Michael Kawwa

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EDUCATION

Stony Brook University   **Expected Graduation: December, 2025**
BS Computer Science   *Stony Brook University*

Relevant Coursework
- CSE 214: Data Structures and Algorithms, CSE 320: Systems Fundamentals II, CSE 216: Programming Abstractions. CSE 373 Analysis of Algorithms, CSE 316: Software Development, CSE 337: Scripting Languages, CSE 361: Web Security

WORK EXPERIENCE

Pulp Chat   **June 2023 - August 2023**
Software Engineer Intern   *Remote*
- I solely led the development of an in-house data collection web-app using python, flask, and SQLite and developed custom preprocessing tools for the data to be used with our machine learning models.
- Worked with a team of three other interns to help design, build, and maintain user interfaces, as well as the underlying infrastructure of the application using several programming languages including Node.js, JavaScript, and React as well as frameworks such as Express and Tailwind.
- Leveraged Prisma and PostgreSQL to accelerate database management and software development.
- Used Stripe payment processing to develop debate tournament mode in React and Express.

Black to Business   **June 2024 - August 2024**
Web Development Intern   *461 W. 126th Street, NY, NY 11027*
- Automated Podcast Transcription: Developed a Python script utilizing OpenAI Whisper to transcribe hundreds of hours of podcast content, deployed on Google Cloud Compute Engine for efficient processing at scale.
- Website Development & Optimization: Designed and implemented multiple web pages in WordPress, enhancing site interactivity and space optimization through custom JavaScript and CSS solutions.
- Custom PHP Development: Engineered custom PHP code to create reusable page templates, enabling streamlined creation of new content across the site.
- Data Analytics Automation: Wrote and deployed a Python script on Google Cloud Functions to automatically store and update podcast analytics in Google Sheets daily using the Google Sheets API.

Stony Brook University Media Lab   **September 2024 - Present**
Software Engineer   *Stony Brook, NY*
- Developed and maintained multiple interactive websites used in Stony Brook University courses within a DDEV environment using the LAMP stack.
- Configured the local DDEV Docker environment to simulate authenticated user sessions by implementing environment variables that replicate identity provider (IdP) and service provider authentication flows, creating a development environment that mirrors production.
- Improved website accessibility by enhancing PHP-based interfaces to support keyboard navigation for visually impaired students.
- Contributed to a streamlined development workflow, ensuring smoother transitions from development to production.

Projects

AI Academy – LLM Quiz Generator Web App: https://github.com/MichaelKawwa/ai-academy/tree/main   2025
- Built a React + Chakra UI frontend and LangGraph/FastAPI backend to ingest documents/text, perform optimized vector retrieval, and generate interactive multiple-choice quizzes with reduced latency and token costs. Used LangGraph to orchestrate document parsing, embedding creation, vector search, and LLM prompt construction, optimizing retrieval with cosine similarity filtering, chunk size tuning, and top-k reranking for higher quiz relevance.

Phreddit (Reddit Clone): https://github.com/MichaelKawwa/phreddit_cse316   2024
- A reddit clone developed as a final project for my Software Development course. I utilized React, Axios, Node, Express, and MongoDB, to design a reddit clone which allows the creation of posts, communities, and comments, facilitating seamless user interaction.

Skills

- Languages: Swift, Javascript/React, C, Python, CSS/HTML, Java, PHP, ARM Assembly, Ruby, Shell Scripting, Rust, C++, R
- Technologies: React JS, Node JS, Express JS, Typescript , MongoDB/Mongoose, Firebase, Xcode, Git/Github, Wordpress, GCP, AWS, LangGraph/LangChain, FastAPI, Flask, Next JS, Docker, Linux, Kubernetes.