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

React-Native Couples App   **May 2025 - Present**
- Built and maintained a mobile app, leveraging native APIs for enhanced UX and multi-platform support
- Integrated firebase services for a scalable and maintainable backend while securing user data
- Implemented caching and pagination techniques to lower database reads by **80%**, reducing overall service costs and creating faster load times

Full-Stack Astrophotography Web App   **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 integrated 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**

Extracurricular Activities

Anne of Green Gables Production   **Apr 2020**
- Managed and programmed lighting effects for production

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, React Native, NextJS, TailwindCSS, ExpressJS, NodeJS, PyTorch, Firebase
Other: Agile, Linux, OOP, Data Structures, Office 365 Suite