Category: Clinical Application of Technology, underlying Principles

Workshop Title: Exploring the Scientific Principles and Technologies of Neurorehabilitation

Workshop Organizer(s): Shimoda Shingo

In person Speaker(s):

- Fady Alnajjar (UAEU)
- An Qi (Univ. of Tokyo)
- Shingo Shimoda (RIKEN, Nagoya University)
- Juan Moreno (CSIC)
- Yasuhisa Hirata (Tohoku University)
- Yang Ningjia (Zhejiang Lab)

Virtual Speaker(s): TBA

Workshop Time: 13:45 - 15:15

Attendee Engagement:

To engage attendees, we add the discussion not olny the pure academic talks but also the application discussions.

Abstract:

The comprehensive understanding of the scientific principles underlying neurorehabilitation and neurological recovery is vital for the design and implementation of effective rehabilitation technologies. Recently, various type of attractive rehabilitation approaches are proposed such as the usage of wearable robots, home-rehabilitation using the simple devices, bio-feedback methods and gaming approaches. Although there is a great deal of discussion regarding the methods and evidence of recovery using these methods, there are scattered instances where the theoretical and neurological background of recovery is not adequately discussed. This workshop aims to provide a comprehensive discussions of the fundamental principles and neurological background associated with proper motor recovery using the various methods. Additionally, we will delve into the cutting-edge field of Artificial Intelligence (AI) and its potential to personalize rehabilitation and tailor it to the unique motor condition of each individual patient, thereby maximizing the effectiveness of the rehabilitation process.

This workshop can include a variety of topics related to the principles of neurological recovery and rehabilitation. Some possible topics include:

Overview of the fundamental concepts associated with proper motor recovery
Techniques and approaches proposed to enhance motor recovery potential
Neurological activity changes during rehabilitation
The role of Artificial Intelligence (AI) in personalizing rehabilitation
Using wearable technology and mobile apps for rehabilitation
Research and case studies on the effectiveness of home-based rehabilitation prograM