

RILEY MCGREGOR

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SUMMARY

Computer Engineer and FAA-Certified Private Pilot with Instrument Rating, specializing in aerospace systems, avionics, and autonomous flight technology. Experienced in PCB design, assembly, and testing.

EDUCATION

San Diego State University — B.S. Computer Engineering (Expected May 2026)

Relevant Coursework: Embedded Systems, Microprocessors, Digital Circuits, Signals & Systems, Feedback and Control Systems, Senior Design (Autonomous Tailsitter Payload Aircraft)

TECHNICAL SKILLS

Programming & Hardware: C, C++, Python, ARM Cortex-M7, STM, ATMega, Teensy, Arduino, Raspberry Pi, I2C, SPI

Aerospace & Autonomous Systems: PixHawk 6X, ArduPilot, Mission Planner, QGroundControl, PX4, Extended Kalman Filters, Sensor Fusion, Real time Flight State Estimation, Fault Tolerant Sensor Logic

EDA & CAD: KiCAD, Altium Designer, EasyEDA, Fusion Electronics, Fusion 360, SolidWorks, Siemens NX

Instrumentation: Oscilloscopes, Logic Analyzers, Multimeters, Function Generators, Flight Data Logging

CERTIFICATIONS

FAA Private Pilot with Instrument Rating (2021)

FAA Part 107 Commercial Drone License (2025)

PROJECTS & EXPERIENCE

Electrical Engineer | RealSimGear | 2025 – Present

- Designed, tested, and debugged PCBs for FAA approved flight simulator hardware.
- Developed embedded firmware in C and C++ for STM and AVR microcontrollers.
- Built, debugged, and supported hardware through prototyping and production.

Avionics Team Lead and President | Autonomous Navigation & Control Systems (ANCS) | 2023 – Present

- Designed and developed main flight computer PCBs and firmware for fin controlled autonomous rockets.
- Used GNSS, LoRa, IMUs, and Barometers, for advanced Guidance Navigation and Control.
- Soldered and assembled custom flight controllers, wiring harnesses, and supporting electronics.

California Unmanned Aerial Systems Competition | Team Quetzal Lead and Pilot | 2025 - Present

- Configured and piloted a custom VTOL airframe, utilizing a Pixhawk 6X flight controller.
- Integrated a Jetson Orin Nano flight computer to execute complex autonomous missions using computer vision.
- Developed and deployed autonomous missions including object tracking, package handling, and race course navigation.

Vice President & Co-Founder | Akaflieg SDSU | 2023 – Present

- Helped students find opportunities to go on discovery flights.
- Set up community service events involved in the aviation community.
- Organized fly out events within the club.

Software Developer & Electronics Engineer | Sparkl Reusables | 2019 – 2021

- Developed an automated reusable container dispensing system.
- Engineered software and electronics for system optimization.

Remote Control Infrared Combat System | RC Aircraft Dogfighting Platform

- Designed a custom PCB enabling infrared communication between RC aircraft for interactive combat simulation.
- Implemented IR detection and communication logic with real time interception and manipulation of PWM motor control signals.

LEADERSHIP & INVOLVEMENT

Ground School Instructor | Air Force ROTC

Taught aerodynamics, navigation, and FAA regulations to US Air Force cadets.

Student RSO | College of Engineering Student Council SDSU

Represented undergraduate engineering students as an elected liaison to SDSU Engineering Department chairs.