

LACHLAN MIEGEL

Melbourne, AU – lachy.miegel@gmail.com – LinkedIn

EDUCATION

University of Melbourne

Feb 2023 – Dec 2026 (Expected)

Bachelor of Science (Mechanical Engineering Systems)

Hansen Scholar – One of 17 selected nationally (2024 cohort); flagship scholarship recognising academic excellence, leadership potential, and resilience

EXPERIENCE

ARES Rocketry

Feb 2024 – Present

Team Lead (2025–Present), Structures Lead (2024–2025)

- Lead 120-member multidisciplinary engineering organisation developing ARES' first student-designed hybrid rocket, with M-class motor (~4.5 kN thrust) targeting 10 000 ft for the Australian Universities Rocket Competition
- Set technical direction and make final engineering decisions across 6 subteams, manage recruitment, team structure, delivery timelines, and formal CDR/PDR-style design reviews
- Liaise with university faculty, engineering department, and external suppliers and manufacturers, primary point of contact for all outward-facing program relationships
- Secretary and Launch Control Officer, Victorian Rocketry Association (Australia's largest Tripoli prefecture), 2025–Present

Project SA Great

Nov 2025 – Present

Tripoli Level 3 Certification Rocket

- Sole designer and builder of a complete Mach 2 sounding rocket targeting 24,000 ft, fabricated all primary structures, recovery hardware, and avionics integration
- Performed full structural verification including FEA, hand calculations, load case definition, and hardware testing
- Designed and validated recovery system from first principles, addressing failure modes observed across prior flight vehicles
- Produced engineering documentation supporting external technical review, with flight scheduled 2026 Q3

O3400 Record Rocket

2026

Fin Can Lead

- Designing fin-can assembly for O3400-powered rocket targeting 81,000 ft; responsible for aerodynamic loading, flutter margin analysis, thermal effects, and structural sizing for Mach 3.5 flight environment
- Developing co-cured carbon composite sleeve architecture bonding fins directly into the motor tube structure

Hargo Engineering

Feb 2026 – Present

Quality Control Engineer

- Perform dimensional inspection and first article inspection of precision-machined aerospace components to AS9100 and ISO9001 requirements
- Interpret engineering drawings and GD&T specifications using CMM, Micro-Vu, and precision measurement equipment
- Support root-cause analysis and corrective actions for non-conforming components

MCHND

2025

CNC Machinist Intern

Adelaide

- Operated CNC milling machines and manual lathe in a commercial machining environment, developed working knowledge of tolerancing, workholding, fixturing, and production constraints

TECHNICAL SKILLS

Design & CAD: SolidWorks; Onshape (multi-hundred-part flight vehicle assemblies); FEA; load case definition; structural verification; GD&T; engineering drawing production

Manufacturing & Composites: Wet layup, vacuum bagging, resin infusion, carbon composite structures (4 yrs); CNC milling, manual lathe; design for manufacturing

Quality & Verification: Dimensional inspection; first article inspection; CMM & Micro-Vu; micrometer; AS9100 / ISO9001; root cause analysis

Systems Engineering: Subsystem integration; design reviews; pressure vessel compliance (AS1210, AS4343); stakeholder engagement; failure mode analysis; project leadership (120+ member team)