

ASME/IMECE 2023: Human-Robot Collaboration & AI Integration Workshop: Two Sessions

Location: Room 299, Convention Center, New Orleans, LA, <https://event.asme.org/IMECE>

Date: Thursday/November 2, 2023 (full day – Two Sessions)

Time: Split into Two Sessions → Session I: 10:30am – 12:00pm and Session II: 2:00pm – 6:00pm

Registration for Workshop: (2 options)

- Option 1: 'Complimentary' workshop only using 'IMECE Committee Meetings Registration 2023' selection at below link.
 - o Note, this registration selection does not give access to the IMECE Technical Conference.
<https://web.cvent.com/event/740ce250-36c7-4a8e-8aa0-99bd4e16115a/summary?i=4N2yCeF2yUaQVWktwVAGsA>
- Option 2: IMECE Technical Conference registration includes access to both Workshop and Technical Conference.
- For workshop program details: <https://event.asme.org/IMECE/Program/Special-Panel-Sessions>

Workshop Program: Two Sessions

SESSION I: 10:30am – 12:00pm (noon)

- Introduction – 5 min
- Welcome and Opening Remarks – 20 min
 - o NSF ENG/CMMI Senior Advisor/Program Director (Bruce Kramer)
 - o STIIMA-CNR Director (Lorenzo Molinari Tosatti)
 - o Sponsors: ASME/MED and ARM Institute
- ARM – Mission & Vision (www.arminstitute.org) – 5 min
- Panel: Risk and Safety for HRC – 60 min
 - o Panelists: NIST (Jeremy Marvel), STIIMA-CNR (Irene Fassi), NIOSH (Marvin Cheng)
 - o Moderator: Mihai Diaconeasa – ASME/Safety Engineering, Risk Analysis Division

Objective:

To engage stakeholders from academe, industry, and government in the areas of robotics, human-robot interaction/collaboration, and AI integration.

Technology focus includes robotics, automation, AI, safety, and other relevant Industry 4.0/5.0 technologies.

12:00pm (noon) – End Session I, reconvene at 2pm for Session II

SESSION II: 2:00pm – 6:00pm

- Plenary Speaker – 40 min
 - o "State of the Art in HRC: Manufacturing Insights" – Paul Evans (SwRI, Director R&D)
- Presentations: Intelligent Human-Robot Collaboration for Smart Factory – 75 min
 - o "Towards the Future of Manufacturing: Human Robot Collaboration based on Extended Reality" – Yunbo Zhang (Rochester Institute of Technology)
 - o "Human Action Analysis from Cameras and Wearable Sensors: Recognition, Localization, Anticipation, and Pose Estimation" – Zhaozheng Yin/MD Moniruzzaman (Stony Brook University)
 - o "Sensing and Recognition of Speech, Gesture, Eye Gaze, and Brain Wave for Human-Robot Communication" – Ming Leu (Missouri University of Science and Technology)
- Break (20 min) In-room: Food & Beverages
- Presentations: Intelligent Human-Robot Collaboration for Smart Factory – 50 min
 - o "When to Assist: Prediction of Human Action and Trajectory for Proactive Human-Robot Collaboration" – Robert Gao (Case Western Reserve University)
 - o "A Proactive/Reactive Human-Robot Collaboration Framework for Smart Manufacturing" – Gloria Wiens/Jared Flowers (University of Florida)
- ASME Robotics Roadmap Briefing and Discussion – 50 min
 - o Briefing: Ashis Banerjee (U-Washington), Stephen Canfield (TN-Tech), Jeff Ge (Stony Brook)
 - o Open Discussion
 - Human-robot physical interaction and beyond physical interaction;
 - Human-centered manufacturing; and other topics of interest
- Wrap-up & Close – 5 min

Sponsors:
ASME/Manufacturing
Engineering Division (MED)
and ARM Institute



Co-Hosted by:
ASME Robotics Technology
Group