Zack Nelson

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SUMMARY

Full-stack software engineer with experience building and deploying web apps using React, FastAPI, and PostgreSQL. Skilled in creating responsive UIs, secure REST APIs, and analytics dashboards. Passionate about solving real-world problems with clean, scalable code and continuous learning.

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]
- Designed and deployed Job Log, a full-stack application to manage and analyze job applications, used personally and shared as a live demo
- Implemented secure REST API with API key-based write protection and Axios-based frontend integration
- Enabled CSV export, tag/status filtering, and analytics dashboard with Chart.js (7-day trends)
- Built responsive, modern UI using Tailwind CSS; deployed frontend on Vercel and backend on Render with persistent PostgreSQL

Aerial Object Detection   YOLOv8, Python | [GitHub]
- Developed a YOLOv8-based object detection model for Cascade Stream Solutions to classify bodies of water, photosynthetic vegetation, and paved areas in aerial drone imagery for environmental impact assessment
- Contributed to model training by organizing annotated drone imagery; collaborated with teammates using QGIS and CVAT to label land cover types
- Configured CUDA-based parallel processing on a dual-GPU server via SSH, accelerating PyTorch training through multithreading and resource scheduling

The Haunting Symphony: Madness Awaits   Unreal Engine 5 | [Demo] | [GitHub]
- Led development of procedurally generated environments and AI-driven enemies using Unreal Engine 5 and C++
- Engineered survival systems including a madness meter, 3D spatial audio, and inventory-based resource management

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*