



Realtor Pricing Tool Study

Prepared for Premier Properties, LLC
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Introduction - Model or Comps?

Business Questions

What are the primary factors influencing housing prices in the King County metro area?

Can we effectively use a regression model for realtors to determine a proper list price?

Is a model-based system more accurate for determining list price than the traditional comps-based system?

What easy-to-use features can we add to our model to increase its accuracy?

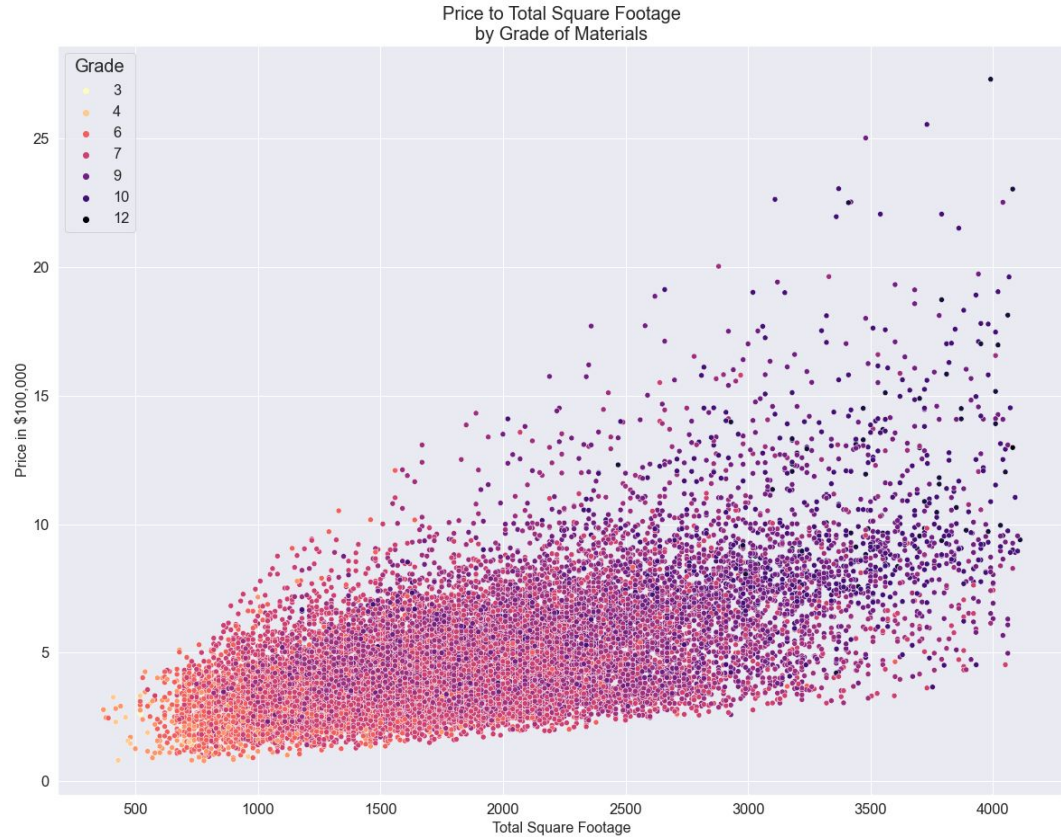
Important Feature

Square Footage

How big is the house?

Grade

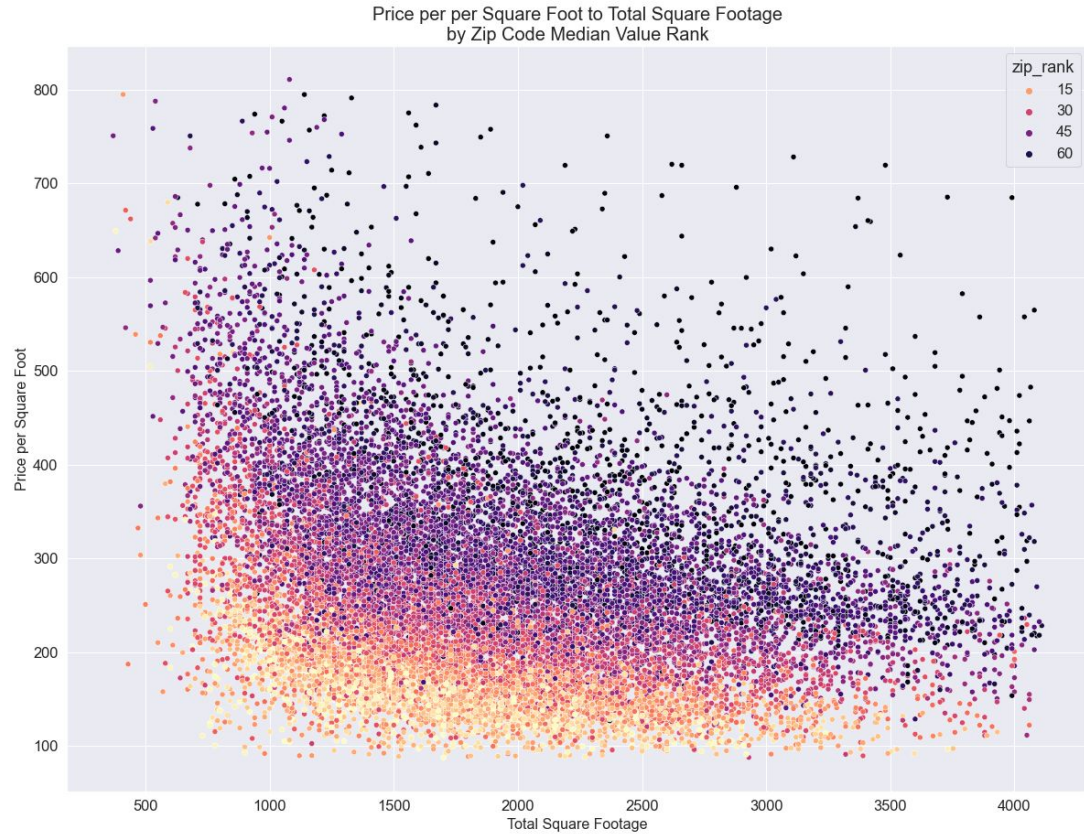
Quality of build materials
And finishes



Important Feature

Zip Code

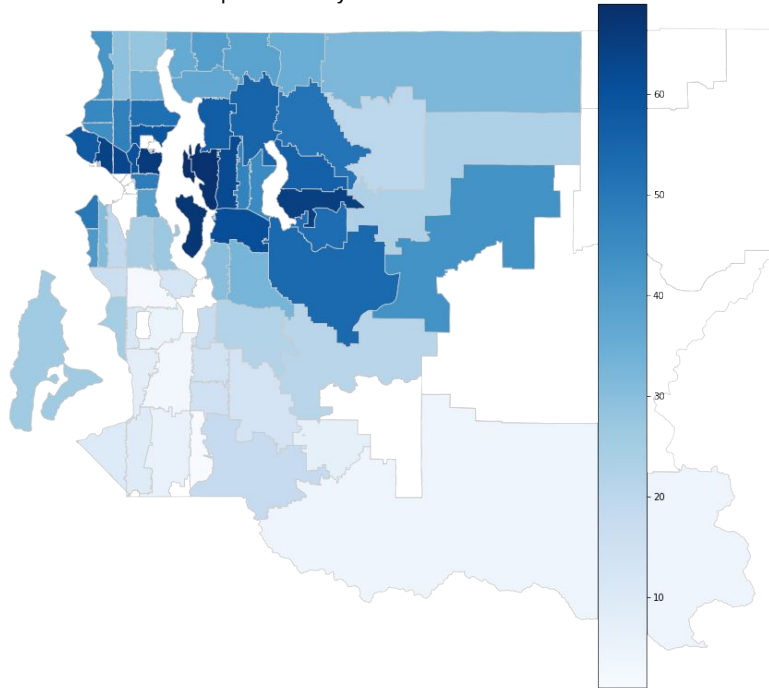
A glimpse of zip code importance



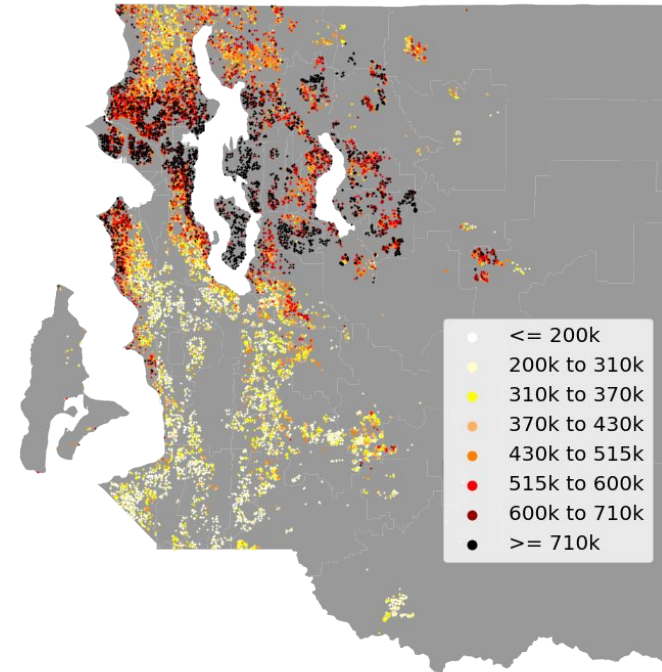
Most important feature

Location is everything.

Zip Codes by Median Rank



Home Sales in King County Metro Area





88.2%

Sounds decent, but average error is 56k either direction

Average error on properties under 500k is still 40k

Model provides at best a baseline.



Realtor Simulator

Realtor simulator - the “comps model”

Uses fewer features

Provides the properties that would
need to be located after running model

Was more accurate on our new test data

Target property and comps found by realtor simulator



This property:

Actual price: 665000

Model estimate: 783695

Realtor simulator estimate: 663722

Model or Comps? Pros and Cons

Model

Pros

- Can be used without housing data on hand
- Does not need frequent updating

Cons

- Wide error range gives only a starting point
- Still requires human intervention to determine final price

Comps

Pros

- Is a familiar method for realtors
- Can capture subjective elements that a model misses
- Can still be done programmatically

Cons

- Requires entire data set be present to function
- Must be updated frequently, preferably daily, for most accurate results

Conclusions and Recommendations

If we want to use the model, it needs to perform better.

- Source better data that has sale type to weed out non-market sales.
- Add easy-use features for realtors that might improve the model and capture some of the subjective elements that the model is currently missing.
- Experiment with higher granularity location using lat/long

Future Work

Improve model:

- Utilize lat/long for more granular location, and provide an address lookup tool to easily obtain these values
- Get School ratings from GreatSchools.org via scraper
- Integrate additional King County GIS map information in concordance with lat/long to determine proximity scores to shopping/restaurants, various public features (parks, services, waterfront), non-discriminatory census statistics and other publicly available information

Realtor simulator - Determine coefficient multipliers for view, basement, waterfront, renovations, comparative sq footage that would allow the realtor simulator to take these elements into account

GUI for use of tool by realtors



Thank you!