Bryce Verberne

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EDUCATION

B.S, Computer Science Aug 2023 - Dec 2025
Arizona State University, Tempe, AZ 3.68 GPA

A.S, Computer Science Aug 2021 - May 2023
Scottsdale Community College, Scottsdale, AZ 3.91 GPA

SKILLS

Programming Languages: C/C++, Python, Java, JavaScript, Assembly, Bash
Tools/Technologies: Git, GitHub, Jira, GDB, Docker, Linux, RTOS, Visual Studio, Microcontrollers, Siemens NX
Engineering & Management: Agile Methodologies, Scrum, Unit Testing, Debugging, Software Design, Risk Management, Budgeting

EXPERIENCE

Northrop Grumman: Incoming Software Engineering Intern Jul 2025 – Aug 2025

- Set to join the Missile Systems team in Colorado Springs, contributing to advanced aerospace initiatives.
- Currently undergoing the process for a Secret Security Clearance.

Sun Devil Satellite Laboratory Club Apr 2024 – Present

ASCEND: Deputy Software Lead (Incoming Software Lead)

- Co-led a 10-member software team using Scrum, Jira, and GitHub to design and develop flight software (C++), ground software (Python), and data processing tools for a NASA-funded high-altitude balloon project.
- Established weekly sprints and retrospectives, identified bottlenecks, and mentored team members to drive continuous advances.
- Refactored the legacy codebase to an OOP design in C++, streamlining new hardware integration for robust flight operations.
- Reduced data footprint by 67% by migrating from CSV-based logging to a packet-based system, improving storage efficiency.
- Enhanced SPI flash memory by designing onboard file system and payload commands for data management.
- Built a packet decoder for a multi-threaded Python ground software pipeline, enabling high-throughput real-time data processing.

Coconut CubeSat: Software Engineer

- Worked on a 7-member team to design and develop the software system for the Coconut CubeSat, a 1U satellite project.
- Developed and debugged real-time software on ARM Cortex microcontrollers using C and RTOS on Ubuntu.
- Wrote Python scripts to parse and route telemetry packages, facilitating satellite-to-ground communication.
- Integrated OpenC3 into ground software for hardline and radio communication using CCSDS protocols.
- Managed serial interfaces (UART, I2C, SPI) and enabled LoRa radio communication to support various communication channels.

NASA L'SPACE MCA Jan 2024 – Apr 2024

Deputy Project Manager

- Co-led a team of 12 to design a conceptual Mars rover, overseeing milestone reviews including MCR, SRR, MDR, and PDR.
- Spearheaded programmatic sub-team, tracking budget, schedule, and risks.
- Facilitated monthly iterative phases with specific goals and deliverables, conducting regular reviews and incorporating feedback.
- Bridged Science and Engineering teams for effective cross-functional collaboration and risk management.

Computer Hardware Engineer

- Developed the Command and Data Handling (CDH) Subsystem of a conceptual Mars rover design, entailing the telecommunications, data computing, and software architecture subassemblies.
- Developed lower-level requirements and conducted trade studies to select sub-components.
- Identified risks, implemented redundancy, and determined mass, volume, and power specifications.
- Created software architecture flowchart and developed manufacturing and procurement plans.

PROJECTS

SatComm Optimizer May 2024 – Present

- Collaborated with a Business Analytics major from CSUN to enhance and visualize satellite communication network algorithms.
- Visualized real-time positions and capabilities of Iridium-NEXT satellites using CesiumJS and SGP4 libraries with TLE data.
- Integrated Python-driven data with JavaScript to depict satellite interactions with ground stations and inter-satellite links.
- Developing Python algorithms to optimize satellite communication processes, feeding performance data into visualizations.