# Emiliano Rodriguez

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## MECHANICAL & SOFTWARE ENGINEER

Mechanical engineer with 4 years of experience building data intensive applications. Tackling challenging architectural and scalability problems in finance, aerospace simulations, and data science including real time data streaming applications.

## Education

### University of Texas at San Antonio [Fall 2016-Spring 2019] San Antonio, TX

- Major: Mechanical Engineering || Minor: Computer Science || GPA: 3.52

## Experience

### Anyar Inc. [June 2023-Present] Fort Walton Beach, Fl

*Data Scientist - Machine Learning Engineer*

- Developing software models of aerospace systems with applications to air/space-based weapons systems.
- Modeling weapon systems, subsystems, and their operating environments using software languages such as C++, Python, and JSON.
- Solving ordinary or partial differential equations using numerical methods or software packages/libraries.

### USAA [June 2019-June 2023] San Antonio, TX

*Data Engineer*

- Bank Data and Analytics - Risk Decision Engine Team. Batch and streaming data applications using python, Apache NiFi, Docker, Hadoop HDFS.
- Control-m scheduling and automation.
- Constructed a python data control framework for big data.
- Data stage, SnowFlake, DBT, NiFi, ETL development.

### Brobotics Inc. [August 2018-June 2019] San Antonio, TX

*Lead Software Developer*

Capstone Project - Constructed an inexpensive, open-source quadrupedal robot 3D printed intended for research use in the Robotics and Motion Laboratory at UTSA.

- Equipped with a Raspberry Pi and O-drive motor controllers.
- Robot Operating System (ROS) - physics simulation engine utilized to implement commonly used functionality.
- Python built software architecture.
- Specifications include a speed of 0.2 m/s, payload capacity of 25% of weight, and weighing less than 23 kg.

### Robotics And Motion Laboratory [Spring 2018-June 2019] San Antonio, TX

*Research Assistant*

Open Platform Humanoid Project - Darwin-OP2 a bipedal robot intended to research agile locomotion and increase dynamic stabilization.

- Refactored software architecture refactored for simplistic development.
- Demonstrated locomotion capabilities.
- Instigated outreach to students and researchers interested in robotics

## Most Proud Of

- Advanced Robotics [senior(UTSA)] – Arduino/Raspberry Pi Instructor. Teaching university students the basics of working with micro controllers, LCD, motors, LED's, and various sensors.
- Aeronautics & Rocketry Club [junior(UTSA)] – Vice President, Avionics/Recovery lead. Engineering rockets, working with body design, force analysis, hybrid motors. Sub projects; wireless launch controller.
- Fluent in English and Spanish, private pilot certified, open water certified, K-16th robotics instructor.