

Noah Zipin

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EDUCATION

B.S. Mechanical Engineering

GPA: 3.91

University of Maryland, College Park, MD

Expected Summer 2023

- *Clark Scholars Program* – Selected as one of ten students; combines engineering, business, and leadership
- *College Park Scholars, Science & Global Change* – Merit-based program on impact of climate change

Universidad de Carlos III, Madrid, Spain

Semester Spring 2022

- *Clark in Madrid Program* – International courses in materials science, manufacturing, and controls

SKILLS

Technical: Rapid Prototyping, Mechatronic Systems, DFM, Machine Design, Tolerance Stack, GD&T

Software: CAD (SolidWorks, CATIA v5/6), ANSYS/Abaqus, Confluence, Jira, Agile, PTC Windchill, MATLAB

WORK EXPERIENCE

J&J Robotics – Mechanical Engineering Co-Op, Santa Clara, CA

Sep 2022 – Jan 2022

- Designed sheet-metal enclosure in large SolidWorks assy that meets constraints for surgical power device
- Drafted designs for injection molded parts and ordered capital equipment tooling with DFM for 4 cores
- Conceptualized proof-of-principle prototype of PCB enclosure to eliminate EMI in surgical vision system
- Performed hand calculations of resultant forces in spinning assembly to assess failure modes and solutions
- Collaborated across R&D, NPI, SI, and Quality teams to verify prototypes against product requirements

Stanley Black & Decker – Mechanical Engineering Intern, Towson, MD

Jun 2022 – Aug 2022

- Designed flux measurement fixture for custom 140 mm BLDC motor using CNC machined and OTS parts
- Determined bearing fits for high stress motor assembly by analyzing hoop stress and creating a calculator that outputs force of insertion and torque transfer in worst-case tolerances
- Created calibration fixture for hall-effect encoder with stack up tolerance less than 0.5 mm

U.S. FDA – Summer Research Fellow, White Oak, MD

May 2021 – Aug 2021

- Conducted an independent project that investigates the influence of unit cell orientation on additively manufactured nylon lattice structures, and drafted research manuscript that is under peer review
- Created 240 lattice samples, manufactured on an EOS P396 SLS printer, tested all samples in load frame
- Analyzed strain profiles of all samples during testing using 3-D digital image correlation and ANSYS R19

Tubaldi Lab – Undergraduate Researcher, College Park, MD

March 2021 – Jan 2022

- Investigated how to control the deflection and force output of soft robotics actuators by using rigid fibers
- Manufactured custom soft robotics actuators by 3D printing rigid fibers suspended in an elastomer
- Compared experimental pressure-volume relation to a simulated finite element model in Abaqus to validate that the deflection and force output of a soft robotics actuator can be “pre-programmed” with rigid fibers

Postlytics – Part-time Intern, Remote

Jan 2021 – Jan 2022

- Led the hardware sub-team of startup based on National Academy of Engineering Challenge to develop the mechatronic components of a wearable medical device to help with hospital overcrowding
- Collaborated on an international team of 17 undergraduate and graduate students with weekly updates

PROJECT EXPERIENCE (visit my [portfolio](#) to view more)

Body Driven Prosthetic Finger

Jan 2021 – Feb 2021

- Designed and manufactured custom 3D printed body driven prosthetic finger that restores finger motion and function of partial finger amputees and tested on real patient, presented on [YouTube](#)
- Reduced the cost from \$5,000+ for similar products on the market to less than \$10 by utilizing 3D printing

Self-Balancing Robot

May 2020 – Aug 2020

- Developed a robot that balances on two wheels with custom mechanical, electrical, and control systems
- Manufactured robot with 15 custom 3D printed components, aluminum extrusion, and polycarbonate sheet
- Assembled all electronics and coded in C++ with PID control algorithm, presented on [YouTube](#)