

Dennis Fong

416-602-6588 | fongd1@mcmaster.ca | [linkedin.com/in/dfong298/](https://www.linkedin.com/in/dfong298/) | github.com/DFong298

EDUCATION

McMaster University

Hamilton, ON

Bachelor of Engineering (Software Engineering, 3.7 CGPA)

Sep. 2020 – Present

Courses: Data Structures (Java), Algorithms and Complexity, Software Design (Java, Python), Software Architecture (ASM), Concurrent Programming (Go, Python)

TECHNICAL SKILLS

Languages: Python, JavaScript, Java, HTML/CSS, SQL, MySQL, C/C++, Go, MATLAB

Libraries/Frameworks: Git, React, Node.js, Flask, ExpressJS, Material-UI, Docker, NumPy, TensorFlow, PyTorch

EXPERIENCE

Quantitative Developer - DeGroote Finance and Investment Council

Oct. 2022 – Present

McMaster University

Hamilton, ON

- Analyzed sentiment of financial headlines with **80%** accuracy by implementing natural language processing model
- Developed trading strategy in **Python** yielding a **278% profit over 10 years** by leveraging mean reverting pairs
- Projected stock value within a **9%** margin from true market price by utilizing long-short term memory in PyTorch
- Created and verified validity of **11** algorithms through back-testing on **over 1,000,000** historical data points

Undergraduate Research Assistant

May. 2023 – Aug. 2023

McMaster University

Hamilton, ON

- Solved software version dependencies and conflicts in polynomial time with linear programming in **Python** and **Z3**
- Explored methods of optimizing package management in supercomputers by formulating them as SAT problems
- Detected cycles in dependencies at **97%** accuracy by devising an algorithm that implements dynamic programming

PROJECTS

Track.it | *JavaScript, SQL, MySQL, React, Express.js, Node.js*

- Built a full-stack web application that tracks the daily and total change of a portfolio created by the user
- Implemented front-end design with React to display user interface for **up to 10 pages** using **MaterialUI**
- Used Express.js to communicate **various relevant data** between the front-end and the database entities
- Created and maintained database schema using MySQL to store asset data leveraging Express.js functionality

Delight | *React, Node.js, JavaScript, HTML/CSS*

- Built front-end web app with React to calculate maximum profits and losses from **5 different option strategies**
- Designed front-end with **Figma** and implemented React components to neatly display **up to 6 parameters**
- Leveraged **Yahoo Finance REST API** to support information retrieval of options data for **millions** of assets

Discord.GPT Discord Bot | *Javascript, NodeJS, OpenAI, Alpaca*

- Built a Discord bot that implements ChatGPT language model to handle conversations of **over 50 messages**
- Interfaced **Alpaca API** to retrieve market data on **millions of stocks** and send requested data from user input
- Implemented **12 custom commands** that take in user input to process and provide a wide range of functionality

London Tube Pathfinding | *Python, PyTest, flake8*

- Experimented with pathfinding algorithms on **more than 300 train stations** in the London Tube transit system
- Applied **object oriented programming** and **SOLID principles** to create proficient and maintainable code
- Tested algorithm implementations using **PyTest** and **Flake8** for automated error checking and code organization
- Utilized **dynamic programming** in order to reduce algorithm execution time from **factorial to exponential**