

HOUSE FEATURES TO INVEST ON IN KING COUNTY, WA

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Stakeholder: **We Buy Ugly Houses** – Real Estate Investor (House Flipper)

Business
Problem:

- We Buy Ugly Houses purchases properties to remodel and resell them for a profit.
- They want to know *what type of house features* to invest on for higher profit.

Data

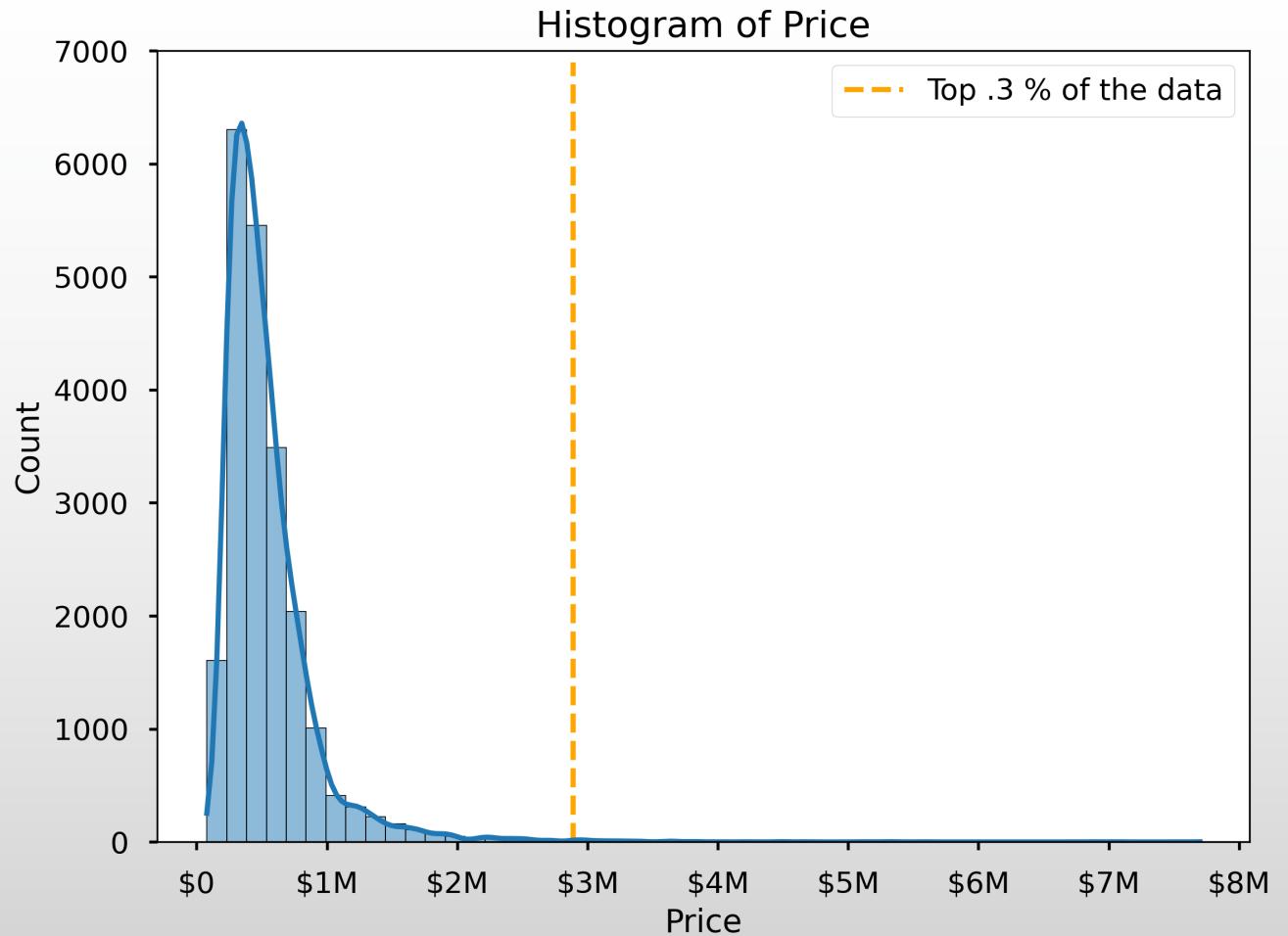
King County House Sales dataset:

- contains house sale prices on 21597 houses sold between *May 2014* and *May 2015*.
- Includes features such as:
 - ✓ Square footage of the house / lot
 - ✓ Number of bedrooms / bathrooms
 - ✓ Coordinates
 - ✓ Year built



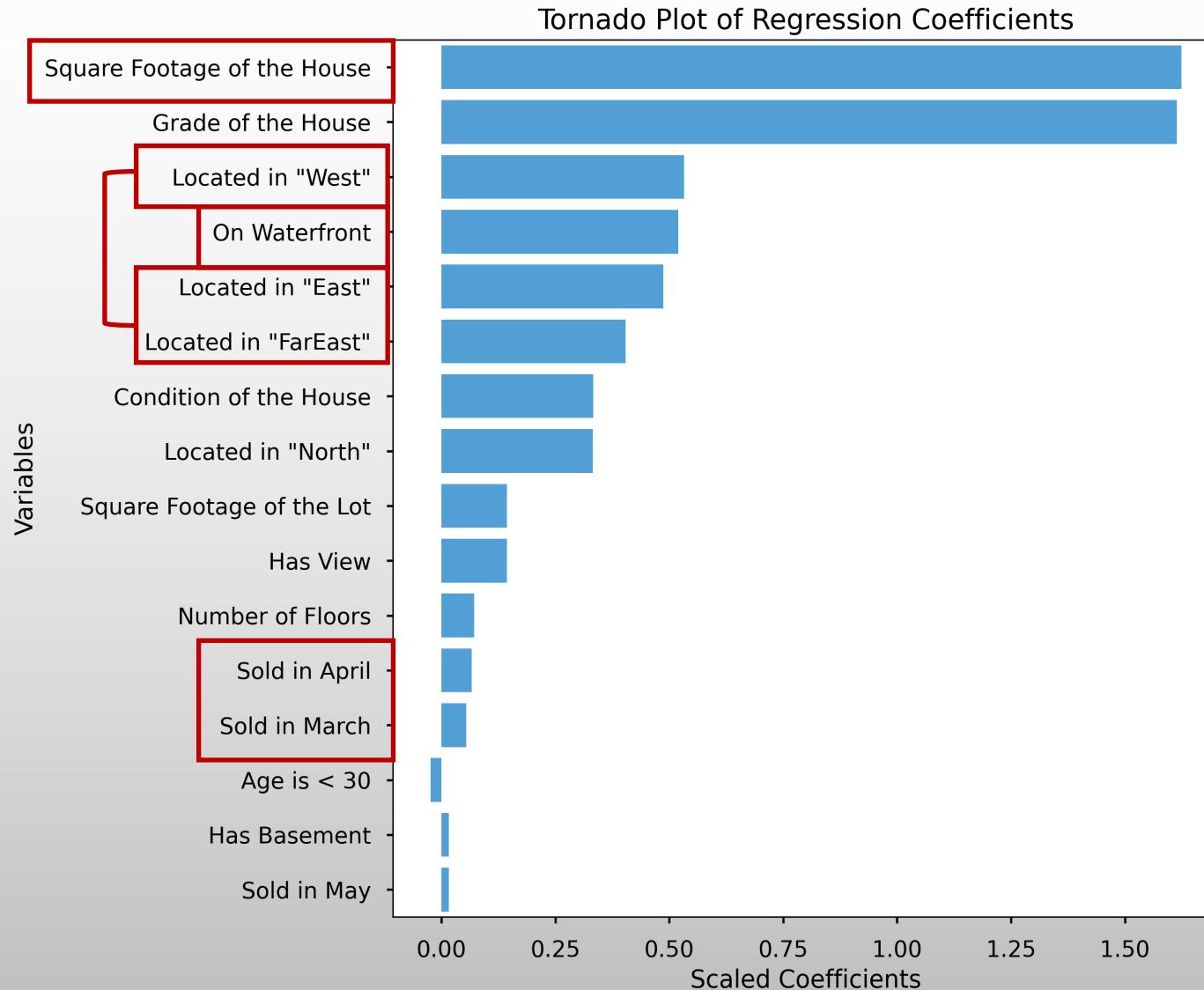
Methods:

- Clean the dataset
- Conduct feature engineering
- Build the best fitting linear regression model
- Make recommendations



Focusing on houses up to $\sim 3M$ in price

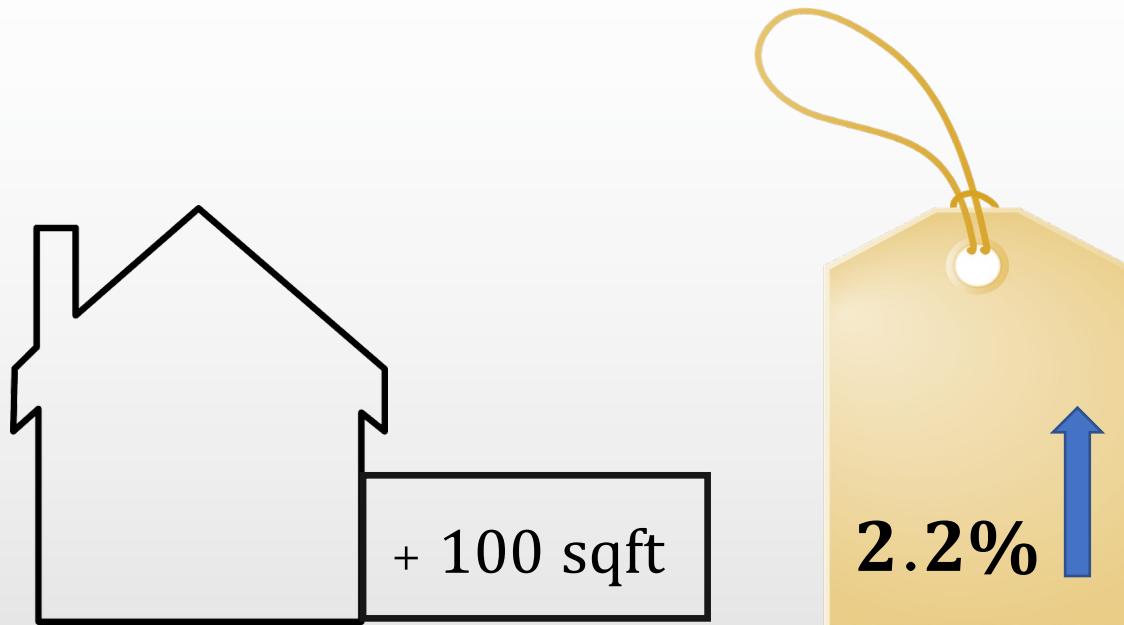
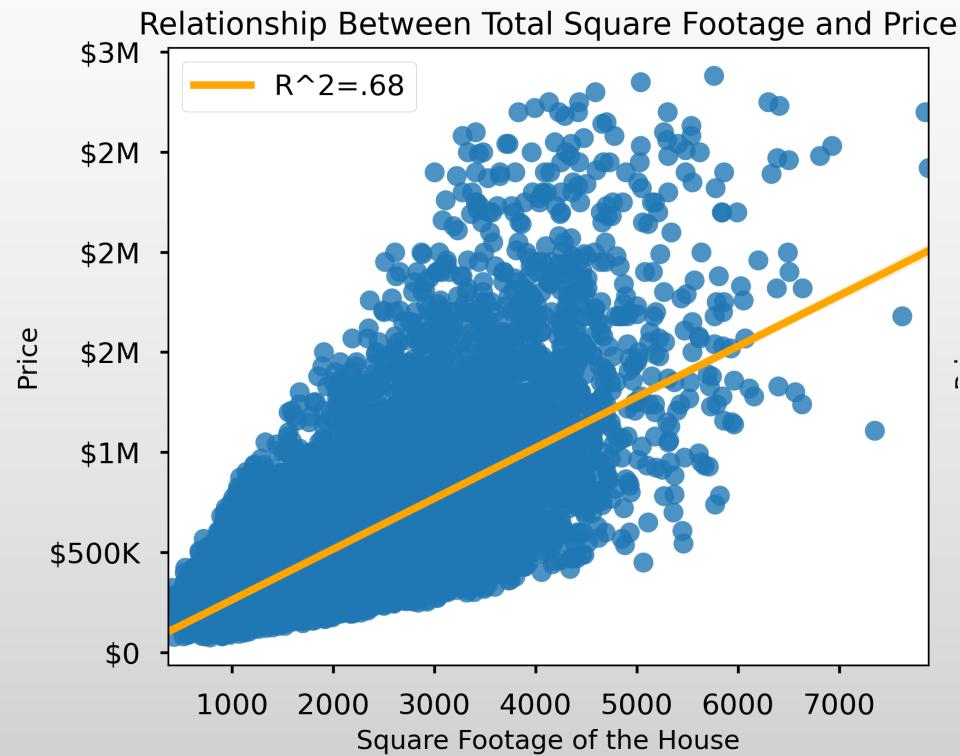
Results:



Final Regression Model:

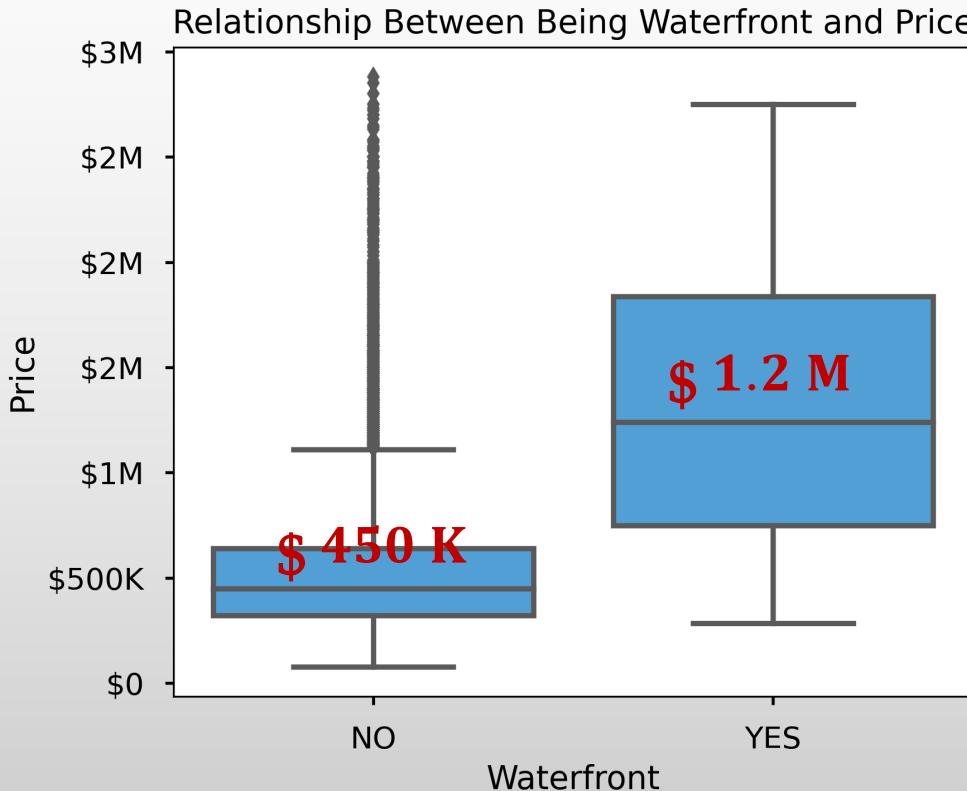
- R square: 75% of the variability in data is explained by these variables

How does square footage impact house price?



- For every **100 sqft** increase of the house, price increases by about **2.2 %**.
 - Prioritize house size over all other features – especially over lot size and try to maximize it.

How does being on waterfront impact house price?



- Being on **waterfront** increases price by **68%** (compared to not being on waterfront).
- **Invest on lots / houses on waterfront.**

How does the month the house goes on the market impact its price?

January
February
March
April
May
June
July
August
September
October
November
December

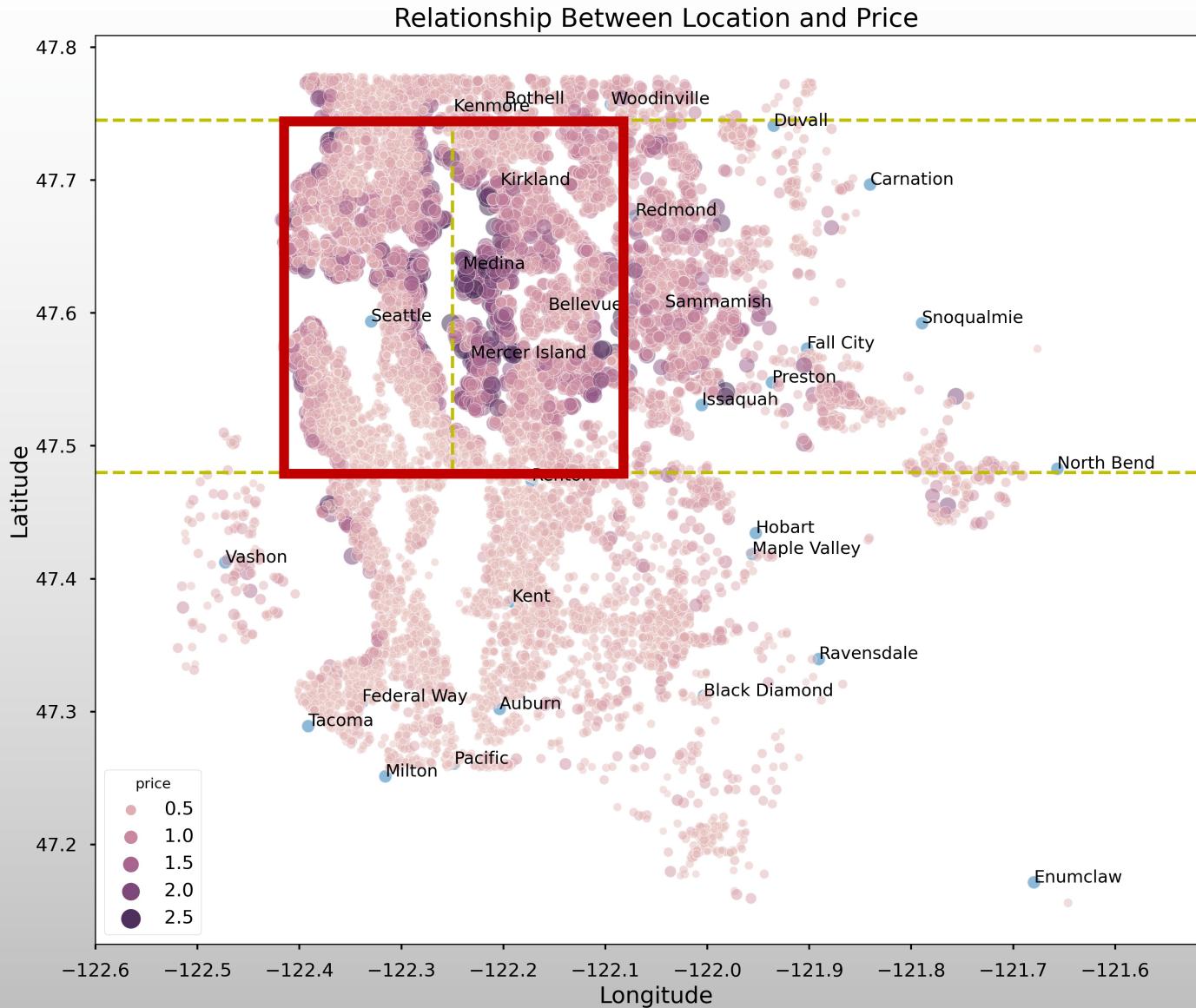


Put the house on market in Spring, especially in April:

- Being sold in **April** increases price by **6.9 %**.
- Being sold in **March** increases price by **5.6 %**.
- Being sold in **May** increases price by **1.7 %**.

(compared to all other seasons)

How does location impact its price?



Invest on houses:

- in **Seattle** for **70 %** increase in price.
- in **Medina, Bellevue, Mercer Island and Kirkland** for **63 %** increase in price.

(compared to the **South**)

Conclusions

For higher profit:

- Try to maximize **square footage of the house** as much as possible.
- Invest on houses / lots located on **waterfront**.
- Put the house on the market in **April or March**.
- Invest on houses in **Seattle, Medina, Bellevue, Mercer Island and Kirkland**.

Limitations and Improvements



- Skewed data required outlier removal or data transformation.
- Zipcodes could not be used in regression due to the huge number of levels (70), and city to zipcode mapping did not work due to the zipcode and city boundaries overlapping.
- Clustering zipcodes into meaningful groups would be helpful.
- Gathering more detailed location info using API calls would enrich the modeling process.



THANK YOU

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