ETHAN SHARP

Knoxville, Tennessee 37916 • (865) 742-5546 • esharp10@vols.utk.edu
www.linkedin.com/in/ethanasharp • ethanasharp.github.io/my-website/

EDUCATION

The University of Tennessee, Knoxville — Graduation: May 2027
Bachelor of Science in Biomedical Engineering — Cumulative GPA: 3.56/4.00

EXPERIENCE

University of Tennessee, Knoxville — Knoxville, TN
Office Assistant — August 2024 – Present

- Manage logistics and package distribution for 1,660+ residents using S.C. Logic and Microsoft Excel
- Audit and maintain digital records for key and card access
- Monitor data from the facility fire panel, coordinating rapid-response dispatch from maintenance to investigate alarms

Knoxville Symphony Youth Orchestra — Knoxville, TN
Rehearsal Assistant — August 2024 – April 2025

- Directed sectional rehearsals for the cello section, providing technical instruction to improve ensemble performance quality
- Mentored student musicians on instrument setup and proper maintenance to ensure rehearsal readiness.
- Performed as a section anchor during full orchestra rehearsals to provide rhythmic and tonal stability for developing players

Holston Hills Country Club — Knoxville, TN
Activities Assistant — May 2022 – April 2023

- Conceptualized and executed engaging recreational activities for youth members, ensuring a safe and inviting environment
- Coordinated high-traffic events, including summer programs, parent nights out, and holiday celebrations for club families
- Enforced facility access protocols for the pool area, verifying memberships to maintain security and exclusive guest standards

RELEVANT PROJECTS

The University of Tennessee, Knoxville — Knoxville, TN
Dual Blood Glucose Monitor and Insulin Pump for Type 1 Diabetics — May 2025

- Designed an integrated continuous glucose monitor and automated insulin pump for patients with Type 1 Diabetes Mellitus
- Analyzed the physiological impacts of hyperglycemia and ketoacidosis to define sensor-to-actuator feedback requirements
- Addressed the need for automated blood glucose regulation to prevent organ damage caused by chronic insulin deficiency

The Miniaturization of ECMO for Emergency Procedures and Ambulatory Patients — April 2025

- Developed a design concept for the miniaturization of ECMO systems to enable emergency and ambulatory use
- Researched the transition from roller pumps to centrifugal pumps to reduce blood trauma and improve system reliability
- Focused on the development of "bridge to transplant" solutions for patients with ARDS or end-stage heart/lung failure

Telescoping Rod with Bioactive Glass Modification Proposal — November – December 2024

- Collaborated with a 5-person engineering team to develop a technical proposal for modifying pediatric telescoping rods
- Co-engineered a design utilizing a bioactive glass surface layer to promote osteoblast attachment and improve the long-term osseointegration of stainless steel and titanium implants
- Designed testing protocols to validate the modification, including pull-out tests for mechanical stability and resazurin assays for biocompatibility and cell viability

Autonomous Sphero Rover — November 2023

- Developed MATLAB code to autonomously navigate a Sphero rover to user-selected coordinates on a mapped interface
- Programmed a "detect and avoid" logic using distance sensors to pause rover movement when obstacles were present
- Integrated real-time data visualization by graphing the rover's position to track progress toward the destination

Pellissippi State Community College — Knoxville, TN
Davinci Hammer Project – Lead Fabricator — April 2023

- Designed and constructed a full-scale, water-powered Davinci hammer for an EF 152 engineering course
- Fabricated the entire structural frame and mechanical assembly, excluding only the water wheel component
- Engineered a cam-driven system to convert rotational motion into vertical impact force for mechanical forging

SKILLS & CERTIFICATIONS

Software and Programming
Python, JavaScript, MATLAB, HTML, SolidWorks.

Technical & Fabrication
Manual Machining, Woodworking, Mechanical Assembly, Power Tool Operation, Prototyping.