**Please demonstrate how your education and experience would be relevant to this role.**

- I have a Master’s degree in aerospace engineering from the University of Michigan, specializing in Computation and Aerodynamics, with a GPA of 3.86/4.00. I have taken and aced courses such as Aerodynamics, Compressible Flows, Turbulence, and CFD.

- I hold an extremely thorough understanding of CFD and fluid dynamics. During my research in entropy stable CFD algorithms, I coded my own CFD solvers from the ground up to investigate various numerical algorithms and their conservation characteristics.

- While I may have only applied my CFD skill in the industry (Volvo Truck) for three months during my internship, I self-learned CFD during my first year in the University and hold a thorough understanding behind applications of major commercial CFD solvers such as ANSYS Fluent and Star CCM+ (and soon OpenFOAM)

- Example of my work: I used Star CCM+ multi-phase flow and optimized a swirl air-coolant separation tank. I reduced the original mass by 40% while maintaining a separation efficiency of 99%

- Fluent in CAD surfacing software ANSA. I have repaired numerous surfaces and geometries and prepared them for aerothermal simulations at Volvo. The geometries include class A surfaces such as the Radiator Grille, air intake, and electronic cooling fans where the surface must conform to the original geometry in order to maximize simulation accuracy.

- From my experience as a Thermal System Intern at Zoox, I also hold an in-depth understanding of automotive thermal systems and how fluid dynamics plays a part in it as well! This includes hands-on experience with instrumentation such as pressure sensors, flow meters, and thermo-couples.

- From my experience as a Rocket Fin Lead at the University Rocketry Team, I led a team of 12 in using the largest wind tunnel (5 ft x 7 ft) available at the University of Michigan to experimentally determine the aerodynamic properties of the largest fin assembly ever designed in organization history (3 ft wide by 4ft tall). I personally led the design, simulation, and prototyping of the fin as well.

**How much experience do you have with CAD surfacing?**

I gained fluency in CAD surfacing tool ANSA during my internship at Volvo Trucks. I have handled Class A surfaces such as the truck's external panels, radiator grille, and electronic cooling fan, in addition to complex assemblies such as truck cabs.

**How much experience do you have with CFD software in the field of aerodynamics?**

3 months of CFD experience in the industry (PowerFLOW and Star CCM+); I simulated and assessed Volvo truck aerodynamics and rain-water intake using Dassault PowerFLOW, which utilizes the Lattice-Boltzmann method instead of the conventional RANS method used in Star CCM+ and Fluent.

4 months of aerodynamic CFD experience in implementation, where I coded my own CFD solver to assess the drag and lift coefficients of different airfoils and vehicles using a combination of MATLAB and C++. I have implemented both first order and second-order finite volume methods in addition to the higher-order discontinuous Galerkin finite element method.

4 months of CFD experience in research, where I conducted literature reviews regarding "entropy-stability" among modern-day CFD algorithms (HLLE, Roe Flux). I also coded these algorithms in Python and assessed their numerical performances. My reports can be found on my LinkedIn.

**How much experience do you have with wind tunnel testing?**

No industry experience in wind tunnel testing.

However, as a project lead at the University Rocketry Team, we evaluated the aerodynamic characteristics (roll, drag, and lift) of our rocket fin assembly at our university's largest wind tunnel (5ft by 7ft).

I also have experience in designing and building advanced fixtures for use in wind tunnel testing. The specific fixture we used on our fin assembly, for example, allowed for the entire part to rotate freely around its cylindrical axis so we could quantify the correctional torque as a function of angular velocity and airspeed.

I understand the operational principles behind various wind tunnel instruments such as pitot tubes, pressure transducers, and also different techniques in measuring drag and lifts such as Balance Scale, Wake Survey, and Pressure Distribution