Matthew Barlow

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PROFILE

AI Engineer who built AutoApply — a live multi-tenant SaaS automating job applications with GenAI. Designed LLM pipeline with schema-validated I/O (Pydantic), prompt engineering, and function calling via multiple LLM APIs (OpenAI, Anthropic). Implemented evaluate-then-patch refinement for quality guardrails. Stack: Python, FastAPI, Docker. Proven end-to-end GenAI solution development in a fast-paced, collaborative environment. Passionate about building reliable autonomous systems that scale.

EDUCATION

B.S. in Electrical Engineering, Columbia University (2020)

B.A. in Physics, University of Redlands (2017)

EXPERIENCE

AI Engineer, WebCloudStudio (Jan 2026 – Present)

- Architected a provider-agnostic LLM pipeline with schema-validated I/O (Pydantic) and DB-backed prompt templates for structured generation.
- Delivered a multi-tenant SaaS (FastAPI, Docker) with Stripe billing, OAuth, and a React dashboard — production-deployed on Railway.

Instructor, Mathnasium (Jan 2023 – Jan 2024)

- Managed simultaneous instruction for multiple K-12 students, adapting methods to each student's pace and learning style.
- Explained complex math concepts clearly, building skills in clear communication and cross-functional collaboration.

Desktop Support, Columbia College IT (2018 – 2021)

- Resolved highest ticket volume on team for hardware/software issues across a large university user base — emphasizing responsiveness and reliability.
- Created clear documentation of troubleshooting steps and fixes; coordinated with faculty and vendors, strengthening written and client-facing communication.

Research Assistant, Lehigh University (2017 – 2017)

- Self-directed numerical modeling of laser-induced crystal nucleation in Python (NumPy, SciPy), reading scientific literature independently.
- Collaborated with PhD researchers and faculty in an active photonics lab — demonstrating rigor and independence in an advanced research environment.

PROJECTS

AutoApply: A deployed multi-tenant SaaS automating job applications: scraping, LLM-powered resume/cover letter generation with schema-validated I/O (Pydantic) via OpenAI/Anthropic, and a React dashboard—all containerized with Docker.

ABR Proxy: Async HTTP proxy for adaptive HLS streaming that measures per-chunk throughput and uses a tunable EMA to dynamically select the highest sustainable bitrate, built with Python, aiohttp, and asyncio, with a live browser dashboard.

Tavernboard: Personal productivity dashboard built with TypeScript, React 18, and Tailwind CSS, featuring modular drag-and-resize widgets, real-time sync via Supabase (PostgreSQL), and CI/CD with GitHub Actions to Cloudflare Pages.

SKILLS

GenAI & LLM: LLM, RAG, vector search, OpenAI SDK, Anthropic SDK
Languages & Core: Python, Node.js, TypeScript, SQL
Backend Frameworks & APIs: FastAPI, Docker, asyncio
Tools & Infrastructure: CI/CD, Git, pytest, PostgreSQL, SQLite