

Ranier Knowles

Graduate Electrical Engineer



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RanierKnowles

Education

- **Master of Financial Mathematics**
University of Queensland
2023 - Present | Brisbane, Australia
- **Bachelor of Engineering (Honours) (Electrical / Computer Software Systems)**
Queensland University of Technology (QUT)
2018 – 2022 | Brisbane, Australia

Certifications

- **NV1 Security Clearance (2021)**
- **Certificate III in Logistics (2019)**
- **Queensland Certificate of Education (QCE) (2016)**

Relevant Skills

- Strong interest in control systems engineering.
- Familiarity with AutoCAD

Programming

Intermediate coding experience in the following languages:

- **Python**
- **C / C# / C++**
- **MATLAB**

Basic familiarity of the following languages:

- **JavaScript**
- **HTML / CSS**

Awards

- **Naval Shipbuilding Scholarship (2021)**

Experience

May 2022 - Present

Graduate Electrical Engineer Fraser-Lever Consulting Engineers

- Fraser-Lever specialises in the end-to-end delivery of medium and low voltage systems, instrumentation, networks, and process control systems for heavy industry, utilities, processing plants, and mine infrastructure.
- Experience utilising industry-standard software tools such as ETAP and PowerCAD to perform load flow analysis, short circuit analysis, and protection coordination studies.
- Familiarisation with Australian electrical codes and standards including AS/NZS 3000, AS 2067, and AS 3008.
- Create detailed electrical drawings using AutoCAD, ensuring compliance with relevant industry standards and codes.

Nov 2020 - Feb 2021

Intern Electrical Engineer

Raytheon Australia

- Project:** Automated workflow system (Supervised by Barry Seager).
- Developed an automated workflow system that aligned with business process requirements as part of sustainment activities. Leveraged automation software such as ServiceNow, JIRA Software, and SharePoint through custom scripts (JavaScript) to enable process automation.
 - Realistically assessed the scope, size, and complexity of complex engineering projects. Conducted trade studies and provided recommendations based on evaluation criteria.
 - Collaborated with a team of engineers to support the development of defence systems and technologies. Participated in team meetings and presentations to share findings and insights and received constructive feedback on my work.
 - Performed analysis activities to evaluate the success of projects and provided recommendations for software maintenance and continued usage.

Aug 2020 - Nov 2020

Electrical Assembly Technician

Siemens

- Assembly and testing of the 'Fusesaver' line of medium-voltage outdoor re-closing vacuum circuit breakers (including communications modules).
- Utilise both power and hand tools (torque wrenches, drills, sanders ETC) safely in a fast paced environment.
- Conduct Medium voltage testing of electrical equipment in a safe and secure manner.
- Responsible for flashing software and debugging electrical and mechanical issues associated with products. Including the utilisation of serial communications.

Projects

Jun 2021 -

Bachelor of Engineering (Honours) (Electrical / Computer Software Systems)

Jun 2022

Thesis: Autonomous Collision Avoidance System for Maritime Applications (Supervised by Prof. Matthew Dunbabin).

The project utilised ROS, OpenCV, and TensorFlow to train Convolutional Neural Networks (CNN) for robotic vision and collision avoidance. The primary focus was to classify navigational buoys, coastlines, and vessels to supply navigational input to a reinforcement learning model trained to operate per maritime COLREGs. Extensive testing was conducted to validate the performance of the reinforcement learning model in a variety of real-world scenarios utilising a simulation of QUT's WAM-V Autonomous vessel. The reinforcement learning model was subsequently fine-tuned to optimise its performance characteristics.

References available upon request.