Title: Wearable Robotics for Healthcare

Type of award  PhD Research Studentship
Department  Mechanical Engineering
Duration  3.5 years
Eligibility  Home / EU only
Starting Date: 1 October 2019

PhD Topic Background/Description
This is a PhD opportunity to join the dynamic and inter-disciplinary research communities of the Bristol Robotics Laboratory and the University of Bristol.

Applicants with an interest in Human-robot interfaces, Biomechanics and wearable technologies are encouraged to apply.

Wearable technologies have a wide range of applications spanning from fashion and entertainment, activity and healthcare tracking to assistive devices. Wearables can be used to assist people with communication or engagement in activities to improve quality of life. Wearable exoskeletons for hands/arms/legs are a prominent example. They are aimed at improving mobility or assisting users in their motor rehabilitation. Specifically, regarding hand exoskeletons, augmented mobility and high functionality of our hands can be essential in performing activities of daily life. At the same time, this extends further, with application in environments where full autonomy is not possible, but which require highly dexterous tele-operation (e.g. surgical, space, nuclear, underwater robotics etc.). How can these interfaces be intuitive as well as dexterous?

In this project, you will develop a novel upper-limb wearable human-robot interface for interaction with and manipulation of the physical environment. Such an interface combines mechatronics, soft/foldable robotics and haptics with intuitive control (e.g. electromyography sensors or brain computer interfaces) of devices and machine learning algorithms. Applications include tele-operation, rehabilitation, prosthetics, augmentation of motor capacity or physiotherapy.

Candidate Requirements
We are looking for a committed and highly motivated PhD student holding (or close to completing) a minimum of a master’s degree (or international equivalent) as well as 1st or 2:1 degree in Robotics, Engineering, Computer Science, Physical Sciences, Mathematical Sciences or a relevant discipline.

If English is not your first language, please provide a recognised English language qualification at Profile E. Further information: http://www.bristol.ac.uk/study/language-requirements/profile-e
Basic skills and knowledge required.
You should have strong mathematical and programming skills and be fluent in written and spoken English.
Understanding of the principles of robotics, tele-operation or wearable technologies is desirable.

Equal opportunities statement
We seek an inclusive environment that respects the diversity of our staff and students and enables them to achieve their full potential, to contribute fully, and to derive maximum benefit and enjoyment from their involvement in the life of the University. We are committed to building and sustaining an excellent learning experience for our students, where staff are equally valued and respected, and students are inspired to thrive academically.

Scholarship Details
The scholarship covers the following for 3.5 years:

- full UK/EU (EU applicants who have been resident in the UK for 3 years prior to 1st September 2019) PhD tuition fees
- Tax free stipend (£14,777pa for 2018/19, £15,009pa for 2019/20)
- Travel / consumables budget

EU nationals resident in the EU may also apply but will only qualify for PhD tuition fees.

Informal enquiries
For informal enquiries, please email Dr Antonia Tzemanaki, Antonia.Tzemanaki@bristol.ac.uk

For general enquiries, please email came-pgr-admissions@bristol.ac.uk

Application Details
Prior to application, send your CV and cover letter describing your interest and proposed direction for this studentship to Dr Antonia Tzemanaki (Antonia.Tzemanaki@bristol.ac.uk).

To apply for this studentship submit a PhD application using our online application system [www.bristol.ac.uk/pg-howtoapply]

Please ensure that in the Funding section you tick “I would like to be considered for a funding award from the Mechanical Engineering Department” and specify the title of the scholarship in the “other” box below with the name of the supervisor.

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