

Alex Lee

Waterloo, Canada | a55lee@uwaterloo.ca | [LinkedIn](#) | [GitHub](#) | [Portfolio](#)

SKILLS

Languages: Python, Java, C/C++, Typescript, Javascript, C#, R, SQL, Bash

Frameworks/Libraries: React, Express, Bootstrap, jQuery, Pandas

Tools: Spring, PowerBI, MySQL, MongoDB, Linux, Git, AWS

PROJECTS

Academic Management System | *Spring, Javascript, HTML/CSS, MySQL, jQuery, Bootstrap* | [GitHub](#)

- Built a full-stack academic management web app of **20+** pages with **50+** users using **Spring** and **MySQL**.
- Distributed project on **AWS EC2** with **Apache Tomcat**, with optimized database schema and RESTful APIs.
- Implemented **10+** essential features, **CRUD** operations of course postings and assignments, self implemented real-time chat, custom course search filters, and dynamic operations and views with the database.
- Reduced query response time by **30%** using nested SELECT statements to handle grouped ID increments.
- Ensured reliability with **200+** test cases and resolved issues such as multiple PK, time zone mismatches.

Personal Portfolio Website | *TypeScript, React, SASS* | [GitHub](#) | [Link](#)

- Developed a personal portfolio website using **TypeScript** and **React** to showcase professional skills and projects.
- Designed a modern portfolio website using **SASS**, including responsive layouts, for better user experience.
- Enhanced personal brand visibility and resulted in **150%** increased networking and interview opportunities.

Biquadraris Game | *C++, X-Window* | [GitHub](#)

- Led a team of three to develop a non-real time Tetris as a CS246 final project, using **C++** with OOP design.
- Built a visually responsive game board with real-time score tracking and piece previews using **X-Window**.
- Conducted over **500** test cases to ensure stability and reliability to reduce runtime errors during play sessions.

Computer Vision Football Analytics | *Python, OpenCV, Pandas* | [GitHub](#) | [Link](#)

- Built a football analysis system using **OpenCV** to track key metrics such as ball possession and player speed.
- Trained a **YOLOv11** model with **10,000+** images, achieving **0.877** mAP50 with 35.7 ms per-frame latency.
- Deployed services on **AWS EC2** with **SQS**, and built a **Next.js** web app for video upload and real-time analysis.

LEADERSHIP & INVOLVEMENT

Finance Lead

September 2024 - December 2024

Waterloo, ON

Association of Korean Canadian Scientists and Engineers

- Conveyed accountability and organization skills by analyzing and managing the cash flow of **\$1,000+** annual income and expenses using **Excel**.
- Coordinated with the **team of 16** to exercise strategized marketing while promoting academic resources such as Open House, and Resume Critique for the greater Kitchener-Waterloo community.
- Reduced **10%** of unnecessary expenditures by writing annual financial reports to identify inefficiencies and recommending actionable strategies for better financial management of the organization.

Fullstack Developer

January 2025 - April 2025

Waterloo, ON

Association of Korean Canadian Scientists and Engineers

- Led the **team of 6** to develop the official AKCSE website using **Express** and **MongoDB**, improving accessibility to career and academic help resources for students.
- Optimized query efficiency and database scalability by **300%** through implementation of **dynamic CRUD**, while implementing **authentication** and access control features to strengthen data security.
- Increased event participation by **150%** by demonstrating quality teamwork and leadership by collaborating with a **team of 5**, focusing on specialization to deliver higher quality outcomes.

EDUCATION

University of Waterloo

September 2023 - April 2028

Bachelor in Data Science, Minor in Combinatorics and Optimization

Relevant Coursework: Data Structures, Algorithm Design, Statistics, Sampling Design, Linear Algebra, OOP

Scholarship: President's Scholarship of Distinction - \$2,000 scholarship for students with average over 95%