




JACOB JOHNSTONE

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 jacobj-portfolio.vercel.app

Education

Western University

Sept 2020 – Apr 2024

Bachelor of Software Engineering, B.E.Sc

London, ON

- Western Admission Scholarship
- Dean's Honour List 2023
- Introduction to Kubernetes on Azure – *Trophy*
- Relevant Coursework: Software Engineering Design, Software Testing, Operating Systems, Artificial Intelligence, Data Structures and Algorithms, Cloud Computing, Database Management Systems

Project Experience

Full-Stack Astrophotography Portfolio

Mar 2025 - Present

Astro Site

- Analyzed user feedback to refine **UI and UX design**, resulting in greater user satisfaction
- Developed the front-end using **Next.js** with **Typescript**, the backend with **Node.js** and **Typescript**, and seamlessly connected each through **API endpoints**
- Configured and implemented an **AWS S3 bucket** and a **Neon** database for storing images

Pirate Software Game Jam 16

Jan 2025

Game Site | Source Code

- Developed a 2D action game with **Unity and C#** focusing on **event-driven** and **OOP design patterns** to ensure modular, maintainable, and scalable code
- Utilized the **A* algorithm** and implemented character states for NPC pathfinding and behaviours
- Managed version control with **Git**

Machine Learning Image Translation

Sept 2023 – Apr 2024

Capstone Project

Western University

- Enhanced video streaming quality and usability, creating a **9+ frames per second increase** by seamlessly integrating Nvidia's CUDA API for accelerated processing
- Reduced image translation errors, increasing the model's accuracy by creating **balanced datasets of 700+ images** from each domain
- Achieved translations approved by medical professionals through refined training of the ML model

Gym Management System

Sept 2022 – Dec 2022

Source Code

Western University

- Developed and deployed a full-stack web application for managing gym memberships and classes
- Utilized **MySQL** for data storage, **Node/Express** backend, and **ReactJS** for the user interface
- Integrated **REST APIs** to connect the front-end and back-end, extensively tested with **Insomnia**

Music Manager

Sept 2022 – Dec 2022

Source Code

Western University

- Developed a full-stack music web application to create and listen to playlists; utilizing React for the UI, Node/Express for a RESTful backend, and a .csv file for metadata, deployed with **AWS**

Extracurricular Activities

Anne of Green Gables Production

Apr 2020

- Managed and programmed lighting effects for production
- Assisted with audio management and audio cues

Technical Skills

Languages: Java, JavaScript, TypeScript, C#, SQL, Python, HTML5, CSS, C++, ARM Assembly

Developer Tools: AWS, Insomnia, Git, Jira, Unity, Figma, Vercel

Libraries/Frameworks: ReactJS, NextJS, TailwindCSS, ExpressJS, NodeJS, PyTorch

Other: Agile, Linux, OOP, Data Structures, Office 365 Suite