Luigi Medrano

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EDUCATION

The University of Texas at Austin B.S. in Electrical & Computer Engineering; May 2025

Computer Science Bootcamp Certificate

EXPERIENCE

Texas Guadaloop – *Head of Electrical and Software Systems;* Austin, TX September 2021 – Present

- Former Lead Power Systems Engineer responsible for all power electronic components manufacturing, assembly, and testing. Manufacturing involving collaboration among companies to create high voltage battery for Linear Induction Motor.
- Research and development of advanced sensors and power electronics onboard the hyperloop pod.
- Programmer in advanced protocol and CAN bus alongside Software subteam.
- Aid in mechanical subsystem research and development including Regenerative Braking and Electrodynamic Suspension Systems.

Blue Origin – *Artificial Intelligence Software Engineering Intern;* Kent, WA January 2023 – April 2023

- Created an AI Model (BlueGPT) for an aerospace company that improved efficiency in data analysis, decision making, and product development by 18 %.
- Worked independently to create the functioning model and received aid from fellow engineers on use cases, business planning, and front-end building.
- Successfully trained the model on large datasets such as the pile and fine-tuned it to meet the company's specific needs while creating a secure network for logging requests and an algorithm to retrieve most up to date information.
- Conducted rigorous testing and validation to ensure the accuracy and reliability of the model's outputs.
- Presented the results of my project to my team, executives, and CEO, received positive feedback, and got over $1M funding for the project.

Dimmitt High School Robotics – *Team Captain & Software Lead;* Dimmitt, TX August 2017 – May 2021

- Competed and mentored in FIRST Tech Challenge robotics for teams 12398, 13755, 15151, & 15152.
- Coded using Java, Python, and C++ for autonomous and tele-operation control.
- Created a Java program using computer vision TensorFlow to detect objects in autonomous navigation.
- Competed at state four times and have won two state championships alongside being the only team to represent Texas in the Maryland Tech Invitational.

NASA Aerospace Scholars Program – *Systems Engineer;* Houston, TX November 2019 – July 2020

- Collaborated with other Texas high school juniors as a Systems Engineer to create a presentation for NASA instructors.
- Presentation covered rover vehicle design and necessary material to design the rover for space flight to the lunar surface.
- Worked on tire tread effects portion of presentation and helped design team with sketching.
- Worked on embedded software implementation for embedded systems and simulations.
- Worked on software development for simulated fail-safe systems.

Projects

- **BlueGPT AI Model –** Developed a private AI model from scratch using TensorFlow, Keras, and Pytorch to serve as a chatbot to all Blue Origin employees increasing product development by **18%** and having a **$1 million** dollar funding.

- **ECE 319K Space Invaders –** Co-developed a recreation of 1978's Space Invaders utilizing TI-TM4C microcontrollers, slide potentiometers, and C programming. The goal would be to bitmap animations to the LCD screen and interface multiple techniques such as **debugging, UART, and ADC/DAC** for audio and movements.

- **Gray Scale Block Sensing Algorithm –** Coded an algorithm that would use **TensorFlow Object Detection** to detect within a frame where two blocks are yellow, and one block is black. A middle row of pixels would be processed and would calculate a precise distance between blocks and return the darkest section of the image to move the robot to using encoders and odometry.

HONORS

- Texas Excellence Scholarship May 2021
- Dell Scholars (Scholarship) May 2021
- UT Austin Ramshorn Scholar August 2021
- Hispanic Scholarship Fund (HSF Scholar) June 2022

ADDITIONAL INFORMATION

Computer Proficiency: Python, Java, C/C++, HTML/CSS, MATLAB, LabView, I2C, SQL, Terraform, TypeScript, GO
Cloud Platforms: AWS EC2, AWS S3, Kubernetes
Machine Learning: TensorFlow, Keras, Pytorch, Scikit-learn, Numpy, Pandas, Matplotlib