587-873-2095
Toronto, Ontario

Zackary Nay

Website
Linkedin

Education

Toronto, Ontario **University of Toronto** **Sep 2019 - Aug 2023**

- **Degree:** Honours Bachelor of Science with Distinction
- **Major:** Mathematics, Economics **Minor**: Statistics
- **Coursework**: Time Series Analysis, Data Analysis, Probability, Econometrics, Real Analysis

Employment

Clearway Group of Companies **Toronto, Ontario**

Manager of Research and Strategic Data Analysis **Oct 2024 - Present**

- Managed a team of five in developing a machine learning algorithm-based system that automatically estimates construction projects, reducing the time to estimate a project by 6 hours by generating cost predictions from both text and image data.
- Led a collaboration with the OptiMaL Research Group at the University of Toronto, developing innovative computer vision techniques to automate the extraction of information from highly detailed engineering drawings.
- Leveraged advanced unsupervised clustering techniques in PyTorch to transform an unclassified text dataset into distinct classes, allowing for more effective data analysis.
- Worked with Vision Language Models to increase object detection accuracy in engineering drawings.

Machine Learning Engineer **Jan 2023 - Oct 2024**

- Improved existing text classification models with TensorFlow by implementing modern models, ensemble methods, and addressing data imbalance, which increased model accuracy from 63% to 95%.
- Applied Markov Chain Monte Carlo methods to optimize margin calculations for construction projects, increasing bid wins and profitability.
- Developed CI/CD pipelines and interactive dashboards to track key trends and forecast future opportunities, guiding the selection of construction projects to bid on in alignment with organizational goals.

Legislative Assembly of Ontario **Toronto, Ontario**

Data Analyst Intern **Apr 2021 - Sep 2021**

- Extracted and analyzed provincial and federal polling data using various statistical techniques, including clustering and random forest models, to generate insightful reports on public opinion trends.
- Identified and corrected inaccuracies in data and code across multiple systems, improving overall data integrity and reliability.

Projects

Writer - Towards Data Science

- Contributing writer for Medium's second-largest publisher, authoring articles on statistical topics such as normalizing flows, kernel density estimation, and other machine learning models.

Datafest - Finalist

- Developed a sophisticated sentiment analysis model that led a team to the final round of the American Statistical Association's DataFest competition, demonstrating strong teamwork and analytical skills.

Governor’s Challenge - Honourable Mention

- Earned an Honourable Mention in a Bank of Canada collegiate case competition by applying RNN and ARIMA models in R and Stata to accurately forecast inflation trends.

Skills

Software: (*proficient*) Python, PostgreSQL, MySQL, R, Stata, Git, Docker, C++, (*familiar*) Matlab, JavaScript, VBA, HTML
Libraries: TensorFlow, PyTorch, Scikit-learn, Pandas, Numpy, SciPy
Cloud Technologies: AWS EC2, AWS ECR, AWS Lightsail, AWS Lambda, AWS DynamoDB, GCP