# Mu (Henry) Ha

Vancouver, BC | 519-503-5609 | [mu2024ha@gmail.com](mailto:mu2024ha@gmail.com) | [LinkedIn](#) | [GitHub](#) | [Portfolio](#)

*Eligible for TN visa sponsorship under USMCA*

## PROFESSIONAL SUMMARY

Data Scientist with a Master of Data Science and hands-on experience building predictive models for time series forecasting, computer vision, and statistical monitoring. Experienced in feature engineering, hyperparameter optimization, and model evaluation, with applied work in predictive maintenance, financial forecasting, and data drift detection. Strong ability to translate complex analytical results into actionable insights through dashboards and data visualization.

## TECHNICAL SKILLS

**Languages:** Python, SQL, R, MatLab, C/C++, Java, Bash, Git, MongoDB, Docker

**Machine Learning:** Regression/Classification, Time Series, NLP, Generative AI, Computer Vision

**Data Analysis & Visualization:** Pandas, NumPy, Scikit-Learn, Matplotlib, Seaborn, Dash, Plotly

**Deep Learning:** PyTorch, TensorFlow/Keras, Hugging Face Transformers

**Statistical Methods:** Hypothesis Testing, A/B Testing, Confidence Intervals, PCA, Monte Carlo Simulation, Stochastic Processes

## PROFESSIONAL EXPERIENCE

**Brilliant Automation** | *Data Scientist (Capstone)* | Vancouver, BC                               Apr 2025 – Jun 2025

- Developed predictive maintenance models using Ridge Regression, Random Forest, and LSTM networks to forecast equipment failures from multivariate industrial sensor data.
- Performed feature engineering and structured error analysis to improve model accuracy while maintaining interpretability for operational and non-technical stakeholders.
- Designed and deployed an interactive Dash application to visualize sensor data and historical health trends.

**Resolution Life US** | *AWS Cloud Engineer (Internship)* | Toronto, ON                               Sep 2021 – Apr 2022

- Built standardized EC2 golden images to support consistent data processing and analytics environments, reducing deployment time by 80%.
- Automated monthly AWS usage dashboards to support cost and trend analysis, and management decision-making.

**University of Waterloo** | *Data Scientist Research Assistant* | Waterloo, ON                               Jan 2021 – Apr 2021

- Implemented and trained U-Net neural network architectures for semantic segmentation of satellite imagery, successfully classifying land, ice, and water surfaces.
- Achieved a validation MSE of 0.026 and 90% classification accuracy on geospatial datasets by systematically benchmarking multiple regression techniques and tuning hyperparameters to identify the optimal model structure.

## PROJECTS

**Time Series Forecasting (Tesla Stock Analysis)** | *Python, PyTorch, Transformers*

- Implemented **Temporal Fusion Transformer (TFT)** to forecast Tesla stock prices using historical market data, tuning encoder length, attention dropout, and learning rate to minimize **RMSE and MAE** across multiple forecast horizons.
- Evaluated model performance against naive persistence baselines using expanding-window cross-validation, and assessed forecasting reliability with **RMSE, MAE, and $R^2$**, ensuring robustness under realistic time-series validation.

**Statistical Model Monitoring System** | *Python, Statistics, PSI*

- Developed a statistical monitoring engine to detect data drift and ensure inference consistency by tracking feature distribution shifts, calculating Population Stability Index (PSI), and analyzing prediction probability distributions.
- Benchmarked system reliability using p50/p95 latency metrics to validate stable real-time performance.

## EDUCATION

**University of British Columbia** | *Master of Data Science* | Vancouver, BC                               Sep 2024 – Jul 2025

**GPA:** 91/100 | **Relevant Coursework:** Machine Learning, Deep Learning, Gen AI, NLP, Optimization, Time Series, Data Visualization.

**University of Waterloo** | *B.Sc. Mechanical Engineering (Honours), AI Option* | Waterloo, ON                               Sep 2018 – Jun 2024

**Honours:** Distinction | **Relevant Coursework:** Probability & Stochastic Processes, Computational Methods, Advanced Linear Algebra.