Liz Tipton

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EDUCATION

Cornell University **Ithaca, NY**
College of Engineering *Expected May 2028*
Bachelor of Science in Mechanical Engineering *GPA: 3.870*
Relevant Courses 2024-2025: Statics, Python, Linear Algebra, Differential Equations, Electromagnetism, Thermodynamics. ***Currently Enrolled:*** Data Science, Dynamics, Mechanical Design, Oscillations and Waves.

RELEVANT EXPERIENCE

AutoBoat Project Team **Ithaca, NY**
Boat Design and Manufacturing Member *Sep 2025-Present*
- Designed mounting solutions for electrical components on an autonomous boat, minimizing wire length while accounting for position, clearance, and accessibility requirements.
- Performed hand calculations to analyze stresses and deflections on the enclosure, informing sheet metal dimensions and required supports.
- Manufactured prototype parts to validate design choices and inform improvements for future iterations.
- Coordinated with electrical, mechanical, and controls teams to understand evolving design changes and ensure interface compatibility across subsystems.

Cornell Rapid Prototyping Lab **Ithaca, NY**
Laboratory Technician *Oct 2024-Present*
- Provided FDM, resin printing, and laser cutting services to research labs, MAE courses, and project teams.
- Analyzed designs to determine required equipment for manufacturing, optimize slicer settings, and part orientation to meet aesthetic and structural requirements.
- Managed large queues under time constraints to meet print deadlines.

University of Stavanger **Stavanger, Norway**
Fluid Dynamics Summer Research Intern *May 2025-Aug 2025*
- Submitted research paper to ASME International Conference on Ocean, Offshore and Arctic Engineering as first author in collaboration with researchers at the University of Stavanger.
- Modeled flow through a bend-pipe with a rough outlet using terminal-based CFD software OpenFOAM to determine the effects of varying surface roughness on the decay of Dean vortices.
- Optimized mesh density across 18 different cases using Gmsh to ensure complex flow features are fully resolved while decreasing computational cost.
- Processed data using Python (Pandas and Matplotlib) and Paraview to identify trends, detect anomalies, and distinguish physical insights from simulation errors.
- Compiled findings in a research paper, using a literature review to pinpoint research gaps to ensure the study delivered meaningful results.

SKILLS

- Software: openFOAM (CFD), Paraview, Gmsh, Slicing software (Bambu Studio, Preform, GrabCAD).
- Fusion 360 (CAD): Proficient in solid modeling; experience with sheet metal, assemblies, and animations.
- Python: handling large data sets in complex file directories, automating data cleaning using Pandas, Matplotlib for visualization.