

## Education

### Northeastern University, Boston MA

April 2022, GPA: 3.55

*Candidate for Bachelor of Science in Mechanical Engineering and Physics*

*Candidate for Master of Science in Mechanical Engineering with Concentration in Mechatronics*

Honors: 2018 Matianuck District Eagle Scout of the Year, Dean's Scholarship Recipient, Dean's List Scholar

Coursework: Graduate Microelectromechanical Systems, Fluid Mechanics, Heat Transfer, Thermodynamics, Mech. Eng. Computation and Design (FEA), Statics, Dynamics, Graduate Adv. Mechanics of Materials, Electronics, Modern Physics, Graduate Math Methods, Materials Science, Measurements and Analysis

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## Experience

### SharkNinja – Needham, MA

January 2020 – June 2020

*Mechanical Engineering Co-op*

- Designed, prototyped, and tested iterative models of electric motor assemblies and impellers to optimize airflow efficiency and performance based on CFD and experimental results from pressure mapping and air watts testing
- Leveraged both brushless DC motors and universal AC motors to meet the constraints of different projects
- Designed and built a new user interface/control prototype utilizing Arduino and sourcing my own electrical components
- Prototyped various nozzle components using SolidWorks and rapid prototyping to improve the cleaning performance of an existing model of vacuum by 15% to address customer feedback alongside Design for Manufacture and Design for Assembly criteria
- Created various mounting structures with Creo and SolidWorks to integrate subsystems efficiently
- Worked remotely to design and build an agitation testing rig using an array of strain gauges to provide quantitative values for a complex performance criterion at up to 30000 samples per second

### Paradigm Hyperloop - Boston, MA

September 2018 – Present

*Mechanical Designer*

- Designed in SolidWorks and built a fully functional hyperloop pod to compete in the annual SpaceX competition as part of an international collaborative team (Placed 8<sup>th</sup> in the World in 2019)
- Co-led the design, Finite Element Analysis (FEA), and DMFEA of an aluminum pod chassis in SolidWorks to withstand acceleration to 300mph and a deceleration of 7g's with an ultimate factor of safety of 3 or higher for the 2019 competition
- Co-led the research and design of a carbon fiber reinforced polymer (CFRP) chassis to provide structural support for subsystems while withstanding acceleration, braking, and vibrational forces for the postponed 2020 competition
- Created clear and accurate documentation of work throughout the process for communication to manufacturers, SpaceX officials, and team members across 5 time zones
- Initiating the research and design of the frame and shield of a tunnel boring machine to compete in The Boring Company's 2021 tunnel boring challenge

### Northeastern University- Boston, MA

August 2020 – Present

*Undergraduate Teaching Assistant*

- Teaching Assistant for a foundational engineering course introducing freshmen and transfer students to software such as MATLAB, Arduino, and AutoCAD as well as logical thinking and engineering ethics
- Responsible for providing support and additional instruction to students with regular office hours and grading assignments

### Urban AdvenTours - Boston, MA

March 2019 – Present

*Service and Retail Associate, Tour Guide*

- Diagnosed problems and performed mechanical repairs ranging from flat tire fixes to entire drivetrain overhauls utilizing Shimano T.E.C. methods, and provided quality service, knowledge, and recommendations on components for customers
  - Prepared rental bikes and guided guests on a historical Boston bike tour while ensuring a safe cultural experience
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## Background

Software: SolidWorks, ANSYS, MATLAB, Arduino, Creo, AutoCAD, Autodesk Inventor, C++, Atlassian Suite (Jira and Confluence), Asana, GrabCAD, HTML

Skills: DFMEA, Soldering, 3D Printing, Lathe, Band Saw, Miter Saw, Drill Press, Table Saw, Standard Power Tools

Certifications: Certified SolidWorks Associate (CSWA), Shimano T.E.C. Certified, American Red Cross First Aid/CPR/AED

Activities: Beta Gamma Epsilon Engineering Fraternity (2-term President), American Society of Mechanical Engineers, Paradigm Hyperloop & Paradigm Boring

Hobbies: Backpacking, Cycling, Running, DIY Home Improvement, Boston History