

Erdaifu (Carl) Luo

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EDUCATION

- University of California, Berkeley** May 2028
BS, Applied Mathematics & BA, Computer Science GPA: 3.97
- **Relevant Coursework:** Abstract Linear Algebra, Discrete Mathematics and Probability Theory, Intro to Abstract Algebra, Intro to Artificial Intelligence, Data Structures & Algorithms
 - Awards: Deans List. Scholarships: The Leadership Award Scholar, Amazon Future Engineer
- Diamond Bar High School** 2020 – 2024
AIME Qualifier (2x); AMC 12 top 1% nationally; Highest scorer at HS (2023, 2024) GPA: 4.0

EXPERIENCE

- Amazon** May 2025 – Aug. 2025
Software Development Engineer Intern Seattle, WA
- Led development of an end-to-end automation solution for onboarding internal data services, cutting setup time from 40+ developer hours to minutes and eliminating human error.
 - Designed and implemented custom API integrations and error-handling layers in Java to connect multiple internal platforms.
 - Built secure cross-account access using AWS role assumption, enabling deployments across multiple regions and environments.
 - Developed Python scripts for complex schema transformations to ensure compatibility across data pipelines.
 - Contributed production-ready code across 7 packages and completed 10+ peer-reviewed pull requests.
 - Presented project to senior engineers and leadership; received an inclined review and a return offer.
- Open Computing Facility, UC Berkeley** Aug. 2024 – Present
SysAdmin DeCal Head Berkeley, CA
- Lead instructor for the SysAdmin DeCal, a student-run course on Linux system administration and infrastructure, receiving 100+ applications and serving 40+ students per semester.
 - Manage course logistics, oversee admissions, and maintain the DeCal website hosted on OCF servers, alongside other open-source software.
 - Develop and deliver curriculum on server administration, networking, security, automation, and containerization, preparing students for professional sysadmin and DevOps roles.
 - Collaborate with other OCF staff to operate and improve Berkeley's enterprise-scale computing infrastructure.

PROJECTS

- Self-Hosted Homelab** | *Docker, Kubernetes, Proxmox, Traefik, Authentik* May 2024 – Present
- Designed and deployed a virtualized infrastructure using Proxmox with multiple Debian VMs and containers.
 - Set up and maintains multiple services using Docker for personal use; began migration to a K8s cluster with Helm and declarative YAML configurations.
 - Secured self-hosted services with TLS certificates, runs VPNs (WireGuard, Zerotier), and Authentik;
- Portfolio Website (erdaifuu.com)** | *Next.js, React, Tailwind* August 2025 - Present
- Developed a full-stack portfolio website using Next.js 14, TypeScript, and Tailwind CSS with Docker containerization for deployment
 - Built custom UI component system with real-time position tracking and event handling for interactive windows.
- TrueType Font Renderer** | *Rust, TrueType Spec, Vector Graphics* July 2025 – Present
- Developed a low-level TrueType font parser parsing glyf, loca, and head tables to decode simple and compound glyphs, implementing coordinate delta compression, flag repetition, and recursive component glyph resolution.
 - Built a vector-to-raster rendering pipeline to convert glyph contour outlines to bitmaps.

TECHNICAL SKILLS

Languages: Python, Java, Rust, Kotlin, HTML/CSS, TypeScript
Tools: AWS, Docker, Kubernetes, Git, Linux, Proxmox, Firebase, Next.js, React, Tailwind
Certifications: AWS Certified Cloud Practitioner (2025)