Callum J Hays

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Education

Queensland University of Technology

Bachelor of Engineering, Mechatronics (Honours)   November 2021
- Thesis Project supervised by Prof. Peter Corke
  Design of Real Time Block Diagram Engine for Rapid Prototyping of Digital Control Systems
- Droid Racing Challenge Winner 2021
- QUT Motorsport Auxiliary Systems Lead 2020
- GovHack Bureau of Meteorology National Winner 2017
- QUT Robotics Club President 2016

Bachelor of Information Technology, Computer Science   November 2021

CSIRO Data61
Functional Programming Course   July 2017

FreeCodeCamp
Front-End Development Certificate   May 2015

Technical Skills

Python	Web Development	API Design	Test Driven Development
Typescript/JavaScript	Data Visualisation	ROS	Debugging & Root-cause Analysis
C++/Rust	Embedded Software	Make/Bash	Sensor & Systems Calibration
React.js	Real-time control systems	Numpy/Scipy	Remote Deployment Automation

Professional Experience

LYRO Robotics   Brisbane, Australia
Lead Software Engineer   March 2021 - September 2022

- Lead a team of four to deliver on 4 prototype-phase customer deployments, utilising both cartesian manipulators (custom) and industrial arms (KUKA)
- Completed a contract for remote software integration of LYRO's machine intelligence with a large US-based customer's hardware prototype.
- Improved autonomous Pick'n'Pack cycle speed by up to 400%
- Developed a React/TypeScript progressive web-app for robot operational control and performance data visualisation on an android kiosk device

Robotics Engineering Intern   January 2021 - February 2021

- Made LYRO's machine intelligence software accessible via HTTP API for partnerships and sale.

- Developed Continuous Integration / Development (CI/CD) infrastructure and integration testing tools for robotic applications using Python and Docker.
- Streamlined robot operation procedure using ROS.

Queensland University of Technology   Brisbane, Australia
Sessional Academic   March 2020 - November 2020

- Taught 4 classes across 2 semesters of Introduction to Computer Systems (IFB102).
- Managed and ran online tutorials via Zoom during the COVID pandemic.
- Consulted students on technical challenges with their unique end-of-unit projects.

Notiv   Brisbane, Australia
Machine Learning Intern   November 2018 - April 2019

- Developed secure dataset labelling tools for remote data labelling team using Docker.
- Implemented audio/transcript sync functionality in javascript web-app.
- Utilised docker containers and AWS lambda for machine learning cloud services.

Popgun Labs   Los Angeles, California
Software Engineer   January 2017 - November 2017

- Rapidly developed data analysis and visualisation tools and full-stack product prototypes using Elm and Javascript.
- Attended Techstars Music 2017 startup incubator in Los Angeles.
- Implemented advanced techniques outlined in Music Information Retrieval research papers.
- Managed fleet of AWS EC2 instances for signal processing and machine learning.

Haitch Labs   Brisbane, Australia
Machine Learning Engineer   October 2016 - December 2016

- Developed semantic search algorithms utilising latent space of GAN machine learning models using Rust.