

Lucas Ho

413-409-9579 | dungho@umass.edu | in/lucas-ho-6a1b08296 | github.com/LucasHo17

EDUCATION

University of Massachusetts, Amherst

Aug 2023 - May 2027

Bachelor of Science, Computer Science and Mathematics

- **GPA:** 3.8/4.0
- **Coursework:** Data Structures, Programming Methodology, Linear Algebra, Web Programming, Computer Systems Principles, Algorithms design

TECHNICAL SKILLS

- **Backend:** Node.js, Express.js, FastAPI, Django, Flask, REST APIs, Authentication, Redis Caching, Java, C++
- **Frontend:** React.js, Next.js, Vue.js, React Native, Expo, TypeScript, Tailwind CSS, JavaScript
- **Databases:** PostgreSQL, MongoDB, MariaDB, Firebase, Vercel Postgres, Cloudinary
- **Cloud & DevOps:** AWS (EC2, S3, Lambda), Google Cloud, Docker, Nginx, Heroku, Ubuntu, GitHub Actions, Linux
- **AL/ML:** Prompt Engineering, LLM APIs, PyTorch

EXPERIENCE

OurFreedom.ai

Sep 2025 - Present

Software engineer intern

New York City, NY

- Built and optimized a cross-platform social impact app using React Native, Expo, and TypeScript, enabling Android and iOS deployment to help families stay connected with incarcerated loved ones.
- Integrated features like Twilio Voice SDK for real-time calls and Stripe SDK for secure in-app payments, enhancing accessibility and affordability for users
- Collaborated in an Agile environment, contributing to sprint planning and EAS build automation to reduce testing and deployment time by 20%, while configuring Firebase Crashlytics for real-time crash monitoring

FinBud AI

Jun 2025 - Aug 2025

Software Engineering intern

Chicago, IL

- Built an AI research pipeline integrating LLM APIs for multi-agent financial analysis with sentiment and classification workflows, improving analytical accuracy and automation.
- Architected serverless backend microservices using Node.js, Netlify, and MongoDB, reducing recovery time from outages by 30% and improving system fault tolerance.
- Engineered scalable, fault-tolerant backend pipelines for financial APIs (AlphaVantage, Plaid) using FastAPI, and asynchronous job queues, integrating RESTful APIs with cloud-based storage to cut latency by 25%

Esmart Solutions Agency

Jun 2024 - Aug 2024

Software Engineering intern

Saint Paul, MN

- Built a scalable full-stack platform using Node.js/Express, Vue.js, and a dual-database stack (PostgreSQL and MongoDB), optimizing queries and migrations to boost API performance by 35% and support 10,000+ weekly records.
- Developed an AI-driven content generation pipeline leveraging LLM APIs (DeepSeek and Gemini) with prompt engineering and automated SEO optimization, raising content quality by 40%.
- Built an AI image generation microservice using FastAPI, PyTorch, and Kandinsky 2.2, optimizing inference with GPU acceleration (MPS/CUDA) to cut generation time to 20-40 seconds.

PROJECTS

Doctor Assistant | React.js, FastAPI, MongoDB, OpenAI, JWT, Docker, Nginx

- Developed a full-stack React/FastAPI AI healthcare assistant integrating LLM model and OpenAI TTS for interactive medical advice and personal health note management.
- Containerized backend and frontend with Docker for reproducible builds and easier deployment across environments

BMO (HackUmass) | FastAPI, React, MongoDB, Google Gemini AI, ElevenLabs, Google Calendar/Gmail APIs, ESP32, OAuth

- Built AI agent using Google Gemini function calling with 4 custom tools, implementing ReAct reasoning patterns, conversation state management, and context-aware function execution for autonomous calendar and email operations
- Architected secure backend with FastAPI, OAuth 2.0 token management, MongoDB for encrypted credential storage, Gmail webhooks for real-time email processing, and Google Cloud Speech-to-Text integration for voice transcription
- Integrated ESP32 hardware for voice input, React frontend for web interface, and end-to-end voice-to-action pipeline enabling hands-free meeting scheduling and email management through natural language commands

HONORS AND AWARDS

- Gold Medal - International Mathematics Olympiad Competition of Southeast Asia 2022