

# Zack Nelson

Santa Rosa, CA | 707-360-8837 | [Email](#) | [Portfolio](#) | [LinkedIn](#) | [GitHub](#)

## 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*