



Call for Papers Workshop 03 – Bidirectional Trust in Human Digital Twin-Based Ergonomics for Industry 5.0

Organizers and Chairs

Nicola Berti*, **Marco Faroni†**, **Mattia Guidolin***, **Cesare Tonola‡**

*Department of Management and Engineering, University of Padova, Italy

†Department of Electronics, Information, and Bioengineering, Politecnico di Milano, Italy

‡Department of Mechanical and Industrial Engineering, University of Brescia, Italy

FOCUS. Industry 5.0 marks a significant shift in manufacturing, prioritizing the well-being of workers alongside automation. Central to this ethos is the human digital twin, revolutionizing human-machine relationships by enabling real-time monitoring and optimization of various parameters, especially ergonomics. Collaborative robots (cobots) also play a crucial role, working alongside humans to enhance productivity and flexibility. However, integrating them into human-centric environments poses challenges, particularly in effectively controlling robotic movements to foster collaboration. To address these challenges, trust must flow in both directions: from the human operator to the cobot, and vice versa. Ensuring such a bidirectional trust flow will pave the way for a more inclusive and sustainable future of manufacturing. The workshop has two primary goals: improving the well-being and ergonomic conditions of operators while maximizing production efficiency. By fostering a culture of trust that flows both ways among all stakeholders—humans and cobots—the workshop seeks to propel the industry toward a future characterized by efficiency, sustainability, and inclusivity.

TOPICS

- ❖ Acceptability and Trust
- ❖ Ergonomics
- ❖ Explainable Robot Decision Making
- ❖ Human-Robot Collaboration
- ❖ Human-Aware Planning and Control
- ❖ Human-Centered Robotics and Automation
- ❖ Human Factors and Human-in-the-Loop
- ❖ Human Modeling and Digital Twins
- ❖ Multi-Modal Perception for HRI
- ❖ Safety in Human-Robot Interaction
- ❖ Shared Autonomy
- ❖ Wearable Sensors and Robots

AIM

The ETFA 2024 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 FORMAT

Half day Workshop, based on solicited research papers.

These papers must report significant and innovative research and development results that will have a long-term impact on the field of research, with the potential for implementation. The final manuscripts must comply with the formatting requirements for ETFA 2024, with a page limit of 8 pages, and a presentation slot of 30 minutes maximum. The working language of the conference is English. For submission rules, please refer to the Author's Instruction on the conference website.

Accepted, registered, and presented papers will be copyrighted by IEEE and published in the conference proceedings. The proceedings will be available in the IEEE Xplore® Digital Library. The final manuscript must be accompanied by a Workshop registration fee payment proof and it is mandatory that at least one author attends and presents the paper at the Workshop. Failure to adhere to these guidelines may result in paper exclusion from post-conference distribution via IEEE Xplore by the ETFA 2024 Organizing Committee.

For any detail regarding registration to the Workshop, please refer to the Call for Workshops as well as the ETFA 2024 website.

AUTHOR'S SCHEDULE 2024

❖ Solicited Workshop papers

Submission deadline	May 26 th
Acceptance notification	June 17 th
Deadline for final manuscripts	July 1 st

WORKSHOP PROGRAM COMMITTEE

- ❖ **Daria Battini**, University of Padova, Italy
- ❖ **Paolo Franceschi**, University of Applied Sciences and Arts of Southern Switzerland, Switzerland
- ❖ **Franco Fummi**, University of Verona, Italy
- ❖ **Luca Gualtieri**, Free University of Bozen-Bolzano, Italy
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