Molly Drumm

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY **May 2024**
Master of Engineering, Aerospace Engineering, **GPA: 3.972**

Cornell University, College of Engineering, Ithaca, NY **May 2023**
Bachelor of Science, Mechanical Engineering, **Cum Laude, GPA: 3.523**
Dean's List: Spring 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023

Relevant Courses: Finite Element Analysis, Intermediate Fluid Dynamics with CFD, Wind Power, Aeronautics, Turbulence and Turbulent Flows, Dynamics of Flight Vehicles, Propulsion of Aircraft and Rockets

EXPERIENCE

Teaching Assistant, Cornell University, *ANSYS Simulation* **January - May 2024**
- Collaborated with professor to create and prepare learning materials and projects for the CFD and FEA classes.
- Aided students in class and office hours by answering questions about FEA and CFD simulations in ANSYS.
- Gained a more in depth understanding of simulation tools such as ANSYS Fluent, Mechanical, and Topology Optimization as well as Autodesk Generative Design.

Bloodsport Battlebots Team, *Design Consultant* **November 2023 - January 2024**
- Simulated fluid flow over the spinning Battlebot Weapon in ANSYS Fluent to understand aerodynamic loading.
- Designed a simple new configuration that was easy to machine and was able to cut the aerodynamic loading on their weapon motor in half.

Esmaily Lab, Cornell University, *Masters of Engineering Project* **September 2023 - May 2024**
- Implemented a Matlab script using Fast Fourier Transform to smooth data of a 3D beating heart model over time.
- Utilized software to smooth each time point of the same model in space using spherical harmonics.

GE Aerospace, Evendale, OH, *Fan and Compressor Aerodynamics Intern* **June - August 2023**
- Completed course on turbomachinery CFD with emphasis on turbulence modeling, numerics, and meshing.
- Implemented two novel data reduction methods in Python and Fortran 77.

New England Wire Technologies, Lisbon, NH, *Process Engineer Intern* **June - July 2022**
- Analyzed CFD results for a thermoplastic extruder that makes custom multi-lumen catheters and used data to modify extrusion tooling in Autodesk Inventor through 10 design iterations to improve flow distribution.
- Researched the yield strengths and elastic moduli of three different extruded thermoplastics at high temperatures, conducted tensile tests, and analyzed experimental yield stress to assess the viability of coreless extrusion.
- Designed a ceramic piece assembly in CAD to fit over and attach to the extruder head to work as a heat guard.

Combat Robotics at Cornell, Cornell University, *Vice Subteam Lead* **October 2021 - May 2023**
- Oversaw 6 mechanical engineers working to design and build a low kinetic energy 12 lb combat robot focused on creative design, strategy, and repairability to compete in the Norwalk Havoc Robot League.
- Modeled designs of the assembly in Fusion 360, taking weight, robustness, and part costs into consideration.
- Manufactured robot components on a mill, soldered electronics, and assembled a competition ready robot.
- Lead training for new members on skills such as CAD, part drawings, part speccing, and manufacturing.

SPECIALIZED SKILLS

Programs: ANSYS Fluent CFD, ANSYS Mechanical FEA, Python, MATLAB, Autodesk CAD, Generative Design
Manufacturing: Mill, Soldering, GD&T
Interests and Activities: Formula One, Big Red Marching Band, Shakespeare Troupe, Skiing, Violin, Guitar, Knitting