Università degli Studi di Genova – Istituto Italiano di Tecnologia

Corso di Dottorato "Bioengineering and Robotics"
Curriculum "Bioengineering and bioelectronics"

Anno Accademico 2018-2019
Ciclo XXXIV

Call for PhD position @Rehab Technologies, IIT Genova (ITALY)

Novel technological approaches for neurorehabilitation

Tutor: Michela Chiappalone michela.chiappalone@iit.it

The primary goal of this PhD project consists of developing novel technological approaches for neurorehabilitation, in the framework of national and international projects and collaborations (e.g. IIT network, San Martino Hospital/UNIGE in Genova, Don Gnocchi Foundation in Milan, Mondino Foundation in Pavia, KUMED at Kansas City, KS USA).
Specifically, it will be required to 1) develop novel protocols, based on closed-loop technology, of intracortical electrical stimulation to promote cortico-cortical plasticity in an animal model of focal lesion OR 2) develop novel paradigms of non invasive brain stimulation, also including closed-loop technology, to promote post-stroke plasticity in human subjects. The possibility to use also robotic wearable devices (e.g. exoskeletons) for motor rehabilitation purposes, in combination with the electrical stimulation, will be also exploited with our clinical partners.
This project, depending on the subproject of interest, requires broad expertise in electrophysiology (i.e. use of the micro-electrode array acquisition system, for in vivo recordings OR EEG acquisitions and analysis in case of human subjects) and a demonstrated expertise in electronic engineering, control engineering and software development. Together with the closed-loop architecture for either in vivo or human experiments, the design of analytical tools for data analysis of multichannel electrohysiological signals will be required. To this end, a proficient knowledge of programming languages such as Matlab, Python, and/or C is mandatory. Experience in Machine Learning techniques will be considered a plus.
The ideal candidate should hold a degree in electronic/biomedical engineering or related disciplines, be a highly motivated and creative individual who wants to work in a dynamic, multi-disciplinary research environment. Former lab experience and previous technical and scientific results will be highly considered.

Should you be interested, please contact:
Dr Michela Chiappalone, PhD
Rehab Technologies IIT-INAIL joint lab, Istituto Italiano di Tecnologia (IIT)
Via Morego 30, 16163 Genova (Italy)
e-mail : michela.chiappalone@iit.it
web-site : www.iit.it
direct phone : +39 010 71781743