A Comprehensive Analysis & Predictive Modelling on Montreal's Airbnb Prices

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OVERVIEW

Montreal is one of the largest cities in Canada. It attracts thousands of tourists during the year. In this regard, Airbnb pricing is extremely important in a big city such as Montreal where there is a lot of competition. In this project we would try to identify the important features that properties should have or need to have in order to be in demand and also predict the appropriate price range for them so the host wouldn't miss any potential income.

GOALS

1. What are the main feature that affect the price of a listing.
2. How much does the location and neighbourhood affect the price and the demand on a property?
3. Predicting the prices using Machine Learning models.

Data

The Data used for this project comes from a website named "Inside Airbnb" (insideairbnb.com). As indicated in there website "Inside Airbnb is a mission driven project that provides data and advocacy about Airbnb's impact on residential communities". This website provides quarterly data for the last 12 months from multiple cities around the world. It also provides a GeoJSON file of neighbourhoods for each city.

Note: The data behind the Inside Airbnb site is sourced from publicly available information from the Airbnb site.

Tools

For the Exploratory Data Analysis (EDA) section, we would using libraries such as *Numpy*, *Pandas* for cleaning, manipulating and engineering our data and *Matplotlib* and *Seaborn* for visualzing our findings. For our predictive modelling and regression analysis we would be using libraries such as *Statsmodel*, *Scipy*, *Scikit-learn*. My stretch goal for this project is to try to also implement a model using a very popular library named *XGBoost* and also create a deep learning model using *TensorFlow* and *Keras*.