

Alejandro Baraona

737-400-1474 | ajb6884@my.utexas.edu | [linkedin.com/in/alejandrobaraona](https://www.linkedin.com/in/alejandrobaraona) | github.com/baraona

EDUCATION

University of Texas at Austin

Austin, TX

Candidate for M.S. in Electrical and Computer Engineering (Concentration: Software Engineering) Jan 2025 - May 2027

- Graduate Research Assistant for the Wang Lab. Developing personalized ASR systems for individuals with disordered speech (stuttering, dysarthria, apraxia), building adaptive pipelines that improve over time for individual users.

Northeastern University

Boston, MA

B.S. in Electrical and Computer Engineering

Sept 2023 - Dec 2025

- EE Specialist, Sherman Center - designed and hosted workshops on microcontrollers, soldering, and sensors; managed lab equipment and supported project teams during weekly office hours
- Student Staff, Center for STEM Education - designed STEM outreach programs for Boston public schools, produced published technical articles, and co-led Building Bridges, a semi-annual ECE recruitment event
- Research Assistant, Action Lab - nominated via UPLIFT Program for Human-Robot Collaboration research; calibrated motion-capture data in Qualisys Track Manager to analyze discrete and rhythmic motor patterns

WORK EXPERIENCE

Vigilant Biosciences, Inc.

Austin, TX

Electronic & Software Integration Technician

Jun 2021 - Sept 2023

- Engineered an Arduino-based 5-parameter environmental sensor system (temperature, pressure, humidity, CO2, UV) to verify medical device performance under FDA compliance requirements.
- Validated an oral cancer detection algorithm end-to-end and built Python UI components, reducing manual verification steps and supporting regulatory submission readiness.
- Characterized medical device components using bench equipment (multimeters, thermocouples, data loggers) and performed statistical data analysis in Excel to confirm measurement accuracy.

PROJECTS

VitalLink: Wearable Triage System

- Built a BLE-enabled wristband and base-station pipeline to continuously monitor patient vitals (heart rate, SpO2, temperature, motion) in hospital waiting rooms, generating real-time severity scores to help clinicians prioritize care
- Designed custom PCB hardware and firmware for the wristband; developed a clinical-facing web dashboard to visualize trends and alerts. Presented at Northeastern's 41st ECE Capstone Design Competition.

CaptionXR: Real-Time XR Captioning

- Developed a Unity-based live caption overlay system that renders real-time speech captions within an XR environment, integrating speech recognition with spatial UI rendering

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, Java, SQL, RISC-V

Libraries: NumPy, Pandas, Matplotlib

Tools: Git/GitHub, VS Code, Docker, MATLAB, Vivado, LTSpice, Adobe Suite

Hardware: Arduino, Raspberry Pi, Oscilloscope, Logic Analyzer, PCB Design, Soldering

OS / Platform: Linux/Ubuntu

HONORS & AWARDS

- Northeastern National Recognition Program Scholarship (\$40,000), NUAccelerate Scholarship, National Grid CECA Scholarship (\$2,000)
- National 2023 HSF Scholar, UPLIFT Program Scholar, National Merit Scholar