17th APCA International Conference on Automatic Control and Soft Computing (CONTROLO 2026)

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https://controlo2026.apca.pt/

Special Session on
“Human-Robot Interaction and Collaboration”

Organised by

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Call for Papers

Description:

The field of human-robot interaction and collaboration is a research topic of high interest driven by rapid advances in robotics, artificial intelligence, and novel sensing technologies. However, the diversity and unpredictability of real-world collaborative environments require unique approaches for how humans and robots perceive, communicate, and coordinate with each other. Additionally, data resulting from human-robot interaction is inherently multimodal, as it includes feedback from various types of sensors. Interpreting this data requires methods that utilize control theory and/or machine learning to enable context-aware collaborative systems.

The goal of this special session is to present novel advances on the topic of collaborative robotics and human-robot interaction. The session welcomes contributions of frameworks, experimental applications, and theoretical methods that enable robots to operate safely, intuitively, and effectively alongside humans in a real-world environment.

Topics of interest include (but are not limited to):

Human-Robot Interaction Frameworks, Collaborative robots, Robot-Assisted tasks, User Interface, Physical Human-Robot Interaction, Gesture and Action Recognition, Human-robot communication, Assistive Devices, Industry 5.0, Context-awareness.

Short CV of Each Organizer

Michele Polito: PhD candidate in Mechanical Engineering at the Politecnico di Torino, where his research focuses on human-machine interaction and collaborative robotics. His doctoral work investigates the development of effective and safe frameworks for human-robot interaction, with particular emphasis on operator monitoring and intelligent assistance within shared workspaces. He holds a Master's degree in Mechanical Engineering from the same institution. His master's thesis addressed the design, control, and experimental characterization of a trunk-support exoskeleton for human assistance. His research integrates robotics, artificial intelligence, and multi-sensor systems to improve safety and efficiency in human-robot collaboration. He has authored several scientific publications in international conferences and journals. During his academic training, he gained international research experience through study and research periods at the Norwegian University of Science and Technology and the University of Coimbra. His research interests include human-machine interaction, collaborative robotics, wearable robotics, and AI-based operator monitoring systems.	
Laura Duarte: Auxiliary Researcher at the Robotics and AI Group (RAI) at the University of Coimbra and integrated member of the Centre for Mechanical Engineering, Materials and Processes (CEMMPRE). She concluded her PhD in Mechanical Engineering in 2025. Her doctoral work proposes novel filtering, tracking and classification methods for event camera data within the context of human-robot collaboration for manufacturing tasks. Her research on the topics of collaborative robotics and computer vision has resulted in several papers in international conferences and journals. She has assumed mentoring and teaching responsibilities alongside her work as a researcher, having taught on the subjects of automation and control as an Invited Assistant at the University of Coimbra. Her main topics of interest focus on collaborative robotics and computer vision, but also contemplate different research areas, such as the design of legged robots and system interoperability.	

Additional information