Ph.D student position in Neuromechanics & Bio-Inspired Technologies Laboratory (NBits Lab)

Eligibility and funding

This PhD studentship in the Department of Bioengineering at Imperial College London is fully funded for UK/EU candidates (3-years) starting anytime between June and October 2017. Overseas students will be considered if alternative funding can cover the additional international student fees. Eligible candidates should have a bachelor degree (2.1 or first class) or a master degree (merit or distinction) in natural sciences or engineering with laboratory experiences.

Project description

The lab is interested in how neural information is coupled to the physical bodies to produce highly sophisticated biological motor control and intelligent behaviors. Thus our general emphasis is on the interaction between biomechanics and neural circuit dynamics in the context of bio-inspired technologies (e.g. robotics).

In this project, we use large flying insects such as the dragonfly as model systems to understand how sensory encoding of mechanosensory and proprioceptive information contributes to the real-time control and fine-tuning of the flight motor system. This work has direct implications for many high-speed dynamic motor control tasks currently inflexible or unachievable in engineered systems. The lab is equipped with the state of the art ultra-light wireless neural telemetry system which enables us to monitor sensory and motor signals from freely flying insects. Please see the lab website for additional information (htlinlab.com).

After completion of the Ph.D, the student will have developed many of the following highly demanded skills for a career in academia or industry: technical skills to handle challenging electrophysiology experiments and motion capture systems, analytical skills for analyzing neural data, skills for modeling biological systems, engineering skills in micro-electronics and neural implants, scientific writing and presentation skills, communication and project management skills.

Application

A successful candidate should have a solid understanding in biological systems at the organismic and physiological level. A good track record in hands-on laboratory work, and the ability to program in Matlab, Python, and/or C++ are advantageous. Proficiency in small-scale dissections/manipulations will be highly desirable. Most importantly, the applicant should be highly motivated, shows clear interest in the sensory representation of complex movements, and enjoys a multi-disciplinary research environment. The project can be tailored to the student within the research scope of the lab.

To apply for the position, please send a single PDF document including a one-page cover letter discussing research interest and experiences, a two-page CV, a copy of transcripts, and contact information of two references to Dr. Huai-Ti Lin (linh10@janelia.hhmi.org) with subject line “NBits_PHD_APP”. Application will stay open until the position is filled.

*The standard PhD studentship covers home/EU tuition fees and provides a bursary (this was £16,296 p.a. for 2016-17, including London weighting).

**Motivated oversea students (non-UK/EU) can discuss alternative funding with Dr. Lin.