Airbnb Sprint1

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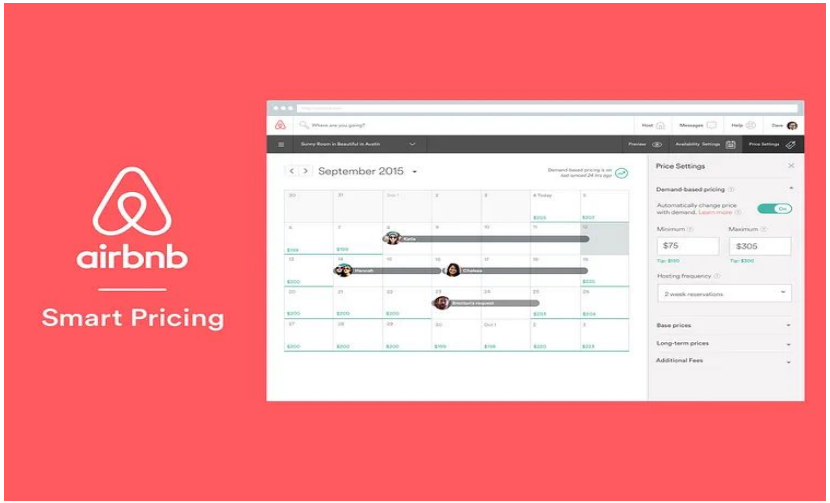
PROBLEM

Pricing can be tricky. Hosts may not know the best price for their property, they can under-price and lose out on revenue, or over-price and lose out on bookings. There are dynamic pricing tools, but they tend to take a black-box approach, and hosts usually do not know how the pricing is calculated.



OPPORTUNITY

Airbnb is a major homestay booking service. In 2024*, there were an estimated 490 million bookings of nights and experiences, giving Airbnb an estimated 83 billion market capitalization, and generating about 11 billion dollar revenue in 2024. Airbnb has listings worldwide, with over 5 million hosts, listing an estimated 7.7 million listings. There is an opportunity to help with better pricing, more transparency, and better customization.

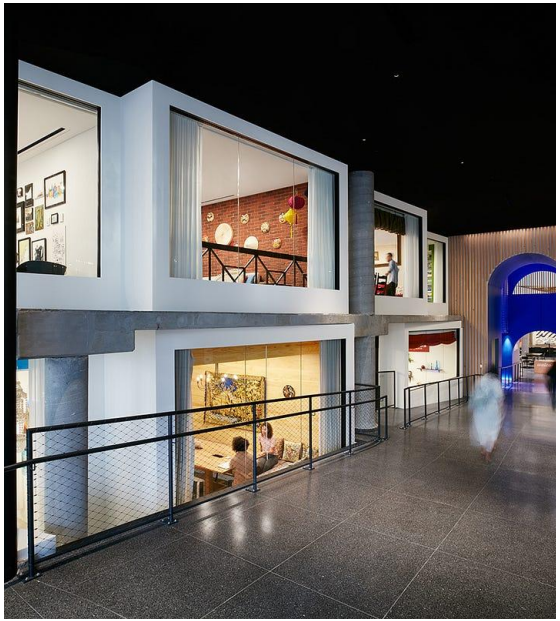
* Source: Statistica

VISION

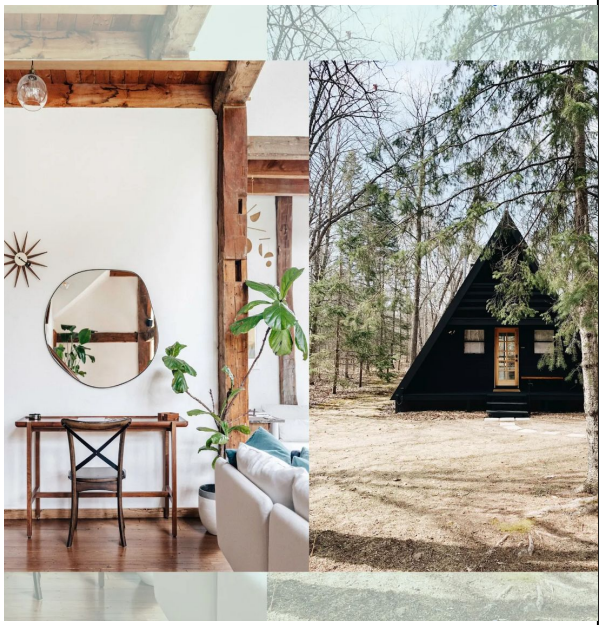
Using Airbnb's NYC 2024 Listings data and the use of machine learning tools such as linear regression, classification, and content recommender to give host information to choose a best-fit price so that hosts and renters can experience a fairer price.

Linear Regression - find best-fit price

Classification - will listing be rented?



Recommender - based on similar listings



IMPACT

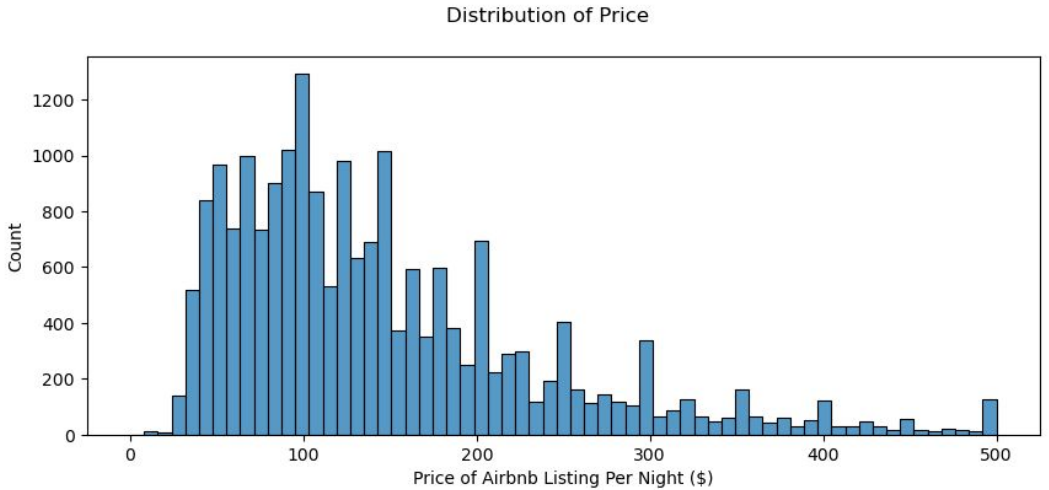
Fairer prices for renters, allowing them more freedom of travel.

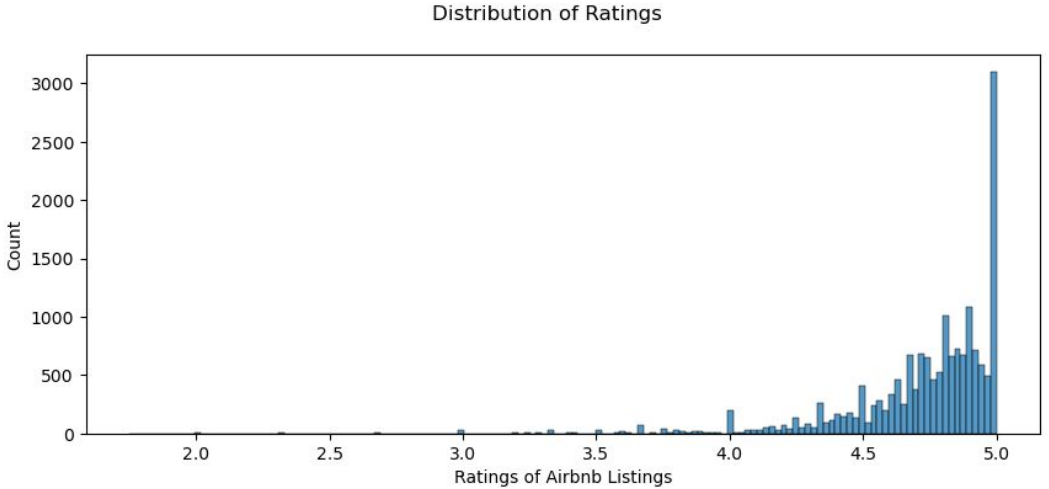
More transparency and control for hosts, allowing them more competitive rates and increased revenue.

Better pricing efficiencies and satisfaction for Airbnb.

DATASET

- 20, 758 observations
- 22 columns (listing name, neighborhood, room type, bedrooms, number of reviews, rating)
- Target variable: price
- Secondary target variable: rating





NEXT STEPS

Data Processing

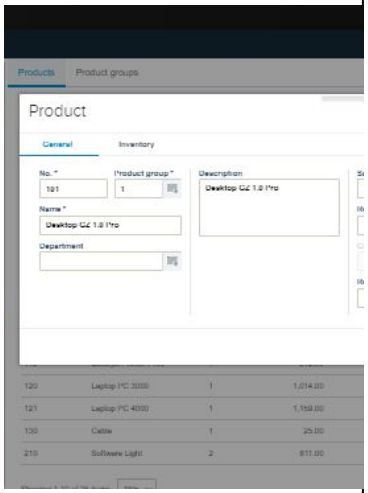
- Clean and convert columns: bedrooms, baths, last review date, rating

Feature Engineering

- Create new variable for Neighborhood - from categorical to average neighborhood price
- Bin average reviews per month
- Create binary variable for license

Baseline Modeling

- Linear regression for pricing
- Linear regression for rating
- Evaluate on the lift



Additional Tools

- Application tool
- Customization inputs and sliders

Thank You

https://github.com/tam3ourine/Capstone_Airbnb/tree/main