

Gavin Vander Veen

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EDUCATION

Moberly Area Community College | Columbia MO 2023 - 2025
General Associates **GPA: 4.0/4.0**

Missouri University of Science & Technology | Rolla MO 08/2025 - Ongoing - 12/2028
B.S. Electrical Engineering and B.S. Computer Engineering **GPA: 4.0/4.0**

EXPERIENCE

Mars Rover Design Team (MS&T Design Team) | Rolla MO

Science Electrical Lead

6/26 - Present

- Leading the architecture of all custom electronics and PCB for the 2027 rover including: Science Board (primary controls pcb), Autofluorescence Driver & LED Board, UV-Vis Spectrometer Photodiode Board and LED, and the Gantry Motor Controller Board.
- Leading the implementation and structure of all C based STM32 embedded software.
- Overseeing Kicad PCB layout and schematic design reviews, code reviews, and general debugging.
- Coordinating and mentoring Science Electrical members through the full system design process of planning, prototype design, testing, redesign, and fill, cross-disciplinary implementation.
- Contributed to multiple aspects of custom C abstraction library, fueling the transition to STM32 based architecture.

Science Electrical Member

8/25 - 6/26

- Designed PCB schematics and layouts using Kicad for the Raman Spectrometer and CMOS Linear Sensor boards.
- Soldered and wired all produced electronics for the instrumentation gantry accounting for interdisciplinary integration.
- Wrote CAN actuation control, time of flight sensor reading, high speed clocking, ethernet telemetry, and general system controls through C++ embedded software for the Teensy microcontroller utilizing Visual Studio Code.
- Implemented ADC integration for CMOS Linear Sensor with high speed data acquisition and transfer (~> 20MHz) utilizing SPI interfacing.
- Utilized a variety of PCB and breadboard circuit debugging tools (oscilloscope, software debugger, and multimeter).
- Designed a variety of software tools for instrumentation testing and instrumentation controls integrated into existing control station software which utilizes CSS, HTML, and Blazor C#.
- Repaired and implemented requested changes to the entire science electrical system. Additionally, recalibrating humidity and temperature sensors to desert conditions. All performed in a high-pressure competition environment (University Rover Challenge) contributing to a world championship finish against 38 teams from 11 countries.

Socket Telecom | Columbia MO

Programming Intern

6/25 - 8/25

- Developed and debugged HTML, CSS, Javascript, PHP, and SQL based front and back-end components for web based tools and applications using a Visual Studio Code ssh development environment with GitLab version control.
- Developed regular billing notification and order tracking tools using SQL and PHP.
- Investigated and fixed reported software issues, such as incorrect permissions management, and false notifications.
- Communicated with individuals from other technical and non-technical areas in order to develop requested features and fix requested issues.

HONORS & ACTIVITIES

- Kummer Vanguard Scholars Program & Missouri S&T Honors Academy 8/25-Present
- Led Columbia Career Center, Skills USA Robotics Team to Competition 8/24-5/25
- URC Rover Competition 2026 World Champion 6/25
- Graduated High School with: Highest Honors, Presidents Excellence Award

SKILLS

Kicad	Git/Gitlab	VS Code	Visual Studio	Schematic Design	Layout Design
Sensors	SQL + PHP	C + C++	JS + HTML + CSS	Python	Technical Instruction
Technical Leadership	Documentation	I2C	SPI	CAN	UART