

Joshua Roe

Curriculum Vitae

Contact

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GitHub/Portfolio:

github.com/Ac3inSpac3

Education

QUT (Gardens Point): Bachelor of Engineering (Honours) and Bachelor of Information Technology

- Majoring in Mechatronics and Computer Science
- Graduation End of 2025
- Current GPA: 5.4

Burpengary State Secondary College:

- Graduated 2019
- OP6
- Physics, Maths C, Aerospace, IT
- Extra-Curricular Activities: Robotics and Drone Racing Clubs

Associations/Awards

Engineers Australia – Student

QUT Executive Deans' Commendation for Academic Excellence Semester 2 2023

Availability

2-3 days per week during Uni semesters

4-5 days per week during Uni break

References

Silvano Colombo

Client for Capstone Project
silvano.colombotosatto@data61.csiro.au

Belinda Grenkie

Department manager at Coles
0412 523 945

Shelby Fisher

Co-worker at Coles
0402 475 175
shelbyfisher1197@gmail.com

Profile

As a final year Mechatronics and Computer Science major at QUT, I possess a strong background in 3D CAD programs as well as extensive programming knowledge in languages like C#, C++, Python, and Java. My experience includes developing solutions for robotics with ROS2, 3D printing, machine learning, specification development and game design. I am eager to contribute my technical skills and creative problem-solving abilities in a role I am passionate about, allowing me to apply my expertise to real-world engineering challenges.

Skills

- | | |
|---|---|
| - Communication | - Computer Aided Design (Fusion 360, Inventor, AutoCAD) |
| - Agile Approach | - PCB design and assembly (KiCAD, Altium) |
| - Project Management | - MATLAB |
| - Leadership | - Unity (2D and 3D/VR game design) |
| - Teamwork | - Office 365 |
| - Code (C, C++ C#, ROS, Python, Java, JavaScript G-Code, SQL) | - Autonomous vehicles |
| - Machine Learning/ AI | |
| - DevOps | |

Please refer to my GitHub page (github.com/Ac3inSpac3) for detailed project summaries showcasing my skills, ranging from prototype development to production-level projects.

Experience

Intern Intelligent Transportation System (ITS) Engineer – WSP

May 2023 – Present

SNMP C-ITS Roadside Infrastructure, QLD, Australia (2024-Present): TMR, Undergraduate ITS Engineer

- Review of SNMP in C-ITS as documented by the National Transportation Communications for ITS Protocol (NTCIP).
- Review existing SNMP implementations within vendor firmware and from AWS services.
- Investigate existing C-ITS MIBs implemented by vendors, highlighting MVPs and outline any additional work required.
- Technical requirements for C-ITS SNMP implementation and testing.
- Stakeholder engagement, Test Plan, Verification and testing, Benefit analysis of SNMP.

Connected Automated Vehicle Initiative (CAVI), (July 2023 – current): TMR

- Building off the Ipswich Connected Vehicle Pilot to design more unified standards for Australia.
- Working to ensure ETSI, C2C (Car 2 Car), NTCIP1218, MQTT, IP and Australian standards and protocols are met with devices.
- Roadside station testing and verification against NTCIP1218 and CAVI ASN via SSH.
- Creating testing and approval documents for C-ITS devices.

C-ITS National Harmonisation and Pre-deployment Project, Vic, Australia (2023): DTP, Undergraduate ITS Engineer

- Worked with DTP to develop the high-level system architecture maintaining alignment with national and international C-ITS standards
- Work with DTP to workshop through interface security.
- Collect and document requirements for solution components provided by external vendors and trial site mapping.
- Systems engineering analysis and requirements gathering through engagement with key C-ITS technology partners as directed by DTP.

Lead Game Designer – CSIRO Data61 (Capstone project 2022)

Feb 2022 – Nov 2022

Interests

3D Design

3D Printing

PCB Design

Machine Learning

Electronics

CAD

Coding

Technology

Robotics

Drones

AI

Game Design

- Developed a game based off the requirements provided by CSIRO Data61, gamify food compliance issues.
- Developed game specific storyline scripting tools using unity.
- Created, debugged, and tested the game and its features.
- Performed agile management of the team and worked as a client liaison with the team at CSIRO.

R&D Engineer, Programmer and Presenter – Kitsune

Nov 2019 – June 2021

- Developed a professional relationship with Kitsune co-founder Alexander Agudelo along with Dr James Davis (QUT) and Professor Hitendra Pillay (QUT) in the creation of an Australian Research Council (ARC) application for a research project.
- Worked directly with the Product Engineer Kitsune to help develop, test, and advertise their robotics education system.
- Planned and held Professional Development workshops on 3D printing and robotics for teachers, and interactive workshops for students.
- Worked in Fusion 360 to 3D Print rapid prototype robot platforms.
- Developed and tested prototype designs and code to stress test the platform.

Online Shopper – Coles

March 2020 – October 2023

- Customer Service.
- Managed the Online Team when the manager was off sick or not working.
- Ordering supplies and assisted with rostering over busy periods.
- Developed a python application to reduce miscommunication with the Deli team.

Achievements

Developed a professional relationship with Kitsune (kitsune.com) co-founder Alexander Agudelo along with Dr James Davis (QUT) and Professor Hitendra Pillay (QUT) in the creation of an Australian Research Council (ARC) application for a research project.

1st Place in Robocup Junior State Championship — 2017

Robotics Innovations Awards — 2017

Academic awards during High School including Science, Robotics and Design

COMPLETED SUBJECTS

- | | |
|---|-------------------------------------|
| - Energy in Engineering Systems | - IT Project Management |
| - Foundations of Electrical Engineering | - Engineering Computation |
| - Introduction to Computer Systems | - Algorithms and Complexity |
| - IT Systems Design | - Software Development |
| - Building IT Systems | - Mechatronics Design 1 |
| - Database Management | - Capstone Project (Phase 1) |
| - Computational Explorations | - Dynamics |
| - Programming Principles | - Mechatronics Design 2 |
| - Discrete Structures | - Capstone Project (Phase 2) |
| - Foundation of Engineering Design | - Machine Learning |
| - Engineering Mechanics | - Signal Analysis |
| - Microprocessors and Digital Systems | - Mechatronics Design 3 |
| - Networks | - Electronics |
| | - Modern Data Management |
| | - Rapid Web Application Development |