

Brendan Rodriguez

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EDUCATION

University of Central Florida – UCF
B.S. Computer Engineering (May 2026)
Hispanic Heritage Foundation Scholar

Relevant Coursework:

- Software Engineering
- Data Structures & Algorithms
- Web Development

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, SQL, C, Swift
Frameworks & Development: React Native, Expo, SwiftUI, MVVM, REST APIs, JSON
Cloud & Data: AWS (Lambda, S3, CloudWatch), Supabase, MySQL, Terraform Enterprise
Developer Tools: Git, GitHub, Bitbucket, CI/CD, Docker, Jira, Linux
Testing & Practices: Unit & Integration Testing, Code Review, Agile/Scrum

EXPERIENCE

- Software Engineer Intern – Duke Energy, Charlotte, NC** **May 2023 – Aug 2023**
- Developed internal-facing web application using Infrastructure-as-Code (IaC) to manage AWS resources that support production.
 - Supported RESTful API integrations for internal application, improving data flow reliability and reducing manual process friction.
 - Performed CI/CD workflows using Git-based tooling, enforcing coding standards, automated testing, and repeatable deployments.
 - Upheld the Agile delivery processes to implement, test, and maintain application changes in collaboration with cross-functional team.
- Cybersecurity Architect Intern – Duke Energy, Charlotte, NC** **May 2024 – Aug 2024**
- Evaluated on-prem, AWS and Azure environments to map data flows and security controls across a hybrid cloud landscape.
 - Analyzed cross-business-unit workflows and identified a 32.6% process bottleneck to reduce backlog review pipelines.
 - Demonstrated forward-thinking PQC initiative and emerging cryptographic threat implications to executive stakeholders.
 - Coordinated cross-site tours of on-prem data centers and critical infrastructure facilities to support security architecture review efforts.
- Undergraduate Researcher – DRACO Lab – UCF, Orlando, FL** **Aug 2024 – May 2026**
- Performed hands-on hardware exploitation using ChipWhisperer to extract cryptographic keys from embedded targets.
 - Detected workload anomalies across compute architectures using power and timing signals.
 - Utilized automated pipelines (perf, NumPy, Pandas) for feature extraction, anomaly detection, and integrating benchmark results.
 - Applied ML/AI techniques (HuggingFace models) to classify security-relevant behavioral signals from hardware performance counters.
- Senior Capstone Project Manager – Lockheed Martin, Orlando, FL** **Aug 2025 – May 2026**
- Ensured only authorized ground-control components can issue flight or mission commands.
 - Preserved integrity of mission, command, position, and telemetry data.
 - Implemented secure UDP/TCP MAVLink communications between distributed components on Ubuntu Linux.
 - Applied Agile practices in Jira to coordinate a 6-person cross-functional team through sprint cycles.

PROJECTS

- VITALS – Agentic Multi-Drone Search and Rescue (SAR) Ground Control Station** **Fall 2025 – Spring 2025**
- Resolved RFD900+ and RFD900x interoperability issues by standardizing telemetry firmware and cabling for Pixhawk 2.4.8 controllers.
 - Developed and tested Python MAVLink UDP/TCP tooling linking UAVs, Ground-Control Software, and an NVIDIA Jetson Nano.
 - Performed hardware-in-the-loop drone testing with Jetson Nano to validate end-to-end telemetry and command-and-control behavior.
- ChipWhisperer Nano – AES-128 Side-Channel Security Assessment** **Summer 2026**
- Examined power traces to identify instruction and data-dependent leakage in embedded targets.
 - Applied Sum of Absolute Differences and Dynamic Time Warping methods to resynchronize traces affected by timing variation and jitter.
 - Evaluated CPA workflows from Advanced Encryption Standard (AES), connecting measured leakage to key-byte hypothesis ranking.
- Independent Mobile & Cloud Application Portfolio** **Spring 2026 – Present**
- Shipped Repello, a React Native/Expo strength-training app, to Apple app Store using TypeScript, Supabase, PostgreSQL, and Zustand.
 - Developed Simulisten, a SwiftUI/MVVM dual-audio player app, and iterated through TestFlight releases with 20+ beta testers.

CERTIFICATIONS & ACHIEVEMENTS

AWS Skill Builder (2026) · Terraform on AWS (2023) · Hacking for Defense (2023) · Principal Investigators & Research (2022)