

# Aamodit Acharya

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## Education

### University of Waterloo

Bachelor of Statistics with Computer Science Minor (Co-op)

Waterloo, ON

Expected April 2026

- **Courses:** Data Analysis, Stochastic Processes, Sampling and Experimental Design, Applied Linear Models, Investment Science
- **Certifications:** Supervised Machine Learning (DeepLearning.ai), SQL for Data Analytics (Coursera), SOA Exam FM and SOA Exam P

## Work Experience

### TD Bank

Data Science Intern

Montreal, QC

Jan 2024 - Apr 2024

- Engineered an internal software tool using **Impala (SQL on Hadoop)** with automated data pipelines to restructure and update contract data for real-time monitoring of client-contract cancellations, enabling the residential pricing team to boost customer retention by 22%.
- Optimized data extraction by converting legacy **R code** into **SQL scripts** to retrieve live website data, reducing report processing by 97%.
- Integrated **Excel PivotTables** and **Power Query** for advanced **ETL** processes, automating data aggregation and enabling real-time competitor premium analysis to enhance market positioning, driving a 16.5% increase in Q2 residential insurance premiums.
- Deployed a **Python** web scraping pipeline on **AWS EC2**, leveraging **Selenium**, **BeautifulSoup** and **Pandas** for accurate pricing decisions.

### TD Bank

Data Science Intern

Toronto, ON

May 2023 - Aug 2023

- Designed a **Python framework** to forecast multiple customer and call center metrics using **Pandas** and **NumPy**, with **SQL** for raw data extraction and organization; utilized **Docker** and **Kubernetes** for deployment on **AWS EC2**, reducing overall forecasting time by 67%.
- Created a **modular framework** to forecast call center staffing needs for the 2024 year, using historical trends; projected to save \$5 million.
- Implemented **RidgeCV** and **linear regression** using **Scikit-learn** to forecast call center metrics, improving predictive performance by 25%.
- Aggregated legacy Cisco data with Genesys data using **Hive SQL on Hadoop** and partitioned tables, cutting report generation time by 50%

### Desjardins

Actuarial Science Intern

Toronto, ON

Sep 2022 - Dec 2022

- Developed **SAS code** for the new-business-progress report, which identified discrepancies in insurance quotes caused by incorrect information from brokers or customers, resulting in a 30% improvement in fraud detection accuracy.
- Streamlined premium data extraction and rating for the Nova Scotia Pre-NeXT initiative, an online insurance premium quoting tool, by extracting profile data with **WTW-Radar** and rating it using a **Microsoft Excel** macro to train the algorithm powering instant online quoting.
- Conducted a review of the New Brunswick Segmentation model, ensuring alignment between **WTW-Radar** and **R models**, resulting in a 10% improvement in accuracy across 10 risk factors.

## Extracurriculars

- **UW Aerial Robotics** 🤖, *Autonomy Engineer*. Designed drone navigation logic using **Python**, integrating **YOLO** for landing pad detection with **NumPy** and **PyTorch**, and optimized waypoint tracking using **Euclidean distance** calculations.

## Projects

- **What Game?** 🎮 : Developed a **Python** and **Streamlit** app using **cosine similarity** with **scikit-learn** to recommend games based on IGDB API data, enhanced with **seaborn** visualizations.
- **What Image?** 🖼 : Built an **image captioning model** in **Python** using **CNNs** for image feature extraction and **RNNs (LSTMs)** for generating text captions, leveraging **PyTorch** to construct and train this multimodal architecture.
- **Drake vs Kendrick** 🎵 : Conducted a comparison of Kendrick Lamar and Drake's song popularity in **R** using **k-Nearest Neighbors (kNN)** classification and **exploratory data analysis** to analyze play distributions and distinct artist features.
- **GameStop Stock** 📈 : Modeled GameStop (GME) stock volatility in **R** with **linear regression**, **influence metrics**, and **robust regression** (using **gradient descent**) to address outliers and highlight influential trading days.
- **Edmonton Oilers** 🏒 : Assessed Edmonton Oilers' goal-scoring patterns in **R** with **Poisson-based MLE** and **MDE** for goal distribution, applying the **Horvitz-Thompson estimator** to evaluate **bias**, **variance**, and **MSE** in home vs. away goal averages.
- **MartMetrics**: Currently working on a sales forecasting model using the Walmart Kaggle dataset and **XGBoost** in **Python**, leveraging **time-series decomposition**, **hyperparameter tuning**, and **cross-validation** to predict sales trends and support strategic business insights.

## Skills & Interests

**Languages:** Python, SQL, R, GraphQL, VBA, HTML/CSS

**Infra:** Git, GCP, Linux, Docker, Kubernetes, Gitlab

**Frameworks:** NumPy, Pandas, Scikit-learn, Matplotlib, XGBoost, Pytorch

**Databases:** MySQL, PostgreSQL, SQLite, Snowflake

**Interests:** Gym Goer, F1 Racing Enthusiast, Fan of Liverpool Football Club and the Toronto Raptors