Andrew Garcia

Pasadena, CA, USA
agarcia.software@gmail.com ◇ (361)-442-0594 ◇ https://andrew-garcia.my.canva.site/

Summary

Experienced software engineer with 5+ years in developing high-performance C++ and Python tools for real-time systems, test automation, and hardware-in-the-loop (HITL) environments. Proven ability to deliver novel software capabilities in customer-facing roles within aerospace and defense. Holds a Master's in Computer Engineering and an active Top-Secret clearance.

Skills

Languages: C++, Python, C#, Rust (familiar), MATLAB, Bash, JavaScript, SQL, HTML, CSS
Infrastructure & Tooling: Linux, Git, CI/CD, SQLite, Shell Scripting, Agile, Jira, DevSecOps, Telemetry Systems
Simulation & Real-Time: Hardware-in-the-Loop (HITL), Real-Time Systems, 3D Modeling, Unity, Blender
Other: Image Processing, Video Rendering, UI/UX Design (Figma), AI/ML Algorithms, Version Control

Professional Experience

Northrop Grumman Space Systems Azusa, CA
Principal UX Software Engineer 03/2025 - Present

- Collaborated within a SAFe Agile team to support new factory planning by developing VR software that effectively mitigated risks for the I&T team.
- Designed and developed an interactive UI with video playback capabilities using C# in Unity.
- Worked with a cross-functional team to simulate factory scenarios during planned development, providing valuable feedback and recommendations.
- Recorded and edited videos of simulated factory scenarios for presentation at shareholder meetings, facilitating informed decision-making and approval.

Northrop Grumman Space Systems Azusa, CA
Principal Software Engineer - Test Mission Analyst 10/2024 - 03/2025

- Developed and deployed Bash and Python tools automating daily telemetry workflows, reducing manual labor by hours per day.
- Built GUI-based visualization tools in C++ and Python for payload image processing, ground testing, and Non-Uniformity Correction.
- Designed telemetry/image database (SQLite) with front-end tools for data exploration—demonstrating full-stack infrastructure experience.
- Supported Hardware-in-the-Loop (HITL) payload testing (TVAC) by verifying image pattern accuracy under real-time conditions.

Northrop Grumman Space Systems Azusa, CA
Software Engineer 06/2020 - 09/2024

- Built performance tools (Line of Sight Analyzer, Image Visualizer, etc.) using Python and C++ for analyzing satellite sensor behavior in orbit.
- Led design and prototyping of embedded spacecraft interface units—balancing software-hardware integration in autonomous platforms.
- Authored robust documentation and training materials to enable long-term tool reuse across engineering teams
- Lead procurement manager for ordering necessary electronic components to develop a prototype spacecraft interface unit and power control unit.

Education

Virginia Polytechnic Institute and State University Online
Master of Engineering, Computer Engineering 09/2021 - 05/2024

Texas A&M University - Corpus Christi Corpus Christi, TX
Bachelors of Science, Electrical Engineering 09/2016 - 12/2019