

# ANDI ZHOU

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2869 E Eisenhower Parkway ♦ Ann Arbor, MI 48108 ♦ 734-881-4192 ♦ andi.zhou1324@gmail.com

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*An aspiring 3<sup>rd</sup> year aerospace engineering student with extensive interests in fluid flows and thermodynamics and is skilled in a variety of design and simulation softwares including Pointwise, Solidworks, CATIA, ANSYS, MSC NASTRAN and MATLAB*

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## EDUCATION

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### UNIVERSITY OF MICHIGAN — Ann Arbor, MI

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

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

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|---|---|
| ♦ Flight dynamic simulation using MATLAB        | ♦ Modeling using Solidworks and CATIA     |
| ♦ Meshing using ANSYS and Pointwise             | ♦ Data analysis leveraging MATLAB and C++ |
| ♦ CFD analysis using ANSYS Fluent and Star CCM+ | ♦ Team leadership                         |
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## EXPERIENCE

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### 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 Aerostructure Lead**, 2018 – present

- ♦ Oversaw simulation, structural integration and manufacturing plan fabrication for the fin; ensuring project deadlines were promptly met
  - ♦ Meshed and tweaked complicated structure using both ANSYS and Pointwise in preparation for CFD and FEA simulations, checking the quality of the mesh and its appropriate  $y^+$  value
  - ♦ Simulated fin aerodynamic and thermodynamic characteristics through all Mach regimes (Mach 0 to Mach 5.0) using ANSYS Fluent static and transient analysis
  - ♦ Performed CFD – Structure coupling simulations using ANSYS in order to investigate the dynamic aeroelastic behavior of the fin under different flight regimes, ensuring flutter does not occur during flight
  - ♦ Analyzed rocket dynamics in our in-house 6DOF flight simulation software MASTRAN and using numerical integration methods to predict the final apogee
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### ACTIVE AEROELASTICITY AND STRUCTURE RESEARCH LABORATORY — Ann Arbor, MI

*Conducting comparison studies on the results between in-house aeroelasticity simulation software UM/NAST with commercially published simulation software MSC NASTRAN*

**Research Assistant**, 2020 – present

- ♦ Evaluated BWB type aircraft with SOL 101, 103, 144, 145 and 400 in NASTRAN to study its structural, modal and aeroelastic behaviors under subsonic speed with varying angle of attack and compressibility factor
  - ♦ Wrote finite element codes with MATLAB that allows NASTRAN to iteratively solve for varying loading conditions and organize the outputs into plots or tables
  - ♦ Composed weekly formal reports and the final “end of the semester” report to the professor in LaTeX regarding research progress and results
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## CERTIFICATE

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**PRIVATE PILOT LICENSE (PPL)**