
# CALL FOR PAPERS - SPECIAL SESSION

# "Control, planning and communication algorithms for Human-Robot Interaction"

**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 developing innovative techniques for shaping Human-Robot Interaction (HRI) during the execution of collaborative tasks. The widespread adoption of collaborative robots has explored new directions of research across a wide range of disciplines. The introduction of robots operating in dynamic, unstructured environments alongside humans calls for advanced interaction frameworks that are intuitive, robust and context-aware, facing additional challenges related to perception, decision-making, motion planning, and real-time communication.

In this context, the way robots sense and interpret human actions and intentions, while also ensuring an explainable and trustworthy behavior for human users, poses relevant research challenges. These issues demand robust human-robot interaction management, leveraging shared autonomy and control architectures, dynamic role adaptation strategies, proactive task planning, and efficient communication algorithms. Gesture-based control, natural language communication, haptic feedback, wearable devices represent useful technologies for enhancing bi-directional communication and human awareness.

An additional key aspect is inclusivity and accessibility: collaborative and adaptive robots can support users with diverse abilities by adjusting assistance and interaction modalities to individual needs, thus reducing task barriers and enabling equitable participation in both industrial and service scenarios.

The goal of the special session is to explore the latest contributions in HRI, providing a meeting point for recently developed strategies that enable more natural and reliable interaction between humans and robots. These approaches aim to support mutual trust, reduce the

cognitive load on human users and ensure a safe and effective collaboration in everyday activities, including industrial scenarios, service robotics and healthcare environments.

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

- Human-Robot Interaction and physical HRI
- Human-Robot Collaboration
- Safety in Human-Robot Collaboration
- Human-Robot collaborative object transportation
- Human intention recognition and robot explainability
- Motion intent estimation
- Cognitive Human-Robot Interaction
- Control algorithms for collaborative applications
- AI-based wearable solutions for bi-directional communication and control
- Augmented and Virtual Reality platforms for Human-Robot Interaction
- Advanced industrial robots for future manufacturing
- Inclusive and accessible HRI frameworks

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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