

ISAIAH BAKSH

Toronto, Ontario

☎ 416-508-6990 ✉ isaiah.baksh2001@gmail.com 🔗 linkedin.com/in/isaiah-b-62bb43193 🌐 github.com/isaiahbaksh28

Education

Ontario Tech University

June 2025

Honours Bachelor of Science in Applied Math & Physics

Oshawa, Ontario

Relevant Coursework: *Data Science, Mathematical Modeling, Probability Theory, Optimization, Differential Equations*

Experience

Ontario Tech University

Sept. 2024 – Present

Undergraduate Researcher

Oshawa, Ontario

- Used the Kalman Filter to analyze large movements in financial derivatives, under the supervision of Dr. Sean Bohun
- Constructed the Kalman Filter in Python to model and forecast equity time series data; utilized Jupyter Notebooks for quantitative analysis and visualization

Philo Investments Ltd.

June. 2023 – May. 2024

Financial Analyst

Toronto, Ontario

- Analyzed financial statements and key ratios to evaluate business performance and identify areas for improvement
- Delivered insights on financial trends and risks, contributing to recommendations on cost control and capital allocation
- Conducted financial analysis on revenue streams, cost structures, and capital expenditures to support strategic planning

Ontario Tech University

Sept. 2022 – Present

Undergraduate Teaching Assistant

Oshawa, Ontario

- Taught Laboratory sessions for Physics I & II to primarily first year faculty of science and engineering students
- Topics related to experiments include, dynamics, electric circuits, magnetic forces, waves & optics
- Assisted in setting up lab equipment and software such as capstone and any large equipment such as air tracks and lasers

Projects

MLedu | *TensorFlow, PyTorch, Scikit-Learn*

June 2025

- Authored a comprehensive technical manuscript explaining foundational to advanced machine learning and data science concepts, including regression models, SVM's, PCA, Clustering, Neural Networks and Transformers
- Applied techniques for regression, classification, clustering, and dimensionality reduction to predictive modeling, optimization, and data exploration tasks incorporated mathematical foundations and Python based implementations to deepen technical understanding

From Probabilities to Podiums | *Python, Pandas, Jupyter Notebooks, Excel, SciPy*

February 2025

- Applied hypothesis testing (Chi-Square) to evaluate coaching influence on Team USA's Olympic performance, validating results with data across multiple Olympic cycles, achieving statistically significant results (p-value less than 0.01)
- Built a Poisson regression model in Python using 1896–2024 Olympic data achieving a 0.86 correlation for gold medal predictions

Is He in The Zone? | *Python, Excel, Jupyter Notebooks*

February 2024

- Developed models to analyze momentum shifts in tennis matches for an international math competition (COMAP)
- Created and tested three models (based on serves, set outcomes, and player movement), achieving up to 65% accuracy in predicting point outcomes

Classification & Regression EPA Data | *Python, Scikit-Learn, Tensorflow, Jupyter Notebooks*

April 2022

- Implemented a random forest model, that was able to predict a state, given AQI data, improved model 24% on predicting with unseen data
- Evaluated metrics implementing a ROC curve, and using metric table from sklearn library
- Implemented GridsearchCV and RandomsearchCV in order to find best parameters to model data and improve results on test data

Technical Skills

Languages: Python, R, SQL, Matlab, C/C++, VBA

Developer Tools: VS Code, Anaconda, Jupyter Notebooks, RStudio, Flask

Technologies/Frameworks: TensorFlow, PyTorch, Scikit-Learn, Scipy, Pandas, NumPy, ggplot2, XGBoost, Git, CI/CD

Data Science/ML: SVM, PCA, Regression Analysis, ANN, CNN, RNN, DNN, Decision Trees, Random Forests, K-Means, Spectral Clustering, GMM, DBScan, A/B Testing, Transformers