Tyler Nielsen

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SUMMARY

A Junior Computer Systems Engineering student with an interest in aerospace and embedded systems. Strong foundations in C/C++, microcontroller development, and digital circuit design. Has project experience in real-time operating systems, communication protocols, and low power radio. Eager to contribute technical knowledge and problem-solving skills to innovative projects across computer engineering fields.

EDUCATION

Bachelor of Science in Engineering, Computer Systems Engineering Graduating May 2026
Arizona State University, Tempe, AZ 4.0 / 4.0 GPA
Relevant Coursework: Embedded Microprocessor Systems, Distributed Software Development, Operating Systems, Design of Digital Systems

SKILLS

Development Tools and Hardware: Linux, Git/GitHub, Jira, FreeRTOS, Pico C/C++ SDK, Vivado, ARM Cortex
Programming: Python, C, C++, Java, MIPS Assembly, Verilog
Organizational: Project Management, Peer Tutoring, Technical Writing

PROFESSIONAL EXPERIENCE

Tutor.com: Intermediate Tutor February 2024 – Present

- Tutoring high school and undergraduate students in math and computer science concepts, including Calculus, Linear Algebra, C, C++, Java, and Python.

Brigham Young University: Undergraduate Research Assistant April 2023 – July 2023

- Implemented Python scripts for satellite footprint simulations for the GLOWS satellite from BYU's Microwave Earth Remote Sensing Lab using custom Python libraries.

Brigham Young University: Teaching Assistant September 2022 – December 2022

- Tutored students and assisted instructors for MATH 213 Linear Algebra, including holding regular, in-person office hours and handling student concerns.

PROJECTS

Sun Devil Satellite Laboratory Coconut CubeSat Spring 2024 – Present
Software Team Lead - Led a team of 7 to create flight software for a store-and-forward satellite using FreeRTOS and the Pico C/C++ SDK in partnership with NASA's CubeSat Launch Initiative:

- Organized development, ran in-person meetings, and helped onboard new members.
- Developed a LoRa radio task, packet definitions, command responses, and I2C device drivers.

ASU ASCEND High-Altitude Balloon Spring 2024 – Present
Software Team Lead - Led a team of 10 to develop dual-core, modular flight software in C++ and multithreaded ground software in Python for ASU's high altitude balloon payload:

- Managed organization GitHub for collaboration, progress tracking, and automation with GitHub Actions.
- Presented project conclusions and development decisions at the Arizona Space Grant Consortium.

BYU Spacecraft Club SatNOGS Fall 2022 – Summer 2023
Deployed a Raspberry Pi based omnidirectional satellite ground station to add the SatNOGS network:

- Built and installed an omnidirectional parasitic Lindenblad UHF antenna.
- Configured and deployed the SatNOGS disc image and added custom scheduled Python scripts to improve reliability.

BYU Spacecraft Club PocketQube High-Altitude Balloon Spring 2023
Project Lead - Organized a team of 10 to build a first physical iteration for a PocketQube micro satellite and flew it on a high-altitude balloon:

- Directed and supported sub-team leaders as well as running the Radio sub team.
- Managed purchasing and project budget.
- Organized official club trip for launch and recovery of the high-altitude balloon.