Faculty of Engineering
Summer Research Program 2019-2020

Project Title: Development of Intelligent Robotics for Structural Health Monitoring (SHM)

Supervisor(s): Prof. Wenhui Duan; Dr Sherry Qianhui Zhang
Department: Civil Engineering
Email: wenhui.duan@monash.edu; sherry.zhang1@monash.edu
Website profile of project supervisor: https://www.monash.edu/engineering/wenhuiduan#about_5d06d71c5585b

Objective
To develop intelligent robot and computer vision technologies for structural health monitoring (SHM)

Project Details
Bridge collapse accidents happened frequently in recent years owing to overload traffics, corrosion and natural disasters, which leads to gradual degradation or sudden failure of bridge components. The commonly used methods for health monitoring and condition assessment of bridges such as visual inspections are time-consuming, labor-intensive and highly-dangerous. Recent development in high-mobility robotics has demonstrated the great potential to greatly reduce the tedious labour works. In this project, the students will be involved in the development of an intelligent robot prototype for structural health monitoring using professional simulation software as well as computer vision algorithms for detecting defects of bridges by analyzing captured images. Via this project, the students will acquire knowledge in structural health monitoring and gain skills in robotics modelling, gait analysis, image processing and programing.

Prerequisites
NA

Additional Information
Applicants may be required to attend an interview