Gavin Martin

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Experience

Amazon - Project Kuiper — Redmond, WA

Senior Software Development Engineer, Mission Operations — *Apr 2024 – Present*

Software Development Engineer, Mission Operations — *May 2022 – Apr 2024*

- Architected and led implementation of a service for managing the lifecycles of satellites and orchestrating their automated progression through key mission phases
- Built Jupyter-based procedure authoring and execution platform and mission operations Python library for use in on-orbit spacecraft operations and ground testing
- Co-created a hardware-in-the-loop test framework to support low-level functional tests, system-level satellite tests, and mission rehearsals; used in >300 days of cumulative test execution time on satellite testbeds
- Developed serverless automated test reporting pipeline and QuickSight dashboards to process and serve data from >20k HITL test sessions and >2M test cases across the Kuiper program

NASA Jet Propulsion Laboratory — Pasadena, CA

Software Systems Engineer, Europa Clipper — *Jan 2020 – Apr 2022*

- Led the Activity Planning Software development team (10 engineers) in delivering software to support automated activity scheduling, resource simulation, and constraint-checking workflows for the Europa Clipper mission
- Designed and implemented models of several spacecraft subsystems and instruments for use in planning software
- Socialized operations and software concepts with large, diverse audiences of scientists and engineers to solicit buy-in on planning software and earn trust with customers
- Received 6 NASA/JPL awards (3 team, 3 individual) for achievements in technical excellence and innovation

Software Systems Engineering Intern, AMMOS (contracted via Raytheon) — *Apr 2019 – Dec 2019*

- Collaborated in designing a Java-based multi-mission framework for modeling spacecraft activities and subsystems
- Developed a generic discrete event simulation engine for predicting the impacts of activity plans on spacecraft state

Mission Planning Intern, Europa Clipper — *May 2018 – Aug 2018*

- Migrated >16-hour-long mission simulation, analysis, and data delivery workflows from local compute to parallelizable cloud-based CI pipelines with Docker and Jenkins
- Created interactive 3D visualization tool for overlaying per-flyby and cumulative science instrument coverage maps on Europa's surface using Google Earth and Python

Texas Spacecraft Laboratory, UT-Austin — Austin, TX

Project Manager, Seeker Vision — *Oct 2017 – May 2018*

- Designed embedded computer vision system for use on NASA's Seeker-1 CubeSat mission
- Directed 15 student development team through successful NASA technical reviews and flight software delivery
- Trained neural networks to intelligently detect, recognize, and localize a nearby spacecraft with >95% accuracy at >1 Hz in a compute-constrained space environment

Mission Manager, ARMADILLO CubeSat — *Mar 2017 – Nov 2017*

- Built ground segment RF hardware and operations software to support test activities and mission operations for the AFRL-funded ARMADILLO CubeSat mission
- Restarted dormant small-satellite laboratory and scaled from 5 founding members to >50 student engineers

Skills

Languages: *Proficient* - Java, Python | *Familiar* - TypeScript, Go (Golang), SQL, C++, Bash, MATLAB
AWS: CDK, Lambda, API Gateway, DynamoDB, SNS, SQS, S3, EventBridge, SageMaker, Glue, Athena, QuickSight
Libraries: JUnit, Guava, Dagger, Jupyter, Pytest, NumPy, SciPy, Matplotlib, Pandas, SPICE, OpenCV
Developer Tooling: Git, Docker, Jenkins, Gradle, Poetry, CodeCommit, CodeBuild, MacOS, Linux
Aerospace: Modeling & Simulation, Mission Operations, Spacecraft Systems, Automated Planning, Flight-Like Testing
Soft Skills: Public Speaking, Technical Leadership, Technical Writing, Project Management, Mentorship

Education

The University of Texas at Austin — Austin, TX

Bachelor of Science in Aerospace Engineering — *Aug 2015 – Dec 2019*

Engineering Honors Program | GPA: 3.8