Elliot Bushman

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EDUCATION

University of Connecticut, Storrs, CT | *Bachelor of Science in Engineering*
Mechanical Engineering; GPA: 3.4; Graduation May 2022

UConn School of Engineering Research Assistant, Storrs, CT
Research Assistant, November 2020 – April 2021

- Modeled anisotropic tubular lattices**,** preparing structures for manufacture by adapting practical node geometry from topology optimized shape to accommodate 3D printing manufacturing limitations.

Krenicki Arts and Engineering Scholar, June 2020

PROFESSIONAL EXPERIENCE

Ensign-Bickford Aerospace and Defense, Simsbury, CT
Development Engineer, May 2022 – June 2025

- Drove technical progress of development programs through ownership of requirements management, risk reduction testing, and qualification completion resulting in flight ready designs.
- Assessed environmental conditions, such as temperature, shock, or vibration, applied to components during flight to determine risk of damage. Executed path for risk burn down over the course of the program, using analysis and tests.
- Designed and built development tests of energetic devices to quantify specific performance characteristics such as initiation reliability, timing, or damage to a target.
- Communicated program status and obstacles with customers to drive successful and on schedule product delivery.
- Supported failure investigations by structuring and visualizing test data using Python to understand trends and outliers across multiple product performance metrics.
- Formed method of processing bulk microscopy or radiographic inspections using Revu and Python and created an associated training package reducing hands on time required to collect key data.

Ensign-Bickford Aerospace and Defense, Simsbury, CT
Development Engineering Intern, May 2021 – August 2021

UConn School of Engineering Machinist, Storrs CT
Machinist, September 2021– August 2022

- Developed concepts and models into functioning prototypes, with emphasis on helping adapt designs for manufacture.

PERSONAL EXPERIENCE

Simsbury High School FIRST Robotics Team, Simsbury, CT
Mentor, 2023- Present

- Help high school students to advance STEM knowledge and leadership abilities through robotics competition.
- Coordinate team logistics with student leads, parents, and other mentors to ensure meetings are engaging and effective.

UConn Formula SAE, Storrs, CT
Chief Engineer, 2021-2022

- Drove design and fabrication of a student-built race car, which competed at the highest level during an international competition, by defining guidelines, checkpoints, and resources to coordinate the efforts of a 40 member team.
- Managed supply chain for long lead parts, such as cast magnesium uprights and oil pan, by working with external manufacturers to align each step of process. For example, mold design and post process machining to meet design specifications and vehicle integration timeline.
- Led development and organization of full car assembly in SOLIDWORKS utilizing over two thousand parts by creating SOLIDWORKS training material for new students, creating BOM templates, and finalizing system interfaces. This resulted in a fully integrated vehicle model which reduced unrealized design errors halting progress during the build.
- Helped to develop an inclusive and enduring team by investing in every student that joined.

Suspension system member, 2018-2021

- Designed suspension kinematics in SOLIDWORKS utilizing parametric principals and equations to reduce duration of each iteration, aiding in a system capable of adapting to the dynamic loading of the team's first aerodynamics package.
- Utilized topology optimization and structural analysis with ANSYS to design components to a minimal weight for a given factor of safety. Free body diagrams and hand calculations were used to derive component level loads.

TECHNICAL SKILLS

Practical: Manual and CNC Machining, Welding/ Fabrication, Mechanical Assemblies and Design with computer aided processes, Sewing/ soft goods, Traditional Blacksmithing

Software: SOLIDWORKS, Ansys (Static Structural), Python (data analysis and visualization), Mastercam, IFS (enterprise and inventory management software