

Alec Vitalievich

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SUMMARY

Passionate fourth-year Mechanical Engineering and Computer Science student majoring in Aerospace. Interested in space exploration, aircraft design, optimisation and algorithm modelling integrating principles from both mechanical and aerospace engineering facets to drive innovative solutions.

WORK EXPERIENCE

Tutor

CS EDUCATION

January 2023 – Present, Adelaide, SA

- Created and delivered customised lesson plans for 20+ students.
- Used interactive teaching methods to ensure that students progress and identify areas for improvement.
- Collaborated with other tutors to deliver comprehensive lessons to larger classes, enhancing engagement.
- Provided an enjoyable learning environment for students to improve overall student performances on tests and classwork.

Senior Head Badminton Coach

St Peter's Girls College

August 2022 – August 2023, Adelaide, SA

- Role as a temporary head coach for St Peter's girls college managing senior badminton students.
- Produced programs and session training plans for students catering towards both weaknesses and strengths.
- Developed comprehensive training programs and session plans tailored to individual students, leading to improvement in player performance metrics and a increase in team win rate over a season.

Senior Badminton Coach

St Peter's College

January 2022 – January 2023, Adelaide, SA

- Experience as a coach for st peter's college after graduating from the first team for senior school students.
- Designed comprehensive training programs for students from year 7 to 12, resulting in improvements in overall performance metrics and a increases in student participation over the season.

PROJECT

Solar Plane

AUDBF • January 2025 – Present

- **Team Collaboration and Goal Setting:** Contributed to a multi-disciplinary team consisting of mechanical, electrical, civil engineers and computer scientists with a goal of achieving a new world record for the longest unscrewed solar plane flight by the end of 2025.
- **CAD and Simulation:** Involved in CAD modelling of the solar plane .
- **Research and Manufacturing:** Involved in 3D printing and simulation with finite element analysis and computation fluid analysis. Further additive research done with AI as a tool for development.

AIAA Design/Build/Fly – Competition Plane

AUDBF • August 2024 – January 2025

- **Aerodynamic Optimisation:** Collaborated with the ADOT (Aerodynamic Design Optimisation Toolbox) team developing and refining code in MATLAB calculating and finding optimal geometries, shapes, aerodynamic forces involved and generating models.
- **CAD Modelling:** Created detailed CAD drawings for parts of the plane including drawings of the fuselage, skin panels, spars and ribs.
- **Manufacturing:** Accomplished tasks with the manufacturing team in 3D printing and laser cutting to produce prototype plane models used in testing geometries and parameters.
- **Prototype Creation and Testing:** Contributed to building the first prototype model of the plane created with foam helping to validate geometries and aerodynamics.

EDUCATION

Bachelor of Mechanical Engineering (Honours) and Computer Science – Aerospace Major

Univeristy of Adelaide • Australia, SA • 2022 – Expected 2026

SKILLS

Programming: Matlab, C, C++

Software: SolidWorks, ANSYS Mechanical, ANSYS FEA, AutoCAD, AutoDESK, Microsoft Office, 3D Printing

Languages: English (Proficient), Mandarin (Intermediate)
