

## 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.