

Liyu Xiao

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Education

McMaster University

(B.A.Sc.) in Computer Science

Expected 2029

Hamilton, Canada

- **GPA:** 3.96/4.00
- **Relevant Courses:** Linear Algebra, Calculus, Computational Thinking, Introduction to Programming

Projects

Heal Motion (React, Flask, Gemini API)

- Developed an injury exercise planner using the **Gemini API** to generate tailored 7-day recovery plans.
- Built the frontend using **React**, leveraging **useState** for state management
- Integrated the **Fetch API** to communicate with the backend for workout plans
- Built **Flask** RESTful APIs with **Flask-CORS** for communication and **JSON** for data exchange

Disaster Relief Chatbot (React, Firebase, Flask, OpenAI)

- Built an insurance claim assistant with **OpenAI API** to provide steps for filing insurance claims
- Designed a responsive dashboard with **React.js**, featuring sidebar navigation and an expense tracker
- Used **React** state management and **Local Storage** for persistent data storage, retaining user data

Task Management Application (Webpack, ES6 JavaScript, HTML, CSS)

- Developed a **CRUD-based task management app** with features to create, read, update, and delete tasks, while allowing organization by project or due date
- Integrated **LocalStorage** to save and persist tasks, ensuring data retention across sessions
- Built with **modern JavaScript (ES6)** and **Webpack** for efficient code modularity and maintainability

Rhythm-Based Platform Runner (Greenfoot, Java)

- Implemented collision detection and smooth player mechanics for a rhythm-based platformer
- Created maps with a modular obstacle system, ensuring varied challenges while minimizing redundancy

BlackJack (Python, Pygame)

- Built a Blackjack game with **Pygame**, featuring dynamic card rendering and player-dealer mechanics.
- Designed game logic using **OOP principles** with modular **Player**, **Dealer**, and **Card** classes.
- Added real-time user inputs using custom **InputBox** and **Button** classes for intuitive interactions.

Experience

Python Instructor

Upper Markham Learning Centre

July 2024 - Sep 2024

Markham, Canada

- Created personalized lesson plans for **30+** students, increasing enrollment by **90%** within **2 months**
- Taught **25+** students **recursion**, **stacks**, **queues**, and **greedy algorithms**
- Guided students in building games like Baccarat and Blackjack, contributing to over **30** projects

Math and Reading Tutor

Kumon Canada

October 2021 - April 2024

Markham, Canada

- Taught **1,000+** students math, helping them achieve proficiency **6 months** ahead of their grade level
- Organized and maintained **300+** student folders per shift to ensure accurate records

Skills

Programming Languages: JavaScript (ES6), CSS, HTML, Python, Java, C#, Haskell, MATLAB

Libraries and Frameworks: React.js, Pygame, Flask, Greenfoot

APIs: Gemini API, OpenAI API, RESTful API, Fetch API

Development Tools: Firebase, Git, GitHub, Unity, Webpack, Material-UI