

Experience

Sikorsky Aircraft Corporation – Stratford, CT

January 2021 – Present

Propulsion Design Co-op

- Designed hydraulic and bleed air system including routing, fittings, material choice, and clamping to ensure proper functioning of aircraft engine with minimum weight
- Extensive use of CATIA V5 for creating parts and assemblies, as well as 2D drawings and Model Based Definitions for manufacturing of steel and composite parts
- Analyzed several engine cycle decks in Fortran under various conditions to compare engine performance parameters

SharkNinja – Needham, MA

January 2020 – June 2020

R&D Mechanical Engineering Co-op

- Fabricated iterative models of electric motor assemblies and impellers to optimize airflow performance based on Computational Fluid Dynamics (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 such as weight, cost, power draw, and product-market fit
- Designed and built a new user interface/control prototype utilizing Arduino and sourcing my own 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 DFM and DFA criteria

Paradigm Hyperloop/Boring - Boston, MA

September 2018 – Present

Mechanical Lead

- Co-led the design, Finite Element Analysis (FEA), and DFMEA of an aluminum pod chassis in SolidWorks to withstand acceleration to 300mph and a deceleration of 7g's with a factor of safety of 3 for the 2019 competition
 - Co-led the research and architecture of a carbon fiber reinforced polymer (CFRP) chassis to provide structural support for subsystems while withstanding acceleration, and vibrational forces for the postponed 2020 competition
 - Led the full design of the frame and shield of a tunnel boring machine to house all onboard components, withstand subterranean forces, and provide a stable base for the cutting head to compete in The Boring Company's 2021 Not-A-Boring Competition
 - Serving as head of the mechanical side of Paradigm for all operations in 2021 and preparing for 2022 competitions
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Education

Northeastern University, Boston MA

April 2022, GPA: 3.63

Master of Science in Mechanical Engineering with Concentration in Mechatronics

Bachelor of Science in Mechanical Engineering and Physics

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

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

Background

Software: CATIA V5, SolidWorks, ANSYS, MATLAB, Arduino, Creo, AutoCAD, Autodesk Inventor, Enovia LCA, C++, Atlassian Suite (Jira and Confluence), Fortran, GrabCAD, HTML

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