PhD Students Recruitment

Project Background

Multiple scholarships are available for the collaborative research project using Artificial Intelligence and Machine Learning in the emerging field of "*Self-aware Computing Systems*".

Artificial Intelligence and Machine Learning are being used to solve real-world problems and is having a significant impact on industries ability to survive. This research offers the candidate to work with Industry to create advanced algorithms and introduce leading edge corporate products to market. Self-aware computing has been used successfully to deal with complex environments and has shown to be better at dynamic resource re-allocation than traditional methods. Self-aware applications are those that can learn from their environment and dynamically adjust how they operate within it.

Currently limited options are available to applications to vary in a dynamic sense to make the most of available resources. Applications need to be enabled to understand the distributed environment that they operate in and thus take advantage of resources wherever they exist to optimise quality of information in response to changing goals. An example is the ability of an application to respond to limiting resources and modify the type of information provided and resources used whilst maximising quality of information.

The self-aware applications reason using models which enable them to predict and then act based on their knowledge of the environment. The methods utilised to learn and predict are varied but largely rely on machine learning, due to the inability of rule-based systems to adequately manage non-linear dynamic relationships. The PhD project aims at building a durable self-aware software system exhibiting both generalisation and adaptation capabilities.

Your Profile

The applicants must be an Australian citizen. The ideal candidate has a Computer Science degree

(Bachelor's degree with honours or Master by Research degree) or a closely related discipline and has a strong interest in Artificial Intelligence and Machine Learning. Strong background in computer programming (ideally in *python*) is essential for the success of the application. Knowledge of machine learning, deep learning is a bonus.

Scholarship

Candidates will receive the scholarship which including a tuition fee waiver and $35,000 per annum living allowance (fix rate for three and half years). This scholarship is funded by the Defence Science and Technology (DST) Group, Australian Department of Defence, Commonwealth of Australia.

Candidates will be fully supported for attending conferences (including conference registration fee, airfare, accommodation, meals and ground transportation fee) for presenting their papers

Future Opportunities

The scholarship is supported by DST Group. The student will be asked to visit DST yearly to present on progress. It provides an opportunity for the candidate to develop working relations with the Australian Department of Defence which may lead to further collaboration after graduation.

During your placement, you will have the opportunity to do an industry internship for 5 months with Consilium Technology. The internship will give you an opportunity for industry experience while at the same time, explore a future opportunity of employment with Consilium Technology on completion of your PhD. Consilium Technology specialises in AI, Modelling and Simulation and Software Engineering. At Consilium Technology, we believe that technology is a key pillar to a sustainable future for humanity

Interested?

The position is available now. Applications should include a research statement, CV, copy of undergraduate and postgraduate (if applicable) academic transcripts. Application are to be sent to Dr Lina Yao (lina.yao@unsw.edu.au) with title: **PhD Application – Self-aware Computing [YOUR NAME]**