

# Gary Huang

[g47huang@uwaterloo.ca](mailto:g47huang@uwaterloo.ca) | [github.com/garyhhj](https://github.com/garyhhj) | [www.garyhuang.ca](http://www.garyhuang.ca)

## EDUCATION

---

### University of Waterloo

*Bachelor of Software Engineering, Honours (BSE)*

Waterloo, ON

Sept 2021 – April 2026

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

## EXPERIENCE

---

### QTG Capital Management

May 2024 – Present

*Software Engineer Intern*

- Developed a web scraper using **Selenium** to extract live news updates, facilitating real-time delivery of news to company chat for informed decision-making
- Designed a stock market emulator in Python for backtesting strategies

### 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
- Achieved a **30%** increase in data transfer speed by reducing serialized data size with **struct packing**

### 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