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

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

Session II:
- Presentations: HRC – AI Integration – 80 min
  - Moderator: Robert Gao (Case Western Reserve University)
  - State of the Art in Human-Robot Collaboration for Manufacturing
  - Research and Application – End-Users
- Presentations: Intelligent Human-Robot Collaboration for Smart Factory – 80 min
  - “Human Action Analysis from Cameras and Wearable Sensors: Recognition, Localization, Anticipation, and Pose Estimation” – Zhaozheng Yin/MD Moniruzzaman (Stony Brook University)
  - “Sensing and Recognition of Speech, Gesture, Eye Gaze, and Brain Wave for Human-Robot Communication” – Ming Leu (Missouri University of Science and Technology)
  - “When to Assist: Prediction of Human Action and Trajectory for Proactive Human-Robot Collaboration” – Robert Gao (Case Western Reserve University)
  - “A Proactive/Reactive Human-Robot Collaboration Framework for Smart Manufacturing” – Gloria Wiens/Jared Flowers (University of Florida)
- Break (20 min)
- ASME Robotics Roadmap Briefing and Discussion – 50 min
  - Briefing: Ashis Banerjee (U-Washington), Stephen Canfield (TN-Tech), Jeff Ge (Stony Brook)
  - Open Discussion
    - Human-robot physical interaction and beyond physical interaction;
    - Human-centered manufacturing; and other topics of interest
- Wrap-up & Close – 10 min

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.