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-11)
- 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`
- 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`
- 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`
- 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