

ANDI ZHOU

2869 E Eisenhower Parkway, Ann Arbor, MI 48108 ♦ 734-881-4192 ♦ andizhou@umich.edu

Dear Mr. Griffin

I was very excited to see Ms. Yee's email about an open position for student assistant at the Aero Tech Center. I am very optimistic and confident that I can be of great assistance in solving the various tasks and problems given by the Aero Tech Center with my current skill set. I am a lead aerodynamic engineer at the Michigan Aeronautical and Science Association (MASA), responsible for designing and manufacturing the fins for the Tangerine Space Machine. What is more, I have plenty of experience working independently without guidance and have strong familiarity with both basic and advanced hand tools.

I understand that the Aero Tech Center is looking for an individual that is punctual, dependable, and self-motivated, and I am happy to say that I have gotten just that. In my current position as the lead engineer for fins, I have ample experience in working in high-stress situations. Specifically, my team and I were tasked with manufacturing all major components for the fins under a tight six-week lead time. This includes finalizing the designs, pushing out manufacturing drawings, coordinating with both in-house and out-of-house manufacturers, and dropping/picking up finished components a month and a half before the final season. And here I am after finals, and I am happy to report that all major components are manufactured and complete. It was certainly not a smooth ride, as it is our first time learning how to create drawings and manufacture components. However, it was during this rough time that I learned how to work under pressure, how to correctly prioritize tasks, and to keep my head cool during intense situations, which are skills I believe I could leverage to assist the team at the Aero Tech Center.

I have always been in awe of the state of the art laboratory facilities available at the Department of Aerospace Engineering, ranging from the various wind tunnels in GFL to the combustion chamber on the second floor of FXB. So much so that on the first day I arrived on campus, I immediately paid a visit to the 5' by 7' wind tunnel. It would honestly be a great honor for me to help continue maintaining these precious instruments at U of M.

Thank you so much for this opportunity, and I am looking forward to hearing back from you!

Sincerely
Andi Zhou

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An aspiring 3rd year aerospace engineering student with extensive interests in structures and fluid flows and is skilled in a variety of hands-on tools and simulation softwares.

EDUCATION

UNIVERSITY OF MICHIGAN — Ann Arbor, MI

Undergraduate Aerospace Engineering / 3rd Year – Sept 2018 to present

- ♦ Overall GPA: 3.65, Major GPA: 3.86
 - ♦ Dean's honor list
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RELEVANT SKILLS

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|---|----------------------------------|
| ♦ Cross-team organization and communication | ♦ Punctual and time conscious |
| ♦ Strong familiarity with basic hand tools | ♦ Pressure and stress handling |
| ♦ Team leadership and management | ♦ Self-motivated and independent |
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EXPERIENCE

MICHIGAN AERONAUTICAL SCIENCE ASSOCIATION — Ann Arbor, MI

Coordinating the design, simulation, manufacturing, and integration of the fin aerostructure on the Tangerine Space Machine, an amateur rocket that aims to be the first student-build liquid engine vehicle to reach space

Fin Lead, 2018 – present

- ♦ Volunteered to lead the design, simulation, and manufacturing of the fins for the Tangerine Space Machine
- ♦ Leading a team of 4 with minimal guidance, successfully designed a manufacturable fin assembly that met all design criteria and engineering constraints
- ♦ Coordinated with Out-of-House manufacturing companies for fabrication of complex components; ensured manufacturing deadlines were promptly met
- ♦ Managed to finalize design, push out drawings and manufacture all major fin components within only a six-week lead time
- ♦ Communicated in team technical meetings issues regarding overall system engineering and design, such as reducing fin surface area to re-adjust component mass and rocket stability parameter

Assembly, Test, Launch and Operation Engineer, 2019 – 2020

- ♦ Participated in assembly and testing of PT-163, an experimental liquid bi-propellant engine that broke the collegiate thrust record on February 22nd, 2020
 - ♦ Assisted in engine plumbing work, can utilize a tube cutter and bender to obtain the desired tubular shape
 - ♦ Comfortable in using both basic and advanced hand-tools, such as a drill, torque-wrench, and Dremel for component assembly and testing purposes
 - ♦ Fully understand the working theory of bolts, able to conduct bolting calculations to determine the suitable amount of bolt pre-load without causing excessive tensile/shear stress
 - ♦ Proficient in using basic electronic instruments such as a hand-held/digital multimeter and an oscilloscope to troubleshoot faulty circuits
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CERTIFICATE

PRIVATE PILOT LICENSE (PPL)