

# Bryce Verberne

US Citizen • bryceverberne.com • linkedin.com/in/bryce-verberne • github.com/BryceVerberne

## EDUCATION

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### B.S, Computer Science

Arizona State University, Tempe, AZ

Aug 2023 - Dec 2025

3.81 GPA

### A.S, Computer Science

Scottsdale Community College, Scottsdale, AZ

Aug 2021 - May 2023

3.91 GPA

## SKILLS

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**Programming Languages:** C/C++, Python, Java, JavaScript, Assembly, Bash

**Tools/Technologies:** Git, GitHub, GDB, Docker, Linux, RTOS, Visual Studio, Microcontrollers, Siemens NX

**Engineering & Management:** Agile Methodologies, Unit Testing, Debugging, Software Design, Risk Management, Budgeting, V&V

## EXPERIENCE

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### Sun Devil Satellite Laboratory Club

Apr 2024 – Present

#### ASCEND: Deputy Software Lead

- Co-led a 6-member team to design and develop the software system for ASCEND, a NASA-funded high-altitude balloon project.
- Organized and hosted weekly sessions to keep the team aligned on project goals and ensure continued progress.
- Refactored legacy codebase to an OOP design in C++, enhancing modularity and enabling seamless integration of new hardware.
- Upgraded sensor interfaces to the fastest communication protocols in C++ and integrated new hardware.
- Coordinated with telemetry, electrical, and mechanical sub-teams to ensure system integration and functionality.

#### 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.
- Followed Agile Methodologies with cross-functional collaboration between software, electrical, and mechanical sub-teams.

### 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.

### Generation Tech Support: Technical Instructor

Oct 2022 – Jan 2023

- Developed and delivered computer science education to classes of up to 30 primary and secondary students.
- Managed classroom dynamics, ensured safety of all students in my care, and coordinated with staff for activities.

## PROJECTS

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### 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.