Eli Perez

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Projects

Open-Source Mapping & Data Platform | Axum (Rust), Python, JavaScript Live Website | GitHub

- Architected and led the development of a full-stack, open-source geospatial platform for animal rights, scaling to serve **3,000+** monthly users.
- Engineered a high-performance RESTful API in Rust, to serve over **38,500** documented facilities to journalists, activists and researchers.
- Managed open-source development, collaborating with a global team of developers, securing a seed grant from the Pollination Project and crowd-funded donations from around the world.
- Developed Python ETL pipelines to aggregate, clean, and standardize data from dozens of disparate public sources.
- Drove project adoption through social media outreach, achieving over 100k views, mentioned in animal rights newsletters, and gained recognition from key organizations in the non-profit sector.

Full-Stack IoT Telemetry Platform | Embedded Rust (Bare-metal), Python GitHub

- Authored a bare-metal sensor driver in Embedded Rust (no_std) for the ESP32, and engineered a Python Flask API with SQL to ingest and persist high-frequency, real-time time-series data from the IoT device.
- Engineered a responsive JavaScript frontend, deployed on Cloudflare Pages, to visualize both live and historical time-series data on a dashboard.

8-bit RISC-V Inspired CPU | Rust, Custom Assembly Language GitHub

- Developed a complete computer-architecture toolchain from scratch in Rust, including a custom assembler, emulator, and VS Code extension for a novel 8-bit, Turing-complete ISA.
- Designed and implemented the 8-bit CPU from first principles, demonstrating a fundamental understanding of computer architecture and digital logic.
- Prototyped and simulated the final CPU design within a sandboxed logic-gate environment

Experience

Software Engineer Intern | Fish Defender (C3 Nonprofit) – Remote September 2025 – Present

- Engineering a full-stack, serverless mapping application to visualize fish-friendly dive locations for activists and researchers, with a Vanilla JS front end to visualize and filter data points on an interactive map.
- Developed a serverless backend on Cloudflare Workers to serve as a RESTful API that interfaces with the Google Sheets API.
- Collaborating directly with the nonprofit founder to gather requirements, define project scope, and manage the delivery timeline.

Education

Southwestern College | AS for Transfer, Computer Science & Mathematics Expected May 2026

Skills

- **Programming Languages:** Rust, Python, Javascript, TypeScript
- **Frameworks & Libraries:** Axum, Flask, Pandas, Selenium, Leaflet.js
- **Cloud & Database:** Cloudflare (Workers, Pages), SQL
- **Systems:** Embedded Rust (no_std)