GERARD KENNEDY

Résumé

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OVERVIEW

I am a Masters student with the Australian Centre for Robotic Vision at the Australian National University. My project involves developing novel ways of utilising image information within deep learning algorithms. I previously completed an Engineering/Science double degree at the ANU. I am currently seeking full-time work from January 2021. I intend to write up my Masters thesis in my own time in the first half of 2021.

EXPERIENCE

Research Assistant November 2017 - December 2018
Australian National University

· I assisted in the development of the vision system for an Agricultural harvesting robot. This work was undertaken within the Australian Centre of Robotic Vision, which has a node at the Australian National University. For this role I developed a calibration pipeline for the robot's sensors, and worked on 3D reconstruction and image segmentation. This required use of Matlab, Python, and C++ programming languages. The broad goal of my work was to develop a system that can identify asparagus that are ready to pick.

Tutor July 2017 - Present
Australian National University

· I have previously tutored four undergraduate systems engineering courses. The courses were Systems Engineering Design and Systems Group Project (a capstone course for ANU's Bachelor of Engineering), Robotics, and Computer Vision. This role involves developing and presenting course material to groups of various sizes, coordinating activities, and assessing students.

Summer Research Scholar November 2015 - February 2016
CSIRO

· I spent a Summer working at the CSIRO's Department of IT and Maintenance in Canberra. In this position I developed hardware and software testing regimes to be implemented on the CSIRO's high performance computers. These tests were written using the BASH scripting language, which I learnt for this role.

Control System Designer March 2017 - October 2017
ANU Sol Invictus Solar Car Project

· I was a member of the Control sub-team for the first solar car that the Australian National University entered in the World Solar Car Challenge. In this role I designed the car's data logger, which required learning a new programming language, C#. I also designed printed circuit boards to be used in the car's steering wheel, and to connect components within the car's battery. This required me to become proficient in the Altium Designer software package.

MAJOR STUDENT PROJECTS

Final Year Engineering Thesis February 2017 - November 2017
Squeezing Video out of a Lytro Light Field Camera *Grade: 93%*

· My thesis involved trying to find new ways of using the Lytro light field camera to test and develop applications of light field video. This project involved writing a software package in C# to interface the Lytro with a robot arm to capture dynamic light field data sets. I also designed a printed circuit board that was used to intercept and analyse image data inside the camera. Finally, I analysed this data and used the results to design a system that has the potential to extract video from the Lytro. My thesis can be found here.

Systems Engineering Group Project February 2017 - June 2017
Guidestar Laser Interface Design *Grade: 86%*

· I worked with four team mates to undertake the initial design phase for a system that would interface three guidestar lasers with a telescope. These lasers will be used to perform Adaptive Optics to aid in the tracking of space debris. This work was conducted for the Australian National University and the Advanced Instrumentation and & Technology Centre, based in Canberra. Our team scored the top mark out of approximately 20 engineering student teams to undertake a project. Upon completion I became a tutor for this course, allowing me to help new teams to carry on this and other projects.

EDUCATION

Masters of Robotic Engineering *2021*
I am currently undertaking a Masters degree with the College of Engineering and Computer Science and the Australian Centre for Robotic Vision at the ANU. My project involves developing novel deep learning algorithms for use in robotics applications. This work has required use of C++, Python and Matlab. Research publications that I have contributed to can be viewed here. I am in the process of writing up my thesis.

Bachelor of Engineering (Honours) *July 2018*
Australian National University
Majors in Mechatronic Engineering, Systems Engineering
First Class Honours

Bachelor of Science *November 2018*
Australian National University
Major in Mathematics specialising in Astronomy and Astrophysics
Minor in Earth Science

FELLOWSHIPS

Associate Fellowship *Awarded 2018*
Higher Education Academy

REFERENCES

Robert Mahony
Professor, Research School of Engineering, Australian National University
Rob is a Chief Investigator for the Australian Centre for Robotic Vision, and the head supervisor for my PhD.
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Steve McMahon
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Steve was my supervisor for my Summer Research Project in 2015/2016.
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