STA141A_FinalProj

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Factors Influencing Airbnb Listing Prices in New York City

Executive Summary

This project investigates the factors that influence the pricing of Airbnb listings in New York City (NYC). By analyzing a comprehensive dataset from Airbnb, we aim to identify key variables that significantly affect listing prices and develop predictive models to estimate prices based on these features. We employ exploratory data analysis (EDA) to understand data distributions and relationships, and we use both linear regression and random forest models to predict prices. Our analysis reveals that factors such as location (borough and neighborhood), room type, minimum nights, availability, and number of reviews significantly impact Airbnb prices in NYC. The random forest model outperforms the linear regression model in predictive accuracy, suggesting that non-linear relationships are present in the data. These insights can help hosts optimize their pricing strategies and assist guests in making informed booking decisions.

1. Introduction

Project Description and Background

Airbnb has revolutionized the hospitality industry by allowing property owners to rent out their spaces to travelers worldwide. New York City, as one of the most visited cities globally, has a highly competitive and diverse short-term rental market. With thousands of listings across five boroughs, understanding what drives Airbnb prices can benefit hosts looking to optimize their rental income and guests seeking affordable options.