

Bon Maclean

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I am passionate about aircraft systems, aerodynamics and systems engineering. I am seeking to contribute to an engineering team while gaining practical industry experience in the STEM field.

EDUCATION

RMIT University

Bachelor of Engineering (Aerospace) (Honours), Minor: Project Management

Expected Graduation: 2027

Current GPA: 2.9/4

COURSE PROJECTS

Wing Box | As a member of a small project team, prototyped and tested practical wing box designs over six weeks.

- Utilised rapid prototyping and, together with the team, developed three initial designs.
- After stress-testing the designs using a three-point test on cardboard prototypes, the final design was constructed using aluminium sheets.
- Our final design outperformed the other 60 teams of four students, achieving a strength-to-weight ratio of 10:1.

Glider Competition | An eight-week design challenge for student groups to build a thrown glider with a propeller.

- As team lead, I managed internal conflict and attendance issues.
- The initial prototype was made at one-third scale, which allowed quick and easy improvements, including increasing the wing area, adding weight to the nose, increasing the camber of the wing and introducing an elliptical taper. After multiple iterations, the final design was scaled up to full size.
- We won the longest flight-time category, earning a tour of Textron Systems, and placed third for average flight time among 36 teams.

CAD Strap Launcher Challenge | A semester-long challenge involving a team of six engineers. The task was to design a launcher system to make securing payloads on trucks easier to manage and perform.

- Conducted extensive market research on current methods, possible improvements and niche exploration.
- Projected design cost, manufacturing sources and material strength.
- Developed technical communication skills by presenting to the lecturer and potential buyer, justifying design choices, outlining current market, and reporting possible economic growth.

Other Engineering Projects:

CAD Rover | Collaborated in a multidisciplinary team to develop a SolidWorks rover assembly, coordinate component interfaces and justify design decisions based on strength, weight and visual requirements.

Airfoil Design | Led a five-person team through airfoil prototyping, foam modelling, carbon-fibre lay-up, low-speed wind-tunnel testing and structural testing.

EXPERIENCE

IT and Data Analysis Support

2023–Present

Mycelia

I currently work as a data analyst for Mycelia, a non-profit renewable energy organisation.

- Identifying new data points, storing current metrics, managing upkeep of spreadsheets, and formal data requests.
- Developed a Power BI dashboard at the end of the pilot year to justify both funding and support from the board. Involved presenting and communicating important data points, such as energy usage and membership growth.
- Providing general IT support, including SharePoint administration, account and email setup, backend policy management and WordPress website updates.

General Retail, Operations and Sales

2023–Present

JB Hi-Fi

- Gained knowledge of current technology, market interest, and product communication.
- Developed communication skills and customer empathy.
- Handle customer orders and manage incoming and outgoing deliveries.

TECHNICAL SKILLS

- **Python, MATLAB, Excel:** Used Python for data extraction, fundamentals in modelling, calculations, and learnt VS Code. In MATLAB graphed, used state flow, and programmed Arduino. Excel data cleaning, graphing from lab results, stress and strain analysis.
- **Data Management:** Working knowledge of Power BI dashboards, proficient in data cleaning, validation and visualisation.
- **CAD & Design:** Used CatiaV5 wireframe mesh, mechanical design, drafting, and building from a technical drawing. Assembled parts/components and ground-up design. Also familiar with SolidWorks and Fusion360.
- **Prototyping & Machining:** Compiled composite fabrication with carbon sheets and epoxy, aluminium component prototyping, involving folding, cutting and riveting.
- **Aerospace Analysis:** Using XFOIL, FoilSim and currently learning ANSYS. Worked with NACA airfoils in wind tunnel testing and multiple speeds, size, and angle of attack. Using stress testing to analyse differing shapes of airfoils and their rigidity.

PERSONAL EXPERIENCE & PROJECTS

White Gum Global, 2019–2021: Co-founded an initiative to raise money for solar lights for students in Timor-Leste who were becoming ill from kerosene lamps. Raised more than \$2,000 through GoFundMe and another \$500 through fundraising events. We delivered 150 lights to students in Grades 3–5 and supported them with their learning. Participated in multiple fundraisers, interviews and public-speaking events.

Questacon Invention Convention, 2019: Selected as one of 25 Australian students for a week-long STEM program involving project development, prototyping, networking and pitching.

Home Lab | Utilised an old laptop to create a home-lab system for running servers and storing files.

- Linux-based operating system to operate the server.
- Worked with command-line tools and Webmin, further developing my understanding of network management.

Local Computer Assistant | Created a personal voice-operated computer assistant that functioned as a simple voice-controlled assistant.

- Displayed script using VS Code.
- Utilised an LLM to enhance the assistant, allowing it to respond to more complex requests and conversations.
- Developed Python programming abilities.

REFERENCES

References available upon request.