

Stuart Wing

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Relevant Languages and Technologies

- Proficient in Python, SQL, C++, and C. Skilled in libraries such as Pandas, NumPy, PyTorch, MLFlow, Plotly, UMAP and HDBSCAN.
- Experienced with cloud platforms such as Databricks, Azure, Azure DevOps, AWS RDS, ThingsSpeak and PostgreSQL.
- Knowledgeable in machine learning topics such as time series forecasting, feature engineering, model evaluation and experimentation.
- Skilled with machine learning models and techniques including LSTM, XGBoost, linear regression, and clustering.

Education

University of Western Ontario

London, Ontario

BESc in Mechatronic Systems Engineering and BSc in Computer Science: Final year GPA of 3.7

2018-2023

Professional Experience

Ontario Power Generation (via Tundra Technical)

Toronto, Ontario

Data Analytics: Data Scientist

July 2023-Present

- Developed an LSTM model to forecast hourly lake water levels over a 48-hour horizon using 67 different historical and forecasted weather features, achieving low RMSE and strong generalization across years worth of diverse storm and ice conditions. Built dynamic data pipelines for ingesting SQL and API based feeds, enabling real time model updates and automated retraining.
- Used XGBoost to assess a legacy physics based model's performance, identifying weather conditions linked to poor results. Applied these insights to guide feature engineering, improving LSTM accuracy under volatile weather conditions.
- Served as the primary liaison with stakeholders from Engineering, Performance Improvement and Equipment Reliability to design and implement a solution for extracting key themes from large text datasets using natural language processing (NLP) techniques.
- Developed and deployed an Azure-hosted web app that integrated with the Databricks REST API to process text datasets, trigger topic modeling workflows, and generate interactive visualizations, enabling stakeholders to leverage text analytics from their data.
- Collaborated in a cross-functional team of 6 to perform a comprehensive assessment of OPG's Nuclear Safety Culture in Engineering, using NLP to produce text analytics from surveys, interviews, reports, and records. Presented findings to VPs of each engineering department, received positive feedback, and promptly delivered the report to the Canadian Nuclear Safety Commission. Awarded a recognition card by the Central Engineering VP, (our executive sponsor) for outstanding work.
- Developed a Django app to input and track Monitoring and Diagnostics Centre benefits, resulting in \$160,000 in tracked benefits.

Rankin Construction Inc.

St. Catharines, Ontario

Software Engineering Intern

May-August 2022

- Developed an internal app for soil tracking, enabling users to track loads across projects and comply with government mandates.
- Collaborated with project managers to ensure the app produced relevant historical data and analytics while also streamlining user data input with smart suggestions by using JavaScript and SQL, allowing project managers to optimize project hauling expenses.

Personal Projects

Player Deployment Analysis for Utah Hockey Club Analytics Competition

- Developed a submission for the Utah Hockey Club analytics competition by scraping the NHL API to analyze player deployment patterns for the 2023-24 season. Processed data for players with 40+ games, calculating percentile ranks for forwards and defensemen across four situations (overtime, power play, penalty kill, and 5-on-5). Applied UMAP and HDBSCAN to cluster players into deployment archetypes and visualized the results using Plotly.

Goalie Performance and Analytics Article

- Authored an in-depth article exploring the high variance in hockey goalie performance, NHL teams' challenges in evaluating the position, and the role of analytics in bridging this gap. Conducted interviews with an AHL goalie coach, an OHL goalie, and a prominent hockey analytics expert to provide diverse perspectives.

Activities & Interests

Western Undergraduate Engineering Society (UES)

Vice President Social

2022-2023

- Elected in March of 2022 by the engineering student body to oversee the UES Social portfolio and manage its 50-thousand-dollar budget.
- Managed and coached the Western Engineering Hockey Team, coordinating the marketing and logistics for the inaugural Engineering Vs Business hockey game at Budweiser Gardens which resulted in a capacity crowd of over two thousand students.

Western University: Engineering Orientation Leader (Soph)

2019, 2022

- Selected to a team of 60 student leaders and tasked with being an upper year student mentor and a primary academic resource to dozens of first year students living on campus.

St Catharines Rowing Club:

2016-2020

- Named to the 2018 Crew of the Year by the St Catharines Rowing Club after winning gold in the Junior A Men's 8+ event in the Royal Canadian Henley Regatta and Row Ontario Championships.

Other Interests: Hockey, football, baseball, golf, curling, and alternative rock music.