Braden Vaughan

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Education

University of Maryland **College Park, MD**
BS, Aerospace Engineering May 2022
GPA: 3.68

Software Skills

3D-Printing, ANSYS, Arduino, Autodesk Fusion, C/C++, CAD, FEA, G-Code, HSMWorks CAM, KISSsoft, LabVIEW, MATLAB, Microsoft Office, NASTRAN, Siemens NX & Teamcenter, SolidWorks

Technical Experience

Hoowaki **Greenville, SC**
Mechanical Engineer III *January 2026 – Present*

- Manages two lab technicians and the daily operations of the company's polymer lab and prototype shop
- Assists in sales efforts as a technical solutions engineer for all opportunities
- Implemented and managed the company's ISO9001:2015 certified QMS
- Scaled technologies to achieve mass-production capabilities of high-grip polypropylene film

Mechanical Engineer II *September 2023 – December 2025*

- Leads all engineering efforts as the sole engineer in the company
- Designs dozens of mechanical microsurfaces to increase friction, with features in the range of 40-600µm
- Develops anti-migration medical devices to decrease patient trauma and optimize surgical procedures
- Maintains, programs, and operates high-precision CNC machines to produce parts within a 5µm tolerance

Techtronic Industries (TTI) **Anderson, SC**
Mechanical Engineer, Advanced Engineering Team *June 2022 – June 2023*

- Designed a variety of next-generation power tools, taking initial concept requests to functioning prototypes
- Innovated tools within the current product line to improve performance, add features, and decrease cost
- Researched sound and air performance in fans, resulting in a future patent for the company
- Redesigned a planetary gear set, using KISSsoft, saving the company over one dollar per tool
- Conducted sound and vibration testing on prototype tools to minimize noise at specified frequencies
- Reported findings and held hands-on demonstrations for project engineers and product managers

University of Maryland Capstone Project – 2022 NASA RASC-AL Competition **College Park, MD**
Mechanical Design Engineer *September 2021 – June 2022*

- Awarded Best in Theme at the 2022 NASA RASC-AL Forum
- Designed in-depth mission plans and specialized payload carriers capable of interfacing with existing NASA docking ports to transport goods to a manned lunar habitat
- Analyzed pressurized structures using finite element analysis to confirm positive margins of safety

STX LLC **Baltimore, MD**
R&D Mechanical Engineering Intern *May 2021 – August 2021*

- Conducted quality control testing on over 500 shoulder pads to ensure products meet NOCSAE standards
- Created engineering drawings for future lacrosse products that included geometric dimensions and tolerances using SolidWorks
- Conducted finite element analysis on future lacrosse stick heads, using ANSYS to determine the design's stiffness relative to current head models

UMD Loop Engineering Team **College Park, MD**
Mechanical Design Engineer *September 2019 – September 2021*

- One of twelve international teams selected out of 400 applicants to compete in The Boring Company's inaugural Not-A-Boring Competition
- Conducted finite element analysis, using NASTRAN SOL101 and SOL105, to verify mechanical design

Leadership Experience

University of Maryland Aerospace Engineering Department **College Park, MD**
ENAE 362 Teaching Fellow & ENAE 301 Grader *August 2021 – January 2022*

- Assisted the course's professor with teaching and grading labs, homework assignments, and exams
- Facilitated office hours to answer students' questions on aerospace instrumentation and experimentation

Patents

"Fan shroud and fan assembly having fan shroud" U.S. Patent No. 12071956B2 (Issued: August 2024)
"Wiper blade with microstructures" U.S. Patent App. No. 20260042424A1 (Filed: August 2025)