

# Gavin Martin

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## Education

### The University of Texas at Austin

*Bachelor of Science, Aerospace Engineering*

*Concentration: Space Flight*

Expected Dec 2019 | GPA: 3.81

## Skills

**Languages:** Python • Java • Go • MATLAB • Bash

**Libraries:** NumPy • SciPy • Pandas • OpenCV • TensorFlow

**Technologies:** Linux • Git • Docker • Jenkins • AWS •  $\LaTeX$

**Interpersonal:** Public Speaking • Project Management

## Work Experience

**Raytheon (Contracted to NASA JPL), [Software Systems Engineer](#), Remote** ..... Apr 2019 - May 2019

**NASA Jet Propulsion Laboratory, [Mission Planning Intern](#), Pasadena, CA** ..... May 2018 - Aug 2018

- Optimized Europa Clipper mission modeling and simulation software for speed, scalability, and reliability
- Automated mission simulation, downstream analysis, and data delivery using Jenkins and Docker
- Built dynamic, interactive 3D visualization tool for science instrument coverage maps on Europa's surface

**Texas Spacecraft Laboratory, [Seeker Vision Project Manager](#), Austin, TX** ..... Oct 2017 - May 2018

- Designed computer vision system for NASA JSC's Seeker-1 mission (launching April 2019 on Cygnus NG-12)
- Trained convolutional neural networks with TensorFlow to detect and recognize target spacecraft in orbit
- Developed algorithms using OpenCV to compute relative bearing of target spacecraft
- Performed hardware-in-the-loop simulations to validate real-time algorithm success on embedded systems

**Texas Spacecraft Laboratory, [ARMADILLO Mission Manager](#), Austin, TX** ..... Mar 2017 - Nov 2017

- Integrated communication and project management platforms while scaling from 5 to 50+ engineers
- Constructed operations infrastructure to support the ARMADILLO CubeSat (launching Summer 2019 on STP-2)
- Spearheaded development of PyQt5 GUI to process and interpret downlinked spacecraft telemetry in real-time

**GE Aviation, [Software Engineering Intern](#), San Marcos, TX** ..... May 2016 - Aug 2016

- Built custom enterprise resource planning software using Java's Swing framework
- Automated customer service reporting by integrating custom ERP software with the Apache POI API
- Value-stream mapped facility's repair station to identify areas for efficiency improvement

## Projects

### ADCS Simulator – [bit.ly/adcs-simulator](http://bit.ly/adcs-simulator)

- Developed object-oriented simulation engine for spacecraft attitude determination and control systems
- Wrote research paper detailing models for dynamics, actuators, sensors, and control algorithms in simulator
- Tools: Python, NumPy, SciPy, Matplotlib,  $\LaTeX$

### Object Detection Models – [bit.ly/detection-models](http://bit.ly/detection-models)

- Developed library for easily deploying TensorFlow Object Detection API models and detecting objects in images
- Tools: Python, TensorFlow, Jupyter

### Rotor Control Service – [bit.ly/rotor-control-service](http://bit.ly/rotor-control-service)

- Designed RESTful microservice for automated ground station tracking of overhead satellites
- Created Slack bot for notifying spacecraft operators of daily & imminent communications passes
- Tools: Golang, MongoDB, Docker Compose, Slack API

## Honors & Awards

**UT-Austin Engineering Honors Program** ..... 2015 - Present

**General Electric Above & Beyond Bronze Award** ..... 2016

**National Merit Scholar** ..... 2015

**4th Place | Public Forum Debate | National Speech and Debate Association National Tournament** ..... 2014