Sky Allinott

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Skills

- Extensive experience with:
    - R (including R markdown), Stata, LaTeX
- Moderate experience with:
    - Python (including Jupyter Notebooks/Google Colab), Matlab, SQL
- Familiarity with:
    - Tableau

Education

- **Master of Arts with Honours, *Economics***

  University of Alberta (Edmonton, AB)

  September 2021 – June 2022
- **Bachelor of Arts with Honours, *Honours Economics***

  University of Alberta (Edmonton, AB)

  September 2016 - April 2021

Experience

Business Analyst (Urban Planning & Economy) – City of Edmonton – *May to Sept. 2021*

- Presented models and analysis to audiences of varying knowledge.
- Forecasted a variety of quarterly permit volumes using both machine learning and econometric models.
- Quantified the positive effect to business owners and developers of the city's red tape reduction.
- Created a system to easily update and forecast several key external variables at once.

Graduate Teaching Assistant – University of Alberta – *Sept. 2021 to June 2022*

- Held office hours and evaluated students for intermediate microeconomic and macroeconomic courses (ECON 281 & ECON 282)

- Improved upon adaptability, as each student had different needs.
- Employed consistency and attention to detail in student evaluation.

Citizenship Assistant (IRCC) – Government of Canada – *June 2019 to Dec. 2020*

- Interacted directly with the public during citizenship tests and ceremonies.
- Assisted in creating an efficient workflow for Citizenship Officers.
- Worked on self-directed projects.
- Learned to make decisions on problems that deviated from standard procedure.

Academic Research

Effect of LRT Expansion on Neighbouring Properties: Evidence from Edmonton Alberta

- Mapped out the economic impact of adding LRT stations to neighbourhoods by property value, distance to the station, and project phase
- Utilized quantile difference in difference for effect across property values, and a dosage model for effect across distance, finding that homes within 1 kilometre felt an approximately 2 to 6.5% appreciation
- Utilized panel data from the City of Edmonton data portal

Determinants of Aggregate Investment: Comparing Approaches

- Compared a traditional static equation for determining investment, to a variety of more advanced time series methods, such as ARIMA, VAR, and seasonal MARIMA models
- Used each model to create forecasts of investment and employed statistical tests to compare the predictive power of each model to one another
- Utilized time series data from Statistics Canada

Impact of Childhood Computer Access on Wage Determination

- Tested a theory that higher childhood computer access correlated to higher wages as an adult
- The paper found that each additional year of computer access led to approximately 1.2% higher wages
- Utilized longitudinal data from the National Longitudinal Survey of Youth: 1997 Cohort

Price Effect of a Gasoline Cartel

- Calculated the effect on price of a retail gasoline cartel in Ontario
- Used structural break detection methods and difference in difference

- Weak evidence of a cartel in weekly data, stronger evidence in daily data that the cartel caused changes in firm strategy
- Utilized weekly and daily time series data from Kalibrate

Personal Projects

Predicting Spotify Song Popularity

- Utilized OLS, randomForest, and XGBoost machine learning models to predict the popularity of songs on spotify in Python
- Pulled song and artist features from the Spotify API.
- Used loops on a set seed to determine optimal XGBoost parameters.
- XGBoost performed best, and determined that release year, instrumentalness, and artist followers were the most significant factors.

Machine Learning Models and Forecasting IBM Employee Attrition

- Utilized Lasso, RandomForest, and XGBoost machine learning models to predict whether employees quit in R
- Used K-fold cross validation to tune model parameters.
- XGBoost model performed best, and determined that high overtime and lack of promotions are the most significant factors that lead to employee attrition.

Logit Forecast of Stock Prices

- Constructed a Logit model to forecast whether Microsoft stock price would increase or decrease the next day.
- Used direct forecasting to obtain a probability that stock price increases.
- Used cross validation to obtain the optimal number of lags in the model.
- Employed bootstrapping to obtain a prediction interval around my estimate.

ARIMA Forecast of Canadian GDP

- Constructed a basic ARMA model to forecast Canadian GDP to the end of 2021.
- Used R for data manipulation and selection of the optimal ARMA model. Statistical tests for stationarity and serial correlation were also conducted.

Achievements

- **Teaching Assistantship** (University of Alberta, 2021)
    - Awarded to select candidates to the Masters of Economics program based on

outstanding scholastic standing.

- **Emerson and Tang Family Scholarship** (University of Alberta, 2020)
    - Awarded to a student with superior academic achievement entering any year of study for a Bachelor of Arts with a major or minor in Economics and has demonstrated involvement in sports.
- **KD Verville Scholarship for Excellence in Economics** (University of Alberta, 2020)
    - Awarded annually to a student with superior academic achievement entering their second, third, or fourth year of the Honors Economics program.
- **Gwendolyn Ewan Scholarship** (University of Alberta, 2019)
    - Awarded for superior academic achievement to a student from the Northwest Territories.
- **Dean's Honours List** (University of Alberta, 2019, 2020 & 2021)
    - *Presented to students possessing a 3.5 GPA or better on a full-time course load.*