

Alex Lee

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EDUCATION

University of Waterloo

September 2023 - Present

Bachelor in Data Science, Minor in Combinatorics and Optimization

Waterloo, ON

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

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

SKILLS

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

Frameworks/Libraries: Pandas, Matplotlib, NumPy, SciKit, TensorFlow, OpenCV, Selenium, Express, React

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

EXPERIENCE

Data Manager

May 2025 - August 2025

Daechitop English Institute

- Managed student performance data using **Excel** by analyzing and visualizing students' performance trend to identify key solution for improvement and generated reports that drove a **15%** improvement in test scores.
- Developed an automation tool using **PyAutoGUI** to streamline the creation of course materials of the institute, improving material creation efficiency by **40%**, enabling instructors to focus on personalized teaching.
- Ensured accuracy and consistency of student performance datasets through systematic record-keeping and data cleaning, reducing overall errors by **20%** and strengthening the reliability of academic performance insights.

Database Developer

January 2025 - April 2025

AKCSE

Waterloo, ON

- Led the development of official AKCSE website using **Express** and **MongoDB** to enhance accessibility to academic and career help resources for University of Waterloo Students and increased the participants of events by **150%**.
- Optimized website maintenance efficiency by **300%** by implementing **dynamic CRUD** and designing an efficient database, while implementing **authentication** and access control features to strengthen data security.
- Demonstrated high quality teamwork and leadership by collaborating with a team of **5**, improving project specialization which led to faster development and contributed to **20%** increase in event participation.

Finance Analyst

September 2024 - December 2024

AKCSE

Waterloo, ON

- Conveyed accountability and organization skills by analyzing, managing, and visualizing the cash flow of the organization using **Excel** to reduce reporting time by **30%** and improved reporting accuracy by **10%**.
- Coordinated with executive members 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 and conducting accurate analysis to identify inefficiencies and recommended actionable strategies for better financial management of the organization.

PROJECTS

AI/ML Football Analysis | *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.

FBREF Football Team Analysis | *Python, Pandas, Matplotlib, Selenium, PowerBI* | [GitHub](#)

- Collected **100,000+** football match data using **Selenium** and cleaned raw datas into a Pandas DataFrame.
- Performed exploratory analysis using **PowerBI** and **matplotlib** to visualize findings interactively and intuitively.
- Identified key predictors of match results, demonstrating improved prediction accuracy and focused strategies.

Virtual Academic Management System | *Java, Spring, MySQL, EC2* | [GitHub](#)

- Built a full-stack academic management web app of **20+** pages with **50+** users using **Spring** and **MySQL**.
- Ensured reliability with **200+** test cases and resolved issues such as multiple PK, time zone mismatches, etc.
- Distributed project on **AWS EC2** with **Apache Tomcat**, with optimized database schema and RESTful APIs.
- Reduced database response time by **30%** using nested SELECT statements to handle grouped ID increments.