Fady Youssef

Austin, TX | itsfadyy02@gmail.com | linkedin.com/in/fadyyoussef08 | github.com/JustFady

Experience

Software Engineer, Tyr Laboratories – Austin, TX — Oct 2026 – Present

- Develop the flight control and ground-station software for Heimdall 2, Tyr's modular uncrewed aircraft.
- Engineered the ground station's Rust control service, the single MAVLink gateway between controller, HUD, Mission Planner, and the ArduPilot autopilot, with two-hand arming and forced-disarm safety interlocks.
- Designed a controller-first Qt/QML HUD for non-pilot operators and fixed a freeze by cutting per-refresh work 94% (5.2 to 0.3 ms), dropping CPU from 118% to under 60% and ending memory growth that had reached 2.4 GB.
- Delivered live 1080p aircraft-to-ground video with RTP retransmission, adaptive bitrate, and GPU decoding.
- Developed security hardening for the aircraft and ground-station embedded Linux images.
- Built the new 7-page company website (SvelteKit, Cloudflare) with unit, accessibility, and end-to-end tests in CI.

Teaching Assistant, Gonzaga University – Spokane, WA — Jan 2026 – May 2026

- Held 6 office hours a week for 64 Linux/DevOps students, debugging configuration, build, and code errors.
- Graded all assignments for Computer Organization and Linux/DevOps, from assembly programs to CI/CD pipelines.
- Helped design quizzes and exams, and wrote step-by-step troubleshooting guides for common setup problems.

Data Engineering Intern, Pangeon – Spokane, WA — May 2024 – Nov 2024

- Developed Python ETL pipelines to clean, validate, and standardize datasets for the company's data platform.
- Integrated AWS OpenSearch with EC2, fixing routing problems and improving query speed by 20%.
- Deployed containerized REST endpoints (Docker, API Gateway) for real-time inference on AWS Bedrock LLMs.

Projects

Universal Sensor Board – Senior Design Project in collaboration with Itron — Aug 2025 – Apr 2026

- Wrote C/C++ FreeRTOS firmware for an Apollo3 MCU to collect, process, and transmit environmental sensor data.
- Implemented HAL drivers for real-time SPI and I2C sensor communication and integrated the board's hardware.
- Validated sensor accuracy and real-time performance with J-Link debugging and embedded logging.
- Presented the system architecture and integration results at the Senior Design Expo (April 2026).

Phishing Awareness Training Platform — Mar 2025 – Apr 2025

- Created a Flask and Docker phishing simulation with tests and GitHub Actions CI, later moved to GitHub Pages.
- Designed the training around a realistic password-reset lure that never collects or stores credentials.

OurPL-Lang (Java Interpreter) — Apr 2026

- Built a Java interpreter for a small language with a hand-written lexer and recursive descent parser.
- Added closures and lexical scoping to its tree-walk evaluator, with JUnit tests for the lexer and parser.

Skills

Languages: C/C++ • Rust • Python • Bash • SQL • TypeScript • Java

Embedded & Systems: Embedded Linux • FreeRTOS • SPI/I2C • MAVLink/ArduPilot • Qt/QML • GStreamer • J-Link

Backend & Tools: Git • CMake • Docker • GitHub Actions • REST APIs • AWS (EC2, Lambda, API Gateway) • Cloudflare

Education

Gonzaga University — May 2026

- **Major:** Computer Science, B.S.
- **Concentration:** Software Security
- **Relevant Coursework:** Operating Systems, Computer Networks, Computer Organization, Applied Cryptography