Jeffrey Lu

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Education

McMaster University - *Bachelor of Applied Science in Computer Science* **2022 - Expected 2026**

- GPA: 3.93 /4.00
- Awards: Engineering Award of Excellence, Deans' Honours List 2023, 2024
- Relevant Coursework: Databases (**SQL**), Development Basics (**C**, **Git**, **Linux/Unix**, **Bash Scripting**), Data Structures and Algorithms (**Python**), Introduction to Software Development (**Java, OOP**), Introduction to Machine Learning (**Python**), Computer Architecture (**C, Computer Hardware**)

Work Experience

Toronto Transit Commission Assistant Health and Safety Analyst (Co-op) **May 2024 - Aug 2024**

- Developed **Microsoft Excel** formulas to automate categorizing over 4000 construction submittals with a 100% accuracy rate
- Populated and managed over 10,000 lines of data into **Microsoft Excel** accurately and efficiently
- Generated **pivot tables**, reports and graphs using **Microsoft Excel** to highlight and analyze data
- Created a 3 month project to analyze patterns and distributions found in over 4000 construction submittals

SequoiaDB Ltd. AI Software Developer (Co-op) **May 2023 - Aug 2023**

- Expedited the testing process by 10% for testing team (20+ people) as a member of the Smart Jira project team
- Researched and compared training methods and implementations of localized Natural Language Processing models Alpaca 13b and Vicuna 13b
- Took initiative by producing demonstration scripts for HNSW and IVF searching algorithms in **Python** using **NumPy** and **NMSLIB** libraries to show nearest neighbours of a query vector to help my team explore those concepts
- Researched Word2Vec and GloVe vectorization techniques for converting words to vectors
- Constructed **Python** scripts that convert words to vectors of user specified dimensionality using **Gensim** library with full unit tests

Projects

Multichat - Github **Aug 2024 - Present**

- Developed a full stack multi-user chat using **Websocket**, a **Python Flask** back end and **React** front end that allows multiple users to send messages to each other in real time
- Enabled users to login through their Google accounts using **Google Oauth**

Personal Portfolio - Github **Dec 2023 - Present**

- Developed a responsive personal website using **JavaScript, HTML** and **CSS** that displays my projects, achievements and a blog page
- Linked a "Contact Me" form to a Google Sheet using **Google Scripts**

Similar Image Search - Github **July 2023 - Sept 2023**

- Built an image search application using **Python** where the user provides an image as input to improve my understanding of HNSW
- Used **Towhee** library to convert images into vectors, **PIL** library to render images and **NMSLIB** library to create and query the K nearest neighbours in an HNSW database

TLDR (Too Long Didn't Read) Roger Ebert Reviews - Github **July 2023 - Sept 2023**

- Developed and tested a natural language processing application in **Python** that generates a 4 line summary of a movie review article from www.rogerebert.com using the **NLTK** library

Technical Skills

- Languages: C, Java, Python, SQL, Bash, HTML, CSS, JavaScript, NodeJS, React
- Other Skills: JUnit, Unix, Linux, MacOS, VS Code, Intellij, Git, OOP, Software Development, Databases, Interest in AI/NLP, Computer Architecture