomous robotic systems can achieve.

Topics of interest for this Special session include but are not limited to the following:

- ✓ AI-Driven Perception and Scene Understanding
- ✓ Motion Planning and Control in Dynamic Environments
- ✓ Multi-Robot Coordination and Swarm Intelligence
- ✓ Energy-Efficient Navigation and Control
- ✓ Sensor Fusion for Robust Navigation
- ✓ Reinforcement Learning for Robotic Control
- ✓ 3D Mapping and Localization (SLAM)
- ✓ Human-Robot Interaction and Collaborative Autonomy

SUBMISSION

Papers must be submitted electronically for peer review by**: January 31, 2026**

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).