

Applications are invited for a Research Challenge Fund PhD studentship tenable in the Faculty of Computing and Engineering at Ulster University, Magee Campus.

Project Summary:

This project, based on a recently awarded BBSRC project, is a collaboration between Ulster University and Oxford University on the development of an advanced and realistic computational model of neuronal circuit involves in emotional learning. The project aims to increase our understanding of the relationship between brain activity and behaviour by investigating the role of specific neuron types and their microcircuitry in emotional learning which is a critical psychological process through which organisms understand what is good and bad in their environment. Specifically, it seeks to understand emotional information signalled by serotonin and other neurons using state-of-the-art large-scale neuronal recording in behaving animals, accompanied by advanced computational modelling. Ulster will make use of machine learning techniques on the collected large datasets and develop a multi-scale computational model that will shed light on the relationship between neuronal circuit activity and emotional behaviour. The project will have impact not only on fundamental neuroscience, but also potentially on anxiety and depression treatment.

This timely and exciting systems biology project is available in the Computer Science Research Institute (in collaboration with Oxford University) and is tenable in the Faculty of Computing and Engineering at the Magee Campus. The successful PhD candidate will benefit from the expertise of Ulster's Computational Neuroscience and Machine Learning community, and will interact closely with Oxford University's experimental colleagues. The student will gain valuable knowledge in machine learning, computational modelling of biophysical neuronal circuits, high-performance computing, mathematics/statistics and brain sciences, which are all essential in many areas of science, engineering, mathematics and biology. This training will provide wide opportunities for finding skilled work, especially in biotechnology and the burgeoning field of data science and analytics.

Entrance Requirements:

All applicants should hold a first or upper second class honours degree (or equivalent) in Computer Science, Mathematics, Physics, Engineering, Statistics, Neuroscience, Biology, or a cognate area. Applications will be considered on a competitive basis with regard to the candidate's qualifications, skills, experience and interests. Successful candidates will enrol as of 1 October 2016, on a full-time programme of research studies leading to the award of the degree of Doctor of Philosophy.

The studentship will comprise fees together (Home/EU Rate) with an annual stipend of £14,296 and will be awarded for a period of up to three years' subject to satisfactory progress.

If you wish to discuss your proposal or receive advice on this project please contact:-

Dr KongFatt Wong-Lin, tel: 028 7167 5320, email: k.wong-lin@ulster.ac.uk .

Procedure

For more information on applying go to ulster.ac.uk/research
Apply online ulster.ac.uk/applyonline

The closing date for receipt of completed applications is 26 August 2016

Interviews will be held in September 2016