

# ZACK NELSON

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Full-stack software engineer and U.S. Marine veteran experienced in building secure, performant web applications with React, FastAPI, and PostgreSQL. Skilled in local-first architecture, REST API design, and CI/CD automation. Proven ability to ship production-ready systems with strong code quality, analytics, and deployment pipelines.

## TECHNICAL SKILLS

**Languages:** Python, JavaScript, TypeScript, C++, SQL  
**Frontend:** React (Vite), Next.js, Tailwind CSS, Zod, Chart.js, react-virtuoso  
**Backend:** FastAPI, Node.js, REST APIs, GraphQL, Pydantic v2, API key auth  
**Databases:** PostgreSQL, SQLite, IndexedDB (local caching)  
**Tools/Platforms:** Docker, Git/GitHub, CI/CD (GitHub Actions, Render, Vercel), AWS (certification in progress)  
**Security Clearance:** Secret Security Clearance (Inactive, U.S. DoD)

## PROJECTS

### Job Radar

Next.js, FastAPI, PostgreSQL | [Demo](#) | [GitHub](#)

- Built full-stack job aggregator crawling Greenhouse ATS and curated GitHub feeds across 100+ companies; enforced entry-level filters and normalization rules
- Implemented FastAPI + PostgreSQL backend with ingestion metrics, CSV export, and admin endpoints; automated ingestion and deploys via multi-job **GitHub Actions CI/CD pipeline**
- Developed Next.js + Tailwind frontend with advanced filters, analytics dashboards, pagination, provider visibility toggles, and robust error handling

### Job Log

React, FastAPI, PostgreSQL | [Demo](#) | [GitHub](#)

- Built full-stack job tracker with **local-first, three-mode architecture** using sessionStorage + IndexedDB for offline resilience
- Designed **secure REST APIs** with header-based API key auth and dotenv-managed secrets for safe public read access
- Achieved high-performance UX with **react-virtuoso virtualization**, memoized selectors, and Zod schema validation
- Added **analytics dashboards** and telemetry endpoints tracking per-mode metrics, trends, and CSV/JSON export tools
- Deployed with **Pytest + Vitest test suites** and multi-job **GitHub Actions CI/CD pipelines** for automated builds and tests

### Commit Companion

Python | [PyPI](#) | [GitHub](#)

- Published Python CLI on PyPI (1,000+ downloads) that integrates with Git to auto-generate commit messages, boosting developer consistency
- Packaged with Flit and Git hooks, applying modern Python packaging and seamless Git integration

## EXPERIENCE

### Software Engineer (Contract)

Jan 2025 – May 2025

*Cascade Stream Solutions*

*Santa Rosa, CA*

- Collaborated with 3 engineers and client stakeholders to deliver YOLOv8 segmentation pipeline for hydrological modeling across 18k+ drone images
- Trained and tuned YOLOv8 models with accuracy gains over baseline; developed augmentation and cross-validation workflows to improve generalization
- Automated hydrological data extraction, reducing manual labeling needs and lowering reliance on costly geospatial platforms

### Math Tutor

2023 – 2024

*Private Tutoring*

*Santa Rosa, CA*

- Tutored 10+ students in algebra and calculus, delivering 100+ hours of personalized instruction and strengthening communication skills

### Military Police

2013 – 2018

*U.S. Marine Corps*

*Okinawa, Japan & South Carolina*

- Led and mentored 70 Marines with zero mission failures in high-pressure environments
- Managed systems safeguarding \$4M+ in assets with 100% accountability through disciplined processes and compliance

## EDUCATION

### B.S. in Computer Science, Magna Cum Laude

*Sonoma State University, May 2025*

GPA: 3.78 | Major GPA: 3.96

*Rohnert Park, CA*