



# 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

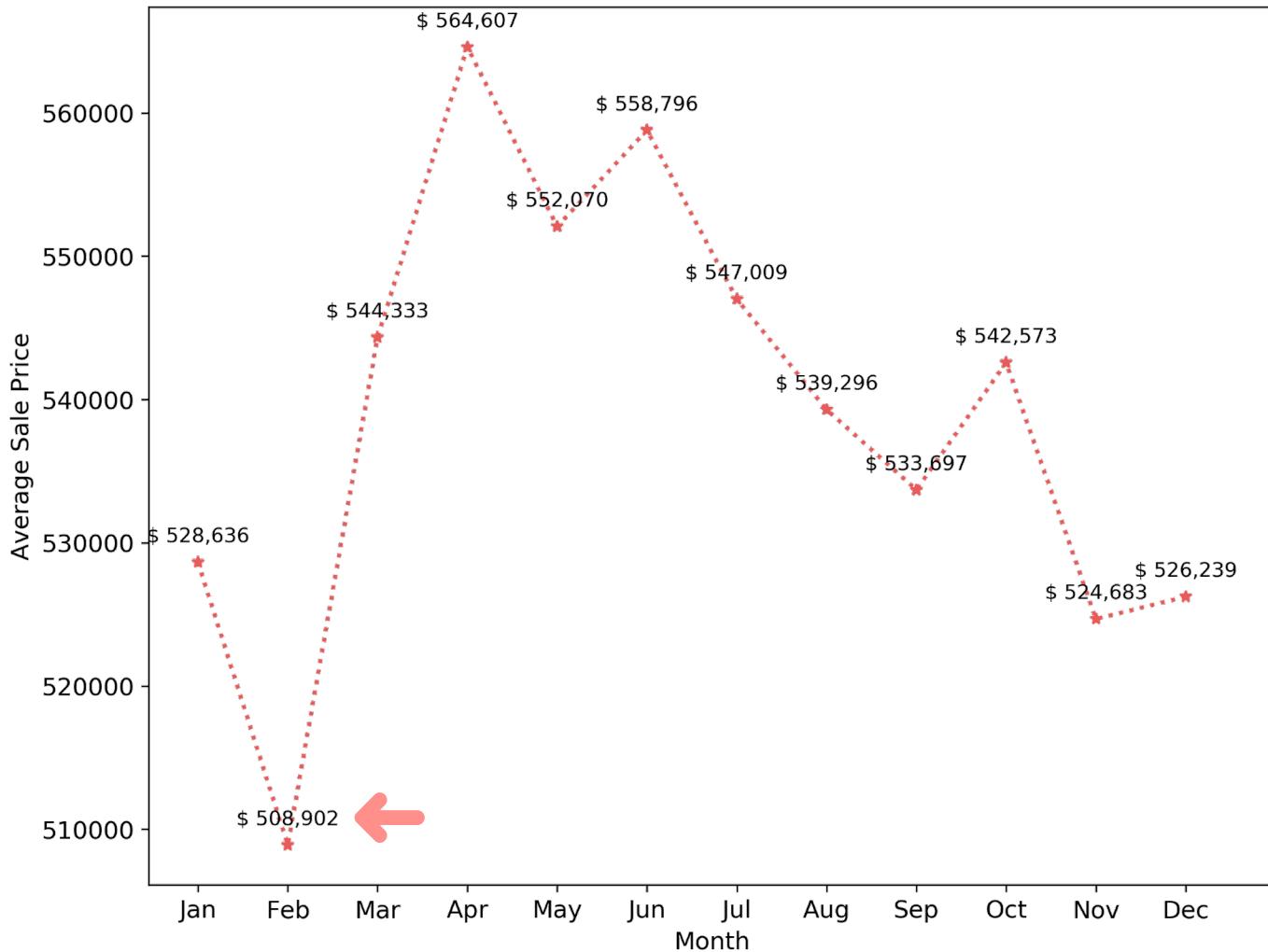
- 21243 House Sale Data
- May 2014 and May 2015
- Linear Regression Modeling



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

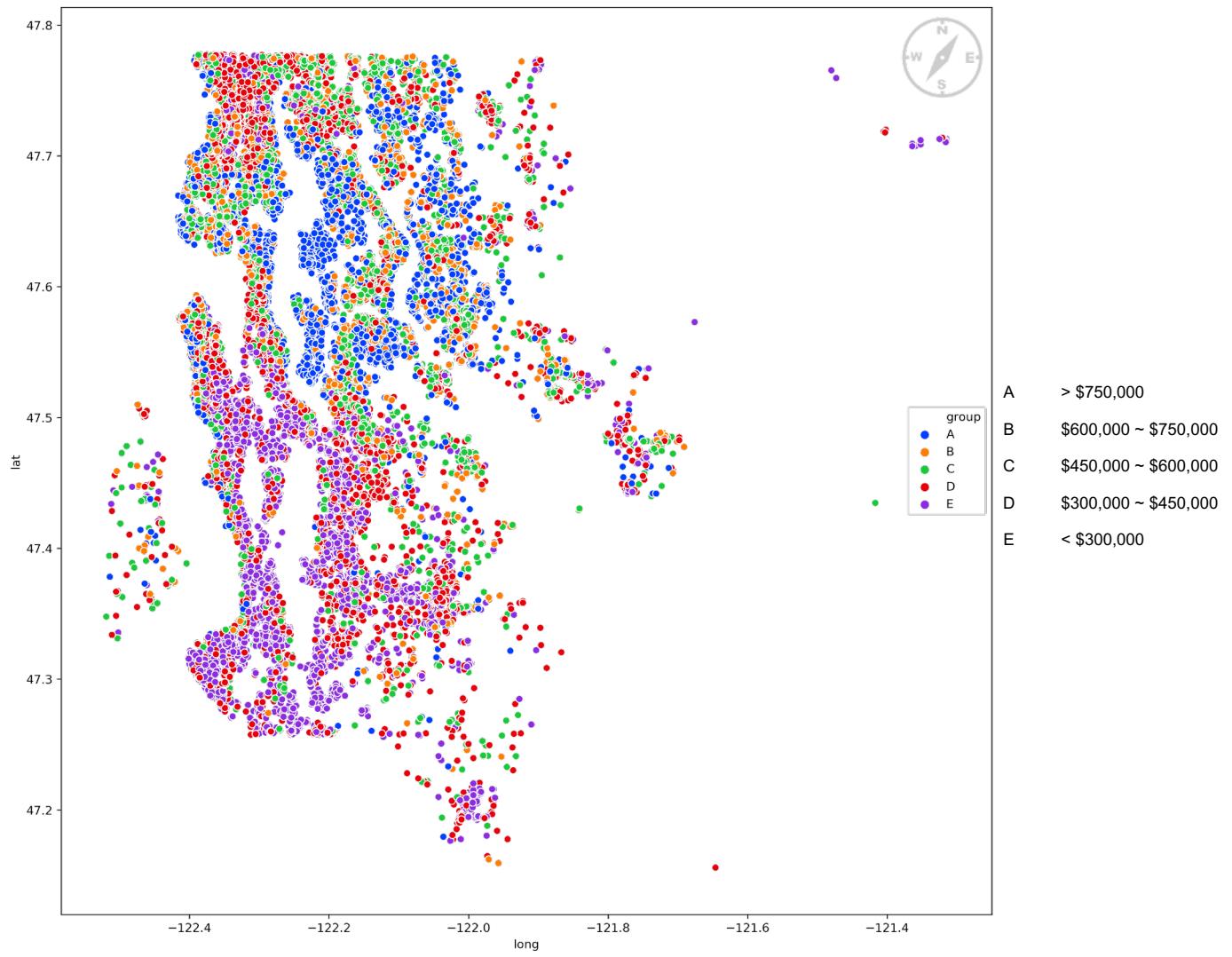


## Price vs. Month



**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?**

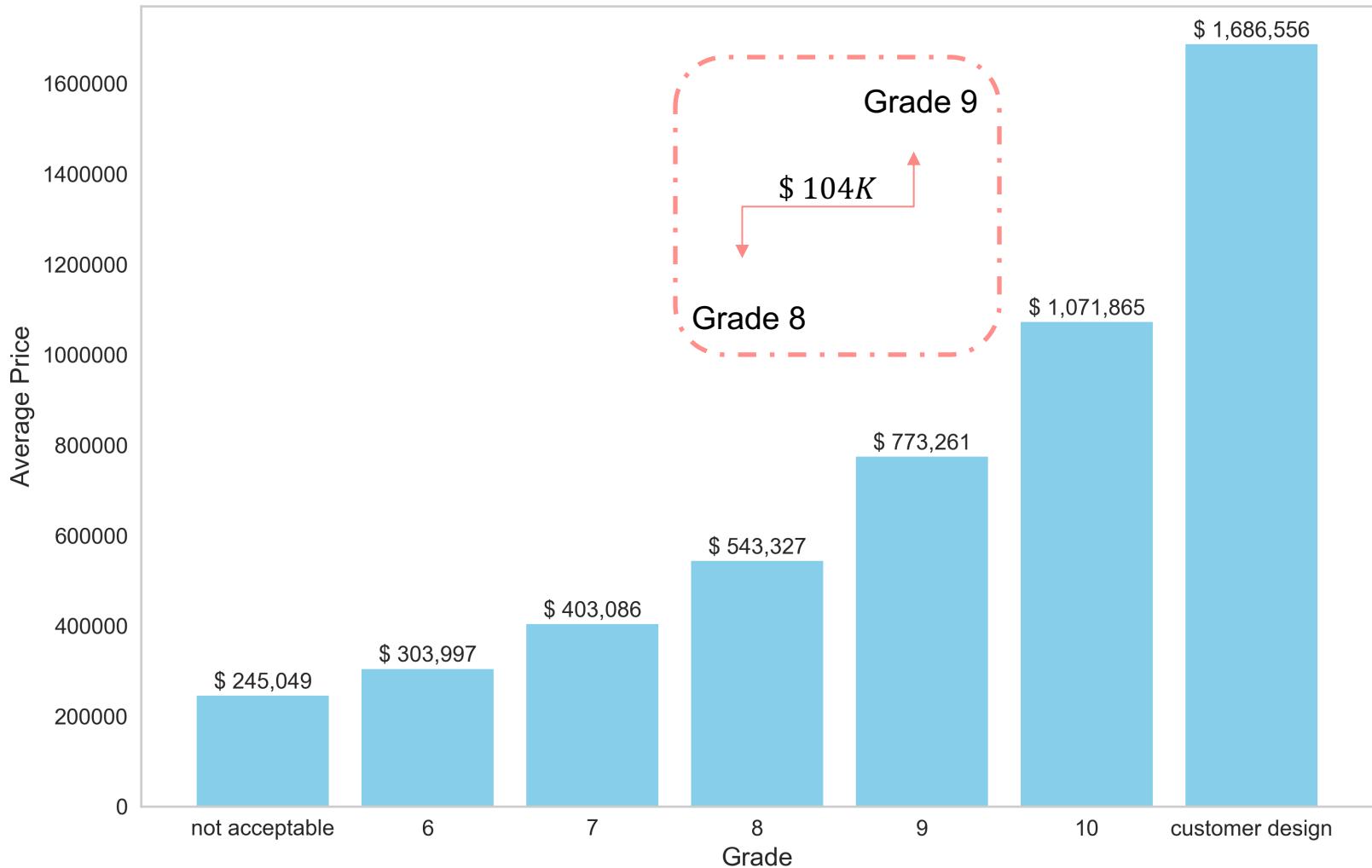




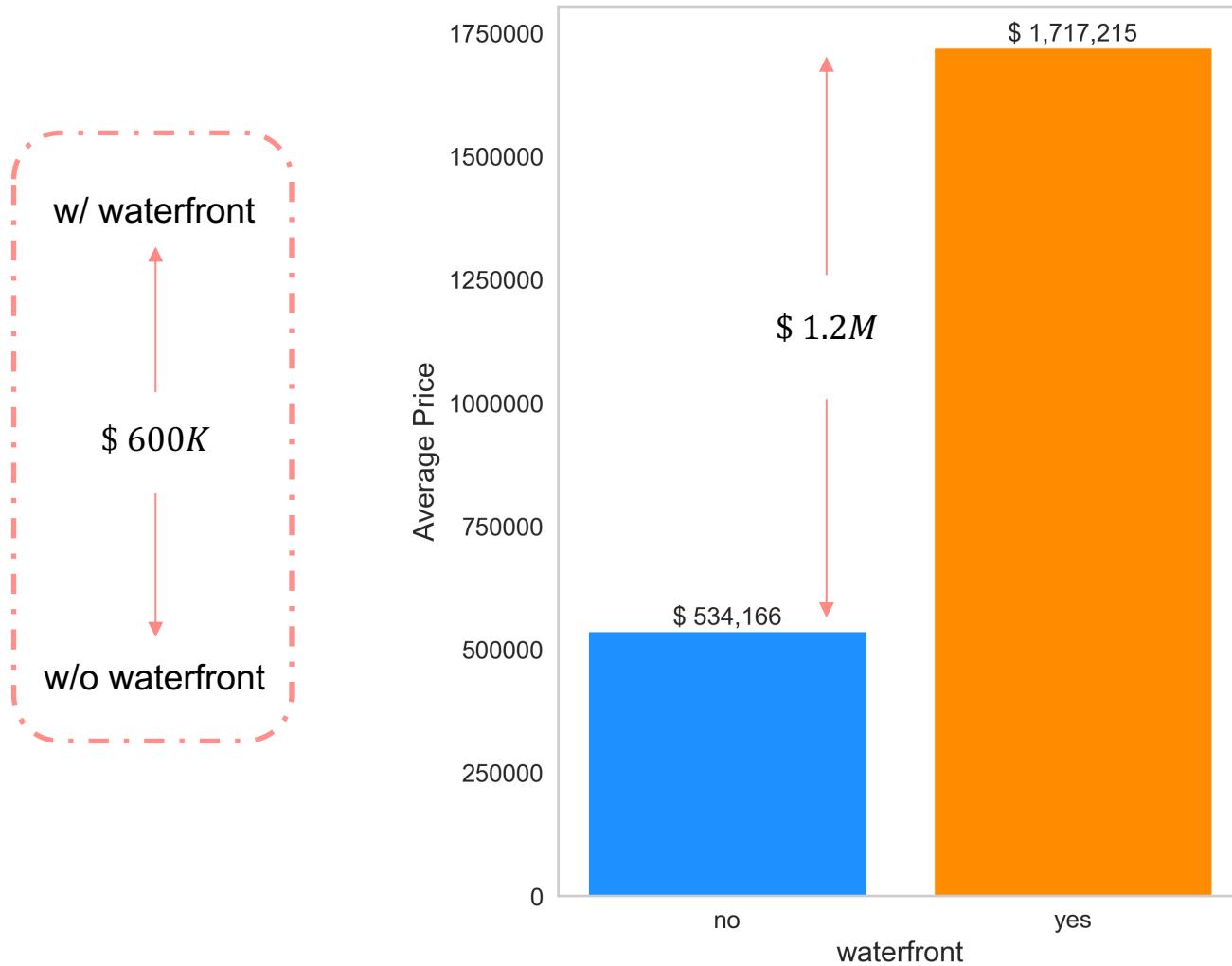
# Random examples

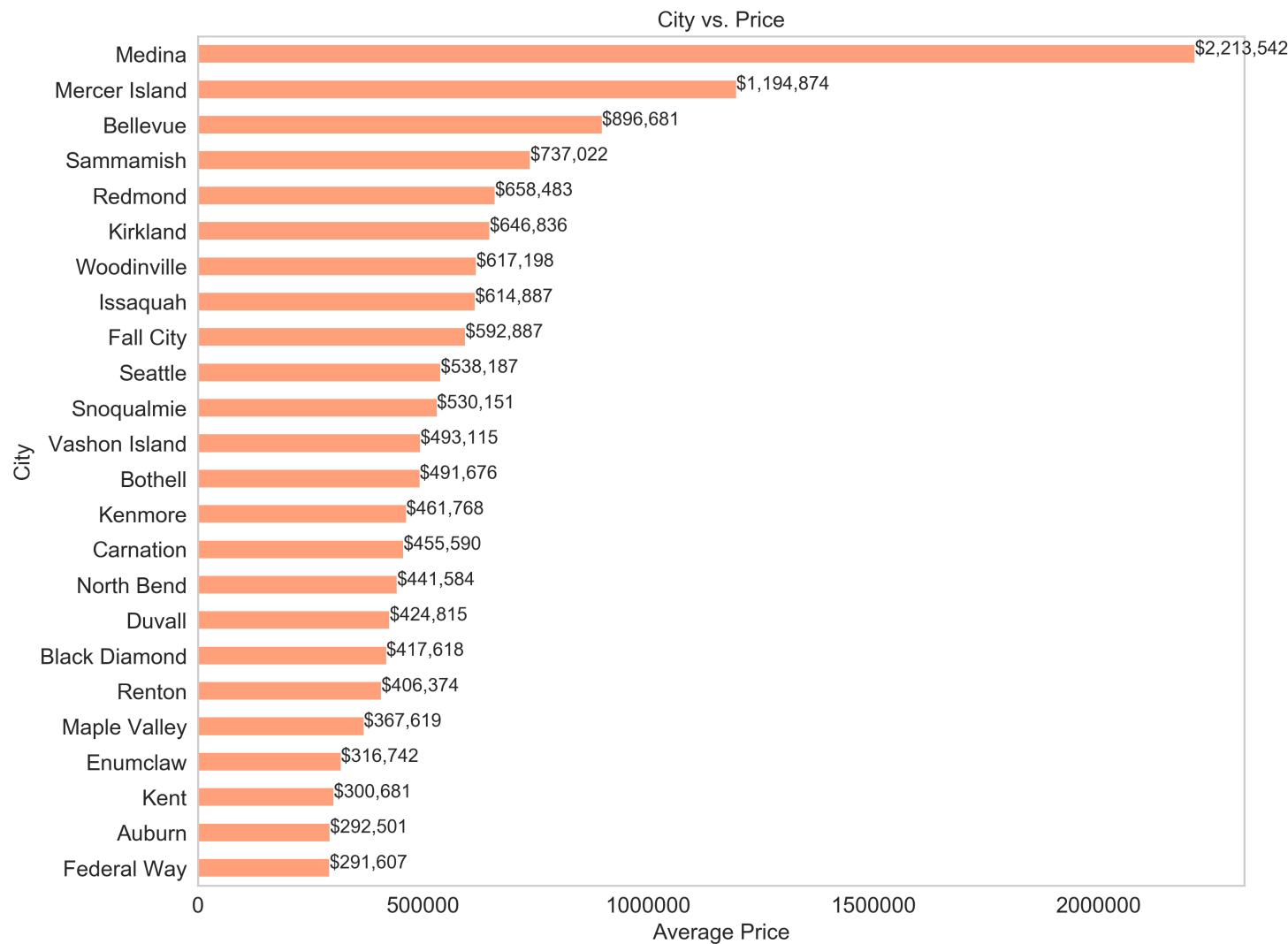
Fixed Features		Testing Feature
Living area	$1000 \text{ ft}^2$	9
Lot Area	$1500 \text{ ft}^2$	8
Lot Area	$1500 \text{ ft}^2$	yes
Room Ratio	$\frac{3}{2}$	no
House Age	70	<i>Medina</i>
Basement	<i>no</i>	<i>Seattle</i>

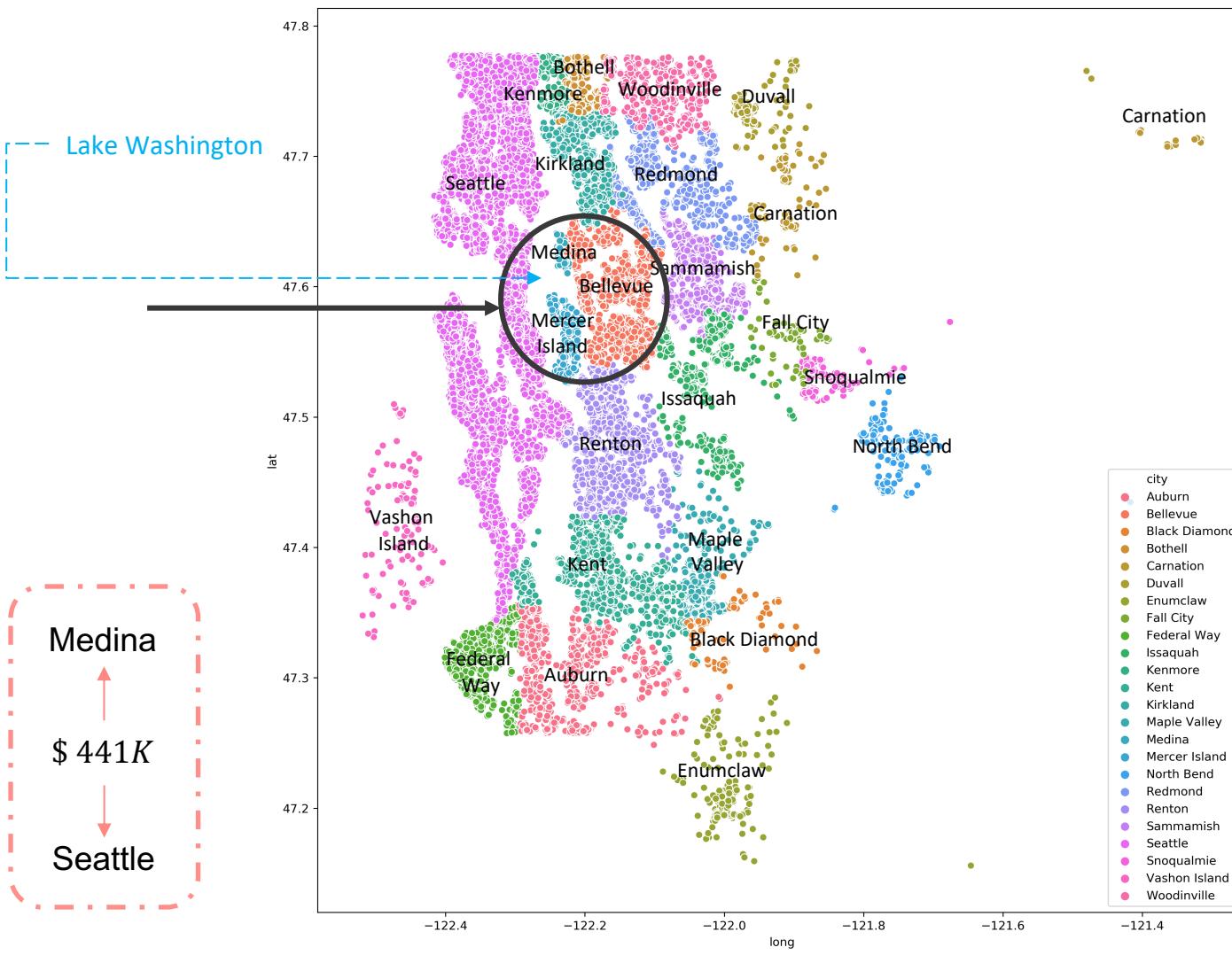
### Price vs. Grade



### Price vs. Waterfront







# Model Evaluation

	Basic Model	Model 3
Features	4	36
$R^2$	0.53 <i>Between 0 and 1, with 1 being perfect fit</i>	0.77
<i>(Root Mean Squared Error)</i> $RMSE$	250000 <i>Lower value indicates better fit</i>	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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