

Sierra Houang

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Objective: to obtain a full-time position starting August 2023 with a biomedical company where I can expand my user empathy, project management, and design thinking skills.

Education

Georgia Institute of Technology, Atlanta, Georgia

Bachelor of Science in Biomedical Engineering, Minor in Computational Data Analysis Exp. May 2023

Georgia Southern University, Statesboro, Georgia

Bachelor of Science in Mechanical Engineering, June 2018 – May 2020, GPA 4.0

Skills

Biomedical Engineering Concepts: Model-based Reasoning, Statistical Modeling, Data Analysis, Deformable Bodies, CAD, Data and Visual Analytics, Sensors & Bioinstrumentation, Physiological Principles, Biomechanics, Biotransport

Software: SolidWorks, Fusion360, SQLite, Minitab, Open Refine, Microsoft Word, PowerPoint, Excel, Access

Hardware: Arduino, Lathe, Mill

Programming Languages: Java, Python, C, Visual Basic, Tableau, MATLAB, R, D3, HTML

Essential Skills: R&D, Quality Engineering, Technical Report Writing, Technical Standard Reading, Communication at a Variety of Levels, Collaboration, Leadership, Conflict Resolution, Presentation Skills

Work Experience

Becton Dickinson, Covington, Georgia

R&D Co-op, Urology and Critical Care, June 2021 – July 2022

- Designed, authored, and conducted 3+ Test Methods and Test Method Validations for V&V, which included design of fixtures for reliability and manufacturability
- Collaborated with vendors to quantify manufacturing processes and device outcomes
- Directed a build and limited release of 2000+ devices for 6 SKUs over 12 lots, managed 3 workers' daily activities, and oversaw documentation for all build activities
- Attended a cadaver lab and conducted clinician interviews to gain valuable feedback on user experience
- Developed design input criteria for material tensile strength in a Class I medical device
- Developed skills in released product management by drafting and updating technical SolidWorks documentation for existing products including models and drawings

Applied Technical Services, Marietta, Georgia

Mechanical Testing Intern, June 2019 – August 2019

- Evaluated and tested products to ASTM specifications (ASTM F963-17 and ASTM F2923-14)
- Collaborated across multiple departments to streamline testing process from quoting to experimentation
- Assessed, designed, and implemented organization and process for Consumer Products testing lab
- Traveled to Pratt & Whitney to complete on-site load testing
- Designed and conducted mechanical testing including load tests, pressure tests, drop tests, etc.

Projects

Rapid Insulin Efficacy Test, Capstone Senior Design, Atlanta, Georgia

August 2022 – Present

Automated Patellar Reflex Tester, Biomedical Sensors & Instrumentation, Atlanta, Georgia

August 2021 – December 2021

- Designed and tested a wearable device to quantify the patellar tendon reflex (PTR)
- Integrated EMG and IMU sensors to collect reflex information initiated by a solenoid and display on an LCD
- Compared test data to clinical metrics to validate device readings

Rural Sanitation in Malawi, Georgia Tech Engineers Without Borders, Atlanta, Georgia

February 2021 – December 2021

- Aimed to improve sanitation infrastructure of K-12 school in Mpitilira, Malawi
- Facilitated organization of many semesters of research to align team with one common goal
- Explored and empathized with cultural nuances of the users in Malawi

Quantitative Blood Loss for Postpartum Hemorrhage, Intro to Biomedical Engineering Design, Atlanta, Georgia

January 2021 – May 2021

- Explored areas of need for quantitative blood loss assessment techniques during vaginal delivery

- Modeled predicate device and potential solutions in Fusion 360
- Ideated with team and create prototypes to investigate concept ideas
- Communicated with three different doctors to obtain user input at multiple points in the engineering process

Guinea Worm Disease Eradication in Chad, Intro to Biomedical Engineering, Atlanta, Georgia

August 2020 – December 2020

- Researched cultural, environmental, biological, and social impacts of Guinea Worm Disease in Southern Chad
- Conducted interviews with personnel from The Carter Center
- Ideated, prototyped, and tested solutions to limit transmission of GWD to domesticated animals

Research

Undergraduate Research, Dept. of Manufacturing Engineering, Georgia Southern University, Statesboro, Georgia

Project Lead, August 2018 – May 2019

- Authored a project proposal and received a \$2000 research grant
- Formulated and conducted experiments to evaluate best method for crosslinking 3D bioprinted hydrogels
- Collected and analyzed qualitative and quantitative data
- Presented findings to people of varying knowledge and educational background in a conference setting

Leadership

GT Alpha Gamma Delta, Atlanta, Georgia

Director of Continuous Open Bidding, May 2020 – Present

- Organize and execute recruitment activities such as recruit
- Communicate with a diverse group of women with

Society of Women Engineers (SWE), Statesboro, Georgia

Director of Outreach, January 2019 – May 2020

Member, September 2018 – December 2018

Eagle Motorsports, Statesboro, Georgia

Vice President of Society of Automotive Engineers, August 2019 – May 2020

Member, August 2018 – July 2019

Other Involvements

American Red Cross, Statesboro, Georgia

Volunteer, June 2018 – March 2020

Rock Climbing Club, Statesboro, Georgia

Member, September 2018 – May 2020

Habitat for Humanity, Statesboro, Georgia

Volunteer, September 2019 – December 2020

Safe Haven Shelter, Statesboro, Georgia

Volunteer, October 2018 – December 2018

Honors

Inventure Prize Gold Ticket Recipient	Fall 2022
Zell Miller Scholarship Recipient	Summer 2018 – Present
Georgia Institute of Technology Dean's List	Fall 2020
Georgia Engineering Foundation Scholarship	Fall 2019 – Spring 2020
Georgia Southern Parent & Family Association Scholarship Recipient	Fall 2019 – Spring 2020
Georgia Southern University President's List	Fall 2018 – Spring 2020
Undergraduate Research Grant Recipient	Fall 2018 – Spring 2019