

DAVID SANTAMARIA

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WORK EXPERIENCE

ZeroEntropy (YC W25)

January 2025 – March 2025

Freelance Software Engineer

Built dashboard.zeroentropy.dev, enabling API integration and top-k semantic search across user collections

Rebuilt zeroentropy.dev with SEO optimization and markdown-driven blog post generation

Google

May 2024 – August 2024

Software Engineer Intern

Intern on the Network Doctor team, detecting and diagnosing network anomalies across Google's production fleet

Implemented a C++ data-processing pipeline to validate GCP telemetry data against cloud records and flag anomalous activity across hundreds of terabytes of production network data

UCF Institute for Simulation & Training

October 2023 – January 2024

Undergraduate Research Assistant

Initial developer on TITENN; built PoC firmware in C for ESP32 and PIC microcontrollers with BLE integration for an AR simulation of military combat training on experimental ML-optimized network architecture

VertexGraph

May 2022 – August 2022

Software Engineer Intern

Implemented user roles workflow and permissions management system

Submitted several patches for bugs, emphasizing clear, readable, and maintainable code

PROJECTS

HorizonOS

medbar.dev

x86_64 kernel in C with 4-level paging, APIC interrupt handling, PS/2 keyboard driver, DMA-based AC97 audio driver, uACPI integration, PCI enumeration, and kernel shell

Pong playable; DOOM port in progress

TernarySearch Competitive Programming Platform

ternarysearch.com

Next.js platform for competing against friends in on-demand competitive programming problems

Agentic ingestion pipeline using LLMs to normalize unstructured contest formats from various ICPC-style competitions

Home Lab

medbar.dev/services

AWS infrastructure provisioned with Terragrunt/Terraform; services (Gitea, pastebin, wiki, file transfer, uptime monitor) containerized in Docker with gVisor sandbox isolation behind nginx

TECHNICAL STRENGTHS

Languages:

C++, C, Python, JavaScript, TypeScript, SQL, Bash, Java

Systems & Infrastructure:

Linux, Git, Docker, AWS, Terraform, nginx, QEMU, Modal, perf, BPF

Web Development:

React, Next.js, Node.js, FastAPI, Prisma

Databases:

PostgreSQL, Redis, NoSQL, pgvector, Qdrant

COMPETITIVE PROGRAMMING COMPETITIONS

ICPC Southeast Regional Contest 2022: Division 2 - 1st

AMC Stetson 2017 - 2nd

EDUCATION

University of Central Florida | Orlando, FL

January 2021 – December 2024

B.S. in Computer Science