

Cameron Bradford

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EDUCATION

Johns Hopkins University, Whiting School of Engineering

Baltimore, MD

Bachelor of Science, Mechanical Engineering with a Concentration in Aerospace Engineering

May 2026

SKILLS

CAD/Design: SOLIDWORKS, Creo, technical drawings, tolerance analysis, FEA fundamentals

Manufacturing/Prototyping: 3D Printing, Mill, Lathe, Band Saw, Laser Cutting & Engraving, Water Jet, Casting, Soldering

Software: MATLAB, Excel, JavaScript, Arduino (C++), Microsoft Office

Languages: Fluent in Spanish & English

EXPERIENCE

TOMI Engineering – Mechanical Engineering Intern

Santa Ana, CA

Summer Internship

Jul 2025 – Aug 2025

- Implemented and optimized a new laser engraver, designing custom parts and optimizing its workflow.
- Gained hands-on experience with tolerancing, the FARO Arm, and CMM operations.
- Evaluated manufacturability of parts for a 5-axis CNC and developed a plan to reach 5S standards.
- Identified and resolved an installation conflict with the Okuma 5-axis foundation by coordinating with contractors.

ENGINEERING PROJECTS

STEM Kit Production Floor Automation – FutureMakers

Baltimore, MD

Johns Hopkins Senior Design, Pneumatics, Mechanical Design, Controls, Prototyping

Aug 2025 – Jun 2026

- Designed, fabricated, and validated a pneumatic bag opener/holder to improve STEM kit assembly ergonomics, reduce operator fatigue, and support hands-free part insertion.
- Built the bag holder using SOLIDWORKS, 3D printing, Arduino controls, soldered electronics, pneumatic tubing, pressure regulators, check valves, blow-off valves, solenoids, and venturi vacuum systems.
- Iterated through 10+ suction cup configurations and tested circular/oval geometries, bellows count, silicone materials, lip contact area, and vacuum response to improve opening reliability.
- Machined and fabricated prototype components using PLA, wood, steel, aluminum, using a lathe, mill, band saw, and hand tools across multiple design revisions.
- Validated final system through 500-cycle durability testing with no damage, 250-cycle bag-opening trials with 95% effectiveness, and retention testing with 100% no-slip performance.
- Supported integration and testing of computer-vision quality control system for hand-bin tracking, missed-bin detection, and reduced operator cognitive load.

Under Armour Recover+ Massage Recovery Shoe

Baltimore, MD

Sponsored Mechanical Design Project Product Design, CAD, Prototyping, Motor Testing

Aug 2025 – Jun 2026

- Led mechanical design, CAD development, prototyping, and motor/electronics testing for a recovery shoe concept targeting arch and plantar fascia massage.
- Designed and iterated crankshaft, camshaft, lock-and-key, and horizontal piston concepts to convert motor motion into localized foot massage.
- Integrated DC motor, Arduino-based electronics, PCB/battery packaging, 3D-printed PLA housings, TPU insole geometry, and foam stack-ups into functional shoe prototypes.
- Conducted comfort, packaging, and motor-load testing to evaluate feasibility under body weight and identify production risks including stack height, friction, and motor stall.

Innovative Car Wing for Optimal Downforce

Newport Beach, CA

Personal Project

May 2024 – Sep 2024

- Designed, modeled, and iterated multiple race car wing designs to optimize downforce for improved performance across varying speeds and accelerations.
- Applied CAD, blueprinting, and FEA techniques to model and validate calculations and design assumptions.

Baja SAE

Baltimore, MD

Blue Jay Racing Team

Jan 2024 – May 2024

- Contributed to Johns Hopkins Baja SAE team, excelling in welding, design, machining, and collaborative project management to optimize vehicle performance and meet strict deadlines.

