OSCAR OLIVA

oscaroliva719@gmail.com | (412) 225-3328

EDUCATION

University of Pittsburgh – Swanson School of Engineering Expected Graduation April 2025

- Bachelor of Science in Mechanical Engineering
- Minor in Bioengineering

SKILLS

● SolidWorks ● Fusion360 ● MATLAB ● C++ ● Python ● R ● Microsoft Office ● Artec 3D
● Vicon Motion Capture ● Technical Writing ● Spanish (Fluent)

ENGINEERING EXPERIENCE

ZOLL, Pittsburgh, PA September 2022 – Ending in April 2024

Human Factors Engineering CO-OP (three 4-month rotations)

- Wrote protocols for wear test evaluations, and then moderated the studies by interviewing participants to assess the comfort, usability, and effectiveness of error prevention features of the LifeVest system
- Utilized R and PowerBI to analyze data collected from studies, drafted reports documenting study details, presented findings, and collaborated with a multidisciplinary team of engineers to address critical use errors
- Performed post-market surveillance analysis and contributed in the drafting of FDA reports
- Designed a prototype LifeVest garment to increase patient comfort without compromising ECG quality by implementing fabric electrodes and attaching the corresponding circuitry to the outside of the garment
- Utilized 3-D scanning to get patient body measurements for garment sizing and to correlate ECG wave amplitude to electrodes placed at various locations on the body

Human Movement and Balance Laboratory, Department of Bioengineering November 2021 – Returning Fall 2024

Research Assistant (only while enrolled in classes)

- Repurposed tribology testing equipment to measure friction on an assortment of ladder rungs in dry and contaminated scenarios, built supports for testing equipment and each ladder rung, and created a testing protocol
- Analyzed tribology data using MATLAB to correlate the surface pattern, material, and rung geometry to the measured coefficient of friction
- Utilized Vicon motion capture system to analyze participants' gait during ladder ascent, descent, and an unexpected slip scenario

Desapro Inc., Rockledge, FL May 2022 – August 2022

Mechanical Engineering Intern

- Drafted models of aluminum transit cases using SolidWorks, and prepared drawings to be used during production
- Analyzed and worked to improve the manufacturability of each case which was fabricated using sheet metal
- Coordinated with customers to deliver unique cases with size, weight, and load-bearing requirements, taking the lead in both the design and manufacturing processes
- Designed a temperature-controlled case that would attach to a drone to carry blood bags to soldiers in combat
- Designed and oversaw manufacturing of a case that reduced harmful vibrations and impact shock

PROJECTS

Pill Lamp – Personal

- Calculated the angles needed to make a dome out of small triangles and connectors, modeled a SolidWorks assembly of over 100 parts, laser cut 2-D shapes, and brought them together to make a pill shaped lamp

Balsa Wood Bridge – Academic Project

- Served as lead engineer for a team of students that modeled a balsa wood bridge in SolidWorks, optimized the design in MATLAB to hold the most weight, and used the Finite Element Analysis package in SolidWorks to verify stresses were within allowable limit

Solar Powered Rover – Academic Project

- Worked with a team of students to design and build a solar powered rover to compete in a series of challenges including an obstacle course and a speed run, in which we recorded the fastest time in