Steven Hsu

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Education

University of California, San Diego Sep. 2021 - June. 2025

B.S. Mathematics and Computer Science *GPA 3.71/4.0*

Relevant Coursework: Advanced Data Structures, Algorithms, Digital Systems, Object Oriented Programming, Operating Systems, Parallel Programming, Re-commender Systems, Machine Learning

Relevant Experience

ProtoLab Sept. 2025 – Present

Software Developer *San Diego, CA*

- Designed and implemented a full-stack prototype of a multi-agent feedback system using QuillJS and WebRTC, enabling real-time collaborative document editing and AI-assisted peer review within a Google Docs interface.
- Developed an agent-jury architecture integrating OpenAI's GPT models to simulate diverse reviewer personas, achieving a **30% increase** in feedback diversity and contextual relevance in early pilot tests.
- Engineered a modular backend API for role-based feedback generation and anchoring, supporting parallelized agent reasoning, session persistence, and user-facing comment synthesis within a controlled research environment.

MIT Lincoln Lab June. 2025 – Present

Teaching Assistant *Remote*

- Developed and deployed machine learning models using **PyTorch**, improving model training efficiency by **30%** through optimized data pipelines and code refactoring.
- Engineered a suite of interactive Jupyter Notebook modules, enabling over **25 students** to experiment with real-world ML algorithms and visualize results in real time.
- Implemented and taught core algorithms for audio pattern recognition, image classification, and natural language processing, enabling a modular cognitive assistant.

Code Research Lab Jul. 2023 - Oct. 2023

Research Intern *Remote*

- Worked with Lawrence Tech Professor Dominic Dabish in a team of 4 to demonstrate dangers of insecure LLM integration within an application.
- Developed secure and insecure PHP application demos with **GPT-3 integration** that was susceptible to JSON Injection through Prompt Engineering based on unsanitized outputs.
- Presented code demos to **50+** students while educating them about security measures to employ for application security in LLM APIs.

Projects

NFL Trend Analysis | *Python: Pandas, Selenium, Statsmodels* | Link

- Partnered with a team of 3 students to develop and implement a machine learning model to predict viewership and search trends measured by previous NFL season data particularly on the Kansas City Chiefs.
- Utilized a large dataset acquired from web scraping, consisting of **∼3000** data points of NFL viewership data, which was wrangled and transformed into **1200+** elements with 10 different variables, covering US NFL TV data from 2014 to 2024.
- Identified viewership patterns based on TV network and employed traditional machine learning algorithms, including linear regression, ARIMA, and SARIMA models to forecast future NFL viewership data for the Kansas City Chiefs.

Huffman Compression/Decompression Tool | *C++, GDB*

- Designed and programmed a Huffman compression and decompression tool in C++
- Constructed a Huffman tree using a bitwise buffer and tree serialization, leading to a **30% decrease in filesize**
- Optimized and profiled runtime using gprof (GNU Profiler), leading to a **10% decrease in overall runtime**

Technical Skills

Languages: Python, JavaScript, TypeScript, C/C++, SQL, HTML, CSS
Technologies: Linux, Git, Docker, AWS, React, Node.js, Next.js, Express, Flask, MongoDB, PostgreSQL, Pandas, NumPy, PyTorch, REST, CI/CD
Other: Agile, Scrum, Unit Testing, Cloud Services