Human-Robot Embodiment:

Myths, Principles, Techniques, Quantification, Benefits, and More



Abstract: Embodiment is a hot topic in biorobotics, evidenced by the many sideline discussions during ICORR23 and recent articles. It is also a poorly understood and highly debated topic, from the definition, to how to objectively measure it, to whether it has benefits for end-users or engineers designing robots such as prostheses or exoskeletons. The goals of this workshop are to: 1. Enable a dialogue between experts in the field with diverse opinions 2. Explain how to achieve and quantify embodiment.

Organizer: Jon Sensinger

Schedule:

Section 1: Perspectives

- 2pm. Jon Sensinger: Embodiment: Motivation, Terms, and Controversies.
- 2:30. Max Ortiz Catalan. What is prosthetic embodiment and who cares?
- 3pm. Brief moderated discussion, and break.

Section 2: Recent related work

- 3:30pm. Jon Schofield. The quantification and measurement of embodiment in upper limb prostheses.
- 4pm. Strahinia Dosen. Using artificial feedback to elicit and modulate embodiment
- 5:30. EJ Lee. Re-shaping Body Representation of Humans when Learning to Walk with Robotic Prosthetics. 30 minutes.
- 5pm. Brief break

Section 3: Moderated discussion

5:15. Helen Huang. Panel and Workshop discussion