Aamodit Acharya

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Education

University of Waterloo *Waterloo, ON*

Bachelor of Statistics with Computer Science Minor (Co-op) *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 *Montreal, QC*

Data Science Intern *Jan 2024 - Apr 2024*

- Engineered an internal 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 latest website data, reducing processing by 97%.
- Integrated **Excel PivotTables** using **Power Query**, improving the **ETL** process, automating data aggregation and enabling real-time competitor quoted-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** to aid in pricing decisions.

TD Bank *Toronto, ON*

Data Science Intern *May 2023 - Aug 2023*

- Designed a **Python framework** to forecast 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 $5mm.
- Implemented **RidgeCV** and **linear regression** using **Scikit-learn** to forecast agent closing rate, improving model performance by 25%.
- Aggregated legacy Cisco data with Genesys data using **Hive SQL on Hadoop** and partitioned tables, cutting report generation by 50%

Desjardins *Toronto, ON*

Actuarial Science Intern *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 for the Nova Scotia Pre-NeXT intiative, 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.

Skills & Interests

Languages: Python, SQL, R, GraphQL, VBA, HTML/CSS
Frameworks: NumPy, Pandas, Scikit-learn, Matplotlib, XGBoost, Pytorch
Infra: Git, GCP, Linux, Docker, Kubernetes, Gitlab
Databases: MySQL, PostgreSQL, SQLite, Snowflake
Interests: Gym Goer, F1 Racing Enthusiast, Fan of Liverpool Football Club and the Toronto Raptors