ETFA 2025 Porto Portugal 9-12 September

30th IEEE International Conference on Emerging Technologies and Factory Automation

Call for Participation – WS

How to make collaborative robots more collaborative for real environments

Organizers and Chairs

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FOCUS. The proposed workshop aims at the practical enhancement of the collaboration capabilities of collaborative robots (cobots) for dynamic and unstructured environments. In particular, this workshop focuses on adapting cobots to operate efficiently in real industrial and healthcare environments by addressing challenges such as safety, adaptability (to different users and products) and user-friendly integration. In addition, it explores cost-effective solutions that are able to transform traditional manual production processes of small and medium-sized enterprises (SMEs) by the adoption of cobots, emphasizing scalability and practical deployment without requiring extensive technical expertise. This workshop invites academic researchers and industrial partners of different international projects (ROBOTA-SUDOE and REMAIN), research groups (HURO) and technological institutes (ADIV) to show their own experience in the agri-food (meat and fruit), manufacturing (toys and shoes) and rehabilitation sectors and discuss their extension to other sectors with the audience.

TOPICS

- Self-sensing soft grippers
- Perception of humans working together with collaborative robots
- Learning from demonstration (LfD) of complex manipulation tasks
- Force control strategies for human assistance

AIM

The ETFA 2025 conference brings together professionals from industry and academia to share cutting-edge concepts, recent developments, research results, and practical achievements in industrial and factory automation. The key goal is to foster the enhancement and application of scientific techniques, models, and tools that support the efficient design and operation of industrial and factory automation systems.

WORKSHOP PRESENTERS

1. AUTONOMOUS MANIPULATION BY COBOTS

Tânia Mendes, Bruno Campos, CENTIMFE;

-P1: Overview of ROBOTA-SUDOE project

1.1. Delicate product manipulation: Fruit use-case

Filipe Costa, Cerfundão; Rodrigo Antunes, UBI: ROBOTA

- P2: Automation in fruit industry and computer vision in fruit handling

Luan Lang, UBI: ROBOTA

- P3: Self-sensing soft grippers with TPU

1.2. Deformable product manipulation: Shoes and Toys use-cases

José Francisco Gómez, INESCOP-REMAIN

- P4: Towards robotics footwear and textile remanufacturing

Daniel Sánchez, AIJU & JUEMA:ROBOTA

- P5: Automation and perception and control of collaborative robots in the toy sector

2. HUMAN ASSITANCE BY COBOTS

2.1. Meat use-cases

Saltanat Seitzhan, USC: ROBOTA

- P6: Automation in the meat use-case

Alexis Babut, CA INP: ROBOTA

- P7: Force control for human assistance in industrial applications

Yacine Oussadi, ADIV

- P8: Robot technologies in the meat industry

2.2. Medical use-case

Carlos Alberto Jara Bravo, HURO-UA

- P9: Force control for human rehabilitation

All presenters and organizers:

- Final round-table: The future of collaborative robotics in real applications

WORKSHOP FORMAT

Full day Workshop, based on invited presentations.

This Workshop will include 9 presentations with 5 speakers from academia (UBI, USC, CA INP and HURO-UA) and 5 from technological institutes and industry (CENTIMFE, Cerfundao, AIJU-JUEMA, INESCOP and ADIV) to show the synergies that are required between research, innovation and use-cases to apply collaborative robots in challenging real environments. Each presentation will be allocated a 25-30-minute time slot, including time for questions and interaction with the audience for exchanges about the possibility of extending the developed robotic solutions to other use-cases.

For any detail regarding registration to the Workshop, please refer to the Call for Workshops as well as the ETFA 2025 website: https://etfa2025.ieee-ies.org/registration/index.html