

KING COUNTY HOUSING PRICE

Khairul Omar & Aleksander Gakovic | DS111819



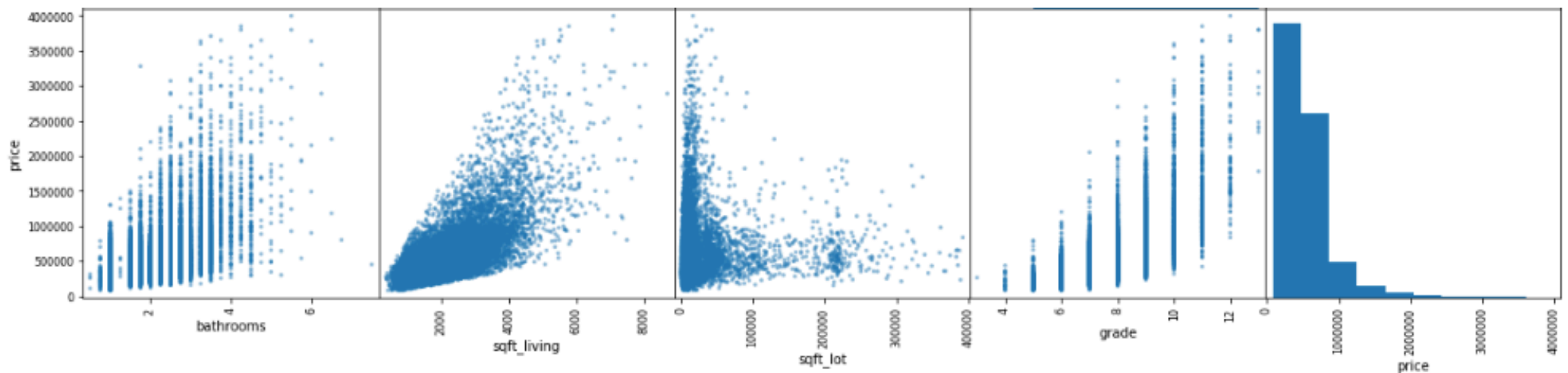
ABOUT US

- We are a **real estate agency** in King County and are exploring ways to:
 - Better serve our clients by optimising buying/selling price,
 - Demonstrate our value proposition to potential investors.
- To improve our business advantage in the agency market, we are conducting a study on how to address these key questions:
 1. What are the main factors that drive property prices?
 2. Could property prices be reliably predicted?
 3. Where are the premium locations in King County?
- Our working assumption is based on the selling price and other features of over 21,000 properties from throughout the county



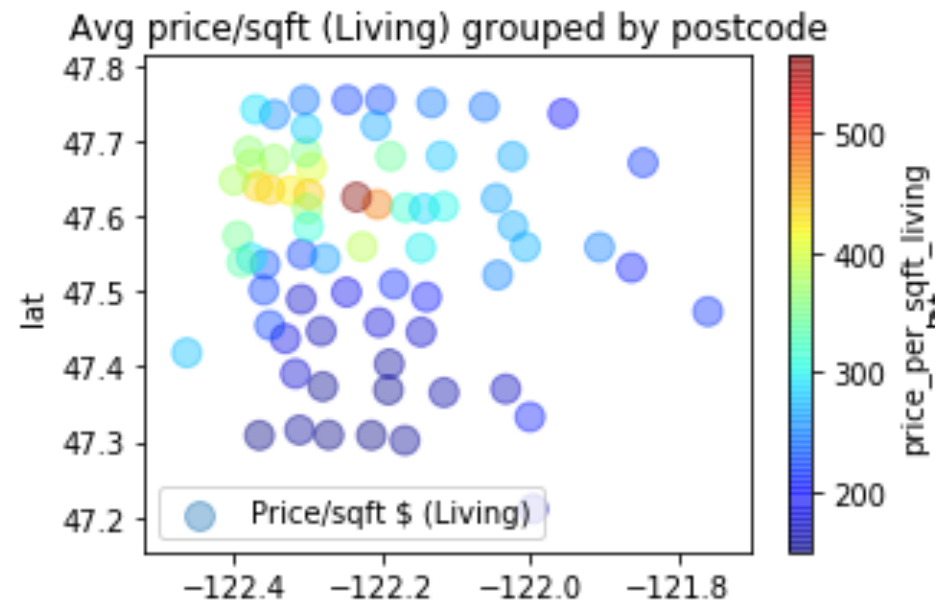
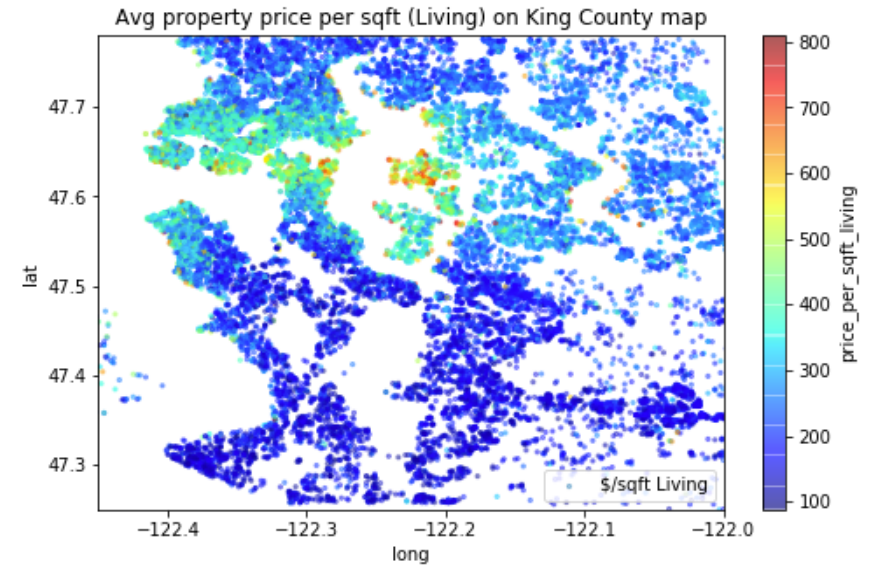
EXPLORING HOUSING MARKET DATA

- **Living space area** has a good correlation with price and rather normally distributed. This is a potential primary driver for the price.
- **Land lot area** is clustered around two groups, one with price steeply increasing with area, while another does not have a clear-cut relationship.
- **Grade** of a property also appears to be another driver to the price, although the spread of prices for a given grade can be fairly large.
- **Waterfront** properties have significantly higher price per square feet compared to other neighbours without a similar view (based on heat map).



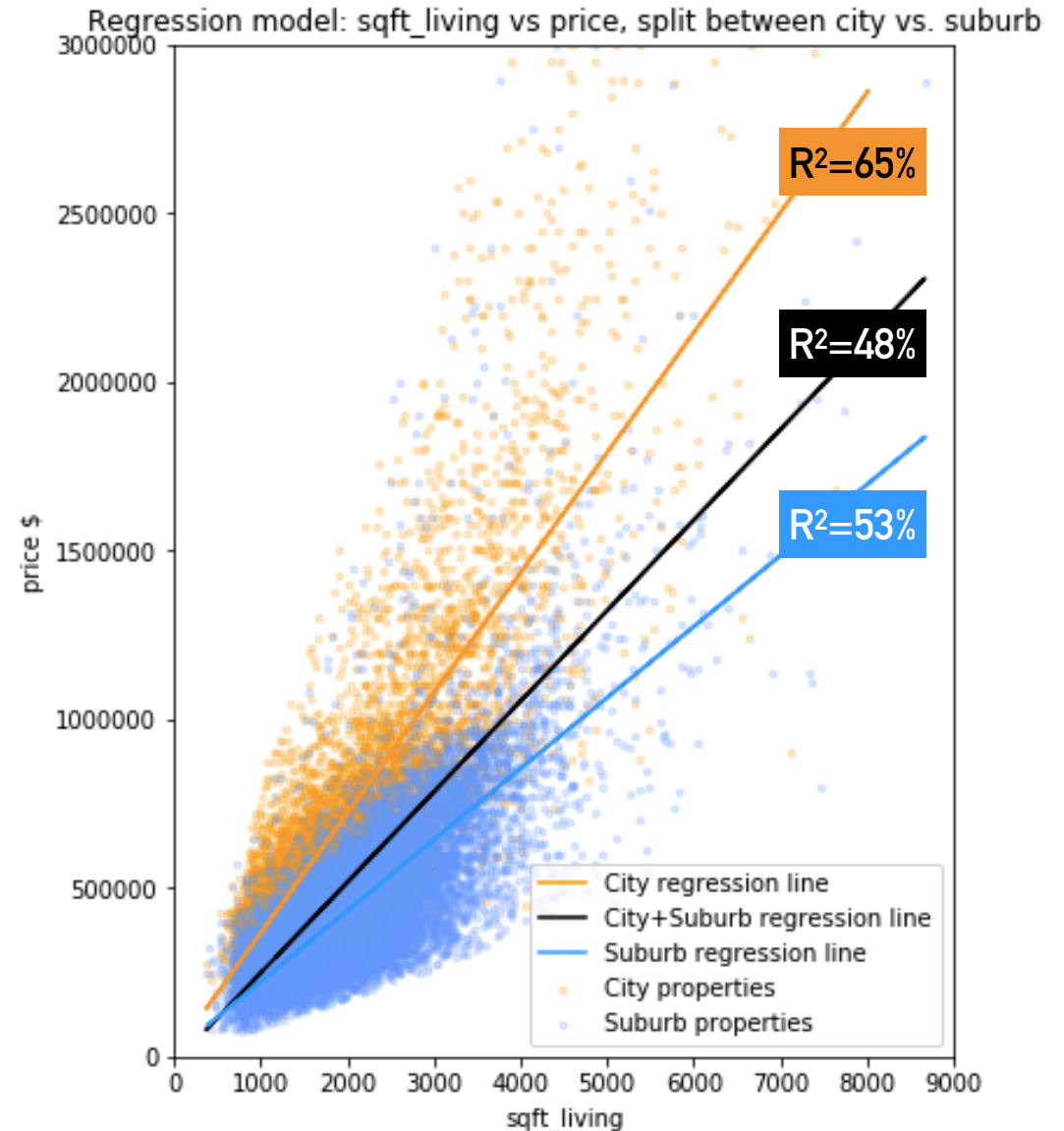
FORMULATING PRICE MODELLING STRATEGY

- We've identified that price/sq. ft. does not clearly correlate with other measures. Instead, a property's location is a better driver.
- We grouped all 70 zip codes into 2 sets to be used in our model:
 1. "City" indicates premium zip codes with high price/sq. ft.
 2. "Suburb" for all other areas.



OUR PRICE PREDICTION MODEL

- Initial model: using **living space area** as the sole driver for the house price (shown in graph)
- Enhanced model: a better accuracy of **$R^2=70\%$** by feeding in additional drivers:
 - **city/suburb distinction**
 - **building grade**
 - **waterfront location**
- Future refinement is possible if more area data is available to better classify zip codes e.g. schools, public transit, etc.



HOW CAN THIS STUDY HELP YOU?



To corporate investors:

- Our pricing model will give us a competitive advantage vs. other market players that will make our business grow.
- With additional investment, we aim to further enhance our model with additional data and more advanced predictive techniques.



To homeowners:

- **Sellers:** we can advise you on maximising profit by optimising the asking price using our model.
- **Buyers:** we can help you negotiate the asking price by comparing it with the price generated by our model.