

Braden Vaughan

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Education

University of Maryland

BS, Aerospace Engineering
GPA: 3.68

College Park, MD

May 2022

Software Skills

3D-Printing, ANSYS, AutoCAD, Autodesk Inventor, Adobe Photoshop, C/C++, FreeFlyer, KISSsoft, LabVIEW, MATLAB, Microsoft Office, NASTRAN, Python, RStudio, Siemens NX & Teamcenter, SolidWorks, STK

Technical Experience

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
- Led the design and analysis of all mechanical components
- Analyzed pressurized structures using finite element analysis to confirm positive margins of safety
- Conducted mass and internal volume trade studies to minimize the structural mass of the design

STX LLC

Baltimore, MD

R&D Mechanical Engineering Intern

May 2021 – August 2021

- Conducted in-house quality control testing on over 500 shoulder pads to ensure products meet company and NOCSAE safety 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
- Assisted with additional daily operations and tasks that occur within the research and development team

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
- Led the design process of the external steel structure of a tunnel boring machine capable of withstanding 100kN of axial load, 2kN/m of torque, and 22kPa of pressure load
- Conducted finite element analysis, using NASTRAN SOL101 and SOL105, on the external structure of the design to assure that it will be able to withstand the projected loads

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

University of Maryland Engineering Design Project

College Park, MD

Mechanical Design & Manufacturing Lead

January 2019 – May 2019

- Designed an Over Sand Vehicle to autonomously find and recover a black box
- Created a complete assembly of the vehicle using Autodesk Inventor
- Led a subgroup of four students while building the vehicle out of in-house materials
- Awarded top craftsmanship out of approximately forty teams