Mumbi Whidby

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mumbzzz.github.io/portfolio-site/

Education

University of California, Los Angeles Sept. 2022–Present
Ph.D. in Mechanical Engineering (Design, Robotics and Manufacturing)
M.S. in Mechanical Engineering, March 2024
Spelman College, Atlanta, GA May 2022
B.S. in Computer Science, Magna Cum Laude

Awards and Honors

Cota-Robles Fellowship – Full Ph.D. fellowship, UCLA
Boeing Scholar – Engineering leadership and academic excellence
Upsilon Pi Epsilon – Computing honor society

Technical Skills

Programming: Python, C++, MATLAB, PHP, Java, Scheme, JavaScript
Tools/Frameworks: ROS, SolidWorks, Onshape, Arduino, Pepakura, Git
Additional: Sensor integration, data acquisition, machine learning basics, teleoperation systems, microfluidics fabrication

Experience

University of California, Los Angeles Biomechatronics Lab Sept. 2022–Present
Research Assistant — Advisor: Dr. Veronica Santos

- Lead development of tactile sensing systems for robotic manipulation and teleoperation.
- Analyze multi-modal sensor data to improve haptic feedback and material classification.
- Mentor undergraduate researchers in sensor integration and experimental methods.

Human Fusions Institute, Case Western Reserve Oct. 2023–Present
Research Assistant — Office of Naval Research Project

- Developed real-time hand motion tracking and immersive teleoperation systems.
- Conducted user studies integrating visual and haptic feedback in bimanual teleoperation.

IC CAE Project, Virginia Tech Aug–Dec 2021
Research Assistant

- Designed adaptive jamming strategies for wireless signals using SDR platforms.
- Investigated signal interception and mitigation in dynamic RF environments.

NASA L'SPACE Mission Concept Academy Jan–May 2020
Researcher

- Conducted systems engineering analysis for NASA Lucy mission design review.
- Assessed spacecraft architecture feasibility under physical, risk, and budget constraints.

U.S. Army Drone Design Competition Apr 2019
Research Assistant

- Engineered biologically-inspired drone chassis; integrated lightweight sensors and controls.
- Team placed 2nd in design category and 4th nationally in overall competition.

Honeywell Enterprise May–Aug 2021
Intern

- Designed cloud-based robotics integration solutions (AWS) for logistics and warehouse automation.
- Performed cost-benefit analysis of robotics platforms for optimized fulfillment operations.

Publications (selected)

- Whidby, M., Kang, S.-M., Harber, E., et al. *"Full Title of Second Paper."* Under review at IEEE Robotics and Automation Letters.
- Harber, E., Johnson, C.P., Liebman, A., et al. *"OptiStrain: A Vision- and Microfluidics-based Tactile Sensor."* In preparation.