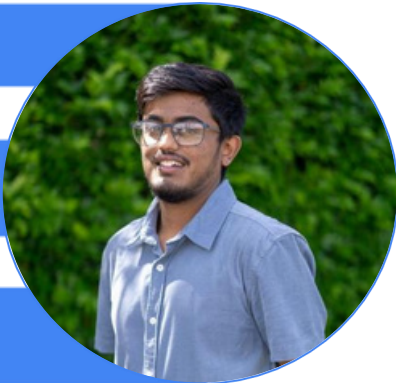



DURAIRAJ SHYAM



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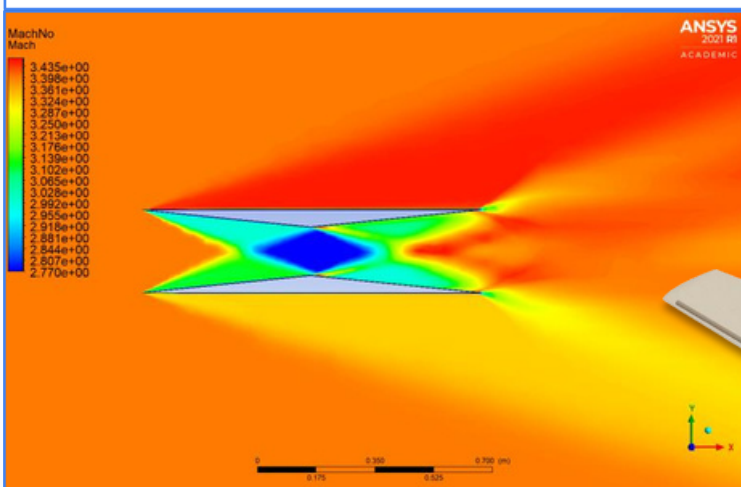
<https://www.linkedin.com/in/durairaj-shyam> 

Aeronautical Engineer from **The University of Sydney**
Major: **Engineering Design** – Achieved **First Class Honours**
Thesis: **Aerodynamics & CFD project** for **Red Bull Racing Formula 1 Team**
– Achieved **High Distinction**

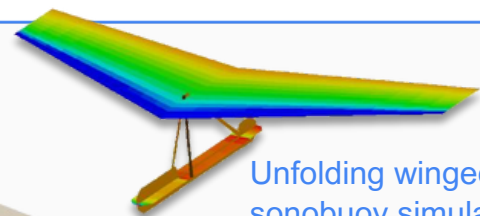


I'm very passionate about the aerospace industry and am always keen to get involved in projects - from work including conceptual design, systems engineering, simulations, testing and flying!

Supersonic Busemann biplane CFD analysis.



UAV design, construction & flight testing.



Unfolding winged sonobuoy simulation & modelling for the RAAF.

Worked with:



UAV Projects

The BluOne™ UAV

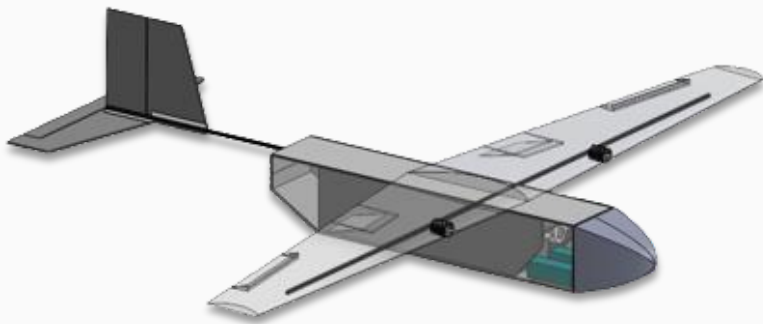


Situation: Build a UAV to be deployed from C-130J transport aircraft to transport blood pack/first-aid kit for soldiers in need.

Tasks: I was tasked with the aerodynamic considerations such as main wing sizing and overall methods of drag reductions. Additionally, as a team we had to build a working prototype of our design.

Actions: Utilised a variety of empirical methods and VLM simulations to ensure our design met RFT requirements put forth by client.

Results: Our prototype was successful in flight testing!



USyd DBF: Project Galah

Situation: Build a UAV to transport vaccine vials & syringes and score highly in the 2021/22 AIAA Design-Build-Fly (DBF) competition.

Tasks: As the aerodynamics lead for our university's team, I was tasked with leading fellow peers on creating a design for a high-lift, high-payload STOL UAV.

Actions: Organised regular meetings and workshops to upskill newer students within the club as well as working alongside them to create our UAV for the competition.

Results: After the design proposal stage, we ranked as the No. 1 team from Australia and 22nd in the world!



Highly proficient in:



Fluent



L^AT_EX



Sugar Glider I & II



Situation: Design two biodegradable winged sonobuoy systems that are capable of being depolyed from a sonobuoy launch-tube and then unfolding and autonomously flying to target location in the open ocean (one powered and one unpowered version).

Tasks: I was tasked with the wing planform optimisation and ensuring that our novel hang-glider concepts could be functional in cruise and during the critical unfolding phase.

Actions: Used skills in OpenVSP modelling and MATLAB for iterative design calculations.

Results: Our client revealed at the completion of the project that our group came 1st for the 'Best Presentations' criteria and came 2nd (out of 5 groups) overall!

Full-scale Aircraft Builds

Jabiru J160-C



Aircraft T-Tail



Spare-time activities:



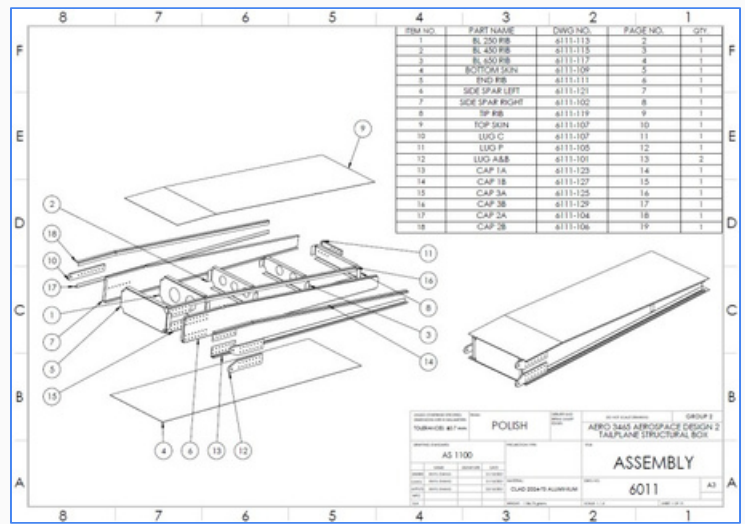
Tailplane Box Design

Situation: Design a tailplane box to be able to withstand a number of max. limit loads in multiple directions.

Tasks: My responsibilities ranged from stress calculations and mitigation of diagonal tension loads to the actual manufacturing of the tailplane box to our design specifications.

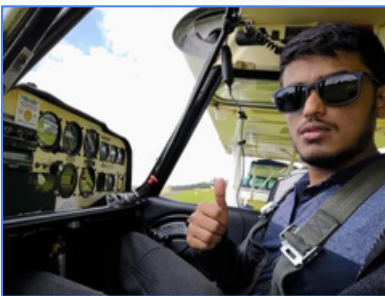
Actions: Conducting hand calculations to validate margin of safety FEA results from NASTRAN/PATRAN software in order to have confidence in our model before testing.

Results: Our estimated or expected loads/deflections were reasonably similar to the measurements taken during the test.



Other Interests

Pilot training:



Model aircraft flight training:



3D printing:



Volunteering:

- Student Equity, Diversity & Inclusion (EDI) Committee member
- Service Learning in Indigenous Communities (SLIC)