

Luis Gonzalez

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Professional Summary

A dedicated Electrical and Computer Engineering Honors student with proven leadership experience across academic, technical, and community-service organizations. Holding leadership positions in multiple engineering societies, I have a track record of guiding complex technical projects, fostering collaborative team environments, and mentoring fellow students. This commitment to leadership and service reflects a deep-seated drive to apply a strong engineering foundation to solve real-world challenges. Seeking to bring a unique blend of technical aptitude and dedicated leadership to an innovative engineering role.

Education

The University of Texas at San Antonio

Bachelor's in Electrical & Computer Engineering

Expected Graduation year: 2027

GPA: 3.7

Research

Undergraduate Researcher - Unmanned Systems Lab (USL)

Advisor: Dr. Cao

- Contribute to development of the Osiris Board, a modular custom controller PCB integrating an NVIDIA Jetson and multiple STM32 micro-controllers for real-time control and firmware execution across unmanned systems (primarily UAVs)
- Develop and support Modify, a custom drone control ecosystem composed of:
 - ◆ **Gateway:** radio bridge enabling bidirectional communication between operator and platform
 - ◆ **Platform:** hybrid simulation + deployment environment used for both virtual testing and real-world drone execution
 - ◆ **Cockpit:** operator interface for telemetry, control input, and peripheral data handling
- Implement an object injection pipeline for the custom 3D simulation environment, enabling seamless import of external assets and scenes from tools such as SolidWorks, Autodesk Fusion 360, Gazebo, NVIDIA Isaac Sim, Unreal Engine, and Unity
- Design tooling to standardize 3D asset ingestion, improving interoperability, simulation realism, and developer workflow efficiency

Skills

Hardware: Arduino, Tetrax Prizm, Raspberry Pi, Jetson Nano Orin, ESP32, STM32, PIC 16f1825

Software: AutoCAD, SolidWorks, OnShape, Revit, KiCad, OrCAD, PSpice, PlatformIO, Docker, ROS2, Git, Slicing Software, Microsoft Office, Google Suite, LibreOffice, OnlyOffice, Linux

Programming: Python, MATLAB, R, C/C++, Java, HTML/CSS, XML, Assembly, OpenCV, Git, PlatformIO, Dockerfile, Lua, Bash, make, Cmake

Soft-Skills: Technical Versatility, Interpersonal Communication, Public Speaking, Action-Oriented Mindset

Coursework: Electric Network Theory, Micro Computer Systems, Engineering Analysis II, Math Signal & Systems, Electronic Circuits I, Analysis Design & Control Systems, Computer Organization & Computer Architecture

Certificates & Awards

Certification - Additive Manufacturing

Awards:

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|---|----------------|
| • Engineering Projects in Community Service Award | 2023 |
| • Architecture Construction Engineering mentorship alumni scholarship | 2023 – present |
| • National Society of Collegiate Scholars | 2023 – present |
| • UTSA Honor's College | 2023 – present |
| • Dean's List | 2023 – present |

Projects & Presentations

Humanoid Robot 2023

- Designed, built, and programmed a humanoid robot using Arduino and C++, integrating servo control and sensor feedback while serving as team lead.

Eye Tracking for ALS Patients 2024

- Directed the design and development of an assistive eye-tracking prototype aimed at improving accessibility for individuals with ALS. Developed the core software and integration framework in Python as part of a larger multi-project system.

Small Bluetooth RC Car 2024

- Engineered a Bluetooth-enabled RC car integrating embedded control with a fully custom Android app written in Java and XML.

University Rover Challenge (Intelligence Team) 2024

- Contributed to the Intelligence Team for the University Rover Challenge, developing vision and navigation software for an autonomous rover using ROS2 and OpenCV.

Robotic Hand Mimic 2025

- Leading a multidisciplinary team in designing, fabricating, and programming a 3D-printed robotic arm that replicates human hand movements via Flex-resistors equipped on a glove as input. Overseeing design, programming, and circuit development teams.

Eye Tracking Graphical User Interface present

- Designing a modular Python-based GUI to integrate an eye tracker with external systems like rovers and automated devices, serving as team lead for interface, programming, and system integration.

Robotics & Automation Society Student Org Website present

- Leading front-end development for the Robotics and Automation Society's website using HTML, CSS, and Java, collaborating with a team of developers to enhance usability and design.

Presentations:

The Modernization of the San Antonio Missions Stadium (UTSA Downtown) 2023

- Led the MEP team in presenting design modernization concepts for stadium redevelopment, emphasizing efficiency and community engagement in Mechanical, Electrical, and Plumbing systems

Humanoid Robot for Engineering Projects in Community Service (EPICS) 2023

- Delivered a technical presentation on the design, programming, and fabrication of a humanoid robot for the first-semester EPICS Tech Symposium.

ALS Eye Tracking Prototype (EPICS) 2024

- Presented an assistive eye-tracking prototype designed to improve accessibility for individuals with ALS, explaining integration and user testing.

Learn to use Git/GitHub Workshop 2024

- Organized and led a hands-on workshop teaching students version control fundamentals and collaborative workflows using Git and GitHub.

Learn Robotics Operating System (ROS2) with Docker Crash-course 2025

- Created and presented an interactive 3-part crash course on setting up and deploying ROS2 environments using Docker for robotics applications.

Introduction to Linux Crash-course

2026

- Created and presented an interactive 3-part crash course on helping students understand, use, and develop the critical thinking skills required to use the Linux Operating System efficiently.

Professional Affiliations & Community Involvement

ACE Mentorship Program (Organization Alumni)	2021 – 2023
Science & Engineering Mentor - John Jay Science & Engineering Academy, Texas	2022 – 2023
STEM Festival Event - John Jay Science & Engineering Academy, Texas	2023
Volunteer – Deer Meat Skinning - San Antonio Food Bank, San Antonio, Texas	2023
Foster Care High school Tutor - San Antonio, Texas	2023 – 2024
UTSA National Society of Collegiate Scholars (Student Member)	2023 – present
UTSA Mathematical Association of America (Student Member)	2023 – present
Society of Hispanic Professional Engineers (Student Member)	2024 – present
IEEE (Member)	2024 – present
IEEE Honors Society (HKN)	2024 – present
IEEE Robotics Automation Society (Development Trainer)	2024 – 2025
IEEE Robotics Automation Society (Technical Representative)	2025 – 2026
IEEE Robotics Automation Society (Senior Advisor)	2026 – present
Engineering Projects in Community Service Student Organization (Vice President)	2024 – 2026
Engineering Projects in Community Service Student Organization (President of Project Affairs)	2026 – present
Engineering Projects in Community Service (Lead Teaching Assistant)	2025