

DanielJohnston.eng@gmail.com · 0459 760 750

Final-year aerospace engineering (Honours) student at RMIT, graduating in semester 2, 2026, and heading for guidance, navigation and control. I design control systems and then measure them: a genetic algorithm that tunes its own settings and reports what they cost, and a fixed-wing UAV generated from a parametric digital twin.

CITIZENSHIP Australian citizen · CLEARANCE Eligible for NV1 · AVAILABLE FROM Anytime · LOCATION Melbourne / Regional West VIC · RELOCATION Victoria, New South Wales, South Australia, ACT · LICENCE Manual car licence

■ PROJECTS

MasterGA

2025–2026

Responsible for the GA on an RMIT team capstone; MasterGA is the rebuild · MATLAB, Simulink, Parallel Computing Toolbox
A genetic algorithm that tunes its own settings, grown out of a flight-control capstone.

26 × tighter spread across seeds than the best hand-written preset, at an equal 5 000-evaluation budget
28/50 seeds escaped the decoys to the true minimum, against 10/50 for the standard preset

VTX-1 Pathfinder

2026

Sole designer and builder · MATLAB, Python, Fusion 360, SolidWorks, ArduPlane

A fixed-wing surveillance UAV, sized from first principles and built from a parametric twin.

1368 g all-up weight, under a hard 1500 g cap
34.7 min computed endurance at cruise, on measured masses and a modelled drag polar
34 bodies regenerated from one parameter file, with zero clashes

■ EDUCATION

Bachelor of Engineering (Honours), Aerospace Engineering · RMIT University

2022–2026

Honours thesis on genetic algorithm optimisation of flight control systems. Coursework in autonomous systems, flight dynamics and control, aerodynamics and advanced engineering mathematics. Expected completion semester 2, 2026.

Victorian Certificate of Education · Girton Grammar School, Bendigo

2021

Subject dux in systems engineering, physics and environmental science.

■ EXPERIENCE

Sole trader — CAD, 3D printing and laser cutting · Self-employed

2023–present

End-to-end product work: client brief, CAD in SolidWorks and Fusion 360, manufacture, quality check, delivery. Operating a 70 W CO2 laser cutter for production runs, managing tolerances and material selection independently.

Labourer · Regional Greenworks Contracting

2019–present

Continuous employment since 2019, maintained through full-time study. Heavy machinery operation, concrete work, retaining wall construction.

Mechanical and electrical team member · Girton Racing Team and Shell Eco-Marathon Asia

2019–2021

Trike racing vehicle build and maintenance; electrical and mechanical contribution to an efficiency competition entry.

■ SKILLS

Simulation and control ↗ MATLAB and Simulink, guidance algorithms, Kalman estimation, genetic algorithm optimisation, 6-DoF trajectory simulation

Software 🦀 Rust, 🐍 Python, 📄 TypeScript, ⚡ React, 📦 Git, 🐧 Linux

CAD and design 🛠 SolidWorks, 🏠 Fusion 360, 🌀 Blender, parametric model generation

Manufacture 🔪 CO2 laser cutting, 🖨 FDM 3D printing, 🔩 soldering, assembly to tolerance

Flight hardware 🛩 Fixed-wing and multirotor build and flight, ArduPlane and Betaflight configuration, PID tuning, RF link budgeting

Visual, nine years 🎨 Adobe Illustrator, 📷 Photoshop, 🎬 Premiere Pro

■ AWARDS

- Subject dux in systems engineering, physics and environmental science
- Three STEM scholarships for academic achievement and excellence in systems engineering
- Five school colours across studies, co-curricular, community service, public speaking and sport