

Jerry Hou-Liu

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EDUCATION

McGill University

Bachelor of Engineering in Computer Engineering

Sep. 2019 – May 2024

Montreal, QC

EXPERIENCE

Software Developer Intern

Hikvision Canada

May 2022 – Apr. 2023

Montreal, QC

- Developed features and bug fixes as a **full-stack developer** for two enterprise projects in an **agile** team of 12
- Helped **successfully ship** the first build of a big data project, implementing 5 major features and many smaller enhancements
- Produced modern user interfaces using **JavaScript, HTML, CSS, React.js, and Vue.js** on a **Node.js** server, including a dynamic **interactive map** using OpenLayers
- Improved server backend and desktop projects using **C++, PostgreSQL, and Qt**, integrating them with the frontend using **REST APIs**
- Managed changes and pull requests using **Git with Sourcetree and Bitbucket** and **SVN with TortoiseSVN**
- Discussed ideas and kept track of progress using **Confluence** for technical documentation and **Jira** for tickets

PROJECTS

Concretize (Software Tool and Associated Paper) | *Node.js, Vue, Python, Flask*

May 2024 – Aug. 2024

- Created a software tool for turning specifications written in our custom programming language into concrete scenarios for testing self-driving cars in a group of 3
- Developed a **full-stack web application** to provide the tool with an easy-to-use interface
- Accepted into the **2024 ACM/IEEE conference on Model Driven Engineering Languages and Systems (MODELS)**

Smart RSS Reader (Personal Project) | *Node.js, Vue, Python, Flask, SQLite, Docker*

May 2024 – Ongoing

- Devised a **full-stack** program that intelligently **categorizes and ranks** RSS stories and offers **search** capabilities
- Used **Sentence Transformers** and k-means with **scikit-learn** to categorize stories semantically, while performing **natural language processing** using **Beautiful Soup** and **NLTK**
- Applied **threading, caching, and pagination** to reduce latency, downloading and grouping stories for 100 feeds in just 24.58 seconds from a cold start and delivering subsequent pages in less than 1 second
- Containerized the application using **Docker** and **Docker Compose** to facilitate easy deployment

Fantasy Football Web App | *Node.js, React, Java, Springboot, PostgreSQL*

Jan. 2024 – Apr. 2024

- Developed a **full-stack web application** in a team of 10 as part of a software engineering practice course
- Led the development** of a responsive frontend user interface using modern web technologies
- Applied **agile** and **scrum** practices to enhance collaboration, while using **automated testing** and **user stories** to validate work and guide implementation

Truck Routing Program (CodeJam XI Hackathon) | *Python*

Feb. 2022

- Worked in a team of 3 in a span of **48 hours** to implement a program that plans out routes for truckers based on distance, cost, and profit
- Applied **simulated annealing** to approximate solutions to a difficult problem that could not be feasibly solved using brute force
- Won **Best Beginner Hack** and 3rd place in the **123Loadboard Challenge**

TECHNICAL SKILLS

Back-end: Java, Python, C/C++, C#, SQL, MongoDB, Node.js, Flask, Docker

Front-end: Vue.js, React, JavaScript, CSS, HTML, Bootstrap

Tools: Git, SVN, Jira, Confluence, VS Code, Visual Studio, Eclipse

Languages: English (fluent), Mandarin Chinese (fluent), French (intermediate), Japanese (basic)