Aamodit Acharya

416-617-5955 | aamodit.acharya@uwaterloo.ca | aamodita.com | ammo-byte | aamodit-acharya

Education

University of Waterloo *Waterloo, ON*

Bachelor of Mathematical Statistics with Computer Science Minor *Sept 2021 - 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 *Montreal, QC*

Data Science Intern (Residential Analytics team) *Jan 2024 - Apr 2024*

- Constructed a comprehensive **cancellation monitoring tool** using **SQL** to restructure customer contract data, facilitating real-time tracking of renewals and cancellations for various products, boosting overall client retention by 22%.
- Optimized the **data extraction** process, reducing the time required to extract website inforce and unbounded data by approximately 97% by converting **R code** into streamlined **SQL scripts**.
- Developed **sales summaries** using **pivot tables** to analyze competitor premiums, enabling better market positioning and pricing strategies, which contributed to a 16.5% increase in residential insurance prices for Q2.

TD Bank *Toronto, ON*

Data Science Intern (Modelling Analytics team) *May 2023 - Aug 2023*

- Designed a **Python-based modular framework** utilizing **Pandas** and **NumPy** for data manipulation, paired with **SQL** for robust data extraction, reducing the overall forecasting process time from 30 minutes to 10 minutes per launch.
- Revamped customer experience strategies by creating a **modular framework** to forecast call center staffing needs, ensuring optimal employee allocation; projected to deliver $5MM in cost savings and increase customer retention by 20%.
- Implemented **RidgeCV** and **Linear Regression** models from the **scikit-learn** library to forecast call center metrics, improving predictive performance by 20%.
- Aggregated legacy Cisco data and Genesys system to create an **SQL report**, streamlining the analytics reporting process and reducing report generation time by 50%.

Desjardins *Toronto, ON*

Actuarial Science Intern (Auto Pricing team) *Sep 2022 - Dec 2022*

- Automated monthly **SAS code** to complete the new-business-progress report to help determine company efficiency in dealing with fraud.
- Developed and executed rating profile batches in **Microsoft Excel**, utilizing **WTW-Radar** to extract premium data for the Nova Scotia Pre-NeXT filing, streamlining the digital initiative for instant online quoting.
- Reviewed the **New Brunswick Segmentation** model with considerable scrutiny to ensure clarity and correspondence between **WTW-Radar** and **R models**.

Volunteering

- **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, Tableau, HTML/CSS

Technologies NumPy, Pandas, Scikit-learn, MatPlotLib, OpenCv, PyTorch, Tensorflow, MySQL, Ggplot2, Dplyr, Survey

Interests Gym Fanatic, Watching F1, Fan of Liverpool Football Club, Fan of Raptors Basketball team, Love Go-Karting and Sim Racing