HENRY LIU

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[Portfolio Website](#) ◇ [Github](#) ◇ [LinkedIn](#)

EDUCATION

University of Massachusetts Amherst *May 2026*
B.S. in Computer Science and Mathematics *GPA: 4.00*
Coursework: *Algorithms for Data Science, Quantum Information Science, Algorithms, Object Oriented Programming, Game Programming, Discrete Mathematics, Linear Algebra, Real Analysis II, Complex Variables, Probability Theory*

WORK EXPERIENCE

Software Engineering Intern - *Cigna* *May 2024 -*

- Developed and enhanced Java applications using **Spring**, **Kafka**, and **PostgreSQL** to streamline clinical data retrieval and extend overall program functionality
- Created AI models for document scoring and filtering, increasing product accuracy and client satisfaction
- Integrated NLP models into main codebase for client usage, improving overall precision and recall metrics
- Identified and resolved software bugs to improve system reliability and performance
- Conducted code and feature reviews in collaboration with client services to maintain high quality code and products

Quantitative Trader - *Minutemen Alternative Investment Fund* *February 2024 -*

- Researched, developed, and deployed volatility matching options trading model with a 1.44 Sharpe Ratio and 40.9% returns back tested over 1 year
- Created and delivered investment strategy pitch as part of quantitative research team

Undergraduate Course Assistant - *University of Massachusetts Amherst* *May 2024 -*

- Supervised and taught over 200 students in course lecture and discussion sections for Algorithms
- Hosted office hours and review sessions to provide mentorship and ensure student progress

PROJECTS

Algorithmic Trading - *C++, Python, SQL* *November 2023 - July 2024*

- Developed an **event-driven backtesting environment** for testing algorithmic trading strategies using C++
- Compiled historical securities information using **Python** scripting into a **MySQL database**
- Wrote and tested a **sentiment analysis** based trading strategy that saw **38% returns** back tested over 1 year

Stroke Classification Model - *Python, Keras* *June 2021 - April 2022*

- Constructed a **machine learning** model to detect and classify medical strokes with **89.6%** accuracy on testing data
- Compiled and analyzed image data from public hospital databases and created a **neural network** using **Tensorflow**

Sky Spectre Chess Engine - *C/C++, Python, Git* *May 2022 - August 2023*

- Constructed a chess engine in C++ and Python and rendered using the Raylib graphics library
- Integrated various algorithms for optimized performance

Graphity (HackUMass 2023 Award Winner) - *React.js, TypeScript, Git* *November 2023 - November 2023*

- Used **React.js** and **Typescript** to create a full stack web-application for visualizing graph creation and search algorithms in a team for HackUMass 2023

EmployBee - *Java/Kotlin, SQL, Git* *January 2022 - May 2022*

- Developed an android app in **Android Studio** aimed to centralize management for small businesses and improve communication between an employer and employees
- Worked within a small team throughout the entire development cycle with primary focus on back-end features

AWARDS

- **Third Place** at the Massachusetts Society for Medical Research Student Competition *June 2022*
- **Finalist** in the International Math Modeling Competition (IMMC) *March 2022*
- **Award Winner** at HackUMass 2023 *November 2023*