

# HENRY LIU

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

## EDUCATION

University of Massachusetts Amherst

September 2023 - May 2025

B.S. in Computer Science

Coursework: *Introduction to Computation, Programming Methodology, Algorithms, Object Oriented Programming Concepts, Discrete Mathematics, Linear Algebra, Real Analysis II, Calculus IV*

## PROJECTS

Sky Spectre Chess Engine - C/C++, Python, Git

May 2022 -

<https://github.com/HenryLiu714/Sky-Spectre>

- A chess engine originally developed in **Python**, later migrated to **C++**, and rendered using the Raylib graphics library
- Uses **bit arrays and manipulations** for board representation and fast move generation, a **min-max algorithm** optimized with **alpha-beta pruning** for searching, and **Zobrist hashing** with a transposition table for optimized evaluation

Stroke Classification Model - Python, Keras

June 2021 - April 2022

[https://github.com/HenryLiu714/stroke\\_classification\\_network](https://github.com/HenryLiu714/stroke_classification_network)

- A research project conducted to create a **machine learning** model using CT head scans to detect and classify hemorrhagic and ischemic strokes
- Involved **data pruning and normalization** of images from public hospital databases and construction of a **neural network** using the **Keras and Tensorflow APIs**

EmployBee - Java/Kotlin, SQL

January 2022 - May 2022

<https://github.com/CamWhiting12/EmployBee>

- An android app developed in **Android Studio** aimed to centralize management for small businesses and improve communication between an employer and employees
- Includes a customizable protocol database and search engine and automatically refreshing and updatable shift-specific task manager, both powered by an **SQLite database**

## WORK EXPERIENCE

Math Instructor - Mathnasium

June 2022 - July 2023

Taught extracurricular math to students from varying age groups, assisted in training new employees.

Retail Associate - Global Partners

June 2023 - August 2023

Handled transactions, assisted customers, and managed deliveries and restockings at a Global Partners owned convenience store

## SKILLS

**Languages:** C/C++, Python, Java, Kotlin, HTML/CSS, Javascript

**Libraries and Tools:** Keras, Tensorflow, Matplotlib, Pandas, Numpy, Git, JUnit, Node.js

## AWARDS

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