

David Cruz

Full-stack Software Development Engineer (Rust, Node.js, C++) seeking position in Software Engineering

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Education

B.S. in Computer Engineering

September 2022 - June 2026

California Polytechnic State University, San Luis Obispo

Expected Graduation: June 2026

Microcontrollers **Operating Systems** **Computer Graphics (Graduate)** **Software Engineering** **Digital Design**

- Engineered a spec-compliant RISC-V CPU Core in **SystemVerilog** with **Vivado** synthesized onto Artix **FPGA**
- Applied **Agile methodologies** using **GitHub Projects** for a sprint based **software development life cycle**
- Built interactive touchscreen graphical interfaces and games from scratch in **C** on **STM32** microcontrollers, interfacing via **UART** and **SPI** according to hardware specifications

Experience

Founder & Developer @ Personal Social Platform - Remote

May 2025 - Present

- Built production-grade social media platform with **microservice architecture** and **Docker Swarm** deployment, designed to scale for thousands of concurrent users
- Implemented **observability** and monitoring infrastructure via grafana, opentelemetry, **prometheus**
- Secured networking via **wireguard** for admin and **nginx** secured with rate-limiting for DOS protection
- Authored **Architecture Decision Records (ADRs)** and design rationale, promoting quality architecture for **production stability** and resilience

Software Engineering Intern @ Devscribe - San Luis Obispo, CA

June 2025 - September 2025

- Developed **backend authentication**, **OAuth** integration, **end to end testing**
- Established **developer tooling** and **software documentation**, improving team-oriented workflow efficiency
- Created cutting-edge **live JSX editor** comparable to proprietary alternatives, published as open source on **npm**

Software Developer @ JC Cobra Guard - Los Angeles, CA

April 2022 - May 2024

- Deployed **full-stack applications** using software frameworks such as **TailwindCSS**, **Next.js**, **Node.js**, and **React**, delivering scalable web solutions for **production environments**
- Developed **serverless clock-in applications** with **AWS** and **Twilio**, improving employee convenience and streamlining workforce management processes
- Mitigated automated attacks via rate-limiting, IP reputation middleware, and abuse-tolerant architecture

Projects & Research

- Developed a RISC-V assembler and simulator with **Rust** providing computer architecture educational value
- Created programming language **compilers** in **Rust** and **TypeScript** using static analysis and **code generation**
- Engineered extensible, ECS based game engines with **C++/OpenGL** and **Rust/WGPU**
- Built AI agent framework with **Bun/TypeScript** using **llamafire** and BNF constraints for reliable tool calling

Skills

Languages & Core

- **Rust**, **C#**, **Lua**, **C**, **C++**, **Java**
- **JavaScript**, **TypeScript**, **HTML**
- **Windows**, **Linux**, **Python**
- **SystemVerilog**, **Tcl**, **CSS**

DevOps & Development

- **Git**, **GitHub Actions**, **Docker**
- **Agile Methodologies**, **CI/CD**
- **Llama.cpp**, **Docker Compose**
- **Cloudflare**, **AWS**, **Azure**

Web & Integration

- **Tailwind**, **React**, **Node.js**, **Postgres**
- **Nginx**, **Redis**, **Grafana**, **Prometheus**
- **Next.js**, **Express**, **Koa**, **Astro**
- **Jest**, **Playwright**, **Vitest**