

Gary Huang

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Skills

Languages: C++, Python, JavaScript, HTML, CSS

Tools: OpenCV, SDL2, AWS, MySQL, Valgrind, Git

Experience

Genellipse | Data Scientist

May 2022 - Aug 2022

- Extracted client information from insurance claim forms with **98% accuracy** by applying a **BERT** machine learning model with **OpenCV**.
- Developed core information requesting server to automate client's annuity claims using **Python**, deployed on **AWS Lambda** and **MySQL** server.
- Verified server's functionality specification through **Fuzzing Testing** technique.

Projects

Chess Engine

<https://github.com/garyhhj/chess-engine-v2>

- Built a chess engine with **minimax algorithm** and **alpha-beta pruning** to increase search depth in the decision tree by **2.5 times** using C++.
- Increased chess engine speed by over **500 times** through the use of **zobrist hashing**, **transposition tables**, and **bit manipulation**.
- Boosted chess.com account to over **1500 elo** with over **90% win rate**.

Pathfinding Visualizer

<https://github.com/garyhhj/pathfinding-visualizer>

- A pathfinding visualizer to visualize **Dijkstra** and **A*** pathfinding algorithms on a maze generator using **prim's** algorithm in Javascript, HTML, and CSS.

Sudoku Solver

github.com/garyhhj/sudoku-solver

- Created sudoku solver with **backtracking** and **greedy pruning** algorithm, achieved an average of **3ms** solving time in C++.

Sorting Visualizer

<https://github.com/garyhhj/sorting-visualizer>

- A sorting visualizer to visualize **bubble sort**, **quick sort**, **merge sort**, and **heap sort** algorithms in JavaScript, HTML, CSS.

Chip8 Emulator

github.com/garyhhj/chip8

- Implemented cross platform **CHIP-8 emulator virtual machine** using C++.
- Simulated **CPU and video graphics** to execute games written in CHIP-8 Lang using **SDL2**.

Award

- University of Waterloo Software Engineering 2026 Hackathon Winner of Best Code
- **Top 10%** in Euclid, Fermat, Cayley, and Pascal Math contest from University of Waterloo from 2018 - 2021

Education

University of Waterloo

Sept 2021 - April 2026

Bachelor of Software Engineering, Honours (BSE)