

Nathan Bowler

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PROFESSIONAL EXPERIENCE

- Brooks Instrument (ITW), Hatfield, PA. – Mechanical Engineering Intern May 2021 – Aug 2021
- Designed five reversible Mass Flow Controller packages resulting in over 10x faster response times than the previous model.
 - Generated variable statistical models for quickly comparing design configurations, orientations, and accuracy errors.
 - Increased validation data processing efficiency by over 300x through MATLAB automation.
 - Automated file organization, data extraction, and data processing of 34 different tests across 55 existing devices with infrastructure to seamlessly handle all future units.
 - Performed a statistical analysis and characterization of incoming parts with high accuracy metrology devices to determine the required ordering specification.
 - Improved a metrology fixture through an 18x size reduction and 28x decrease in cycle time.
 - Performed a tolerance analysis of a faulty fixture to identify points of failure.
- Skillion, Bethlehem, PA. – Mechanical Engineer Dec 2020 – Jan 2021
- Leveraged Solidworks and 3D printing to create a functional, sleek, and tamper-resistant casing prototype for an integrated fleet-management e-bike dashboard.
 - Modeled for manufacture, universal and discreet energy solutions for non-electric bikes allowing for the integration of powered accessibility and safety devices.
- Lehigh, Bethlehem, PA. – Research Associate May 2020 – Dec 2020
- Utilized ROS and Python to develop a virtual testbed for autonomous vehicles in the CARLA simulation platform by integrating a navigation and perception stack.
 - The virtual environment's design allows for seamless integration into physical miniature racecars that simulate various traffic scenarios in scaled urban environments.
- Skillion, Bethlehem, PA. – Lead Mechanical Engineering Intern June 2020 – Aug 2020
- Used Solidworks to invent and prototype an automatic continuously variable transmission for an electric bicycle, a connected dashboard product, and a 3-functionality phone case.
 - Calculated static and dynamic loads on the continuously variable transmission to ensure structural integrity and to minimize risk and cost in the prototyping process.

EDUCATION

- Lehigh University, Bethlehem, PA. Graduation: May 2022
Mechanical Engineering Major Current GPA: 3.98

TECHNICAL SKILLS & TRAINING

Computer-Aided Design: Solidworks, PTC Creo, AutoCAD, Revit, Rhino, 3D Printing
Programming: Java, MATLAB, Python, Octave
Software: Microsoft Office Suite, Google Suite, Trello, Git
Foreign Language: German

TECHNICAL PROJECT EXPERIENCE

- Skillion Capstone Team – Project Manager Jan 2021 - Present
- Directing and aiding the design work for a customer-facing bicycle safety, security, and connectivity device.
 - Creating weekly update reports, design presentations, and prototypes.
- Lehigh Alliance of Battle Bots - President Aug 2019 - Present
- Serving as a mechanical lead, utilizing Solidworks to design combative robots.
 - Organizing and running meetings as well as training new members.