# **Molly Drumm**

maxdrumm2000@gmail.com | (508) 734-0317

**LinkedIn:** [linkedin.com/in/mollydrum](https://www.linkedin.com/in/molly-drumm-a4430a208/)m **Project Portfolio:** mollydrumm.com **GitHub:** github.com/mollydrumm2

**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