

Landon Buscher

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EDUCATION

University of Missouri – B.S. Computer Engineering

Expected May 2029 • Columbia, MO

3.921 GPA • Coursework: digital logic & FSM design, data structures in C, calculus, physics

FAA Private Pilot License

July 2025

Swiss French School

May 2026 - Present • Montreux, CH

TECHNICAL SKILLS

Languages C (bare-metal embedded) • Python (NumPy, matplotlib data analysis)

Embedded STM32 • SPI, I2C, USART • Timers & PWM • Clocks • Interrupts • Technical Documentation

Hardware Soldering • Prototyping • Schematics • Sensor integration • UAV fabrication

Analysis Sensor characterization and calibration • Noise and bias measurement • Allan variance analysis

Tools STM32CubeIDE, STM32CubeMX, STM32CubeMonitor

PROJECTS

Inertial Sensor Characterization

- Wrote a Python analysis to convert raw gyroscope data to physical units, integrate to find angle, and characterize bias, noise, and drift; showed that the uncorrected gyro drifts $\sim 22^\circ/\text{min}$ and reduced it to below $0.5^\circ/\text{min}$ with bias estimation
- Implemented an Allan variance analysis from scratch in NumPy to extract angle random walk, bias instability, and rate random walk; validated extracted coefficients against reference dataset
- Validated firmware sample-rate stability (loop timing, missed deadline detection) to ensure integration integrity

STM32F401 Flight Controller Firmware

- Writing a drone flight controller in C without the hardware abstraction layer (HAL), deriving all peripheral configuration and readings from reference manuals and datasheets.
- Authored a register-level SPI driver and brought up an IMU and barometer sharing the same SPI bus
- Sampled data at a fixed rate driven by timer interrupts, with data handling done outside ISR
- Wrote an ADC library to monitor battery voltage from the internal VBAT divider with VREFINT correction

EXPERIENCE

Engineering Intern – St. Louis University AirCRAFT Lab

Jun - Aug 2023 • St. Louis, MO

- Fabricated fixed-wing UAVs through composite shaping, molding, sanding, painting, and assembly in a graduate university research lab
- Developed a real-time computer vision program in Python and OpenCV to detect and classify hand gestures, enabling controller-free operation of small drones.

IT Security Intern – McCarthy Construction

May – Jul 2024 • St. Louis, MO

- Built a Python web-scraping dashboard to automate the collection of cybersecurity threat intelligence and compiled it into scheduled reports; briefed executives weekly on vendor risk
- Coordinated across 5 national teams to remediate multi-factor authentication risks on 6,000+ accounts nationwide

Bicycle Mechanic – Trailhead Bicycles

Nov 2022 – Aug 2025 • Ellisville, MO

- Assembled, diagnosed, and repaired bikes valued up to \$15,000; sold over \$65,000 in services and gear

LEADERSHIP

Group Commander – Air Force Junior ROTC

Jan – May 2025

- Senior cadet leader of a 100+ cadet corps, directly leading 12 cadet leaders across all program operations, training, and inspections; oversaw \$30,000+ in equipment; led unit to earn the Distinguished Unit award.

Founder & Captain – CyberPatriot Team

Mar 2024 – May 2025

- Founded my school's cybersecurity competition team, found a corporate sponsor, and coached it to a top 1% national finish amongst 700+ teams.

FBI Youth Leadership Program

Jun 2023 • Quantico, VA

- One of 62 students worldwide offered the opportunity to attend a week-long program by the FBI that taught lessons in leadership, communication, and other essential soft skills from prominent guest speakers

INTERESTS

IRONMAN Switzerland Finisher (2026) • Ultra-cycling • Photography • General aviation