**PhD Position on the Development of Control and Training Modalities for a Novel Robot for Rehabilitation**

The Rehabilitation Engineering and Robotics laboratory at UCD has an opening for an outstanding individual interested in pursuing a PhD in rehabilitation robotics, under the supervision of Dr. Giacomo Severini and Dr. Donal Holland. The PhD project is funded by SFI as part of the ReHapt project and will be run in collaboration with the activities of the Insight Centre for Data Analytics.

**Background.** Rehabilitation Robotics is a field that has been growing steadily in the past 20 years, leading to the development of several different types of mechanized orthoses that are used to assist and facilitate the training of impaired individuals. Recent research suggests that individuals should start training as soon as possible after acute neurological events such as stroke. Following this rationale, the Rehabilitation Engineering and Robotics group at UCD has recently developed a prototype for a novel robot for lower limb rehabilitation based on a cycling system design. The system is called the Haptic Cycling Trainer, HaCT.

The aim of this PhD project is that of developing novel control and training modalities for the HaCT system and to test them in healthy individuals and stroke survivors. The proposed PhD project aims at increasing our understanding of how robots can be used in lower limb rehabilitation training of stroke survivors. The PhD position is funded for 4 years and the start date for this position will be as soon as possible after January 2023.

**Who Should Apply.** Applicants should have, or expect to obtain before the beginning of the position, a first or upper second class honours Masters degree in Robotics, Mechatronics, Electrical, Electronic, Mechanical or Biomedical Engineering (or a related discipline). Suitable candidates will have a strong interest in robot control, biomedical engineering and data analysis. Excellent analytical, computer programming (Labview, Matlab, Python, C/C++…) and communications skills are essential. Self-motivation, an inquiring mind, ability to work independently are necessary for the position. Previous experience in robot control is a plus.

**Funding.** This position is funded by the Science Foundation Ireland Frontiers for the Future Project “ReHapt”. Studentship includes a tax-free stipend of €18,500 per year, coverage of tuition fees, funds for conference travel, and equipment allowance. The student will also have the opportunity to earn extra income through teaching activities.

**How to Apply**. Application to this position can be made by sending an email with subject: "Applying for PhD Position on the Development of Control and Training Modalities for a Novel Robot for Rehabilitation" to giacomo.severini@insight-centre.org Candidates are requested to submit (in pdf format):

* 1 page cover letter detailing relevant experience and motivation behind the application
* CV
* Transcripts (courses with grades)
* Contact of one referee