Bryce Verberne

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EDUCATION

B.S, Computer Science Aug 2023 - Dec 2025
Arizona State University, Tempe, AZ 3.81 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, Docker, Linux, RTOS, Visual Studio, Microcontrollers, Siemens NX
Engineering & Management: Agile Methodologies, Risk Management, Budgeting, Software Design, Verification & Validation (V&V)

EXPERIENCE

Sun Devil Satellite Laboratory Club: Software Engineer Apr 2024 – Present

- Collaborated on the development of software for the Coconut CubeSat, a 1U satellite relaying data from remote sensors to ASU, in partnership with NASA.
  - 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 iterative phases, regular reviews, and cross-functional collaboration between software, electrical, and mechanical sub-teams.
- Contributed to the development of software and telemetry systems for ASCEND, a NASA-funded high-altitude balloon project.

NASA L'SPACE MCA Jan 2024 – Apr 2024

Deputy Project Manager:

- Co-led 12-member team to design a conceptual Mars rover, overseeing milestone reviews including MCR, SRR, MDR, and PDR.
- Managed 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 for the CDH Subsystem.
- Identified risks, implemented redundancy, and determined mass, volume, and power specifications for the CDH Subsystem.
- Created software architecture flowchart and developed manufacturing and procurement plans for the CDH Subsystem.

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 and mentored young learners, preparing them for future challenges in technology.

PROJECTS

SatComm Optimizer May 2024 – Present

- Collaborated with a Business Analytics major from CSUN to enhance and simulate satellite communication network algorithms.
- Visualized real-time positions and capabilities of Iridium-NEXT satellites using CesiumJS and SGP4 libraries with TLE data from CelesTrak.
- 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.