Cameron Wolff

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Education

California Polytechnic State University (Cal Poly) San Luis Obispo, CA
Master of Science in Computer Science *06/2026*

California Polytechnic State University (Cal Poly) San Luis Obispo, CA
Bachelor of Science in Computer Science *06/2025*

Experience

Research Associate Intern 06/2024 – 09/2024
BMSIS Young Scientist Program at NASA Ames Research Center

- Designed data pipeline to take Plotly graph from an R script to Django to a HTML client, enabling users to dynamically update visualizations stored on the server.
- Ported genetic data graphs from static PNG to interactable Plotly webpages, enabling Scientists to explore data.
- Developed and deployed full stack web application to Ames's servers, enabling integration with the NASA GeneLab Visualization Portal.
- Presented live web app demo virtually to end users, NASA Ames Data Processing staff.

Undergraduate Research Intern 11/2022 – 10/23
SDO Exploration and Research Community for Heliophysics

- Developed an AI search engine that enables content-based image retrieval of solar images for astronomers.
- Followed unit test driven development, used AGILE sprints and mob programming for fast paced collaborative development.
- Trained a simple siamese neural network on the SDO/AIA satellite dataset, ensuring astronomers could see accurate search results.

Volunteer Research Assistant 06/2023 – 09/2023
Directed Acyclic Graphs Project through the NASA Open Science Data Repository AWG

- Researched using AI to generate DAGs for modeling astronaut medical risks, enabling biologists to understand human health in space.
- Presented research on effectiveness of MMHC algorithm at American Gravitational and Space Research Conference.

Projects

Software Lead | Cal Poly Space Systems — *C++, Linux, Git, ROS2, micro-ROS, esp32* 03/2024 – Present

- Designed and presented flight software architecture for Altitude Determination and Control System to SpaceX engineers for external feedback.
- Designed and implemented distributed flight and ground software, moving rocket data to graphical visualizer.
- Lead team during summer through development of new flight computer and flight software OS, enabling re-usability for future rockets.

Personal Mobile Robot | *C++, Python, Linux, Git, ROS2, micro-ROS, Rviz, Servos* 07/2023 – Present

- Built Raspberry Pi robot, controlled wirelessly by a Linux base station with camera feed for remote operation.
- Calculated and implemented differential drive kinematics for velocity control and odometry, enabling 3D visualization of movement.
- Iterated after real world testing, moving to ackermann kinematics (car controls) for greater stability at speed.

Rover Software Developer | SC Robotics — *Python, C++, Linux, Git, ROS2, OpenCV, PID* 09/2022 – 02/2024

- Developed camera calibration, distance estimation, and rover controller for autonomous driving to ArUco markers.
- Designed robust and scalable backend for arm and end-effector, creating link between physical and simulated twin.
- Obtained operational insight, piloting the rover through the URC 2023 finals as the only community college team.
- Mentored new students through workshops on ROS2 and Python, ensuring the success of future teams.

Technical Skills

Languages: Python, C/C++, Java, R, JavaScript, ARM Assembly, HTML/CSS, XML, JSON, URDF
Frameworks: Django, unittest, ROS2, micro-ROS, JavaFX, JUnit, JQuery
Developer Tools: Git, Linux server, VIM, VS Code, PyCharm, IntelliJ, Jupyter, Docker, Python venv, conda, Gazebo
Libraries: pandas, NumPy, Matplotlib, Plotly, OpenCV, Streamlit, Scikit-learn, Pytorch Lightning