



Mini Project 3: Airbnb Price Prediction

BY: SAM HOPKINS

Introduction

Purpose

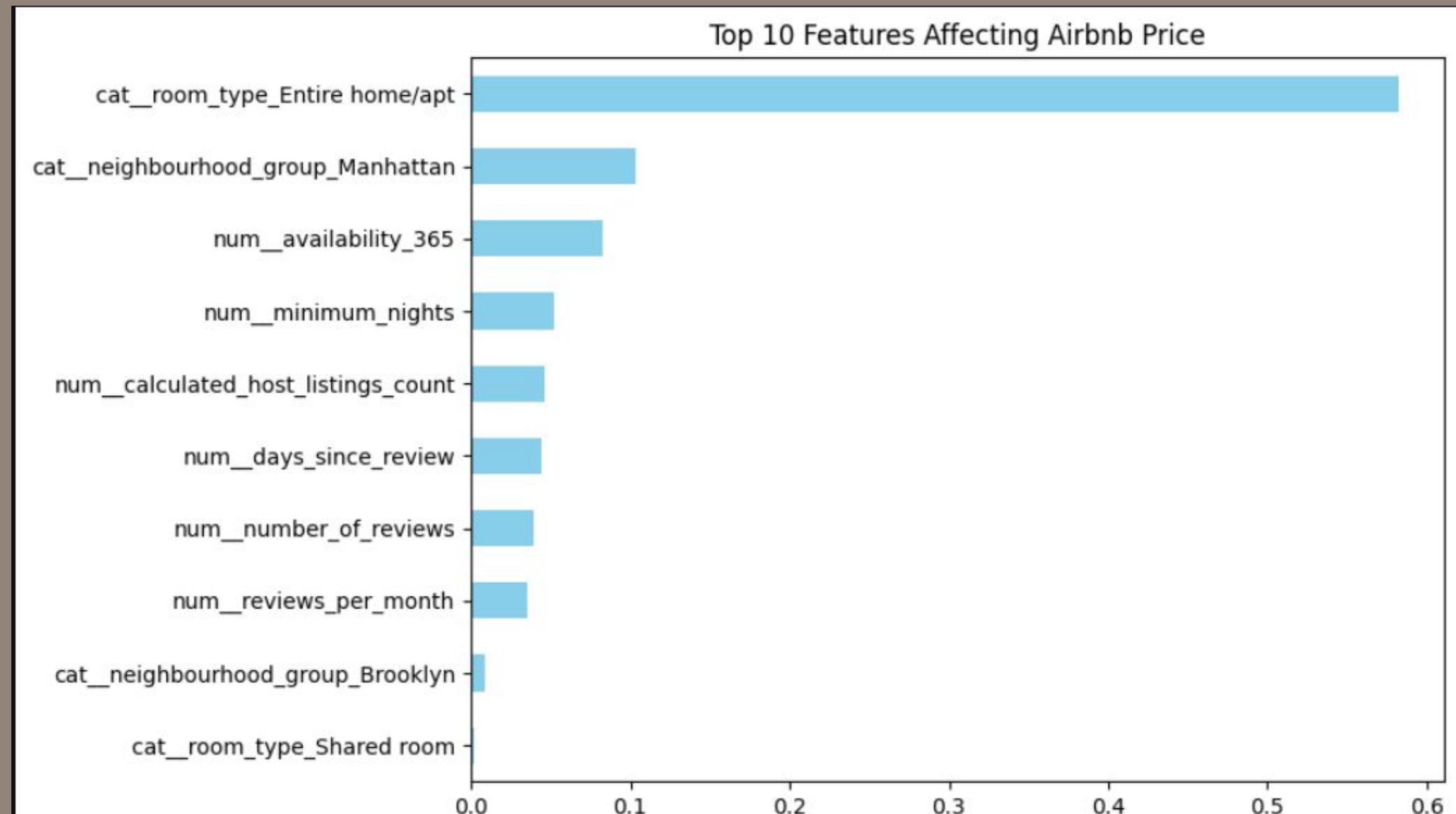
- Help predict the Airbnb listing prices using ML
- Provides hosts guidelines to set fair/competitive pricing

Dataset

NYC Airbnb Open Data (Kaggle)

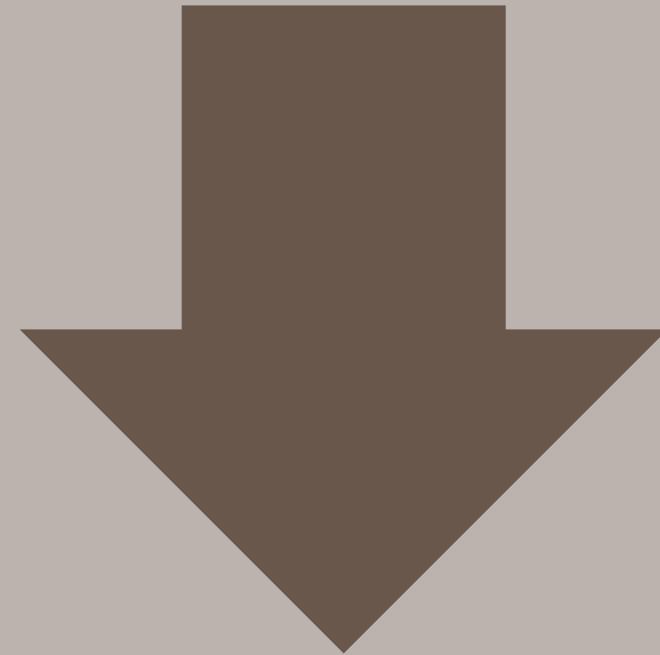
Feature Selection

- Many Features involved
- Used ML models to find top drivers of price
- Top Features affecting price:
 - Room Type, neighborhood group, availability



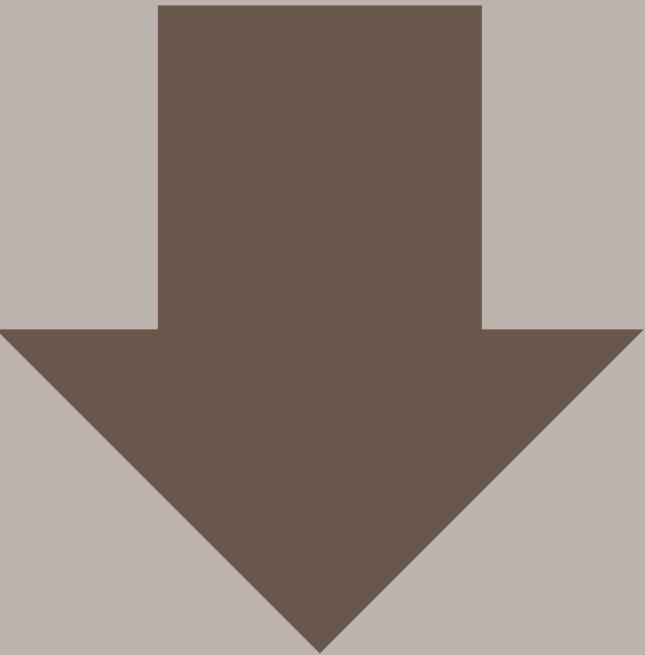
Machine Learning Models

Ridge Regression



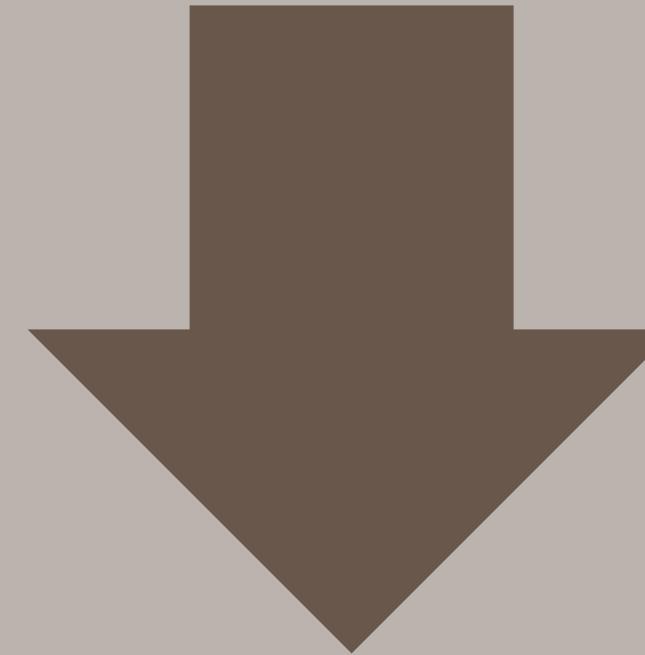
Linear

Random Forest



Ensemble Trees

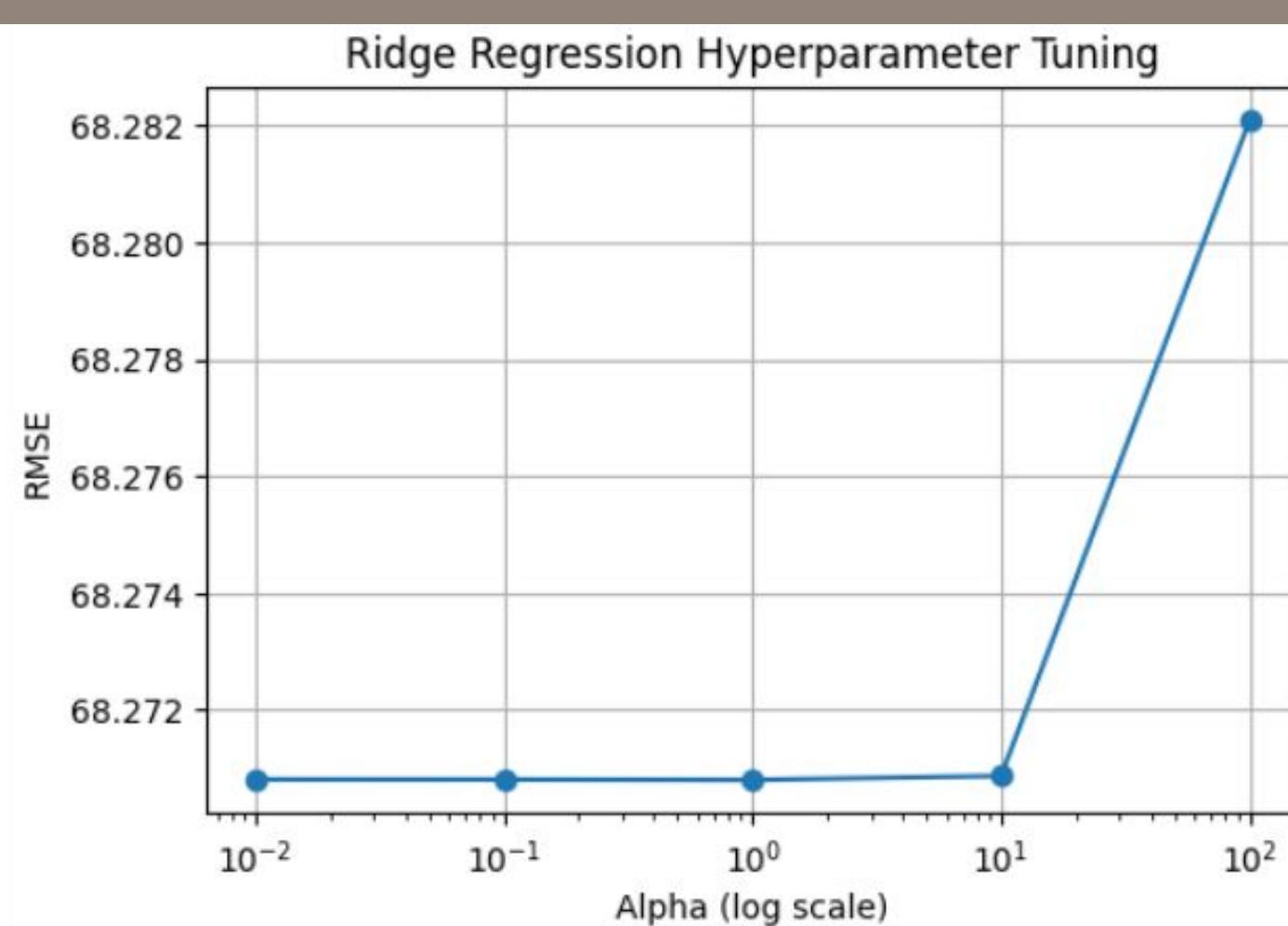
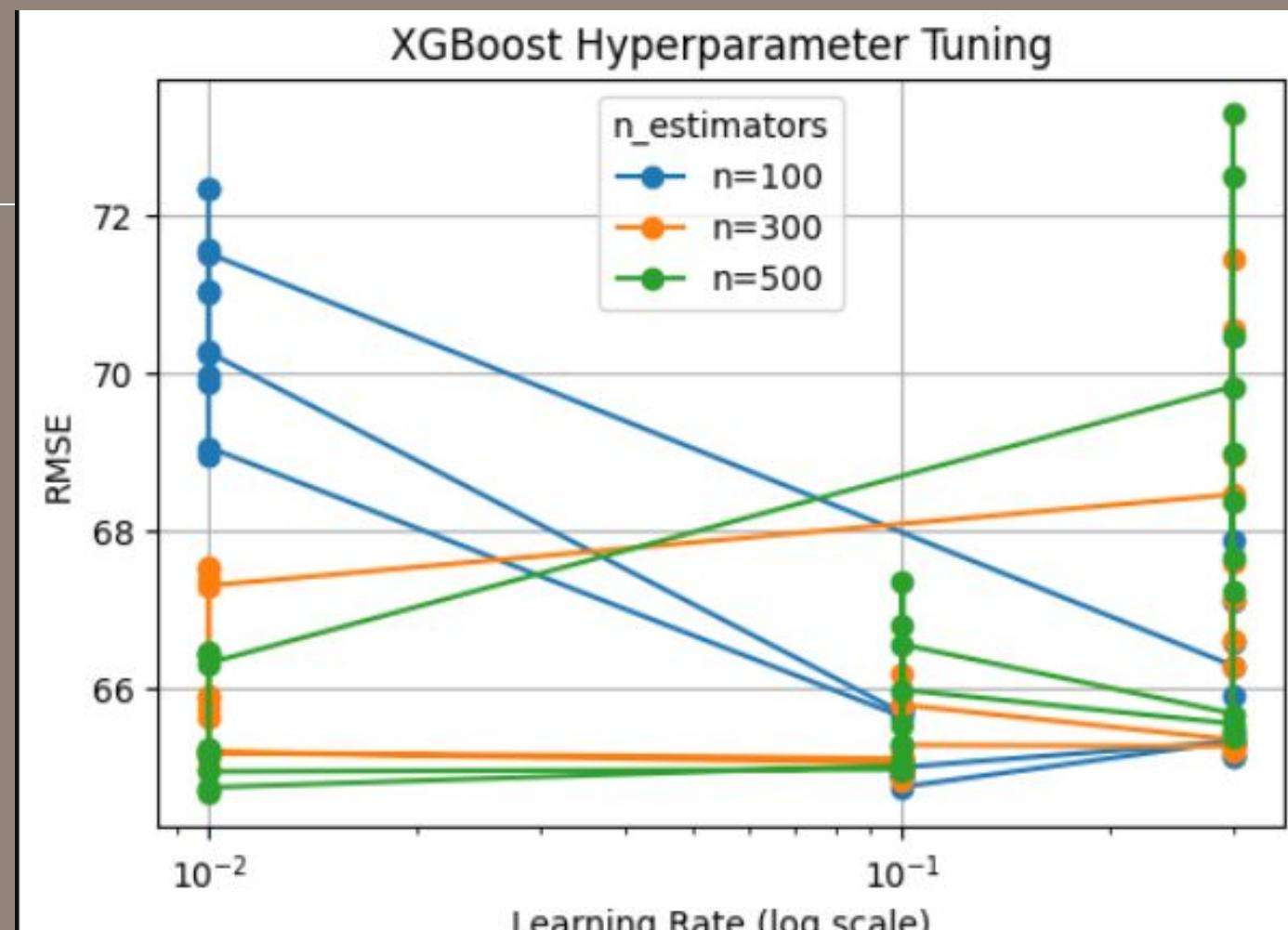
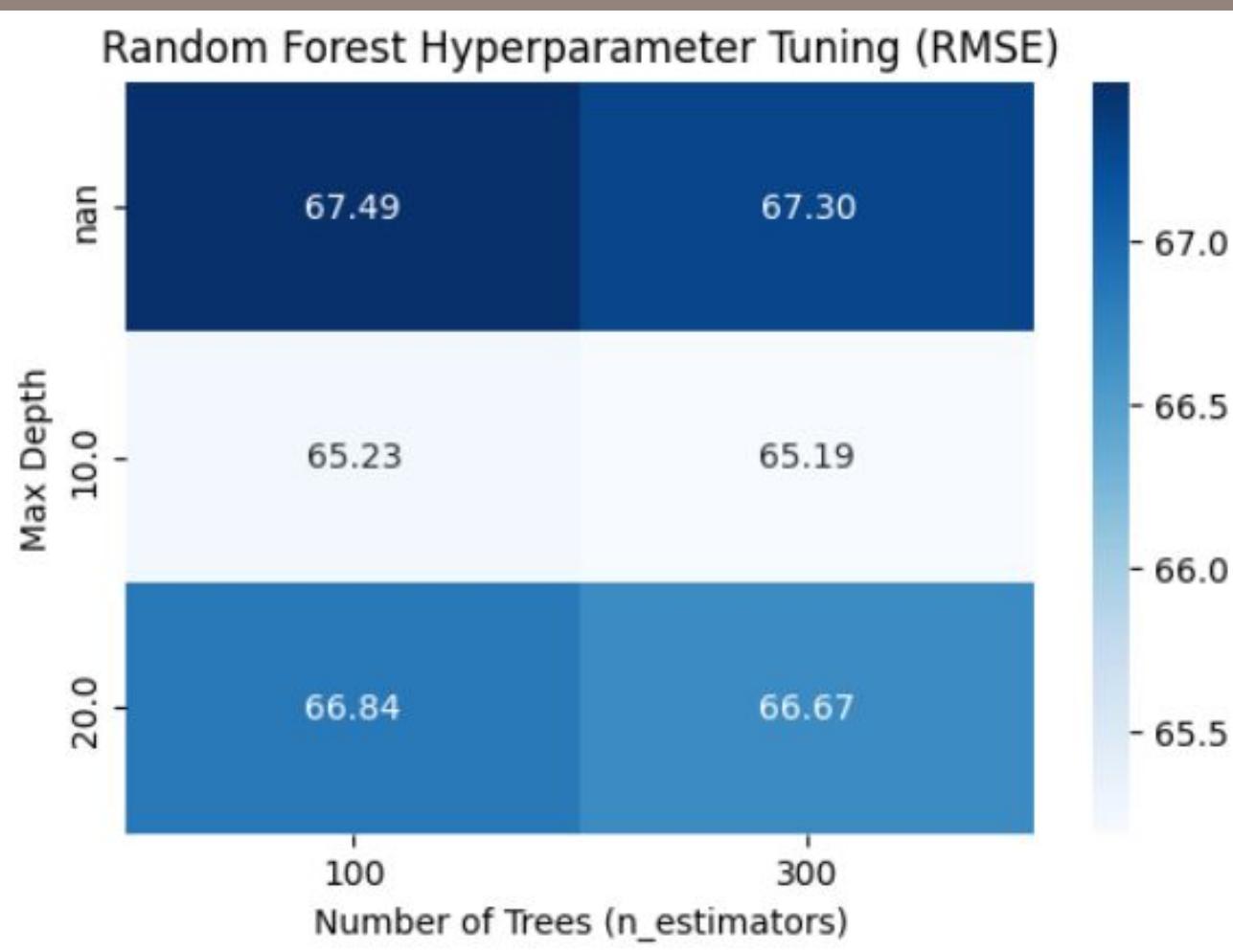
XGBoost



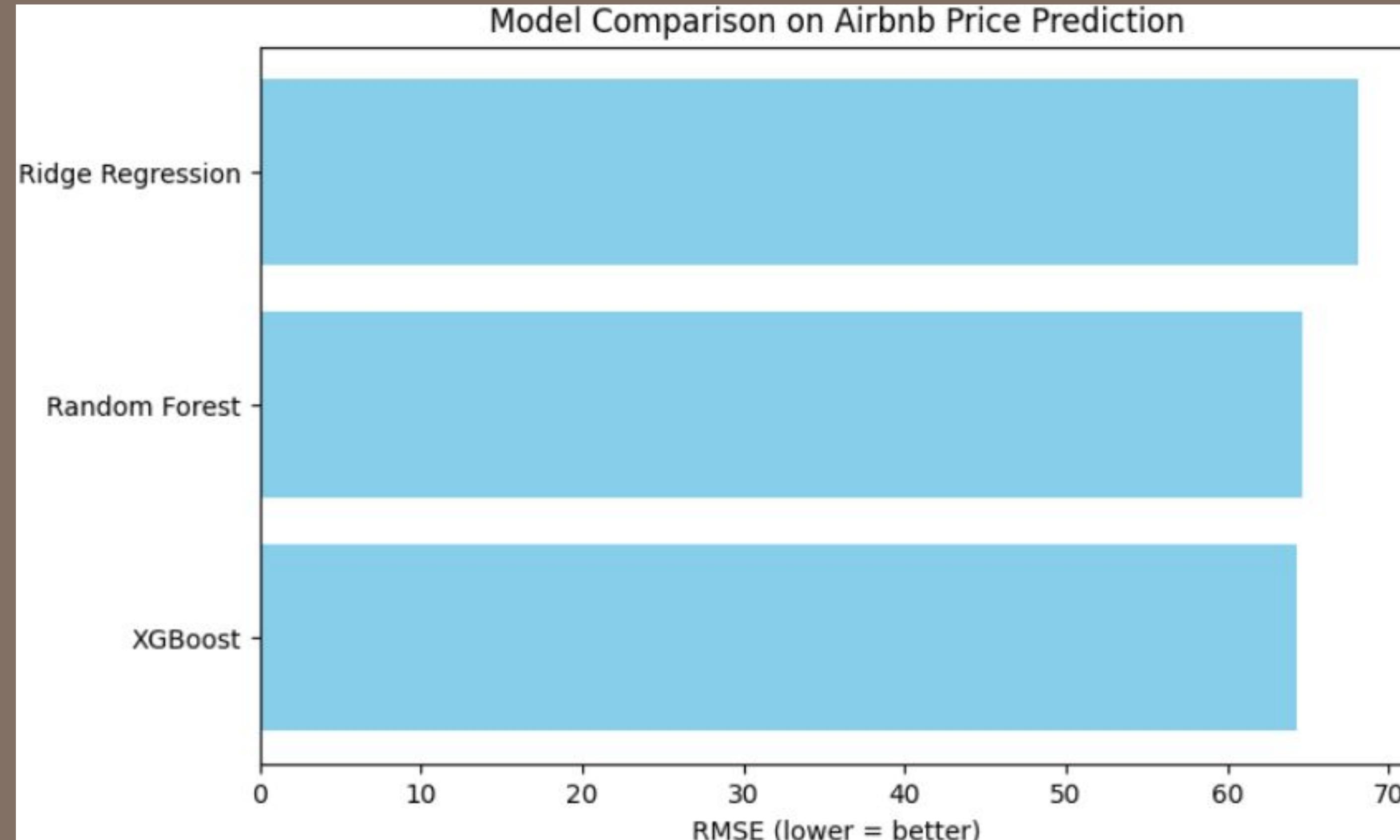
Boosted Trees

Hyperparameter Tuning

- Used GridSearchCV
- Evaluated Models on RMSE
- Improves Prediction Accuracy

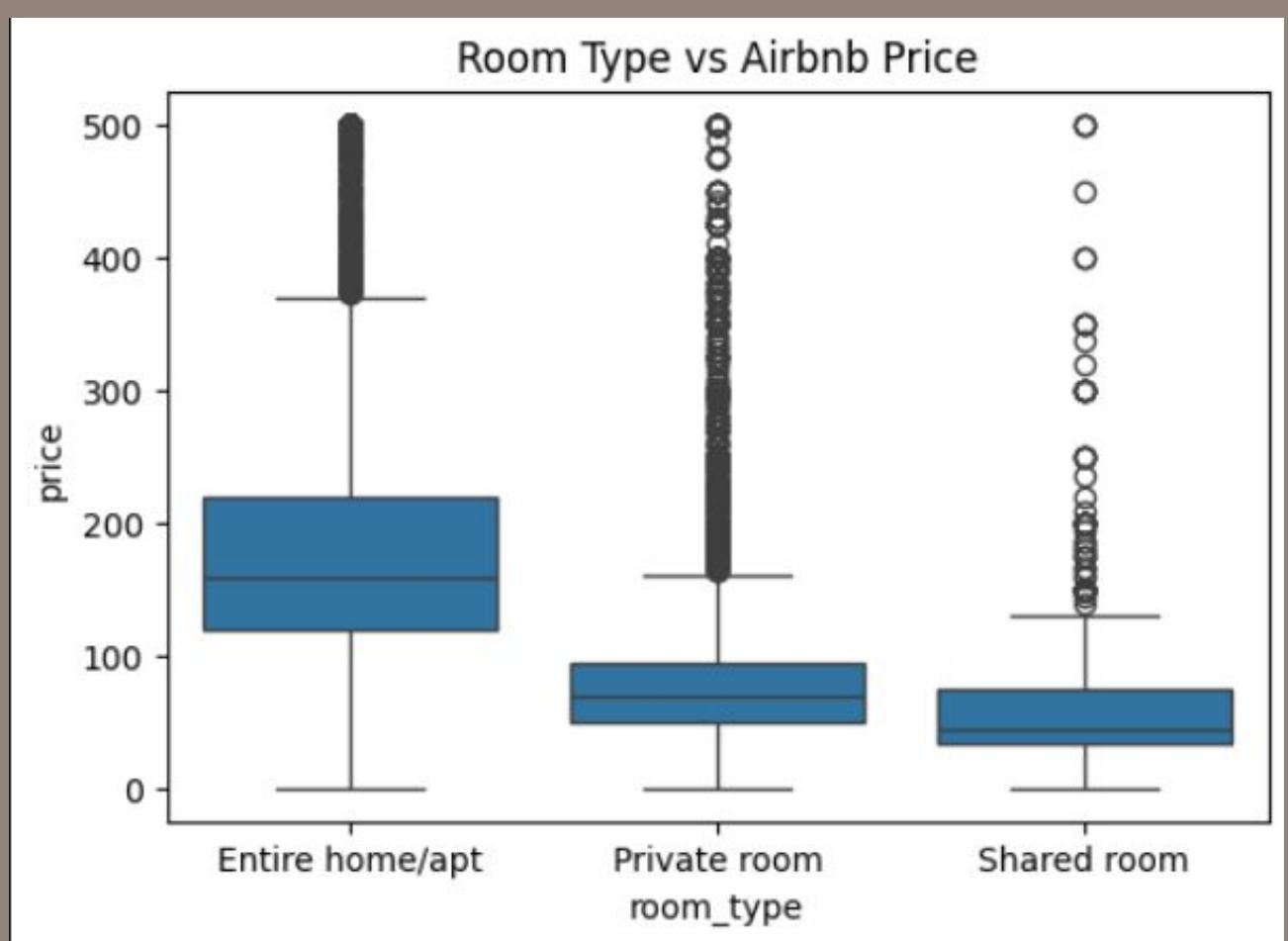
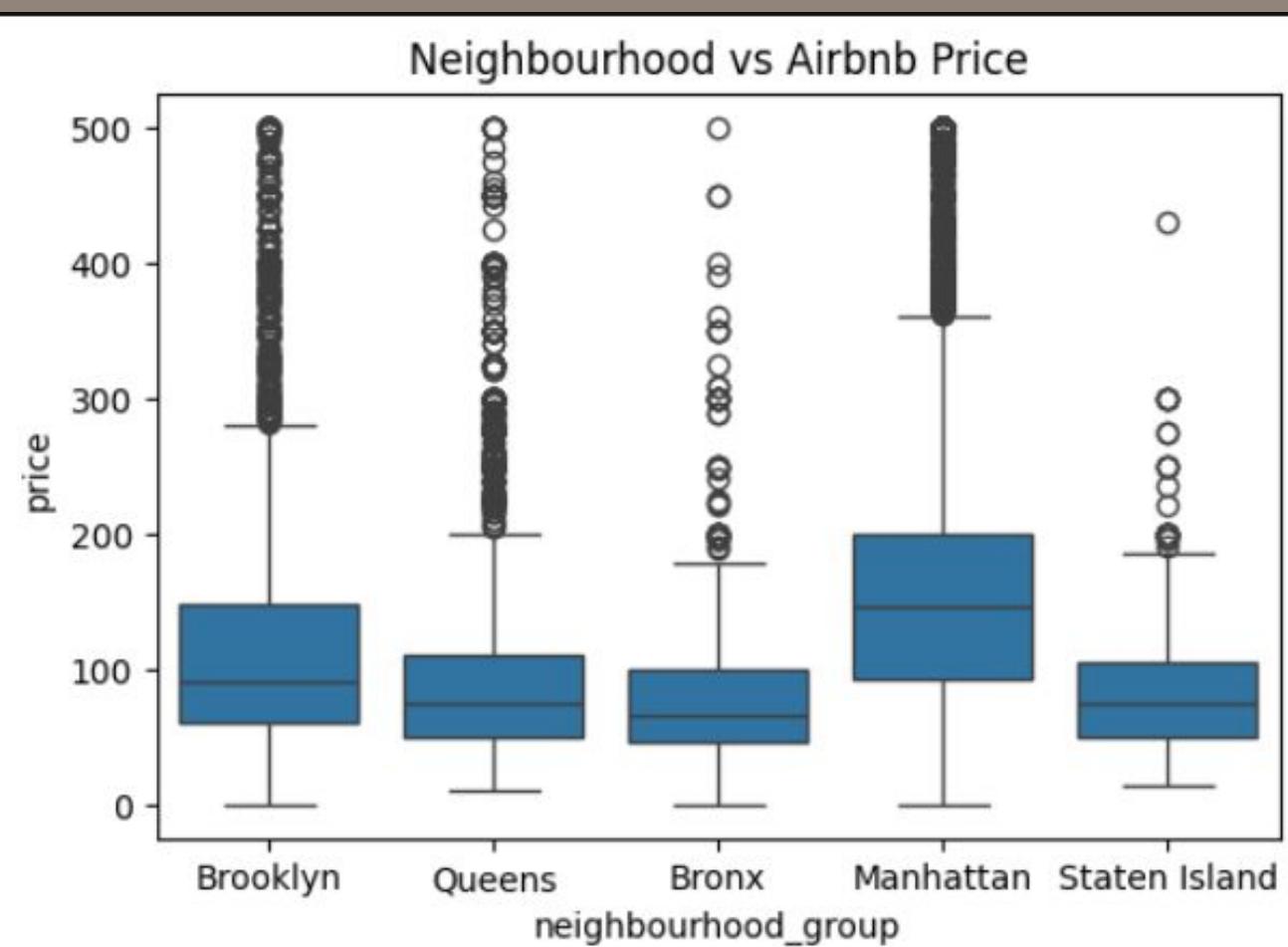


Model Performance



Feature Effects on Price

- Neighborhood vs. Price
- Room Type vs. Price
- Min Stay vs. Price



Findings & Recommendations

- Main Insights
 - Important Features
 - Patterns
- Best Model
 - XGBoost
 - most reliable model for predicting Airbnb prices
- Business Suggestions
- Recommendations for Next Steps