

**PROFILE** Eager professional with a focus on electro-mechanical systems from core engineering concepts to high-level system design. Career ambitions include developing complex systems in a fast-paced and challenging environment.

**EDUCATION** **B.S. in Mechanical Engineering, The University of St. Thomas** 9/2017 - 5/2021

- Involved with FIRST Robotics, [ASME](#), [SHPE](#), [BDPA](#), B'nai Israel Synagogue
- Trained 20 hours/week with Varsity Swim Team while carrying full course load.

**SKILLS** **Mechanical Design:** SolidWorks, CAM, FEA, CFD, AutoCAD, GD&T, ANSYS, Cura/PrusaSlicer  
**Software Development:** Python, C/C++, Arduino, Javascript, Git/Github, MATLAB/Simulink, OpenCV  
**Electrical:** PCB Design (KiCad)

**EXPERIENCE** **Mechanical Engineer, SUBC INC.** 5/2022 - Present

- Developing electro-mechanical medical device systems and components and integrating into a diverse portfolio of hematology-related applications
- Ideating and championing new and innovative designs for human plasma to wound dressings, and a point-of-care device that measures platelet reactivity.
- Collaborating with external consultants for Engineering and QMS development.

**Process Development Engineer, MicroMed Solutions** 9/2021 - 5/2022

- Played a key role in R&D initiatives, developing mechanical systems for new biotech products in an ISO:13485 QMS.
- Used statistical analysis techniques to improve product performance, verifying and validating design changes within subsystems.
- Prepared and presented BOMs, drawing packages, technical reports and documentation to communicate design concepts and manufacturing results to stakeholders.

**Research Assistant, The University of Saint Thomas** 9/2020 - 5/2021

- Experimentally acquired and analyzed effervescent jet flow images with PIV in MATLAB.
- Performed statistical analysis on resulting data to draw conclusions on downstream fluid dynamics for industrial applications.

**CNC Machine Operator, Rochester Precision Machine** 6/2018 - 8/2018

- Fabricated engineering designs for plastic and metal-alloy parts with CNC mills and lathes.
- Led quality improvement processes to maintain cosmetics and tolerances in various products.

**PROJECTS** **FIRST Robotics Team 2530** – I mentor with Rochester, MN's FIRST Robotics Chapter. Assisting and mentoring middle and highschool students across mechanical, electrical, software design, grant writing for a global Robotics competitions operating within a \$50,000 budget.

**Pro-Athlete Velocity Telemetry** – I went to Nairobi, Kenya to test Africa's Fastest man with a Resisted Sprinting Device I conceptualized, designed, built, and tested. The device provides a unique training stimulus to athletes and track training outcomes via speed telemetry. Implemented with Mechanical Design and 3D printing, Power Systems, Embedded Design, and Python.

**FEA Analysis** – Performed FEA with ANSYS to design a +1 million-cycle-life crimping tool for Emerson, from ideation to production.

**Computer Vision** – Devised and programmed vision algorithm to track athlete running speed from 2D phone-shot video using MediaPipe Pose Estimation, Applied biokinematics, OpenCV, Convex hull algorithms, Computer Graphics, Python and Javascript.

**CNC Pen Plotter** – Conceptualized, designed, built, and tested an X,Y Pen Plotter, including from-scratch software using Arduino, Python, OpenCV, and Computational Geometry to convert 2D images to G-Code tool paths to create shaded drawings.