Alex Jiwon Lee

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SKILLS

Languages: Python, Java, R, SQL, Bash
Frameworks/Libraries: Pandas, Matplotlib, NumPy, SciKit, TensorFlow, OpenCV
Tools: MySQL, MongoDB, PowerBI, Git, AWS

EXPERIENCE

Data Analyst — May 2025 - August 2025
Daechitop English Institute

- Boosted average test scores by **12%** by designing **PowerBI** dashboards and conducting exploratory analysis built from cleaned and normalized student performance schema in **Excel**.
- Reduced repetitive work time by **75% (3x)** by developing automation tools using **Excel VBA** and **PyAutoGUI**, and enabled instructors to focus on personalized teaching.
- Delivered **data-driven insights** through statistical modeling and efficient data pipelines, which instructors used to design and offer an adaptive education system that maximized study efficiency.

Database Developer — January 2025 - April 2025
AKCSE — *Waterloo, ON*

- Led the development of official AKCSE website using **Express** and **MongoDB**, improving accessibility to career and academic help resources for University of Waterloo 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.

Finance Analyst — September 2024 - December 2024
AKCSE — *Waterloo, ON*

- Conveyed accountability and organization skills by analyzing and managing the cash flow of **$1,000+** annual income and expenses using **Excel** 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 to identify inefficiencies and recommending 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.

Credit Card Fraud Detection | *Jupyter Notebook, Pandas, Scikit-learn, Tensorflow* | [GitHub](#)

- Developed credit card fraud classification model using **sklearn** and **TensorFlow** with **96%** prediction accuracy.
- Collected **200,000+** transaction data and cleaned by reshaping and scaling to handle **imbalance dataset**.
- Utilized **Shallow Neural Network** as a prediction model, comparing **5** different models for optimal results.

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

- Collected **100,000+** football match data using **Selenium** and cleaned raw datas into a **Pandas DataFrame**.
- Performed exploratory analysis using **matplotlib** and **PowerBI** to visualize findings interactively and intuitively.
- Identified progress passing distance as key predictor of math results, suggesting focused strategies to teams.

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%