

MODULE 1 FINAL PROJECT

KING COUNTY HOUSE PRICE PREDICTION MODEL

KING COUNTY PREDICTION MODEL - GOAL AND METHODOLOGY



FINDING WHAT WE WANT FROM WHAT WE HAVE

GOAL: Develop a model to predict House Price in King County

DATA: King County's Housing Market

HOW: Statistics + Math + Data Science - Regression Analysis

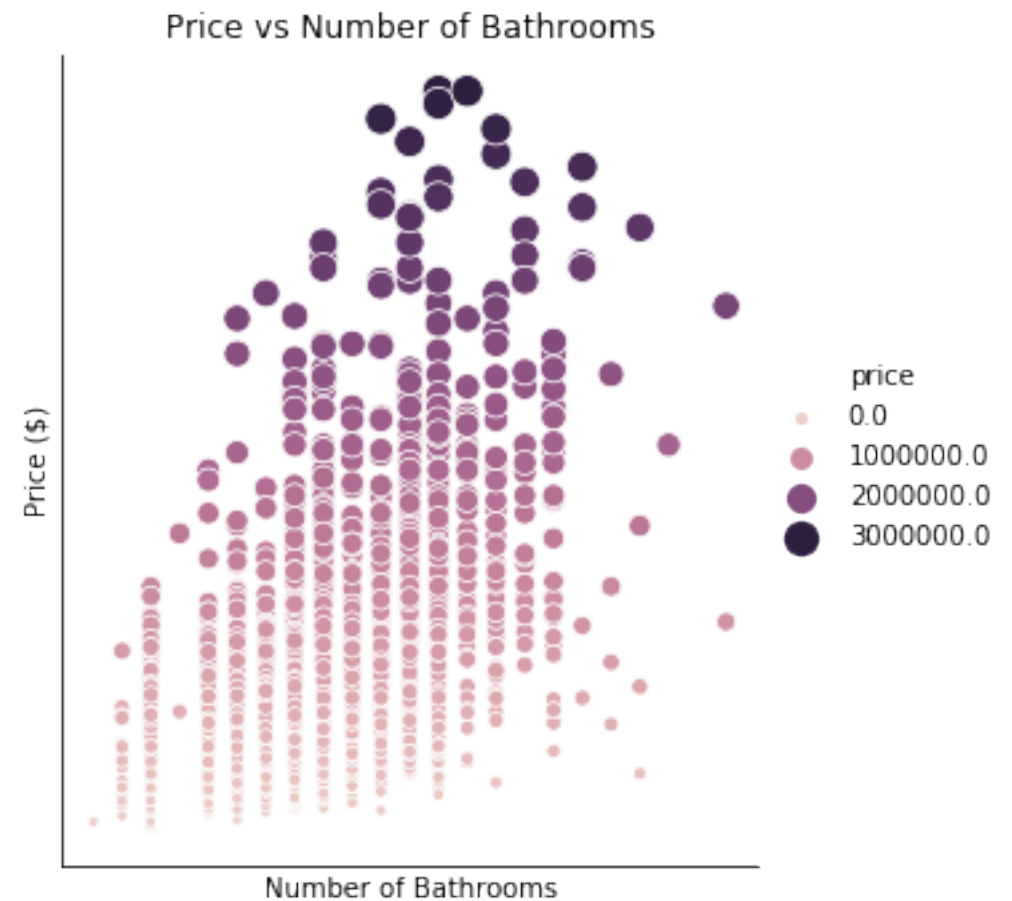
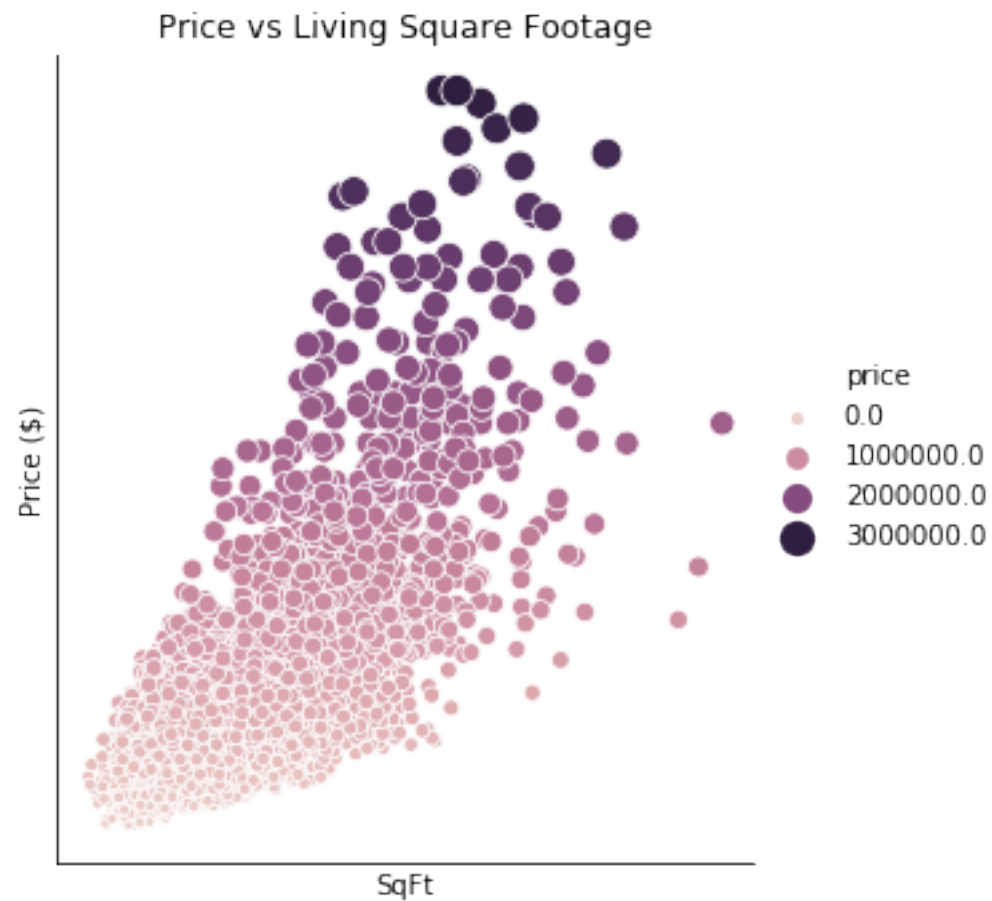
**“IF ONLY WE COULD USE
PRICE TO PREDICT PRICE.”**

Victor Geislinger

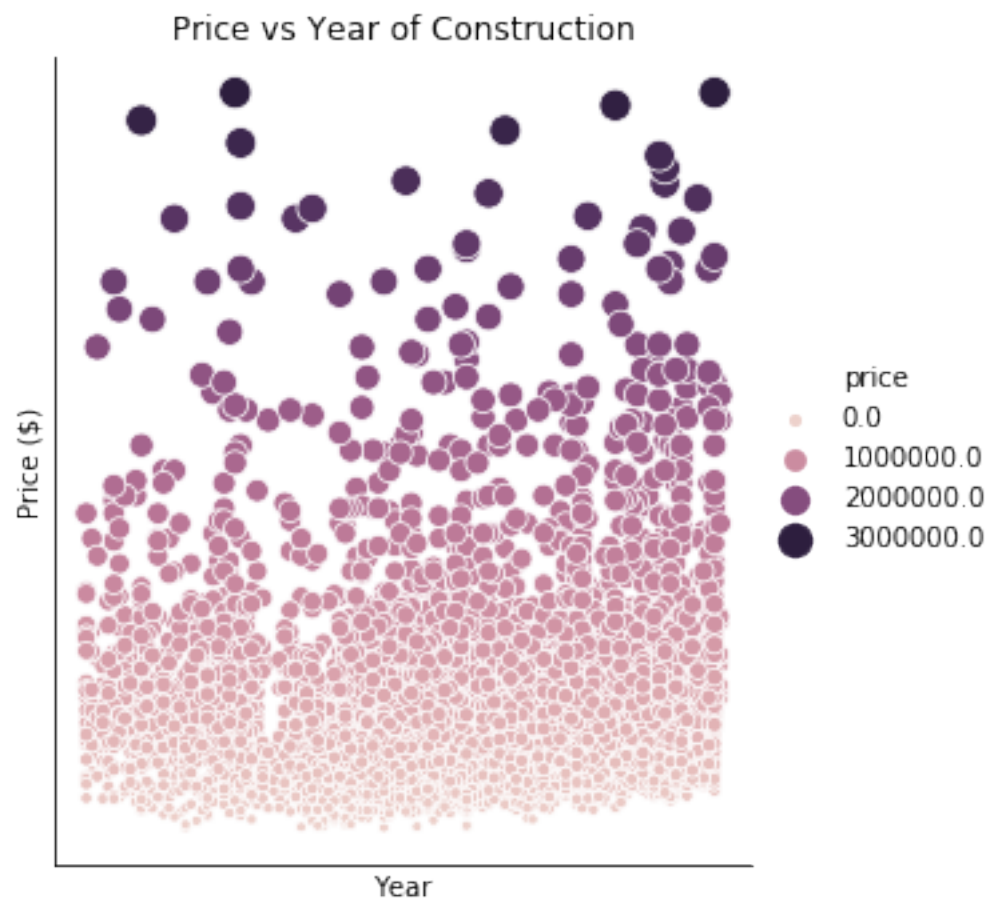
OUR PREDICTION FEATURES

- ▶ Unique identifier number
- ▶ Date of sale
- ▶ Sale price
- ▶ Bedrooms
- ▶ Bathrooms
- ▶ Sqft Living
- ▶ Sqft Basement
- ▶ Sqft Lot
- ▶ Number of floors
- ▶ View
- ▶ Condition
- ▶ Grade
- ▶ Year built
- ▶ Year renovated
- ▶ Zipcode
- ▶ Latitude and Longitude

HOW PRICES CHANGE AS FEATURES CHANGE



HOW PRICES CHANGE AS FEATURES CHANGE



SELECTED FEATURES

- ▶ Location (as in Latitude)
- ▶ Square Footage Living Space
- ▶ Bathrooms
- ▶ Bedrooms
- ▶ View
- ▶ Renovation
- ▶ Basement

Dep. Variable:	y_train	R-squared:	0.846
Model:	OLS	Adj. R-squared:	0.845
Method:	Least Squares	F-statistic:	1440.
Date:	Mon, 17 Jun 2019	Prob (F-statistic):	0.00
Time:	00:09:40	Log-Likelihood:	2637.8
No. Observations:	16864	AIC:	-5146.
Df Residuals:	16799	BIC:	-4643.
Df Model:	64		
Covariance Type:	nonrobust		

	coef	std err	t	P> t	[0.025	0.975]
Intercept	12.8815	0.004	3016.049	0.000	12.873	12.890
bathrooms_log	0.0238	0.003	9.112	0.000	0.019	0.029
sqft_living_log	0.3075	0.003	101.819	0.000	0.302	0.313
lat	0.1785	0.003	58.315	0.000	0.172	0.184
zip_98004	0.8119	0.014	58.078	0.000	0.784	0.839
view_4_0	0.5988	0.013	45.081	0.000	0.573	0.625
zip_98040	0.6802	0.015	45.819	0.000	0.651	0.709

OUR RESULTS – PREDICTIONS FOR PRICE (68%)

- ▶ A great **view** can add up to 60% in price
- ▶ For every **extra half-bedroom** = + 47% price
- ▶ For each degree as you move **north** = + 22% price
- ▶ Recently **renovated** = + 20% price
- ▶ For every **extra half-bath** = + 5.18% price
- ▶ 10% increase in **living sqft** = + 3.3% price
- ▶ Has **basement** = + 3% price



EXAMPLE:
3 BED/2 BATH
2000 SQFT
NO BASEMENT
NOT RENOVATED
VIEW 3
LOCATED AT LAT 47.155

\$844,000

TAKE OUTS – AREAS FOR IMPROVEMENT

- ▶ Time
- ▶ More information



THANK YOU!

Giovanna Fernandes