Tim Chung

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Technical Skills

Languages: Python · SQL · Spark · Bash · C/C++ · Javascript · HTML/CSS
Libraries: Pandas · Scikitlearn · NumPy · Matplotlib · PyTorch · Keras · OpenCV · AutoML
Tools / Techniques: Azure DevOps · PowerBI · Databricks · Jupyter · Excel · Machine Learning · Deep Learning

Education

University of Waterloo Waterloo, ON
Candidate for Honors Bachelor of Computer Science, Minor in Data Science, GPA: 3.7 *Sept. 2020 – May 2025*

- Coursework: Data Structures and Algorithms · Statistics · Probability · Object Oriented Software Development

Professional Experience

Machine Learning Engineer Jan 2022 – Present
Nuclear Promise X - AI and Advanced Analytics Team *Oakville, ON*

- Implemented Regression and Boosting Models **(XGBoost, Catboost, RFG, LR)** in **Python** on **One-Hot Encoded** data to forecast and improve project costs for clients.
- Used the ANOVA F-Value metric to perform feature selection on **100+** categorical variables, resulting in a **250%** increased MAPE accuracy from existing client forecasts.
- Worked alongside Data Scientists and ML engineers across the product team, in an **Agile** SCRUM environment.

Data Scientist April. 2021 – Dec. 2021
Transport Canada - Digital Services and Advanced Analytics Division *Ottawa, ON*

- Utilized **Python** and **Spark** on Databricks to build a data pipeline that forecasts 30+ categorical variables from **35 million** rows of highly granular vehicle collision data.
- Formatted the raw data into a **time series** format, and imputed missing values using **SQL** queries and Pandas.
- Implemented time series **(sarimax, fbprophet)**, regression, and **neural network** (N-Beats) techniques in Pytorch / Scikitlearn, with hyperparameter tuning and cross validation, resulting in a **95%** forecasting accuracy.
- Incorporated seasonal parameters and exogenous data (vehicles kilometer travelled) with multiple lagged sequences into the Arima model to increase performance by **7%**.
- Presented results weekly to clients, and proposed strategies to improve the efficiency of the original software methodology.

Projects and Leadership

Education Team Executive Jan 2022 – Present
University of Waterloo Data Science Club *Waterloo, ON*

- Responsible for running a series of reading groups / workshops to discuss recent papers on Data Science and AI.
- Papers Discussed: **N-Beats** (Neural Basis Expansion Analysis for Interpretable Time Series Forecasting).

SHAD Program Intern June 2018 – July 2018
University of Calgary - Engineering Department *Calgary, AB*

- Prepared financial statements of estimated product costs and sales using Excel.
- Worked alongside 8 members to develop a business model detailing value propositions and advertising strategies.

Phishing Detection Link Application Aug 2021
Hack-the-6ix - Hackathon *Toronto, ON*

- Developed a real-time phishing detection link application to warn users of fraudulent links on the web browser.
- Worked alongside 3 developers to train and test a logistic regression and random forest model.
- Transformed the Notebook file into a Google Cloud Function, to efficiently pass data to a JSON endpoint.

Achievements and Interests

Hack-the-6ix Accenture Award | Most Innovative Use of Tech, **1st of 100+** participants Aug 2021
Euclid and Fermat Math Contest |Placed **top 11%** and **top 5%** respectively, Waterloo Distinction Roll 2018
Youtube Guitar Channel | Personalized covers, Fingerstyle Acoustic, Jazz