Gary Huang

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EDUCATION

University of Waterloo   Waterloo, ON
Bachelor of Software Engineering, Honours (BSE)   *Sept 2021 – April 2026*

Relevant Courses: Operating Systems, Data Structures and Algorithms, Object Oriented Programming, Databases

EXPERIENCE

QTG Capital Management   May 2024 – Aug 2024
Software Engineer Intern
- Created a stock market backtester in Python. Designed and tested a proprietary stock strategy on Shanghai Stock Exchange stocks, achieving a sharpe of 2.97
- Preprocessed Level 2 (L2) high-frequency trading data by integrating execution flow and order flow into a detailed order book, improving backtesting accuracy
- Developed a web scraper using **Selenium** to extract live news updates, facilitating real-time delivery of news to company chat for informed decision-making

Ford   Sept 2023 – Dec 2023
Software Engineer Intern
- Enhanced system responsiveness by **125%** through C++ code optimization within the node addon codebase, enabling the use of low cost hardware for Ford EV infotainment systems
- Implemented **dynamic arrays** and thread-safe **maps** using the **iterator pattern** and **mutexes** to enhance code reusability and eliminate data coherency issues
- Cached style values resulting in a **30%** reduction in the frequency of IPC messages transmitted

Genellipse   May 2022 – Aug 2022
Data Scientist Intern
- Automated insurance claim form extraction by prototyping a solution using **PyTorch** and **OpenCV**, which later evolved into a full-scale project
- Employed **OpenCV** for preprocessing legacy insurance claim forms, reducing noise and allowing **BERT** machine learning model to interpret client information with **98%** accuracy
- 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 | *C++*   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
- 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 before getting banned

Pathfinding Visualizer | *JavaScript, HTML/CSS*   https://github.com/garyhhj/pathfinding-visualizer

TECHNICAL SKILLS

Languages: C++, Python, JavaScript, TypeScript, HTML/CSS, SQL
Tools: OpenCV, Selenium, Pytorch, SDL2, AWS, MySQL, Valgrind, Git