

LEVI DWYER

4th Year AEROSPACE ENGINEERING

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MELBOURNE, AUSTRALIA

PROFESSIONAL EXPERIENCE

Vice Lead Propulsion Engineer | Monash High Powered Rocketry (MHPR) | 2025–Present

- Sole engineer for Mk3.1's fluids GSE, including remotely actuated plumbing and fuelling systems.
- Vice Lead, directing 20+ engineers through the design, manufacture and testing of Mk3.1, a 12 kN hybrid rocket engine.
- Project manager overseeing the full mechanical GSE program; led test stand and launch rail design, and ran a full Swagelok procurement cycle, building an industry-standard bill of materials that became a sponsorship agreement.
- Extensive hands-on testing: hydrostatic testing, cold-gas testing, hot firing, engine assembly and launch-pad operations.
- Engineered regeneratively cooled nozzles, SRAD pneumatic valves, ignition devices and combustion chamber components.

Vice Lead Dynamics and Simulations Engineer | Monash High Powered Rocketry (MHPR) | 2024–2025

- Authored the team's CFD methodology guide for drag characterisation and heat transfer
- Built Python automation, feeding drag data into SATURN, the team's 6-DOF trajectory simulator

Final Year Project, Cold Gas Reaction Control System | 2026

- Developing a cold-gas RCS to stabilise a sounding rocket in pitch and yaw, including thrusters, fast-switching solenoids and an active control algorithm.
- Built quaternion-dynamics simulator with EKF attitude estimation and a two-axis gimbal test rig, benchmarking PID, bang-bang, phase-plane and sliding-mode controllers.

Research Intern | Turbulence and Combustion Research Lab (LTRAC) | Nov 2024–Mar 2025

- Researched entrainment and vaporisation of liquid fuel-film layers in hybrid rocket engines.
- Built a clear-walled combustor model for Schlieren imaging at Monash LTRAC Laboratory and ran CFD to optimise fuel-matrix composition.

Credit Officer (Part-time) | Industry Fund Services | Sep 2025–Present

- Negotiate payment extensions, payment plans, and legal and ATO referrals with employers on behalf of Cbus and AustralianSuper.

TECHNICAL SKILLS

Software & CAD: PTC Creo + Windchill PLM, SolidWorks

Simulation & DAQ: ANSYS (FEA & CFD), MATLAB & Simulink, Python Fluids Simulations

Fluid Systems: All types of fluids fittings, specialty in Swagelok fittings

Manufacturing: Machining, Welding, Additive Manufacturing, Composites, Drawings, Hands-on Assembly

QUALIFICATIONS & AWARDS

Bachelors Engineering (Honours), Aerospace Engineering | Monash University, Expected Jun 2027

Swagelok Training & Mentoring | 2026

Jim Furfaro Award for Technical Excellence | IREC Rocketry Competition, 2025

Runner-Up, 10k Feet SRAD Hybrid Category | IREC Rocketry Competition, 2025

Machining Tafe Course | Chrisholm Institute, 2025

ANSYS FEA & CFD Introduction Course | Leap Australia, 2024