

Data Mining - Airbnb Study

How to predict the best price to maximize the profit.

The problem

Company

Most Companies like Airbnb Face a Big problem to convince the houses owner to list their houses on their website for renting

Owners

While some Owners are too greedy so they put high price while thinking that high price will increase their profit to the maximum

Problem statement

There is in balance between the quality of the listing and the price which will lead to reduce the profit and will affect the market growth

Solution

Pricing Adviser

Provide very good machine learning tool which will predict the profit for a listing has specific price, which will lead us to a way to get the best price to maximize the profit.

Challenges deep-dive

Challenge 1

Profit Dataset

In the provided datasets there is no way we can estimate the profit

Challenge 2

The listing features are text written

The amenities in our dataset are list of string, which will let us face hard time when we exploring the preprocessing the data

Challenge 3

Modeling

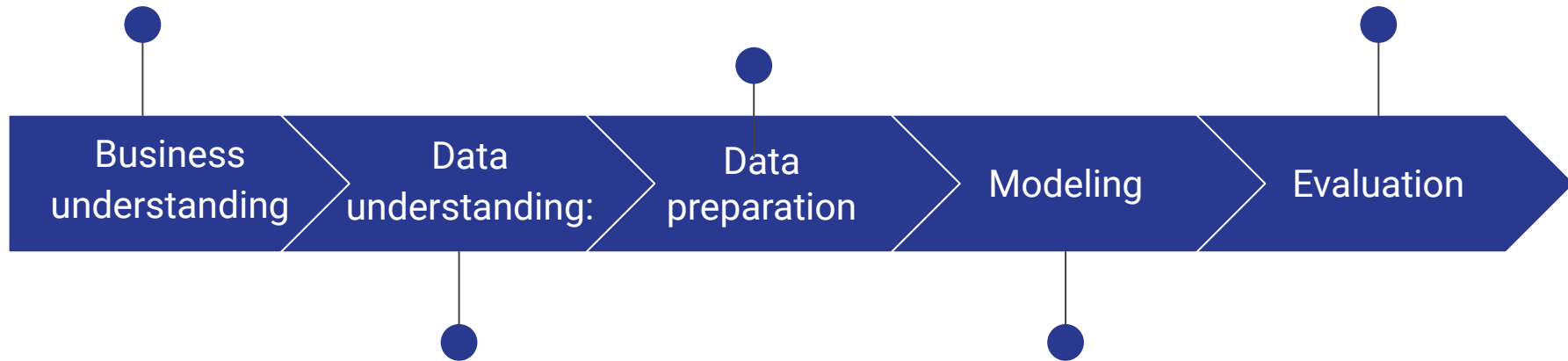
What model whe gonna use?

Implementation

Profit can be calculated
by (number_of_days_full
x price)

we split the string into parts and
used regular expressions to
remove unnecessary characters.
Then, we encoded amenities as
dummy variables, which resulted
in a total of 559 columns.

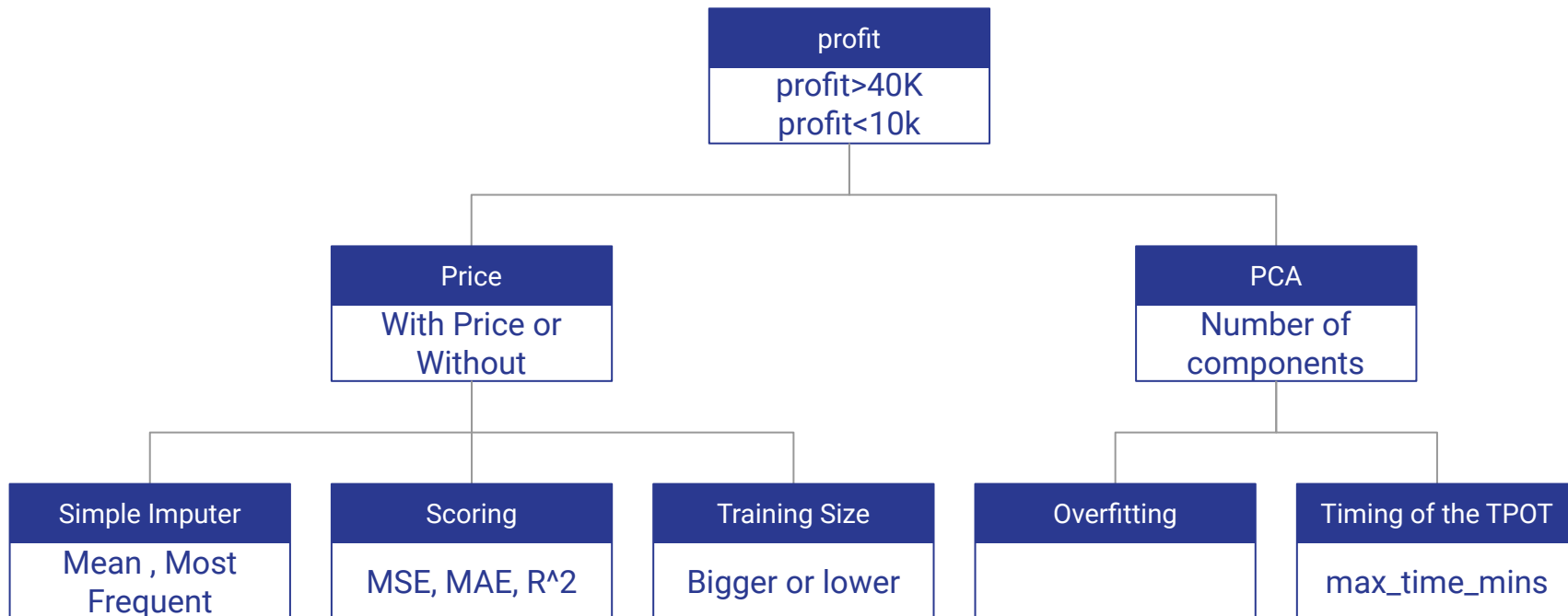
Get highest profit from
Best price



Number of reviews
has decreased, which
is due to COVID-19

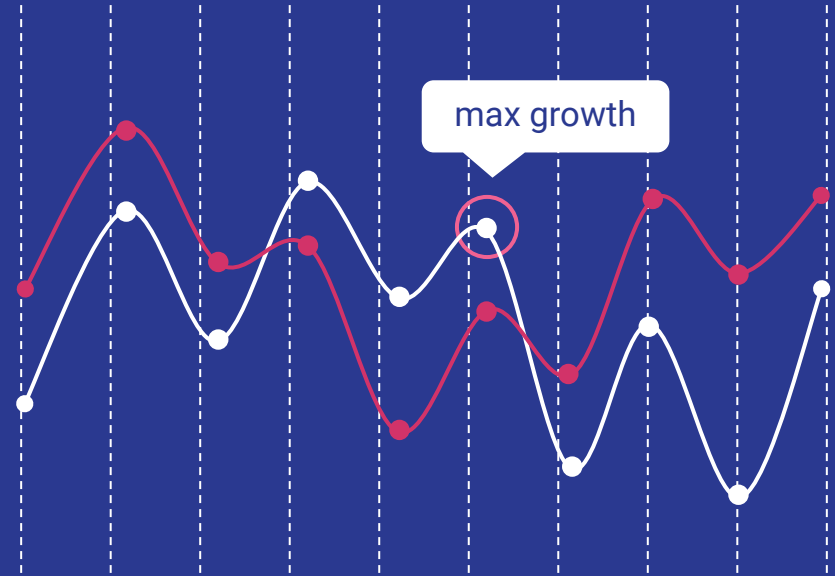
Tree-based Pipeline Optimization
Tool

modeling and Data Selecting Experiments



Impact

The percentage increasment in
the profit is between : 27% - 43%



Pros, and Cons

Scalability: you can scale it on every city you have its data,

Credibility: you can check the result after low period of time

Profitability: see the increasing of the profit on the paper

Cons.

You cannot apply the same model on different city, you need to train first on different dataset.

It does not deal very good with noisy data