**SUMMARY**

Graduate Researcher who has experience modeling vehicle dynamics and controls. My experience with project management entails working with others to integrate software and hardware for perception, path planning, and controls together. My goal is to obtain a **full-time** position in developing technology in the robotics and autonomous vehicle research fields as well as my own understanding.

**EDUCATION**

**Texas A&M University**, College Station, TX

Masters of Science in Mechanical Engineering Cumulative GPA: **3.86** May 2020

Thesis: *Nonlinear Control of a Ground Vehicle Using Data-Driven Dynamic Models*

Bachelor of Science in Mechanical Engineering Cumulative GPA: **3.41** May 2018

**PROJECTS AND EXPERIENCE**

**Connected Autonomous Safe Transportation Research Laboratory,** Texas A&M University Jan 2019 - Present

*Graduate Researcher* | *Off-Road Autonomous Vehicle Project Manager*

* Derived a 3-D vehicle dynamics model that considers roll and pitch using an off-road tire model
* Analyzed experimental data to identify the system’s response for throttle, brake, and steering
* Implemented a data-driven longitudinal and lateral sliding mode controller with Python
* Managed a team of 5 graduate students to plan and execute autonomous features for an off-road vehicle

**SAE AutoDrive Challenge,** Texas A&M UniversityAug 2017 – May 2018

*Lateral Control Team Lead* | *Sub-Project Manager*

* Verified a state feedback lateral controller by simulating with MATLAB
* Implemented a longitudinal and lateral controller using C++ to follow a given path with 30 cm accuracy
* Helped produce a Python script to transmit and receive CAN messages for steering
* Planned a schedule in the form of demos for 10 sub-teams

**Electric Go Kart,** Personal Project Jul 2017 – Dec 2017

* Designed a 3D model of the go kart using SolidWorks with a focus on manufacturability
* Machined steel using a power drill and angle grinder to assemble the chassis
* Integrated an electrical system containing lead-acid batteries, brushless motor, and speed controller

**BioRobotics Research Laboratory**, Texas A&M UniversitySep 2016 – May 2017

*Undergraduate Researcher* | *Surgical Robotics* | *Soft Robotics*

* Designed and 3D printed structures for surgical devices
* Casted and cured silicone materials to develop a soft-robotics hand device
* Redesigned a hand mechanism by integrating silicone and LEGO blocks to create a “gripper” system

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**EMPLOYMENT**

**Engineering Ethics Teaching Assistant,** TAMU – College of Engineering Spring 2019

* Prepared 2 lectures per week for a class of 50 students
* Critiqued 50 students’ essays which developed the students’ writing

**Lab Tech Assistant,** Optics and Signal Processing Laboratory Summer 2018

* Designed small structures using SolidWorks in order to reduce size from previous models
* Manufactured designs made from aluminum using a drill press, power saw, and milling machine

**Statics and Dynamics Teaching Assistant,** TAMU – Department of Mechanical Engineering Fall 2016

* Mentored 90 students in Statics and Dynamics

**SKILLS**

**•** C++ yoC==C **•** Python **•** MATLAB/Simulink **•** SolidWorks **•** Windows/Linux OS

**•** ROS  **•** Git  **•** LabVIEW  **•** Manufacturing (Mill,Lathe, Power Saw, Drill Press)

**LEADERSHIP**

**American Society of Mechanical Engineers,** Texas A&M University

*International Relations Director* May 2019 - Present

* Collaborated with University of Guanajuato to host a Mexico Leadership Exchange Program for 24 students
* Organized and facilitated a week’s worth of tours with Texas companies and laboratories