

Scientific/Clinical Workshop

Workshop Title

Can the Collaboration Between Engineers and Clinicians Enhance the Objectiveness, Sensitivity and Reproducibility of Clinical Functional Assessment Methods?

Workshop Responsible

Clara (Beatriz) Sanz-Morere (Hospital Los Madronos)
David Rodriguez-Cianca (Spanish Research Council)

Speakers

Diego Torricelli, Jesus Tornero, Erik Prinsen, Natacha Leon

Attendee Engagement

The workshop will start with a set of short talks covering the following topics:

- 1-Current methodologies for patient functional assessment in clinical environments
- 2-The EUROBENCH benchmarking concept
- 3-The vision of the CCN regarding the integration of new technologies in standard patient care.

Afterwards, attendees will be asked to gather into small groups to share their opinions and start a guided short discussion on the open issues raised by the speakers. At the end of the discussion, each group should come up with a list of proposals for integrating technologies into standard patient care and a list of questions and conflict points. The workshop will end up with an open debate between an expert panel and the audience to address these questions.

Prior to the start of the RehabWeek, we will share a survey in the workshop webpage where potential attendees will be asked about their background, attitude towards the topics of the workshop and specific questions for the experts in order to facilitate the discussion sessions.

The workshop will be advertised through several channels: first, we will advertise it through a website that will be created in case of workshop acceptance. Second, we will promote it through our social media accounts and mailing lists aiming at reaching a wide and multidisciplinary audience that includes a balanced number of engineers and clinicians.

Abstract

Standard rehabilitation methods generally assess the effects of the applied therapies and classify patients' evolution by means of well-known validated clinical scales. Though these scales are the gold standard during functional assessments because of their simplicity and effectiveness, there might be room for improvement with respect to their sensitivity and reproducibility.

In parallel, a recent trend within the robotics community is to develop standard testing and evaluation protocols to guarantee an objective comparison between different robotic systems. As part of these efforts, the H2020 EUROBENCH project (<https://eurobench2020.eu/>) has created a new testing facility, hosted by the Center for Clinical Neuroscience (CCN) at Hospital Los Madroños (Madrid, Spain), where researchers and developers can objectively assess and compare the

locomotion abilities of their bipedal robotic devices employing standard sensorized testing platforms, protocols and metrics.



Following a similar approach, could the rehabilitation field benefit from the integration of a wider set of sensors and objective metrics for complementing the scales used during the functional assessments? Would objectivity be an asset for the quality of the diagnostic and assessment of patients? Could this be a first step towards the adoption of updated and more standard clinical scales?

This workshop aims at (1) rising awareness among researchers about the value and challenges of including standardized methods and testing protocols during clinical studies, (2) encouraging a sustained collaboration between engineers and clinicians in everyday research and (3) fostering an open debate to understand how to enhance clinical assessment by integrating technology during standard care.