Alexander L. Li

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EDUCATION

Massachusetts Institute of Technology (MIT) — Exp. May 2028
Candidate for BS in Computer Science, Artificial Intelligence (6-4) & Mathematics (18) — *Cambridge, MA*

- Relevant Coursework: Machine Learning, Computer Vision, Algorithms, Fundamentals of Programming (Python), Web Design Lab, Low-level C & Assembly, Discrete Applied Mathematics, Linear Algebra, Differential Equations, Probability & Random Variables, Fundamentals of Statistics

EXPERIENCE

Air Force Research Laboratory — May 2025 - Aug 2025
AI/ML Research Intern (Full-time / On-site) — *Wright-Patterson AFB, OH*

- Trained conditional diffusion model using PyTorch to solve inverse problems in deep learning: predicting multimodal distributions of input parameters used to generate images via a black-box Blender pipeline
- Constructed computer vision (U-Net) architecture conditioned on features fed through an image encoder (ResNet)
- Accelerated model training by multi-GPU distributed data parallel on high performance computing clusters using SLURM for batch scheduling & Apptainer/Singularity containers for reproducible Linux-based environments

Fetch.ai (Agentic AI) — Jun 2025 – Sep 2025
Software Engineer Intern (Part-time / Remote) — *Cambridge, UK*

- Built autonomous task-based AI agents prompted 1,000+ times on the Fetch framework, hosted on the network
- Integrated RESTful APIs for agentic AI communication & coordination, enabling modular multi-agent workflows
- Currently leveraging LangChain on a full-stack community service tracking app powered by Fetch.ai, where autonomous agents collaborate on complex tasks using shared memory, toolchains, & structured communication

Foundation for Resilient Societies — Jan 2025 – Feb 2025
Data Analyst (Full-time / On-Site) — *Cambridge, MA*

- Researched effects of retiring power plants on U.S. Electric Grid capacity with a focus on ISO New England
- Analyzed grid stability using Sklearn, SERVM forecasting simulation software, & ad hoc MS SQL queries
- Co-authored 50-page internal user guide for future interns following in-person training from Astrapè Consulting

PROJECTS

College Marketplace App — Aug 2025
React.js, HTML, Tailwind CSS, Node.js, Express, FastAPI, PostgreSQL, Supabase, Docker, CLIP

- Built MVP full-stack app for campus-based marketplace with mobile-first design & modern UI/UX
- Engineered secure user authentication & dynamic item listing system with full CRUD functionality
- Deployed AI-powered item category recommendations using OpenAI's CLIP via FastAPI microservice
- Architected a scalable, containerized development environment with Docker & prepared for cloud deployment

ChillDeck DJ - MIT Web Lab Hackathon — Jan 2025
React.js, HTML/CSS, TypeScript, RESTful APIs, Node.js, MongoDB, Figma

- Won **2nd place** (out of 60 projects) in MIT's Web Lab & received **Best Futuristic UI Design** award
- Developed an interactive DJ web app allowing users to upload songs, isolate audio stems, & remix music
- Engineered backend with Audioshake API for automated stem splitting & used Wavesurfer.js for live visuals
- Implemented full user system themes, profiles, & custom audio track uploads using MongoDB & Node.js

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, SQL (Postgres), C++, Java, HTML/CSS, Bash

Frameworks/Technologies: React.js, Node.js, Express, FastAPI, RESTful APIs, Flask, MongoDB, PyTorch, TensorFlow, Scikit-learn, LangChain, Supabase, Docker, Git, Linux, Slurm, Apptainer/Singularity

Awards: USA Computing Olympiad Gold, 5th in Cryptography @ 2024 Science Olympiad Nationals