

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 lattice structures from topology optimized shape
- Prepared structures for manufacture by designing practical node geometry to accommodate 3D printing limitations.

Krenicki Arts and Engineering Scholar, June 2020

PROFESSIONAL EXPERIENCE

Ensign-Bickford Aerospace and Defense, Simsbury, CT

Development Engineer, May 2022 – June 2025

- Drive technical progress of development programs through ownership of requirements management, risk reduction testing, and qualification completion resulting in flight ready designs.
- Assess environmental conditions, such as temperature, shock, or vibration, applied to a component during flight to determine risk of damage. Execute path for risk burn down over the course of the program, using analysis and tests.
- Design and build development tests of energetic devices to quantify specific performance characteristics such as initiation, timing, or damage to a target.
- Communicate program status and obstacles with customers to drive successful and on scheduled product delivery.
- Support failure investigations by structuring and visualizing test data using Python to understand trends and outliers across multiple product performance metrics.

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

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

LEADERSHIP EXPERIENCE

Simsbury High School FIRST Robotics Team, Simsbury, CT

Mentor, 2023- Present

UConn Formula SAE, Storrs, CT

Chief Engineer, 2021-2022

- Drive design and fabrication of student built race to compete at highest level during yearly international competition by defining guidelines, checkpoints, and resources for a 40 member team
- Manage supply chain for long lead parts, such as cast magnesium uprights and oil pan, by working with external manufacturers to align schedule and technical details. For example, mold design and post process machining to meet design specifications and vehicle integration timeline.
- Lead development and organization of full car assembly in SOLIDWORKS utilizing over two thousand parts by creating SOLIDWORKS training material for new students and creating BOM template. Completed integration of multiple systems into one cohesive model.
- Communicate team goals to sponsors, university administration, and community members to ensure long term team growth and security. From funding meetings with the Dean of Engineering to getting leaks in the roof patched.
- Building an inclusive and enduring team by investing in every student that joins our team.

Suspension system member, 2018-2021

- Design suspension kinematics in SOLIDWORKS utilizing parametric principals and equations to reduce duration of each iteration. This resulted in a system that could accommodate 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 components level loads.

TECHNICAL SKILLS

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

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