

CALL FOR PAPERS
SPECIAL SESSION ON
Perceptual Computing and Fuzzy Systems for Intelligent Control, Automation, and Industrial Applications
for ICCAD 2027
July 6-8, 2027, Paris, France

Session Co-Chairs:

-**Professor Edy PORTMANN,** Human-IST Institute, University of Fribourg, Switzerland
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Session description:

Fuzzy Systems and Perceptual Computing offer powerful frameworks for handling uncertainty, incomplete information, and human expertise in complex engineering environments. While modern AI techniques have achieved remarkable performance, industrial control systems often require interpretable, robust, and trustworthy decision-making mechanisms.

This special session aims to bring together researchers and practitioners working on theoretical advances and practical applications of Fuzzy Sets, Computing with Words, and Perceptual Computing for intelligent control, automation, and industrial systems. Special attention will be given to Industry 5.0, cyber-physical systems, autonomous decision-making, digital twins, and human-centered industrial intelligence.

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

- Fuzzy Control Systems
- Type-2 and Generalized Fuzzy Systems
- Perceptual Computing for Industrial Applications
- Computing with Words in Control Engineering
- Explainable AI for Automation and Control
- Human-in-the-Loop Control Systems
- Intelligent Decision Support Systems
- Industrial Process Monitoring and Diagnosis
- Fault Detection and Fault-Tolerant Control
- Smart Manufacturing and Industry 5.0
- Industrial Robotics and Autonomous Systems
- Cyber-Physical Production Systems

- Digital Twins for Industrial Processes
- Predictive Maintenance
- Smart Energy Management Systems
- Transportation and Autonomous Vehicles
- Multi-Agent and Distributed Control
- Intelligent Sensors and Sensor Fusion
- Human-Robot Collaboration
- Trustworthy and Explainable Industrial AI

SUBMISSION

Papers must be submitted electronically for peer review by**: January 31, 2027**
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).