Justin Xue

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EDUCATION

McGill University   Expected Graduation: May 2027
Bachelor of Science, Computer Science (GPA: 3.9/4.0)   *Montréal, QC*

EXPERIENCE

Software Developer   May 2024 – Aug 2024
QNX Blackberry   *Ottawa, ON*
- Enhanced LibC coverage for the QNX real-time operating system by developing **30+ tests** in **C** for functionalities such as **IPC** and **file I/O**, ensuring compliance with safety certification standards required for product release
- Conducted over **25 code reviews** to ensure **100% portability** across multiple SDP versions
- Reverse-engineered **Jama Software** to develop a robust **FastAPI** application with **Uvicorn**, serving as a wrapper for internal API calls
- Incorporated a front-end that displays a list of outstanding review items generated by scraping data from Jama Software, enhancing project planning efficiency by **25%**

Coding Instructor   Sep 2021 – Jun 2023
Logiscool   *Ottawa, ON*
- Prepared over **30** lessons in introductory programming and advanced **Python** courses to students online and in person
- Monitored students' learning progress and provided constructive feedback on their development

EXTRACURRICULARS

Web Executive   Sep 2023 – Present
Hackthe6ix   *Remote*
- Developed **React** components for the Hackthe6ix website in **Typescript**, leveraging wireframe designs
- Designed the landing page, user dashboard, marketing materials, and merchandising using **Figma**
- Conducted **UX** research through interviews, card sorting, and A/B testing to derive actionable insights, resulting in a **22%** improvement in user engagement

Software Subteam Member   Sep 2022 – Jun 2023
FIRST Robotics   *Ottawa, ON*
- Implemented the vision detection system for Apriltags and reflective tape using homography-based pose estimation and **OpenCV-Python**
- Collaborated with over **20** software students using a feature branch Git workflow to deliver a competitive robot

PROJECTS

AI Music Analyzer ⚲ | *Flask, p5.js, Three.js, Moises, Basic Pitch*
- Developed an AI app for track separation and song analysis at Canada's largest AI hackathon (MAIS Hacks)
- Leveraged AI technology to analyze the waveform of a user-selected song using **Moises API** and implemented an interactable user interface to visualize frequency, pitch, and chord progression
- Produced a 2x award-winning project, securing the People's Choice and Best Hack for All Arts awards

Fridge Friend ⚲ | *React, Flask, PostgreSQL, Supabase, Google Cloud Vision, Cloudflare Workers AI, Auth0*
- Created a virtual fridge to help university students keep track of expiring food items and reduce food waste (Hack Western)
- Built a robust backend using **Flask** and **PostgreSQL**, hosted on **Supabase**, to handle efficient data storage and retrieval
- Integrated **Google Cloud Vision** for OCR to scan and digitize text from food items for accurate inventory updates, and utilized **Cloudflare Workers AI LLM** to generate recipes from soon-to-expire foods.
- Implemented basic user authentication with **Auth0** on a **React** front-end, allowing users to log in securely

Smart Wallpaper Fitter ⚲ | *Go, Python Pillow, OpenAI, HTML/CSS*
- Developed a web app that resize images for phone backgrounds while preserving quality and aspect ratio with AI
- Handled image processing using **Python Pillow** and image generation using **OpenAI API**
- Built a simple full-stack application using **HTML/CSS** for the front-end and **Go** for the back-end

2D Roguelike Game ⚲ | *Unity, FL Studio, Photoshop*
- Led a team of 4, delegated tasks, and served as lead presenter, resulting in the **team winning 1st place**
- Implemented game mechanics, collision detection, visual effects, audio, and menu UI

TECHNICAL SKILLS

Languages: Python, Java, Go, C, C++, C#, JavaScript, TypeScript, Bash, OCaml, HTML/CSS
Frameworks and Libraries: React, Node.js, Three.js, Tailwind CSS, Flask, Selenium, OpenCV, FastAPI