

# 2018/2019 EIS Summer Research Scholarship

**Supervisors: A/Prof. Lam Phung and Prof. Christian Ritz**

A scholarship of \$5000 is provided for an excellent UOW undergraduate student to participate on a 10-week research project between 12/2018 and 02/2019.

**Project title: Deep Learning for Underwater Mine Detection in Sonar Images**

**Project description:** The aim of this project is to develop a system based on deep learning for the detection of underwater mines in sonar images. In the last ten years, deep learning has gained fervent interests in machine learning, computer vision, signal processing and many other fields. It has been judged by MIT Technology Review as one of the top-10 breakthrough technologies in 2013. Deep learning works well when a large amount of labelled images and high computation power (GPUs) are available. However, for underwater mine detection and other applications with limited labelled data, new strategies for deep neural networks must be developed. The project will involve extensive programming using MATLAB and Python for image processing. This project is open to students (computer engineering, electrical engineering, computer science) in the second, third, or fourth year of their studies at University of Wollongong. It is suitable for motivated students with a mathematical background, experience in MATLAB and Python programming, and an interest in pursuing a further research study (Master/PhD).

**To apply:** Visit <http://eis.uow.edu.au/scholarships/summer/index.html>

**Application deadline:** Friday 19/10/2018.