Aaron Hsu

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EDUCATION

University of Michigan - College of Literature, Science, and Arts — **Ann Arbor, MI**

B.S in Computer Science, Minor in Statistics — *December 2025*

- **Relevant Coursework:** Data Structures and Algorithms | Computer Organization | Database Management Systems | Statistical Computing | Intro to AI | Intro to Computer Security | Conversational AI | Statistics and AI | Web Systems
- **Extracurriculars:** Tau Epsilon Kappa (Co-ed Professional Technology Fraternity), Michigan Club Soccer, CLR Academy

SKILLS

- **Languages:** Python, SQL, C++, C, Java, JavaScript, HTML, CSS, R
- **Libraries/Frameworks:** React, Flask, TensorFlow, Keras, PyTorch, Google ADK, MCP (Model Context Protocol)
- **Tools/Platforms:** Git, Visual Studio, VS Code, Jupyter Notebook, Microsoft Office 365
- **Interests:** Soccer (Tottenham Hotspur), Piano, Cooking, Weightlifting, Running, Hiking, Photography

WORK EXPERIENCE

Viasat — **Boston, MA**

Software Engineering Intern — *May 2025 - Present*

- Developing an internal, **locally running desktop AI** assistant used in production; built with Electron, React, and AWS Bedrock integration to meet enterprise security standards. Utilizes a fully client-side architecture with persistent local storage
- Designing a multi-agent AI system that autonomously runs tests and analyzes web optimization/SEO metrics (TTFB, LCP, etc.), identifying performance bottlenecks and generating improvement suggestions with results showing a **~25% reduction in LCP**. Visualizes optimal outcomes using waterfall diagrams and effectively handles follow-up questions from the user
- Embedded agentic AI into CI/CD using a custom GitHub Actions workflow that responds to repo events and enforces policy-based behaviors via YAML config, **cutting review time by ~50%**
- Standardizing team-wide AI workflows by documenting best practices, installation guides, and usage support; leading onboarding efforts for a team of 20+ developers and non-technical users, informing on both enterprise benefits and security compliance policies

First Solar — **Perrysburg, OH**

Software Engineering Intern — *May 2024 - September 2024*

- Implemented automatic, **30-second interval retry configurations** for MassTransit consumers inside of RabbitMQ integrated applications, allowing the system to effectively handle transient/idempotent errors and prevent data loss
- Built an end-to-end retrieval augmented generation system using **LangChain on 500+ company documents**, successfully deploying a GPT-integrated web application and reducing mean time to repair (MTTR) from 5 hours to 3 hours
- Applied **prompt engineering** techniques to optimize SQL queries, significantly reducing execution and retrieval times
- Presented AI-driven solutions to C-Suite executives, highlighting enterprise benefits and efficiency gains through Generative AI

Tiimo — **Copenhagen, DK**

Web Development Intern — *May 2023 - September 2023*

- Conducted biweekly smoke tests of Android application alongside the development team, developing solutions for 30+ bugs
- Integrated code-level changes based on feedback from user reviews to enhance accessibility for neurodivergent users

PROJECTS

Automated Retrieval Augmented Generation (RAG) Quality Assessment

- Developed a fully automatable script to evaluate RAG systems across different GPT/embedding model combinations
- Conducted 10+ experiments using various LLM parameter settings (e.g., chunk size/overlap, temperature, top-k)

AI Cooking Assistant

- Developed an open source chatbot that helps users create recipes/meal plans and provide suggestions based on user preferences
- Integrated Hugging Face LLMs with a Python/Flask backend and React frontend, utilizing SQLite to manage user data

Social Media Platform

- Generated static pages using Jinja2 templating in HTML and JSON data. Implemented secure user authentication mechanisms using Flask session cookies and SHA-512 password hashing with salt
- Developed a Flask-based web application with a RESTful API that serves data from a SQLite database, enabling AJAX calls from a React frontend to enable dynamic modification of the DOM
- Deployed the application on AWS IaaS by provisioning EC2 instances, configuring Nginx as a reverse proxy for a Gunicorn-powered Flask application, and automating the environment setup with shell script

Graph Traversal and Optimization Algorithms

- Implemented classes to represent graph structures, leveraging abstraction and encapsulation to model vertices, edges, and spatial constraints in graph traversal algorithms
- Utilized algorithms including Minimum Spanning Tree (Prim's/Kruskal's) and heuristic/branch-and-bound approaches for TSP, optimized with priority queues, adjacency lists, and dynamic distance calculations for large datasets