

# 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

April 2025

- **Relevant Coursework:** Data Structures and Algorithms | Web Design, Development, and Accessibility | Computer Organization | Database Management Systems | Statistical Computing | Introduction to AI
- **Current Coursework (F24):** Introduction to Computer Security | Conversational AI | Statistics and AI

## SKILLS

- **Languages:** Python, SQL, C++/C, Java, JavaScript, HTML/CSS, R
- **Libraries/Frameworks:** LangChain, Hugging Face, TensorFlow, Keras, PyTorch, NumPy, Matplotlib
- **Tools/Platforms:** Visual Studio, VS Code, Git, Microsoft Office, Azure OpenAI Service, Jupyter Notebook, Ollama

## WORK EXPERIENCE

### First Solar

Perrysburg, OH

Software Engineering Intern

May 2024 - August 2024

- Implemented automatic, 30-second interval retry configurations for MassTransit consumers inside of RabbitMQ integrated applications, allowing the system to effectively handle transient 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, reducing execution and retrieval times by up to 50%, significantly enhancing the data analytics team's productivity.
- Presented project results and solutions leveraging Generative AI tools on product deployment to C-Suite executives. Recommendations were well-received and led onboarding efforts for new hires regarding continuation of the project.

### Tiimo

Copenhagen, DK

Web Development Intern

May 2023 - July 2023

- Conducted biweekly smoke tests of Android beta application alongside the development team.
- Documented issues in Notion/Linear; developed solutions for 30+ functionality bugs and proposed various UI/UX fixes.
- Integrated code-level changes based on feedback from user reviews to enhance accessibility for neurodivergent users.

### Shinsung SoundMotion

Ann Arbor, MI

Engineering Intern

May 2022 - September 2022

- Designed various PCBs using Sprint Layout and Cut2D, integrating models into silicon neural probes for clinical testing. Engraved designs on copper boards using a Wegstr CNC Prototyping Mill aiding in production of prototyping.
- Operated a wire and hydrogen ball bonder to aid in PCB design, reducing drill bit size to .019 mm to meet specifications.

### University of Michigan - Center for Entrepreneurship & College of Engineering

Ann Arbor, MI

Instructional Aide

September 2023 - Present

- Oversee operations for two upper-level courses including attendance, grading, and preparing lecture material.

## PROJECTS

### Automated Retrieval Augmented Generation (RAG) Quality Assessment - Python

- Developed a script to evaluate RAG systems across different GPT/embedding model combinations, fully automating the testing process and eliminating the need for manual data entry.
- Conducted 10+ experiments using various LLM parameter settings (chunk size/overlap, temperature, top-k, etc.).

### AI Cooking Assistant - Python

- Developing an open-source chatbot that helps users create recipes/meal plans and provide suggestions based on user preferences.
- Integrating Hugging Face LLMs with a Python backend for advanced NLP capabilities, leveraging MongoDB to store user queries/responses to enhance personalization.

### Custom Relational Database ("SQL") - C++

- Designed and implemented a custom relational database emulation program in C++ with hash maps, focusing on efficient data storage, retrieval, and algorithmic optimization.
- Created an interactive shell interface that allowed users to execute queries and interact with the database.

## LEADERSHIP ACTIVITIES

### Tau Epsilon Kappa - Professional Technology Fraternity

Ann Arbor, MI

VP of Operations

January 2023 - Present

- Coordinate event logistics, organizing professional development and networking events.