

# Mu (Henry) Ha

Vancouver, BC | m8ha@uwaterloo.ca | 519-503-5609 | LinkedIn | GitHub | Portfolio

**Programming:** Python, SQL, Bash/Shell, C/C++, R, Java, Git/GitHub, AWS (EC2, S3, IAM, CloudWatch), Docker

**Machine Learning:** Supervised/Unsupervised Learning, Time Series Forecasting, LLM, Generative AI

**MLOps & Data:** MLflow, Experiment Tracking, Model Versioning, Deployment Concepts, Model Monitoring, Data Drift (PSI), Model Evaluation, ETL Pipelines, Data Validation, Feature Engineering, Fine Tuning

**Infra & Tools:** CI/CD, GitHub Actions, PostgreSQL, FastAPI, REST APIs, Linux, Dash, Matplotlib, Terraform

## EXPERIENCE

**Brilliant Automation** — Vancouver, BC

Apr 2025 – Jun 2025

*Machine Learning / MLOps Engineer*

- Designed and delivered an **end-to-end predictive maintenance system** on **real-world industrial sensor data**, spanning ingestion, feature extraction, model training, and evaluation.
- Trained and compared multiple **model families (Ridge, Random Forest, LSTM)**, performing structured error analysis to balance accuracy and deployment interpretability.
- Implemented **reproducible experimentation workflows** and an **operations-facing Dash dashboard** to support reliable iteration and stakeholder decision-making.

**Resolution Life US** — Toronto, ON

Sep 2021 – Apr 2022

*AWS Cloud Engineer*

- Built **standardized EC2 golden images** with **secure configurations** and **preinstalled dependencies**, improving **infrastructure provisioning efficiency by 80%**.
- Automated **AWS usage and cost reporting pipelines**, enabling improved **cost visibility** and supporting **cloud governance** and operational decision-making.
- Worked across **IAM, EC2, S3, and CloudWatch** in a **production cloud environment**, following **change management** and reliability-oriented practices.

**University of Waterloo** — Waterloo, ON

Jan 2021 – Apr 2021

*Data Scientist Research Assistant*

- Built U-Net ML pipelines for **satellite image segmentation**, covering preprocessing, training, and validation.
- Achieved a **0.026 validation MSE** and **0.90 classification accuracy** through **systematic tuning** and evaluation.

## PROJECTS

**ML Guard** — **ML Monitoring and Cost Attribution System**

Oct 2025 – Dec 2025

- Built a **Datadog-lite monitoring service** for **ML inference**, tracking **latency, prediction statistics, feature distributions, and drift (PSI)**.
- Implemented **baseline-driven drift detection** and **timezone-aware daily aggregation** via a background worker and PostgreSQL datastore, with **Slack alerts** triggered on drift threshold breaches.
- Integrated **AWS Cost Explorer** to pull and store **daily costs** per project, enabling **cost anomaly** detection.
- Shipped as a reproducible **Dockerized** stack (FastAPI + Postgres) with end-to-end smoke validation.

**ML Model Deployment & MLOps Pipeline (Stock Price Forecasting)**

Aug 2025 – Sep 2025

- Delivered a **production-ready ML serving system** supporting multiple forecasting approaches, including classical baselines, **AutoML**, and **transformer-based models from Hugging Face**, across local and AWS environments.
- Established a **registry-driven deployment workflow** that decoupled model experimentation from production inference, enabling safe comparison and promotion of diverse model families.
- Enabled **live, load-balanced inference** via a containerized FastAPI service on AWS, validated through health-gated startup checks and real end-to-end prediction requests.
- Created **operational runbooks** that reduced deployment risk and made the system maintainable and cost-efficient.

## EDUCATION

**University of British Columbia**

Sep 2024 – Jul 2025

Master of Data Science

**University of Waterloo**

Sep 2018 – Apr 2024

B.Sc. Mechanical Engineering (Honours, Co-op) — AI Option, Management Science Option

## CERTIFICATIONS

AWS Certified Cloud Practitioner (2025) | CFA Level I (2024) | Machine Learning & Deep Learning Specialization

Eligible for TN visa sponsorship under USMCA (Engineer / Computer Systems Analyst categories).