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Personal Website: https://raquelsusko.github.io/

EDUCATION

Texas A&M University, College Station, TX

Master of Science in Electrical Engineering | Expected Dec 2027
Bachelor of Science in Electrical Engineering | Expected May 2027
GPA: 4.0/4.0 | University and Departmental Honors Student | Computer Science Minor

TECHNICAL SKILLS

- **AI & Machine Learning:** PyTorch, TensorFlow, Imitation Learning (ACT, SmolVLA, DAgger), Vision-Language-Action (VLA) models, CNNs.
- **Robotics & Control:** ROS 2 (Humble/Galactic), PID Control, Teleoperation, UR5, SO101, Jetson Nano.
- **Hardware & Embedded:** Altium Designer (Custom PCB Design), STM32 (C/C++), I²C, SPI, DMA, Soldering.
- **Software:** Python, C++, C, Java, Verilog, R, Flutter/Dart, Git.

RESEARCH EXPERIENCE

LENS Lab – Texas A&M University | *Paid Student Researcher* | Jan 2025 – Present

- Investigating generalization boundaries of SmolVLA models on SO101 platforms, specifically analyzing model robustness against environmental variables
- Optimizing data efficiency by reducing demonstration overhead through the HuggingFace Lerobot interface.

Laboratory for Computational Sensing and Robotics | *JHU REU Researcher* | May 2025 – Aug 2025

- Engineered a ROS 2 teleoperation system to bridge a Force Dimension haptic device and a UR5 robotic arm for partial nephrectomy simulation.
- Developed PID-based trajectory smoothing and a high-fidelity data pipeline to synchronize 6-DOF poses with Zivid 3D camera point clouds, generating datasets for downstream imitation learning.

Biosensors Research – Texas A&M University | *Undergraduate Researcher* | Jan 2024 – May 2024

- Developed firmware for STM32WB55RG to interface with an AD5940 potentiostat via SPI, achieving real-time electrochemical signal capture.
- Built a Flutter mobile application to visualize real-time sensor data transmitted over Bluetooth Low Energy (BLE).

LEADERSHIP & EXPERIENCE

WIRED AUV Robotics Club | *Electrical Lead & Programming Member* | Aug 2023 – Present

- Leading a cross-functional electrical subteam in designing a centralized power system for "Swim Shady," an autonomous underwater vehicle.
- Designed custom ESC and Fuse PCBs in Altium, reducing internal wiring volume by 20% and improving diagnostic accessibility.
- Integrated a Teledyne Wayfinder DVL and Jetson Nano into a ROS 2 stack to enable autonomous navigation in the RoboSub International Competition.

Engineering Honors Ambassador | *Student Representative* | Sept 2024 – Present

- Serve as a technical liaison for the Honors Department, facilitating panels and recruitment events for 100+ prospective students annually.
- Collaborate with faculty to manage high-stakes events including Honors Career Fairs and networking symposiums.

Computer Science Department – Texas A&M | *Peer Teacher* | Jan 2024 – Present

- Mentoring 100+ students per semester in C++ and Data Structures, leading lab sessions that resulted in a measurable increase in class-wide coding proficiency.

PROJECTS & AWARDS

- **DRONE (LENS Lab):** Solving mechatronic constraints to mount an SO101 arm on a drone; optimizing thrust-to-weight ratios for edge-AI inference on a Jetson Nano.
- **3rd Place – Aggies Invent:** Designed a thermoelectric wearable cooling device for Paralympic athletes in a 48-hour "sprint" competition.