Sky Allinott

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WORK EXPERIENCE

Government of Alberta   **October 2022 - Present**
Data Scientist (Alberta Insurance Rate Board)   *Edmonton, AB*
- Improved the usage of data by utilising SQL and Power BI to create empowering dashboards.
- Leveraged data by conducting studies into the auto insurance market in Alberta with R and Python.
- Reviewed GLM and machine learning models submitted by insurers to ensure they charge fair and equitable rates.
- Utilised a Git workflow for version control, documentation and project management.
- Presented studies and complex statistical topics monthly to our board.

University of Alberta   **August 2022 - December 2022**
Research Contractor (Department of Economics)   *Edmonton, AB*
- Constructing a rich panel dataset (4 million rows, 100+ features) on Edmonton and Calgary real estate.
    - Created measures on crime, transit accessibility, development activity, pollution levels and more.
    - **Insight:** Half the properties in the City do not live within 1 kilometre of a grocery store.

University of Alberta   **September 2021 – April 2022**
Graduate Teaching Assistant   *Edmonton, AB*
- Improved class instruction by presenting common class misunderstandings to the instructor.

City of Edmonton   **May 2021 – September 2021**
Business Analyst Student (Urban Planning and Economy)   *Edmonton, AB*
- Determined if City initiatives to reduce permit timelines were successful using internal permit data.
    - Communicated the success and failure of these initiatives regularly to senior leadership.
    - Shared with the public by Mayor Amerjeet Sohi and the City of Edmonton twitter account.
- Improved team forecasting by introducing machine learning methods for model selection in R.
- Saved time for the team by implementing a script that pulled external data and published it to Google Sheets.

Government of Canada   **June 2019 – December 2020**
Citizenship Assistant (Citizenship Canada)   *Edmonton, AB*
- Implemented a database of client requests and information to improve efficiency and reduce errors.

EDUCATION

University of Alberta   **June 2022**
Masters of Arts, Economics (GPA: 3.9)   *Edmonton, AB*
- **Thesis:** Effect of LRT Expansion on Neighbouring Property Valuations: Evidence from Edmonton Alberta
    - Quantified the effect by distance to the station, project stage, and property value quantiles.
    - **Insight:** Nearest properties depreciated 5%, while further properties appreciated as much as 12%.

University of Alberta   **September 2021**
Bachelors of Arts with Honours, Honours Economics   *Edmonton, AB*

ACADEMIC RESEARCH

Effect of LRT Expansion on Neighbouring Properties   **June 2022**
Stata
- Determined causal effect of new LRT stations on property value in Edmonton Alberta.

Forecasting Aggregate Investment: Comparing Approaches   **April 2022**
R   *Project Link*
- Compared forecasting ability of a static theoretical investment formation equation to time series models.

Price Effect of a Gasoline Cartel   **February 2022**
R
- Estimated damages and cartel period of a collusive gasoline market in Southern Ontario.
    - Utilised QLR testing to identify cartel period, and reduced form econometric models for price effect.
    - **Insight:** Weak results in weekly data; evidence that the cartel changed daily price cycle behaviour.

Impact of Childhood Computer Access on Wage Determination   **April 2022**
Stata
- Measured the impact additional years of computer access as a child had on adulthood wages.

PERSONAL PROJECTS

Answering Business Questions   **August 2022**
SQL   *Project Link*
- Utilising a theoretical business' database, I answer many questions that may be asked of a data/business analyst.
    - I utilise multi table joins, subqueries, stored procedures, window functions, ranks, rollups, and more.

Anomaly Detection: Credit Card Fraud   **August 2022**
Python   *Project Link*
- Compared an unsupervised model of anomaly detection to a tuned model on a tiny subset of the data.
    - With only 10,000 observations (of 1,000,000), XGBoost heavily outperforms the unsupervised model.

Comparing Daily Weather Forecasting Accuracy for Various Models   **July 2022**
R and Python   *Project Link*
- Forecasted daily temperature 6 months ahead using Prophet, XGBoost, ARIMA, and a neural network..
    - Weather is a challenging forecast, but the best model had a mean absolute error of just 3.71 degrees.

Forecasting Hourly Energy Consumption with Prophet   **July 2022**
R   *Project Link*
- Forecasting energy consumption 14 (336 hours) days ahead using an hourly series with >100,000 observations.
    - Achieved an average inaccuracy of only 8.7% (typical wisdom suggests <10% is an "excellent" forecast)

What Determines Edmonton Housing Values?   **July 2022**
Python   *Project Link*
- Predicted Edmonton housing valuations on a personally made dataset using a tuned machine learning model.
    - Model had an average inaccuracy of just 6%, or approximately $16,500.
    - **Insight:** Lot size, structure size, and distance to downtown were the most important variables.

Predicting Spotify Song Popularity   **June 2022**
Python   *[Project Link](#)*
- Utilised the Spotify API to pull track information and predict song popularity with machine learning models.
  o Compared XGBoost, RandomForest and OLS models, with XGBoost performing best.

Predicting Spotify Song Popularity using Neural Networks   **July 2022**
R   *[Project Link](#)*
- Utilised tensorflow to create and tune a neural network to predict Spotify song popularity.
  o Utilised the Keras interface and tuned the network via early stopping and grid search.

Forecasting Change in Stock Price   **April 2021**
R   *[Project Link](#)*
- Determined probability of a stock price increasing/decreasing the next day using time series cross-validation.
  o Utilised a logit model with price lags for a prediction and then bootstrapped a prediction interval.

Predicting IBM Employee Attrition   **April 2021**
R   *[Project Link](#)*
- Compared predictive power of three machine learning models in determining employee attrition.
  o Most important variables were overtime hours, commute, and years without a promotion.

Tableau Dashboards
Tableau   *[Tableau Portfolio](#)*
- Employed Tableau to create various visually engaging and interactive data visualisations.

AWARDS

Graduate Teaching Assistantship   **2021**
University of Alberta
- Awarded to select candidates of the Masters of Economics program based on outstanding scholastic standing.

Emerson and Tang Family Scholarship   **2020**
University of Alberta
- Awarded to a student with superior academic achievement in Economics and has shown involvement in sports.

KD Verville Scholarship for Excellence in Economics   **2020**
University of Alberta
- Awarded annually to a student with superior academic achievement entering their second, third, or fourth year of the Honours Economics program.

Gwendolyn Ewan Scholarship (University of Alberta, 2019)   **2019**
University of Alberta
- Awarded for superior academic achievement to a student from the Northwest Territories.

Dean's Honours List   **2018, 2019, 2020, 2021, 2022**
University of Alberta
- Presented to students possessing a 3.5 GPA or better on a full-time course load.