IAN TURNER

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EDUCATION

Carnegie Mellon University | Pittsburgh, PA
Bachelor of Science in Mechanical Engineering, Minor in Robotics **May 2023**
Overall GPA: 3.48/4.00 (Engineering Dean's List: Fall 2020, Fall 2022, Spring 2023)

RELEVANT EXPERIENCE

Milwaukee Tool | Design Engineer | Milwaukee, WI **November 2023 – February 2024**

- Designed improved powered ratchet mechanism testing fixture and collected data to drive design
- Collaborated with industrial design team to advance power tool trigger design
- Worked globally with counterpart engineering team in PRC on design and drawings
- Assessed technical design reviews for new concept designs across the power tool division

Henry Schein Orthodontics | R&D Engineering Intern | Carlsbad, CA **Summer 2022**

- Led a new product from conceptualization to manufacturing after conducting design reviews with orthodontists
- Built a fully custom design verification apparatus with the ability accommodate a variety of loading tests
- Created micro-precision testing equipment to drive design features of a new orthodontic bracket product
- Constructed the base 3D geometry of a new bracket product to vastly reduce future design work for prescription models

TE Connectivity- Automation Manufacturing & Technology Group | Robotics Intern | Harrisburg, PA **Summer 2021**

- Collaborated with a team to design and build a robotic machine to automate the assembly of electric car connectors
- Designed a gripper in Creo, made a 3D printed prototype, and programmed theoretical arm movements

TechSpark CMU | Shop Technician | Pittsburgh, PA **Fall 2020-Spring 2023**

- Teach laser cutting, manual machining, CNC machining, and woodworking skills to students and maintain the shop

PROJECTS

Automatic Kindling Machine | Senior Capstone Design Project **Spring 2023**

- Led a team of 4 to design and fabricate a hands-free solution to chopping firewood into kindling
- Designed a custom vertical linear motion system to align a rack and pinion driven impact mechanism that splits the wood
- Integrated together an impact mechanism, centering device, custom blade, magnetic locking mechanism, and cabinet enclosure
- Assembled a custom H-bridge and low pass filter to control a high current DC motor from a Milwaukee impact wrench controller

Thrust Vectoring Control (TVC) Model Rocket | Honors Research & Build18 Hackathon **Fall 2021-Spring 2023**

- Researched parachute deployment and recovery systems for TVC style model rocketry
- Designed a reliable testing structure to test the dynamic simulation against the real world output

Robotic Railway Cart | Wabtec Rail Safety Make-A-Thon **January 2022**

- Presented a solution to reduce human casualties and improve safety on railways using an autonomous robotic rail cart

Tripod Reimagined | Design I **Fall 2021**

- Created a better mounting system for people with grip strength impairment without changing the original functionality

Imaging Rig for CMU B.O.R.G. (Biohybrid and Organic Robotics Group) | Research Lab **Fall 2021**

- Built a DSLR imaging rig to study the effect of stretching PDMS material through photography

Where's Waldo Game | 15-112 Term Project [Video: https://tinyurl.com/y5ea5mnp**]** **Spring 2020**

- Coded a Where's Waldo style game that hides one picture in another using a RGB pixel processing algorithm

Electric Skateboard | Personal Project **2019**

- Created a custom 10s3p battery pack with Samsung 30Q and electronics enclosure

Eagle Scout Outdoor Equipment Shed **2018**

- Led a community service project to design, build and assemble a steel sports equipment shed for Harbor View Elementary School

ADDITIONAL EXPERIENCE

DIY Design and Fabrication Teaching Assistant | concepea.net| Carnegie Mellon University College of Engineering **Spring 2023**
C++ for Engineers Teaching Assistant | Carnegie Mellon University College of Engineering **Spring 2022**

SKILLS

Software: CAD (Solidworks, NX, Creo, Inventor), CAM (Mastercam, Mach 3), KiCAD PCB Design, Python, C++, MATLAB, Adobe Suite, Microsoft Suite
Hands-On Tool Experience: CNC Machine, FDM/SLA 3D Printer, Water Jet, Laser Cutter, Manual Mill/Lathe, Miter/Table Saw, Welding, Soldering
Languages: Proficient in Spanish, achieved Seal of Biliteracy (5 years of Spanish) in June 2019

ACTIVITIES & LEADERSHIP

Carnegie Mellon Ski Team **2022- 2023**
Student-Athlete, Carnegie Mellon Men's Cross Country and Track Team **2019-2021**
President, Triton Tech Robotics 6072 (First Robotics Challenge) **2017- 2019**