

# Hayden Hargreaves

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Software Engineering student with hands-on experience building full-stack applications, backend services, and self-hosted infrastructure. Seeking a Software Engineering role to apply backend and cloud skills to real-world systems.

## Education

### Embry-Riddle Aeronautical University

Prescott, AZ

Bachelor of Science: Software Engineering. GPA: 4.0

Expected May 2028

**Relevant Coursework:** CS I/II, Data Structures and Algorithms, Software Principles, Software Construction.

**Involvement:** IEEE President, Eta Kappa Nu President and Tau Beta Pi Voting Member.

## Technical Skills

**Languages** Go, C#, JavaScript/TypeScript, Python, SQL

**Backend** Gin (Go), .Net, REST API Design, PostgreSQL, Query Optimization, MVC Architecture

**Frontend** React, HTMX, Tailwind CSS, CSS Architecture, Component-Based UI Design

**DevOps & Infra** Linux, AI tools, Docker, CI/CD Pipelines, Cloudflare, AWS IoT, Self-Hosted Infrastructure

## Professional Experience & Projects

### Poppin' Jobs, Full Stack Software Engineer

Mar 25 – Current

- Fixed a performance issue in the job search engine by replacing per-job database queries with a single bulk query, reducing dozens of database hits per job to one and significantly improving response times for large search results.
- Led and designed an AI-powered resume builder from concept to production, collaborating with product stakeholders to define requirements and user experience flows.
- Incrementally replaced legacy code using a straggler-style migration approach, including a full cleanup of the CSS architecture into a cohesive, modular system.
- Authored a technical proposal and roadmap to modernize CI/CD infrastructure, transitioning from manual deployments to an automated pipeline leveraging Azure DevOps services with automated testing and Docker containerization.

### Gim – Terminal Text Editor, Personal Passion Project

Jan 26 – Current

- Architected a vim-like terminal text editor in Go using the Elm Architecture (BubbleTea), implementing a clean Model-Update-View pattern for predictable state management and testability.
- Designed a finite state machine to parse vim's composable command grammar, supporting count prefixes, operator-motion composition and text objects.
- Integrated syntax highlighting with a Treesitter engine powered by grammars and queries.
- Achieved 1900+ integration tests using Charm's teatest framework with functional option patterns for flexible test setup.
- Designed a multi-buffer editing system separating content from presentation, supporting buffer navigation, dirty-state tracking and lazy loading for efficient memory usage.

### AI-Powered Acoustic Drone Detection Network, Research Project Team Lead

Sept 24 – Aug 25

- Led a team of students in architecting a distributed IoT system of edge devices, implementing real-time acoustic processing and ML inference for autonomous drone detection.
- Built custom messaging protocol using MQTT for reliable, low-latency data streaming between edge devices and cloud infrastructure, ensuring 99%+ message delivery.
- Designed a cloud data pipeline on the AWS IoT platform with automated data ingestion, storage and analytics, enabling real-time monitoring and historical pattern analysis.