



King County House Price Analysis and Prediction

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What should you looking for when you
buy a house?

01

**Business
Problem**

02

**Data and
Methods**

03

Results

04

**Model
Evaluation**

05

**Conclusion and
Future Work**

Business Goal



Month



Region



House Features



Top Features

Data and Methods

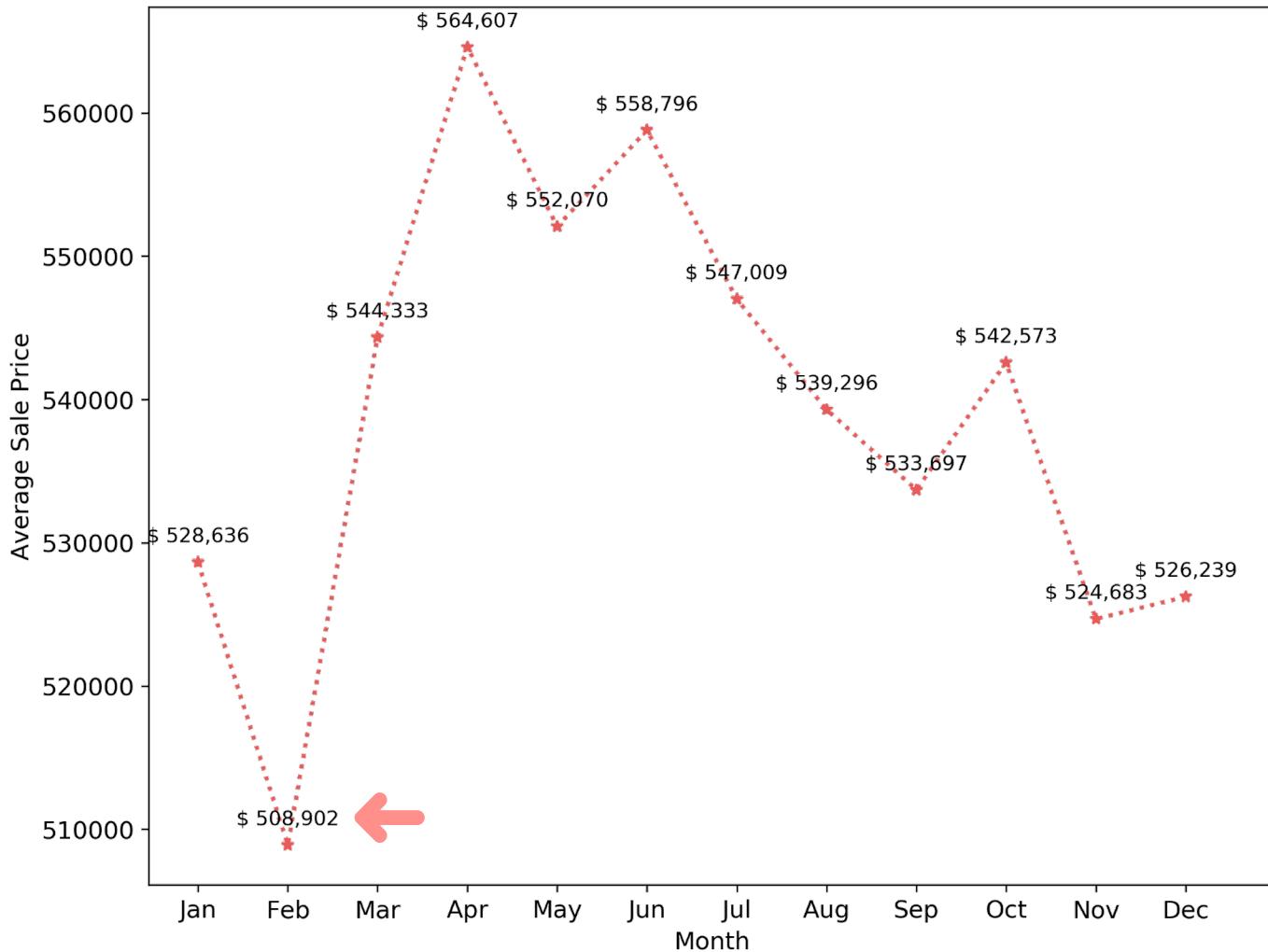
- 21243 House Sale Data
- May 2014 and May 2015
- Linear Regression Modeling



Q1. What is the best month to buy a house?

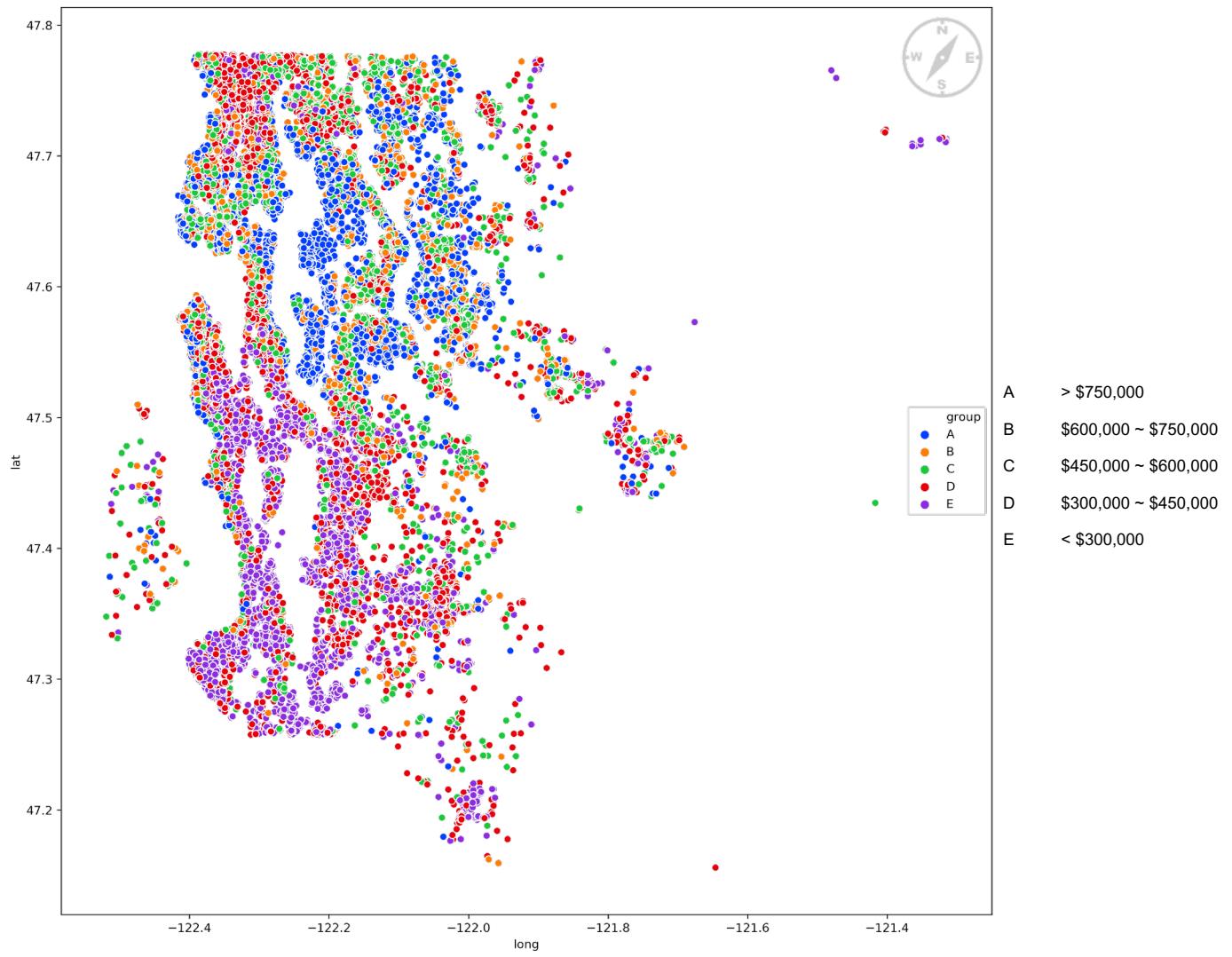


Price vs. Month



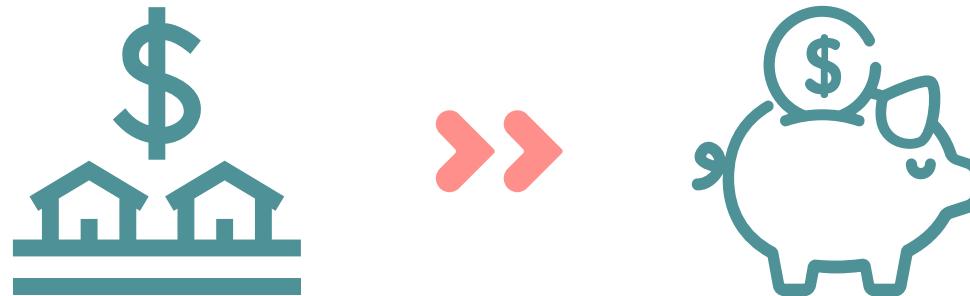
Q2. Which region should you look first based on your budget?





Q3. What features help predict house price?

Q4. What are the top features that have stronger relationship with house price?

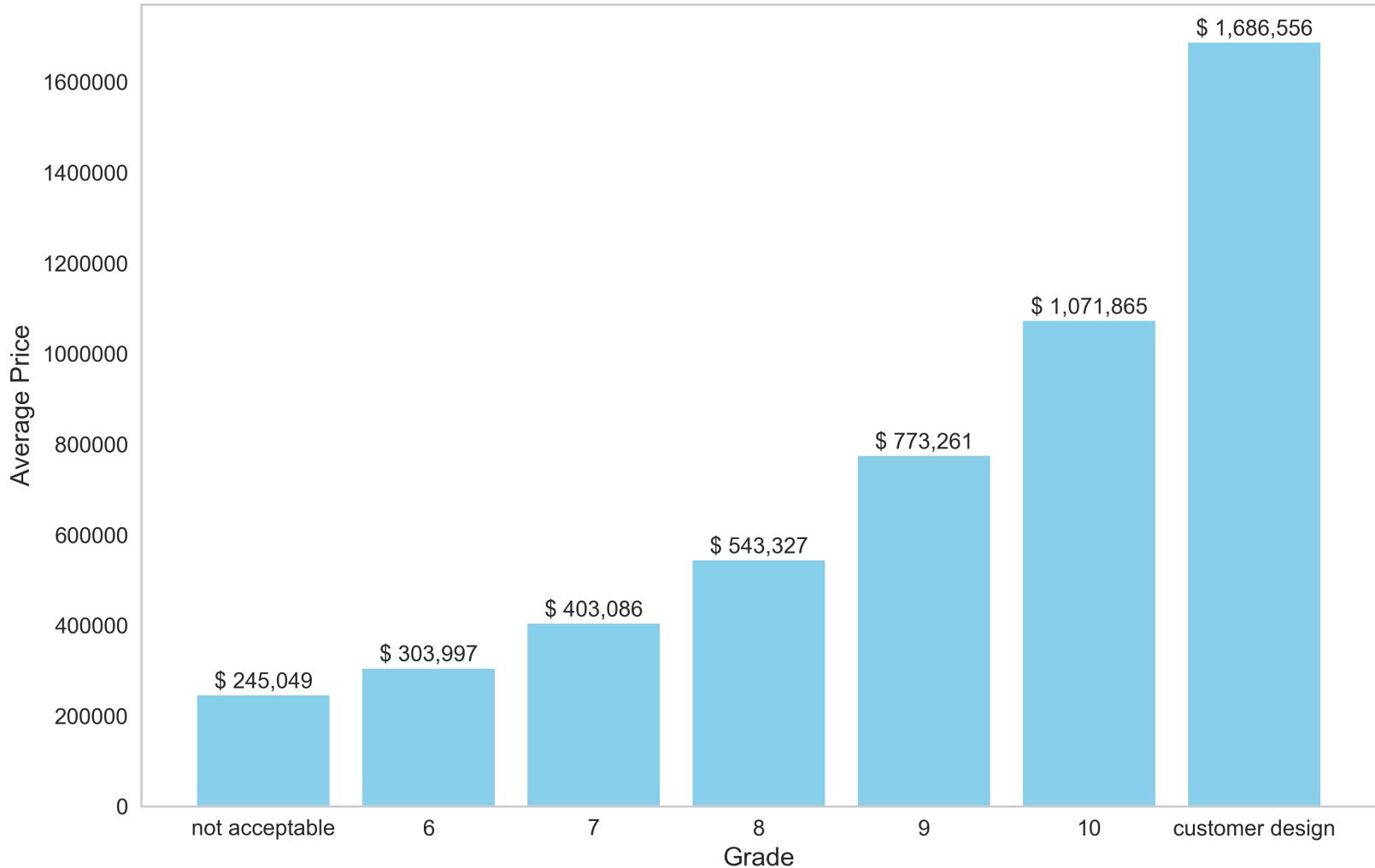




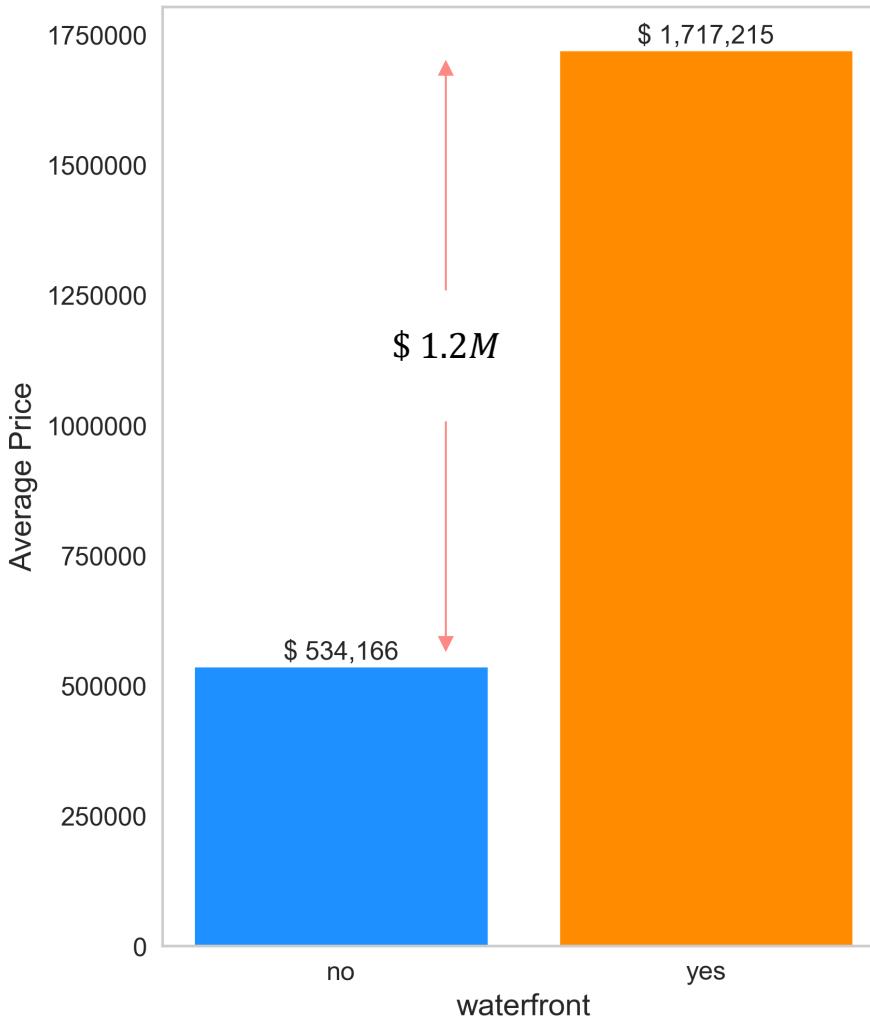
A random example

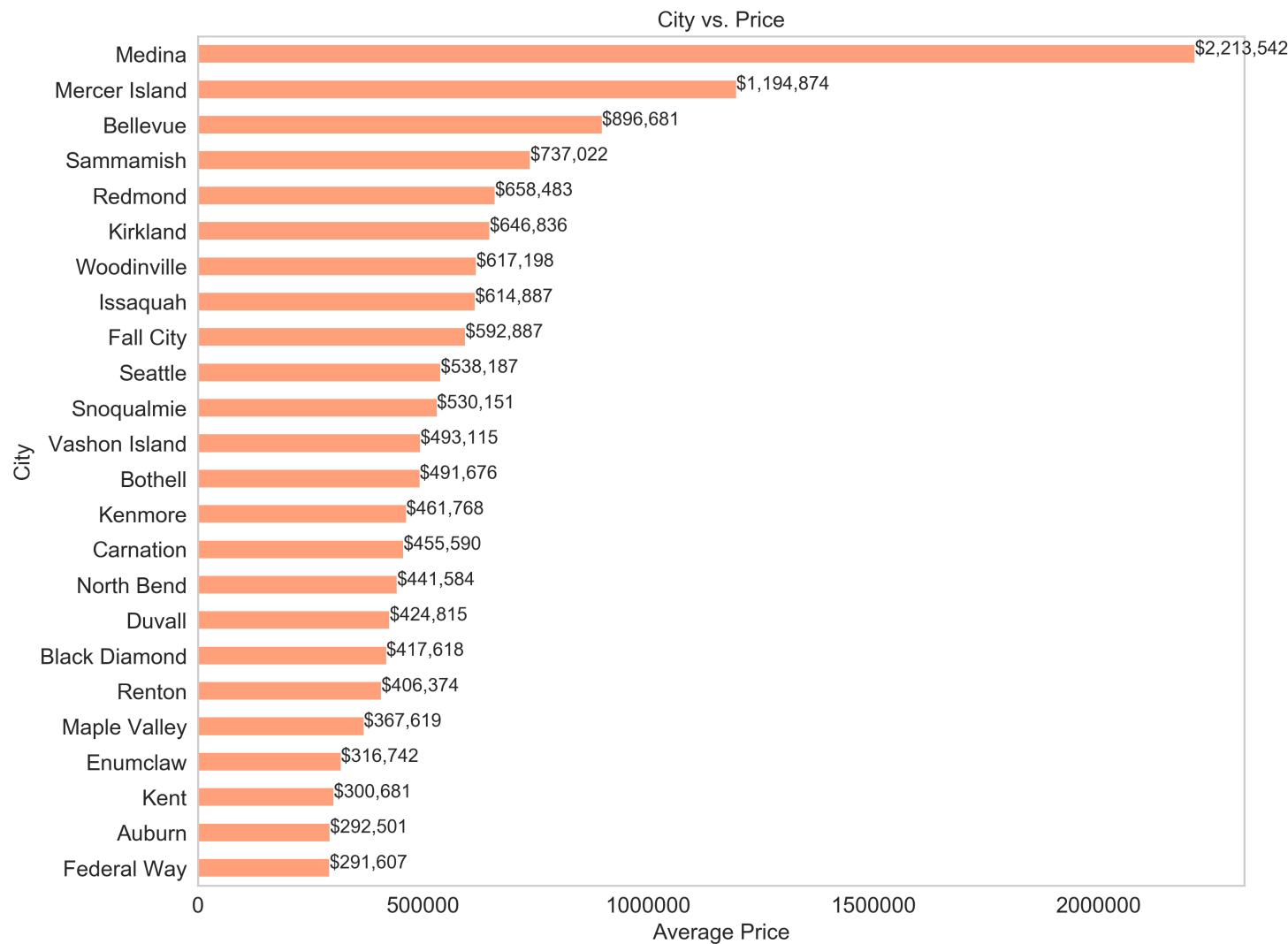
Fixed Features		Testing Feature
Living area	1000 ft^2	9
Lot Area	1500 ft^2	House Grade
Lot Area	1500 ft^2	8
Room Ratio	$\frac{3}{2}$	Waterfront
House Age	70	<i>yes</i>
Basement	<i>no</i>	<i>no</i>
		City
		<i>Medina</i>
		<i>Seattle</i>

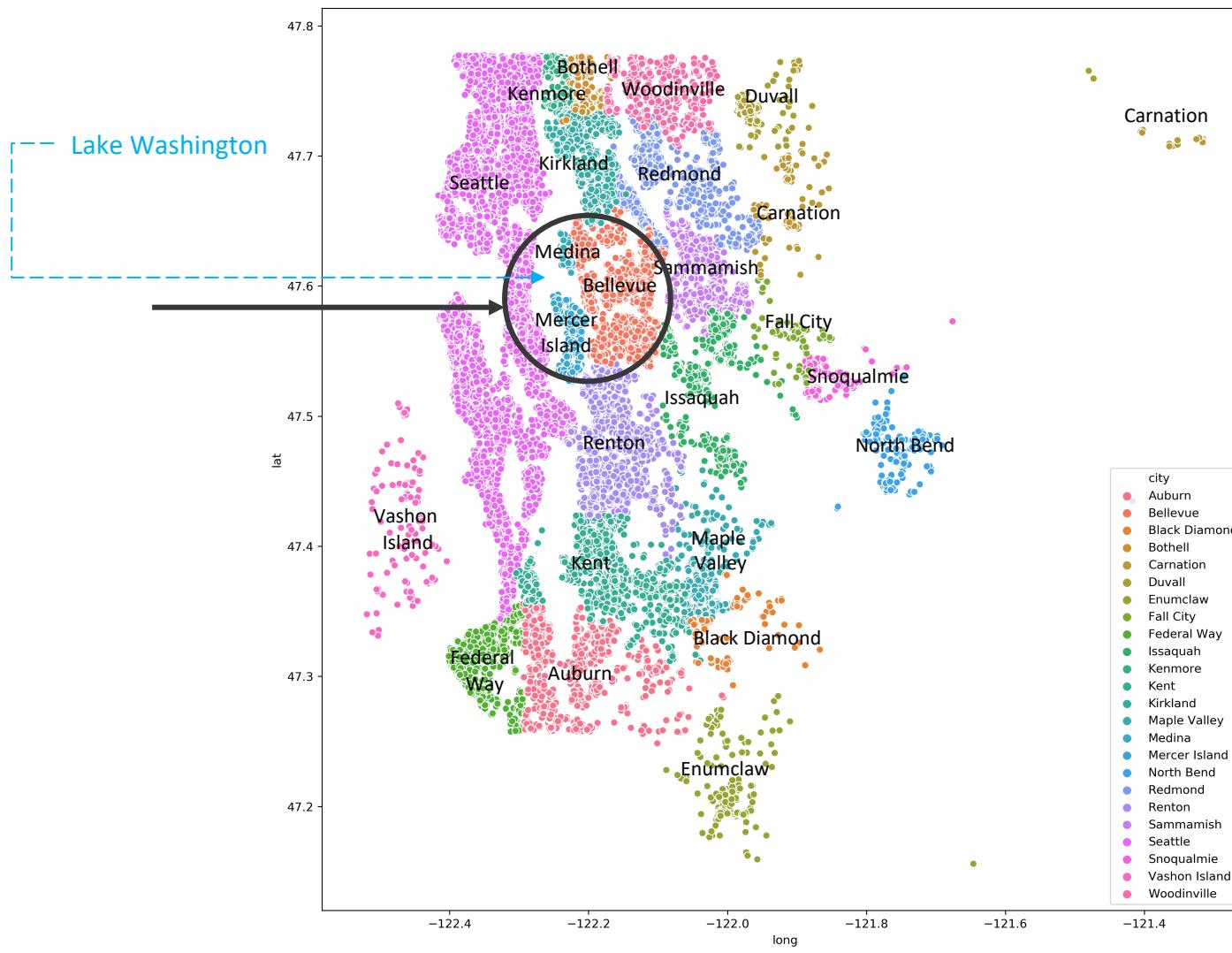
Price vs. Grade



Price vs. Waterfront







Model Evaluation

	Basic Model	Model 3
Features	4	36
R^2	0.53	0.77
<i>(Root Mean Squared Error)</i> $RMSE$ <i>Lower value indicates better fit</i>	250000	0.25

Conclusion

- February has the lowest house sale price
- North → higher price house
- South → lower price house
- Top features have strong relationship with house price
 - Living area
 - House grade
 - Waterfront
 - City

Future Work

School Ranking



Nearby Features



Market Fluctuation



THANK YOU!



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