Bayesian Deep Learning for Alzheimer's conversion prediction in Mild Cognitive Impairment subjects (Ref CSEE/APR18/02)

The School of Computer Science and Electronic Engineering at the University of Essex is pleased to announce a PhD studentship available in "Bayesian Deep Learning for Alzheimer's conversion prediction in Mild Cognitive Impairment subjects".

This studentship will start from 23 April 2018 and once awarded, you'll receive the scholarship for three years of your PhD (subject to satisfactory progression).

The studentship includes:
- a fee waiver equal to the Home/EU fee (for 2017/18, £4,120). International students will need to pay the balance of their fees.
- a stipend equivalent to the Research Councils UK National Minimum Doctoral Stipend (£14,553 in 2017-18)

Mild cognitive impairment (MCI) is a transitional state between normal ageing and dementia. In a number of cases, MCI carries the risk of conversion to Alzheimer's disease-related dementia. MCI typically includes slowing of motor performance and information processing, impaired attention and impaired executive functions with partial preservation of memory. Machine learning techniques have recently been identified as promising tools in neuroimaging data analysis and can, to a certain extent, work on a single patient basis in predicting conversion from MCI to Alzheimer's disease (AD). This PhD will investigate novel convolutional and Bayesian deep learning techniques to identify biomarkers of MCI and improve the accuracy of detecting early signs of the potential for MCI to progress into AD. Early AD diagnosis is important for giving access to treatments that can improve symptoms and slow down the progress of the disease.

The successful applicant will be supervised by Dr Luca Citi and Dr Alba Garcia and will be part of the Essex BCI and Neural Engineering Lab (http://essexbcis.uk): today the UK's largest research group in brain-computer interfaces.

Additional questions and queries about the studentship can be addressed to:
Dr Luca Citi: lciti@essex.ac.uk and Dr Alba Garcia: alba.garcia@essex.ac.uk .

Entry requirements

At a minimum, the successful applicant will have a good honours BSc or BEng degree (1st class or high 2:1, or equivalent) in electronic engineering, computer engineering, computer science, statistics, mathematics, or related subjects. An MSc with Merit or Distinction is desirable (but not essential for students with a first class degree). Strong analytical and mathematical skills are required, as well as good programming skills.

Knowledge of machine learning, signal and image processing are desirable but not essential.

How to Apply

- To be considered for this Scholarship applicants are required to apply for their PHD course in the usual way via the University of Essex online admissions application process here: website, (including uploading all supporting documents required) by the deadline of **Friday 23 February 2018**.

- Please note on your PG Admissions application form in the 'Proposed research topic or area of research' field that you wish to apply for this scholarship, quoting Ref CSEE/APR18/02.

- In addition to your main online PHD application, you are also required to submit a separate application form, which can be accessed here and submit separately to:
- csee-schooloffice@essex.ac.uk by the deadline of **Friday 23 February 2018,** quoting Ref CSEE/APR18/02

- Applicants will be informed of the outcome of their application for their PHD course and the scholarship award by the end of March 2018.

For further information on our current areas of research please refer to our research interests and staff profiles.

If you have a disability and would like information in a different format telephone (01206) 873521/874588.