Aaron Potter

San Diego, California | ajpotter6@gmail.com | dev.aaronpotter.net | (619) 559-9786

SUMMARY

Software engineer with a CS degree from UC Davis and interdisciplinary background spanning computer science, philosophy, and music. Builds tools at the intersection of language design, machine learning, and systems infrastructure. Writes about AI and programming languages at dev.aaronpotter.net/blog.

EXPERIENCE

Website Manager California Aggie
Student Position Jan 2023 – Jun 2025

- Managed and published content for student newspaper website using WordPress CMS.
- Coordinated with staff on content scheduling, site organization, and accessibility compliance.

EDUCATION

University of California, Davis Sep 2022 – Jun 2025
B.S. Computer Science, Minors: Philosophy and Music

St. John's College, Santa Fe Sep 2019 – Jun 2020
Liberal Arts — Great Books program emphasizing close reading, logic, and analytical writing.

SKILLS

- **Languages:** Python, Rust, C++, JavaScript/TypeScript, Java, SQL, PHP
- **ML/AI:** PyTorch, Hugging Face Transformers, LangChain, OpenAI/Claude APIs, RAG pipelines
- **Web & Infra:** FastAPI, React, Next.js, Django, Docker, Linux, Git, CI/CD, PostgreSQL, Redis

PROJECTS

Melos — Music Notation Language Rust

- Designed and implemented a domain-specific language for music composition that compiles to MIDI, including parser (pest grammar), multi-part scores, time/key signatures, tuplets, and dynamics.
- Used for original compositions exploring generative and algorithmic approaches to music.
- Wrote about the design process and AI music generation experiments on personal blog.

micrograd-rust Rust

- Reimplemented Karpathy's micrograd autograd engine in Rust with reverse-mode automatic differentiation.
- Solved Rust ownership challenges for computational graph backpropagation and gradient accumulation.

BlakeGPT Python, PyTorch

- Trained custom GPT-2 variant (6 layers, 1.9M params) on William Blake's complete works from scratch.
- Built custom BPE tokenizer and end-to-end training pipeline using PyTorch and Hugging Face Transformers.

Gridmind RAG Assistant Python, React

- Built retrieval-augmented generation pipeline using LangChain, Gemini embeddings, and Chroma for domain-specific Q&A with citations.
- Implemented PDF ingestion, chunking, and embedding with FastAPI backend and React frontend.

Homelab Infrastructure Docker, Linux

- Built multi-node distributed system on Raspberry Pis with Docker orchestration, PostgreSQL/Redis, Pi-hole DNS, VPN, self-hosted Git, Jenkins CI/CD, and automated backups.