



Airbnb Pricing System Paris



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01

Business Case

Starting Point



Dataset

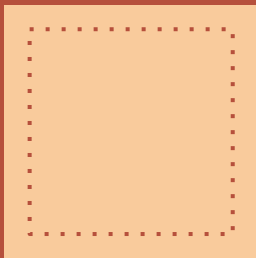
67.323 listing
106 features
March 15th 2020



Initial Data Cleaning

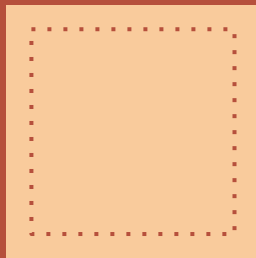
65.575 listing
39 features

Feature Engineering



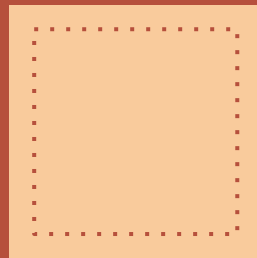
Size

Extracted from
description column



Important Amenities

Extracted from
amenities column



Location

City Center
Distance

Feature Groups in the Dataset



“The price you charge for your listing is completely up to you. To inform your decision about what price to set, you can search for comparable listings in your city or neighborhood to get an idea of market prices.”

–Airbnb Help Center

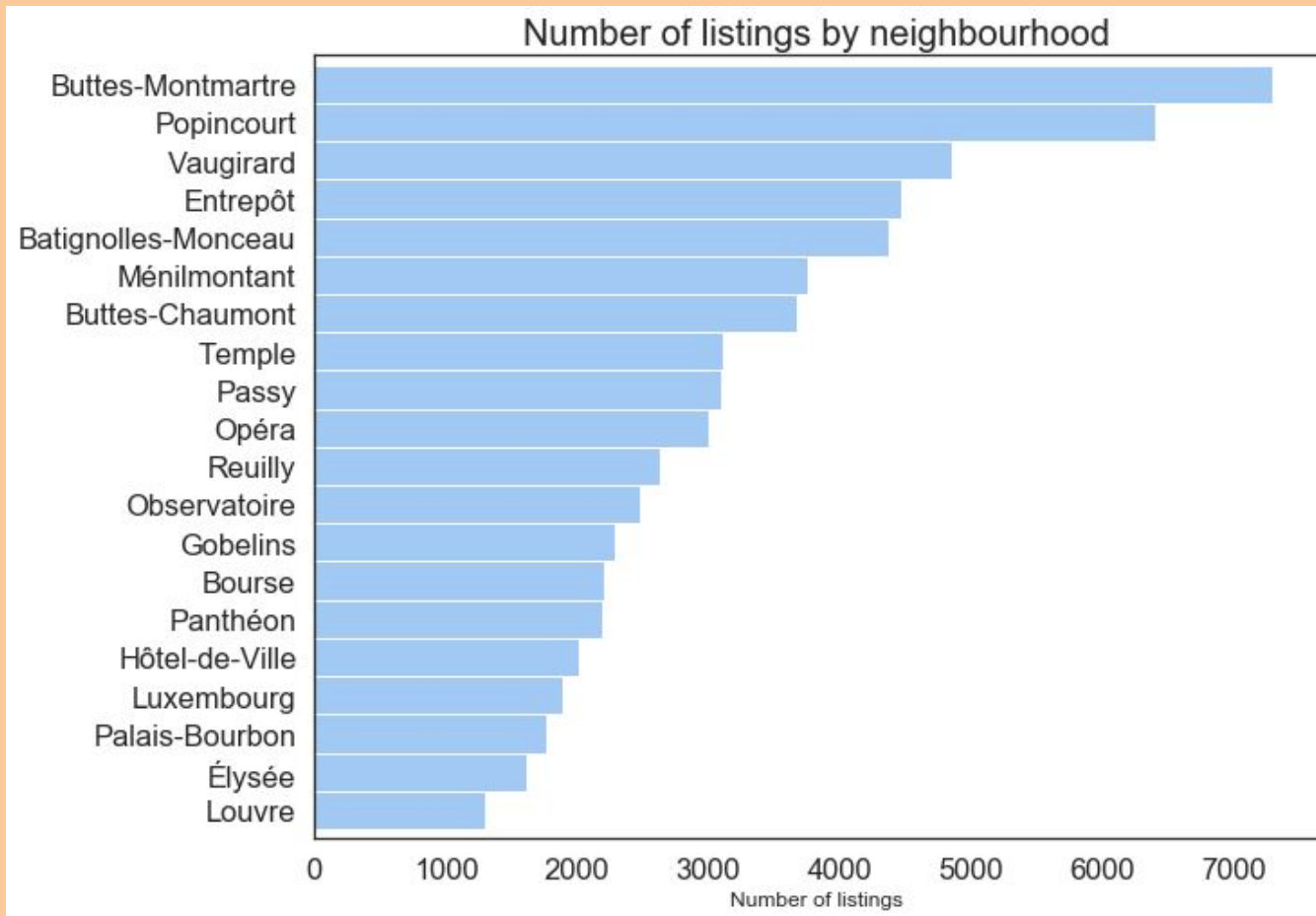


Pricing Model

And how to optimize your daily Rate !!

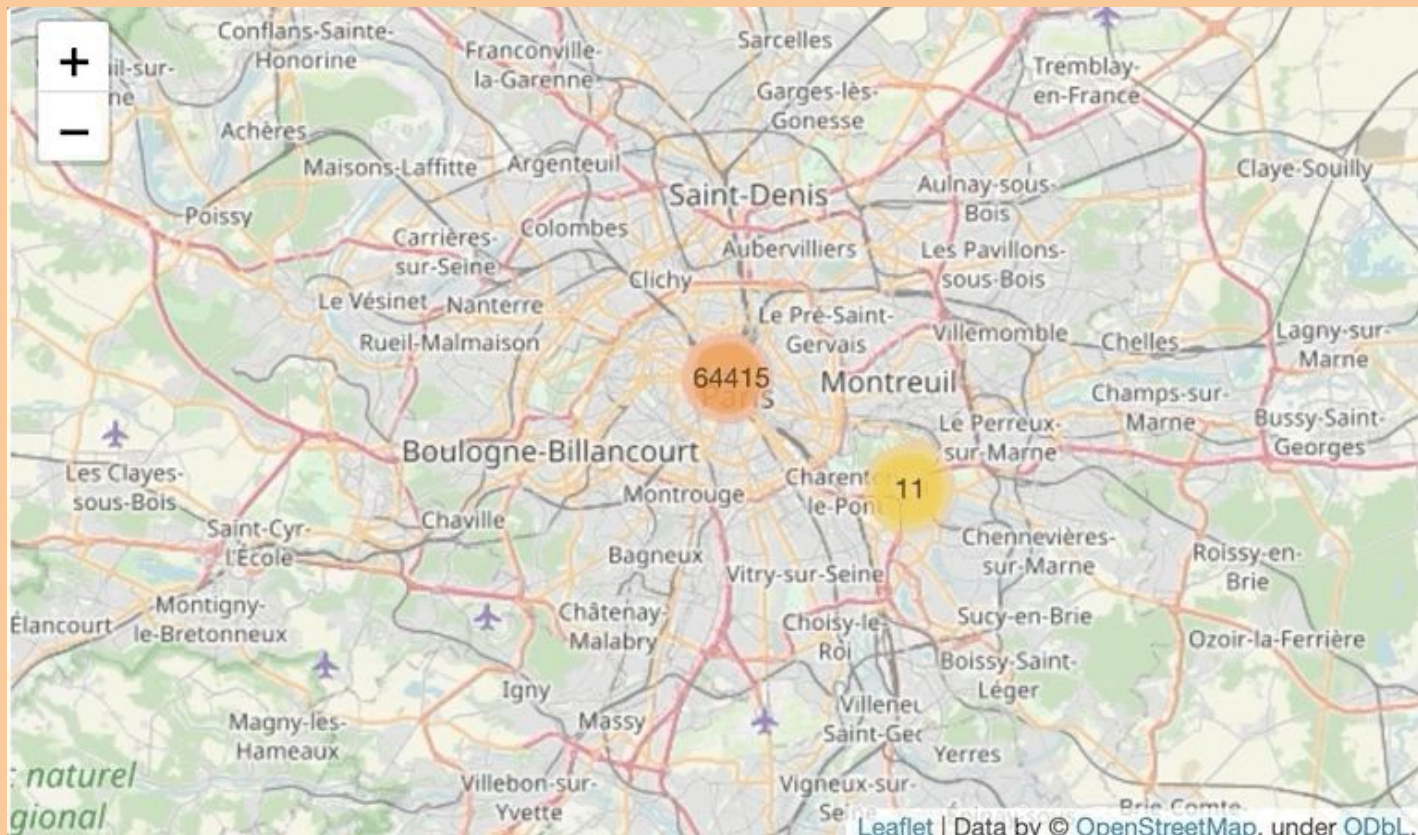
02

Analysis

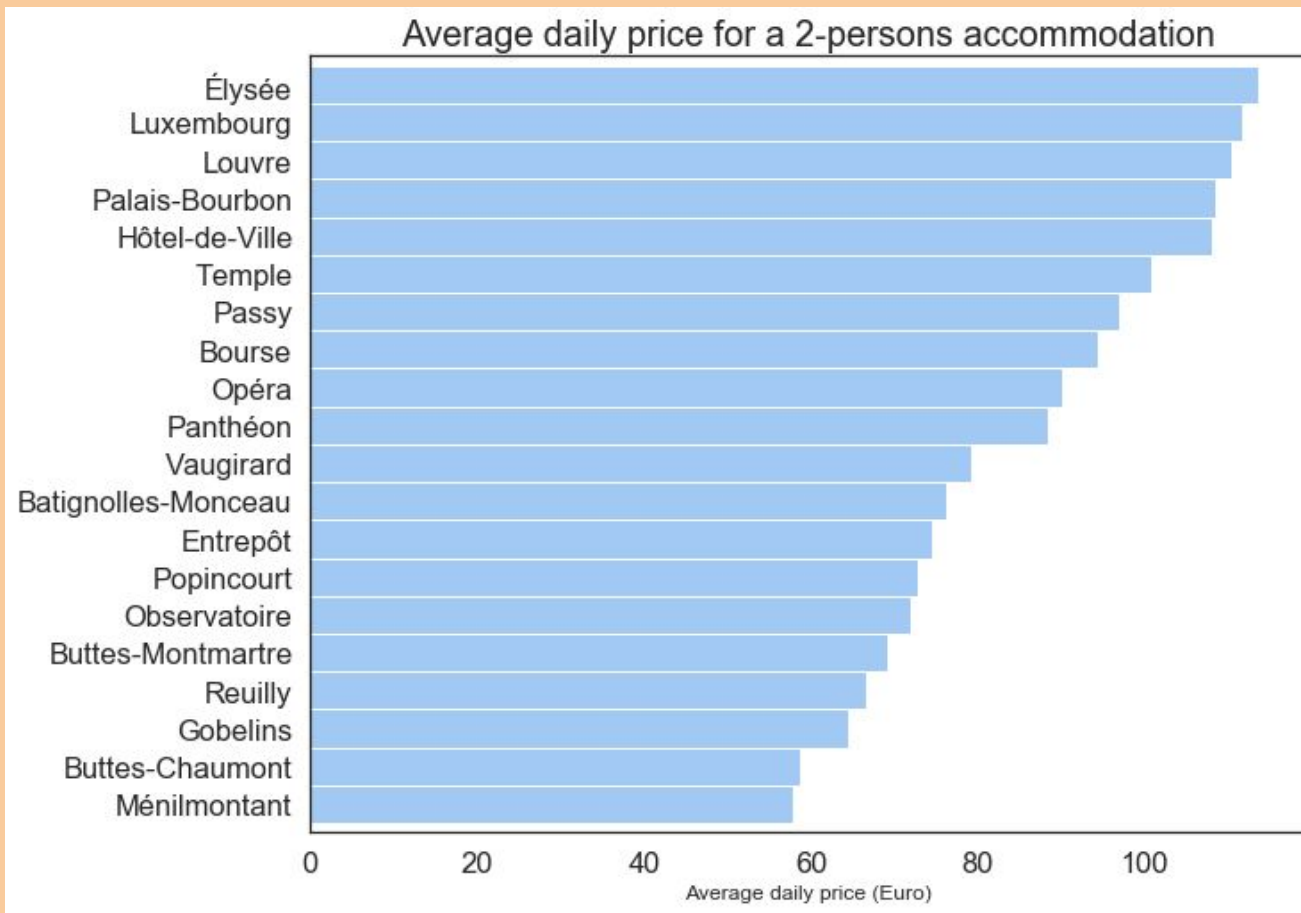


Where can you find the most listings?

Location

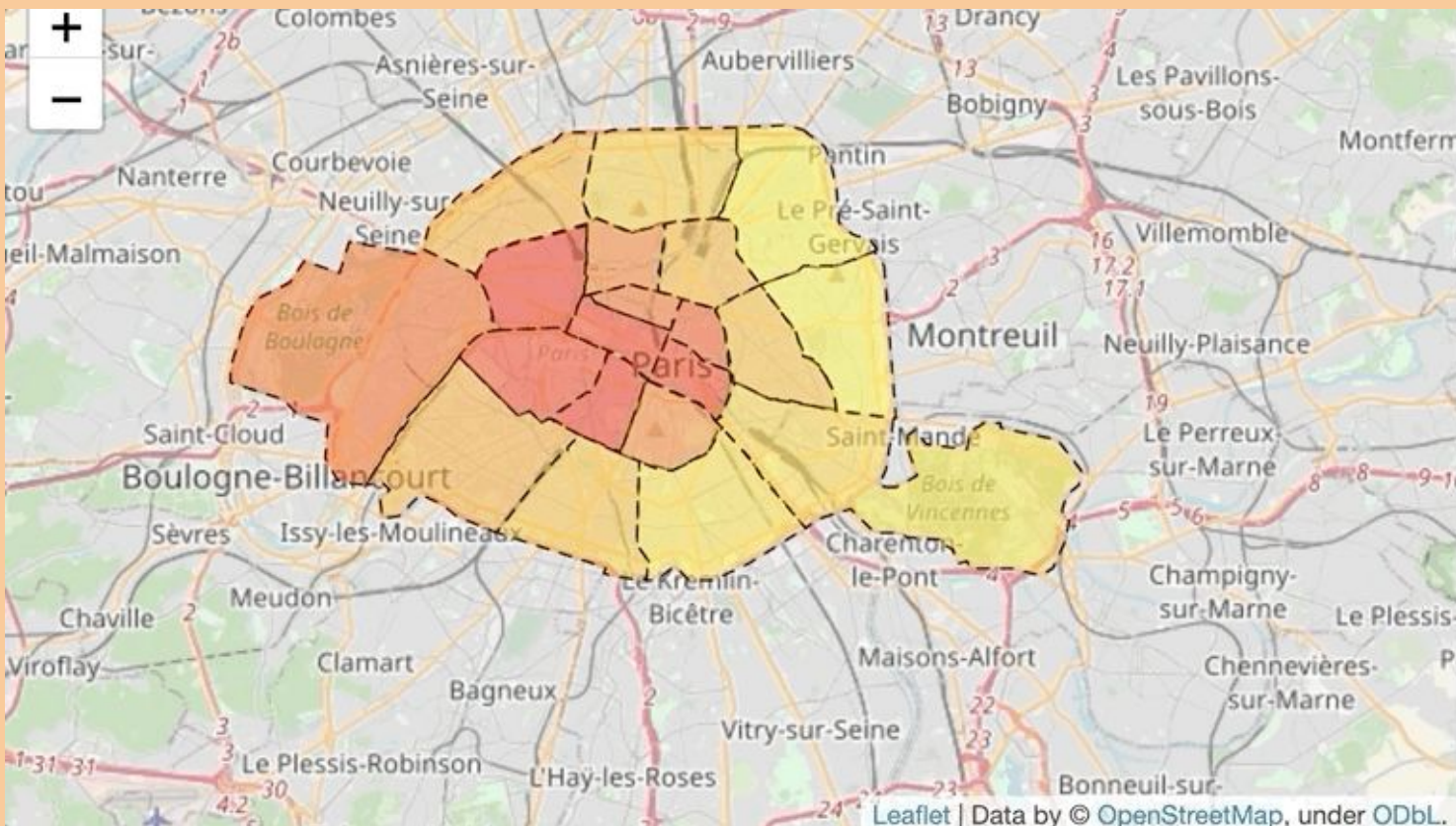


Let's have a look on the clusters!



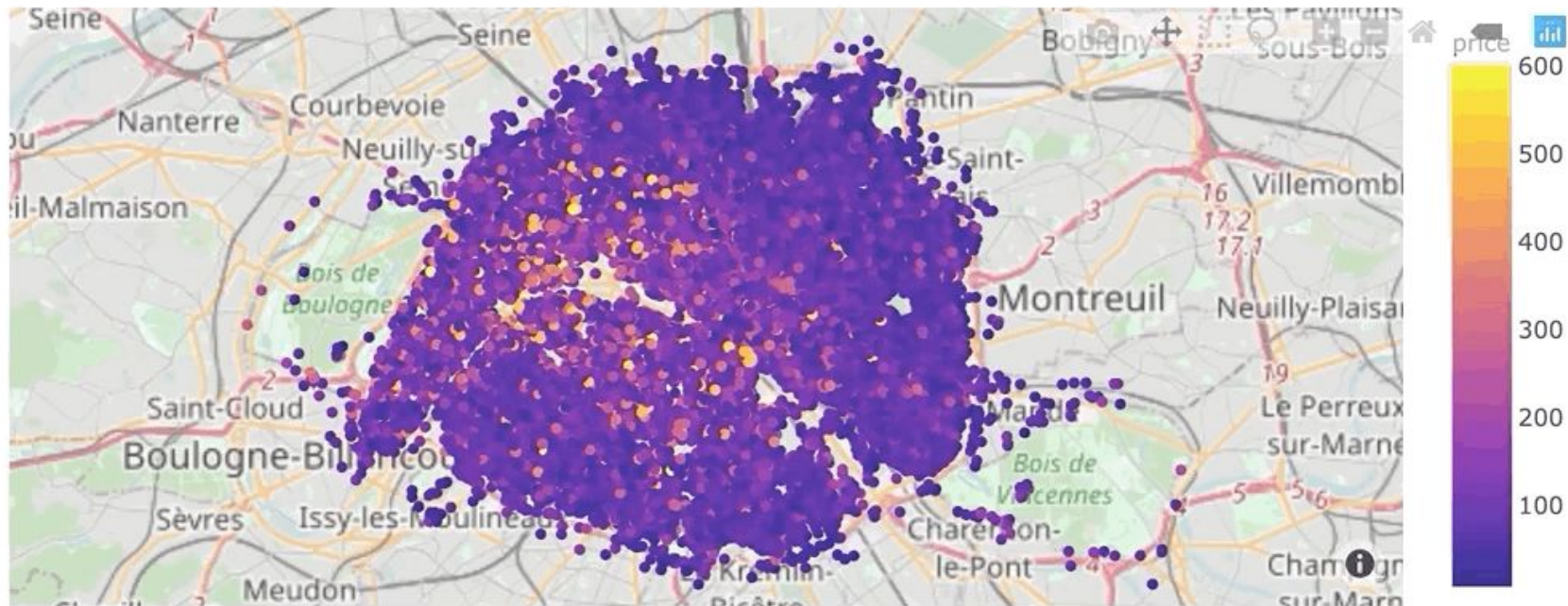
Where can you find the cheapest listings?

Location



Guide to one of the cheapest neighbourhood!

Location



Guide to one of the most expensive apartments!

Takeaways



- If you want to save money as a guest, look for apartments more to the north or the east
- Buttes-Montmartre offers the most listings for a reasonable price
- Minimum average price for two are 58 euros
- The most expensive listings seem to be in the center and near the Seine River

Numeric Feature

Amenities Count

The more the
better!

Bedrooms/Bathrooms

The more the
better!

Size

The bigger, the
better!

Reviews

Every review
counts, make your
guest write them!

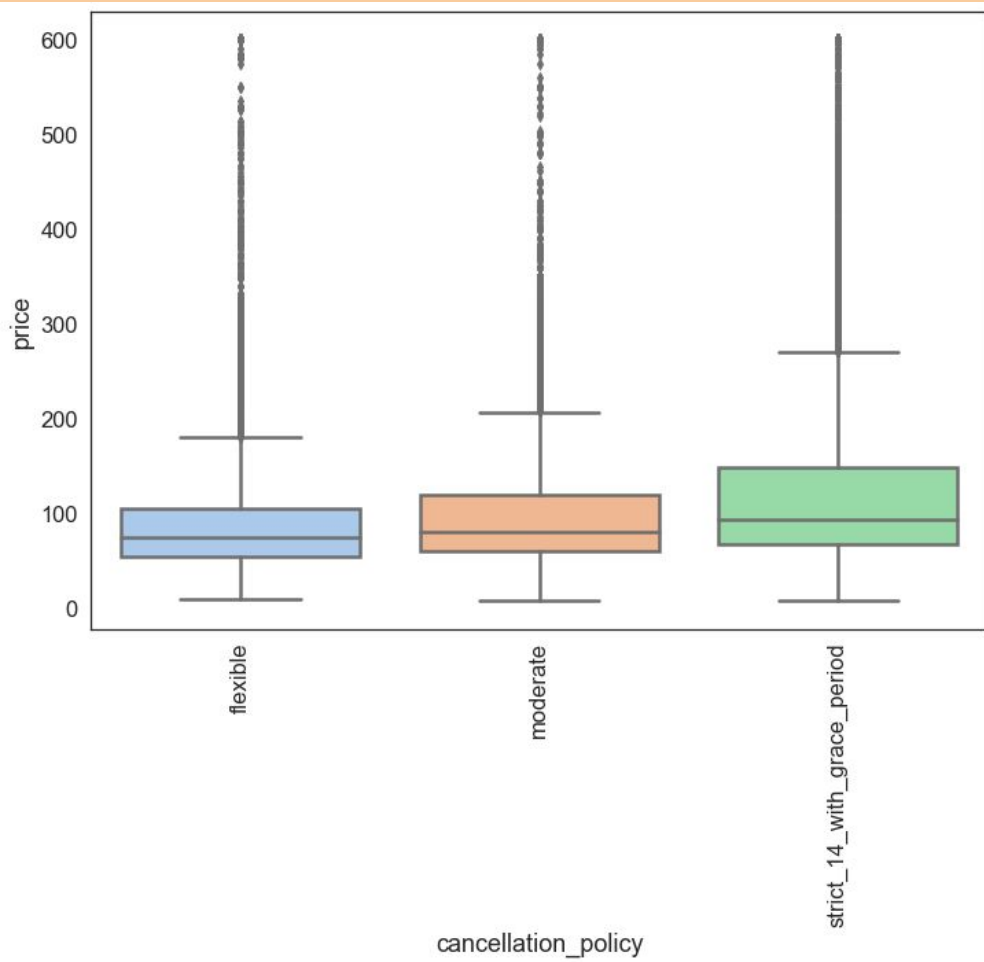
Extra People

Let them in!

Availability

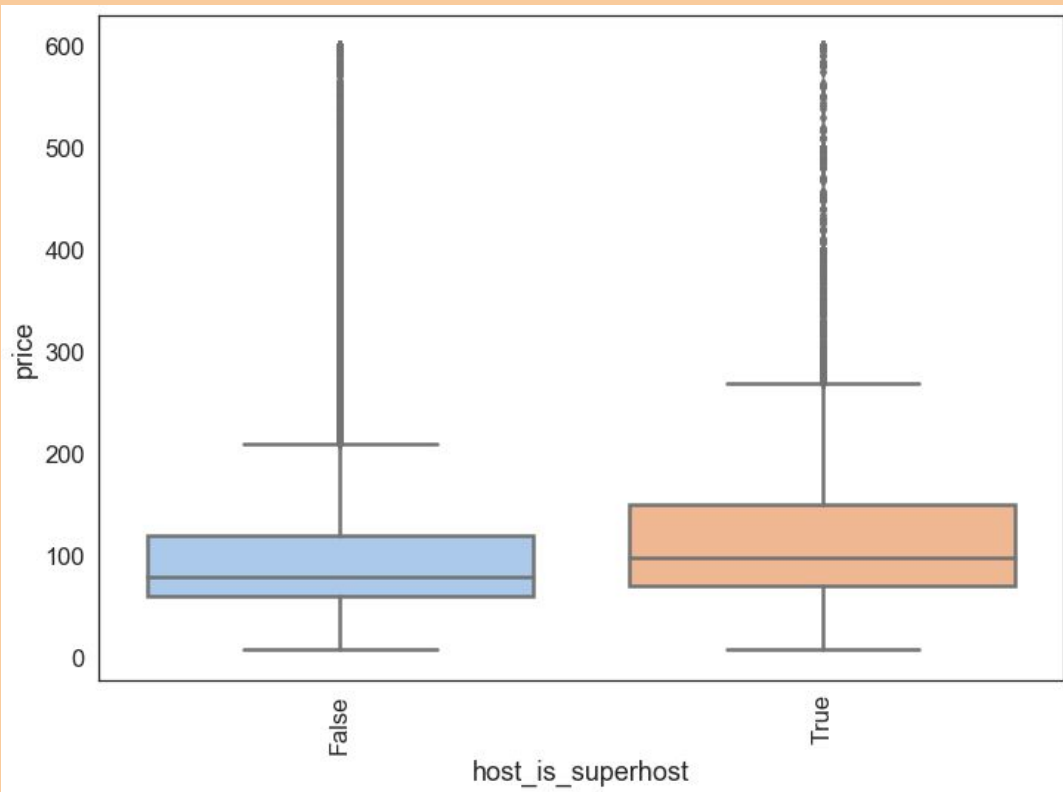
Be available, sleep
in your van!

Object Features



- Listings with a strict cancellation policy tend to be more expensive
- Possibly nice appartement in good neighbourhoods
- Host cannot afford to keep them empty due to loose rules or has made a business out of it

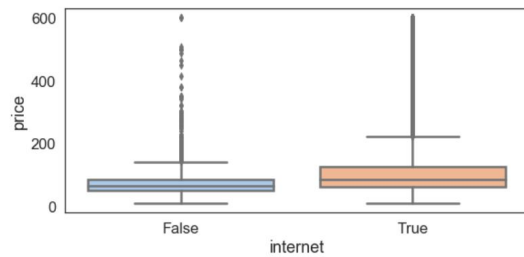
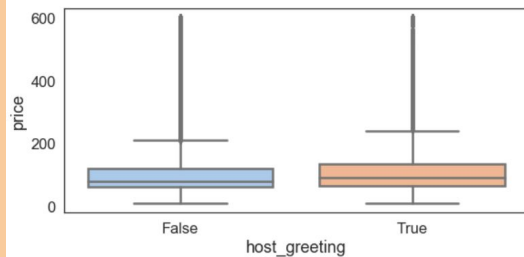
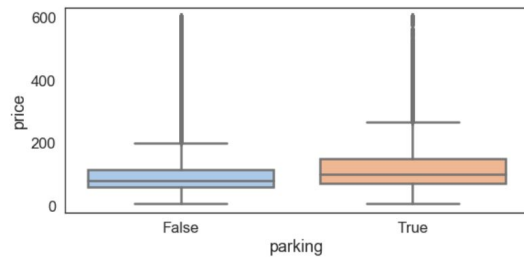
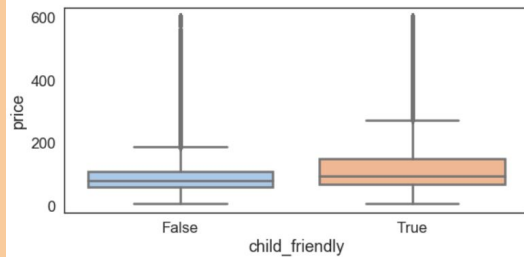
Object Features



How to become a Superhost:

- Host a minimum of 10 stays in a year.
- Respond to guests quickly and maintain a 90% response rate or higher.
- Have at least 80% 5-star reviews.
- Honor confirmed reservations (meaning hosts should rarely cancel)

Object Features



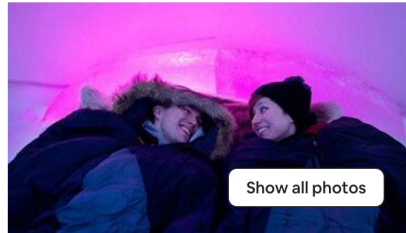
Other important factors:

- Child friendly
- Parking
- Host greeting
- Internet

The North Pole in Paris

Paris, Île-de-France, France

[Share](#) [Save](#)



Shared room in igloo hosted by Luis

4 guests · 1 bedroom · 4 beds · 2.5 shared baths



Add dates for prices

03

Model

Model Description

Number of Features

69

Type of Model

Hyperparameter
Tuned XGBoost
Regressor

Metrics

RMSE: 42 Euro
 R^2 : 71%
on unseen Data

Features Importance

Top 6: Bedrooms,
Bathrooms, Size,
Accommodates,
Cleaning Fee,
Availability, TV

Case Study

	Example Apartment (Hôtel de Ville)
Price Prediction (no changes)	105 Euros
Price Prediction (add dishwasher etc.)	113 Euros
Price Prediction (create place for one more person)	124 Euros
Price Prediction (add bed linen)	125 Euros

03

Recommendations / Future Work



Recommendation for Hosts

There are many easy ways to make your place more valuable:

- Collect Reviews**
- Buy a dishwasher**
- Make it Child Friendly, etc. etc.**

Future Work

- Make Use of NLP**
- Improve Neural Networks for Prediction**
- Build a dash board for the maps**
- Use model for more cities**
- Work with actual booked prices**

Thanks!

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