Noah Zipin

Towson, MD | noahzipin@gmail.com | 443.422.5292 | www.linkedin.com/in/noahzipin

EDUCATION

University of Maryland, College Park, MD Expected May 2023
B.S. Mechanical Engineering GPA: 3.92

- **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

SKILLS

Technical: Rapid Prototyping, Mechatronic Systems, Additive Manufacturing (SLS, SLA, FDM), 3D DIC
Software: CAD (SolidWorks, Inventor, AutoCAD), FEA (ANSYS, Abaqus), nTopology, Materialise Magics
Programming: C++, Arduino C, Java, Python, MATLAB, Simulink, Excel, EES, Processing

WORK EXPERIENCE

U.S. FDA – ***ORISE Fellow in AM Medical Devices Core Facility*** *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 to be peer reviewed in Dec. 2021
- Designed 240 lattice samples in nTopology, personally manufactured them on an EOS P396 SLS printer, post-processed in bead-blaster, and compression tested all samples in load frame to collect data
- Analyzed von-mises strain profiles of all samples during testing using 3-dimensional digital image correlation
- Compared experimental loading response with finite element model using ANSYS Workbench R19

Tubaldi Lab – ***Undergraduate Researcher*** *March 2021 – Present*

- 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*** *Jan 2021 – Present*

- Collaborated on an international team of 17 undergraduate and graduate students to develop a wearable medical device that monitors vital signs to help with hospital overcrowding as a result of COVID-19
- Led the hardware sub-team to develop the mechatronic components of the wearable medical device
- Integrated many IC modules in Autodesk EAGLE that can monitor heart rate, body temperature, and more

Ridgely Robotics & Technology Summer Camp – ***Head Camp Counselor*** *June 2020 – Aug 2020*

- Transformed traditional summer camp into an online environment in the era of COVID-19 by developing new curriculums that engaged over 50 middle-school aged students to supplement online education
- Taught ~100 hrs of novel courses in Intro to Robotics (VEX IQ Platform), Introduction to 3D Modeling (TinkerCAD, Autodesk Inventor), Flight & Space (model rockets) and Video Editing (Adobe Premiere Pro)
- Led the creation of a new and interactive Facebook Page so parents can easily access all information online

INDEPENDENT PROJECT EXPERIENCE

Body Driven Prosthetic Finger *Jan 2021 – Feb 2021*

- Designed and manufactured custom 3D printed body driven prosthetic finger in SolidWorks 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 project on YouTube

ACTIVITES

- RC Flying Terps – club for students to fly racing quadcopters in a safe and controlled environment
- Robotics at Maryland – team that works on autonomous underwater vehicles for RoboSub competition
- Clark Scholars Service-Learning Project – develop a water retention garden on campus, AutoCAD team