

ZACK NELSON

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SUMMARY

Full-stack software engineer with experience building and deploying web apps, developer tools, and ML models. Skilled in React, FastAPI, and PostgreSQL, with recent projects including a job tracker, AI-powered Git tool, and drone-based object detection system. Passionate about solving real problems with clean, scalable code and thoughtful design.

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, TypeScript, SQL
Web Development: React (Vite), FastAPI, Tailwind CSS, Axios, Node.js
Databases: PostgreSQL, SQLite
Machine Learning: PyTorch, TensorFlow, NumPy, Pandas, OpenCV
Tools & Platforms: Git, GitHub, VS Code, Jupyter, Chart.js, Render, Vercel, Docker (familiar)

ADDITIONAL CREDENTIALS

Secret Security Clearance (Inactive): U.S. Department of Defense

PROJECTS

Job Log

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

- Built a secure REST API with API key protection and integrated it into a React frontend using Axios
- Enabled CSV export, tag/status filtering, and a 7-day trend analytics dashboard using Chart.js
- Created a responsive UI with Tailwind CSS; deployed to Vercel (frontend) and Render (backend + PostgreSQL)

Commit Companion

Python, OpenAI API | [GitHub](#)

- Developed a CLI tool that uses OpenAI's GPT API to auto-generate Git commit messages from staged diffs
- Supports Conventional Commits, tone customization, and environment-variable-based config for flexible use
- Includes Git hook installer for seamless automation in local Git workflows

Aerial Object Detection

YOLOv8, Python | [GitHub](#)

- Developed a YOLOv8-based object detection model for drone imagery classification used in environmental impact assessments
- Configured CUDA-based parallel processing on a dual-GPU server via SSH, accelerating PyTorch training
- Labeled drone imagery using QGIS and CVAT to support model training

EXPERIENCE

Math Tutor

2023 – 2024

Private Tutoring

Santa Rosa, CA

- Tutored algebra to calculus, emphasizing structured problem-solving and logic, improving average scores by 31%
- Designed exercises that mirrored debugging and algorithmic thinking in software development

Photographer

2018 – Present

Freelance

Santa Rosa, CA

- Specialized in portrait photography with an emphasis on lighting, composition, and advanced editing techniques
- Mentored 30+ aspiring photographers globally, strengthening technical training and communication skills

Military Police

2013 – 2018

U.S. Marine Corps

Okinawa, Japan & South Carolina

- Supervised 70 personnel and managed logistics for assets valued at \$4M+ with zero losses
- Oversaw 23 firing ranges and ensured compliance with safety regulations across 600,000+ rounds

EDUCATION

Bachelor of Science in Computer Science, Magna Cum Laude

GPA: 3.76 | Major GPA: 3.95

Sonoma State University, May 2025

Rohnert Park, CA