



MAY 12-16 2025 · CHICAGO, IL USA · REHABWEEK.ORG



Category: Development of Technology

Workshop Title: Is Open-Source Hardware the Road Forward for Upper Extremity Rehab and Neuroscience?

Organizer(s): Jeremy DeLaine Brown

Speaker(s): Senthur Ayyappan

Ashish Deshpande

Marcia O'Malley

Aaron Young

Workshop Time: 08:15 - 09:45

Attendee Engagement: The workshop will feature panel discussions with invited speakers as well as a forum style open-ended discussion at the end. In addition, we will be using live polling to capture participant opinions that will be formulated into a journal paper submitted after the workshop.

Abstract: Despite concerted efforts over the last three decades, upper-extremity rehabilitation robots have yet to realize their intended potential. Despite the many promising platforms that have been introduced in the literature, very few have made it to widespread adoption across hospital, clinical, and at-home settings. We question to what extent robotic rehabilitation needs to follow the prototypical model of building then commercializing a device in order to have real-world impact. Breaking the robotic device design and commercialization loop and instead seeking out collaborative, 'big data' opportunities has the potential to identify promising robot-mediated interventions. This will require a shift in roboticists' efforts as well as systematic changes in our participation in neuroscience and clinical research. Specifically, we assert that an open source exoskeleton will enable the next generation of research towards achieving robotic rehabilitation's promise. This workshop will feature presentations and panel discussions from expert clinicians, neuroscientists, and roboticists with the overarching goal of establishing the engineering requirements for an open-access upper-extremity device. In addition, this workshop will feature presentations and open-ended discussions with researchers who have had success in building open-access lower-limb devices. This workshop will culminate with an open-ended audience discussion on what the community of researchers thinks is the best path forward towards the goal of open-access upper-extremity devices. We plan to capture these thoughts and opinions in the form of a survey whose results will be disseminated in a journal manuscript following the workshop

More detailed information:

<https://sites.google.com/view/rehabweek2025-workshop05>