

Predicting recent bidding wins for Portland real estate sales.

Helping you navigate home buying in Portland!

Portland's real estate market is sizzling hot!

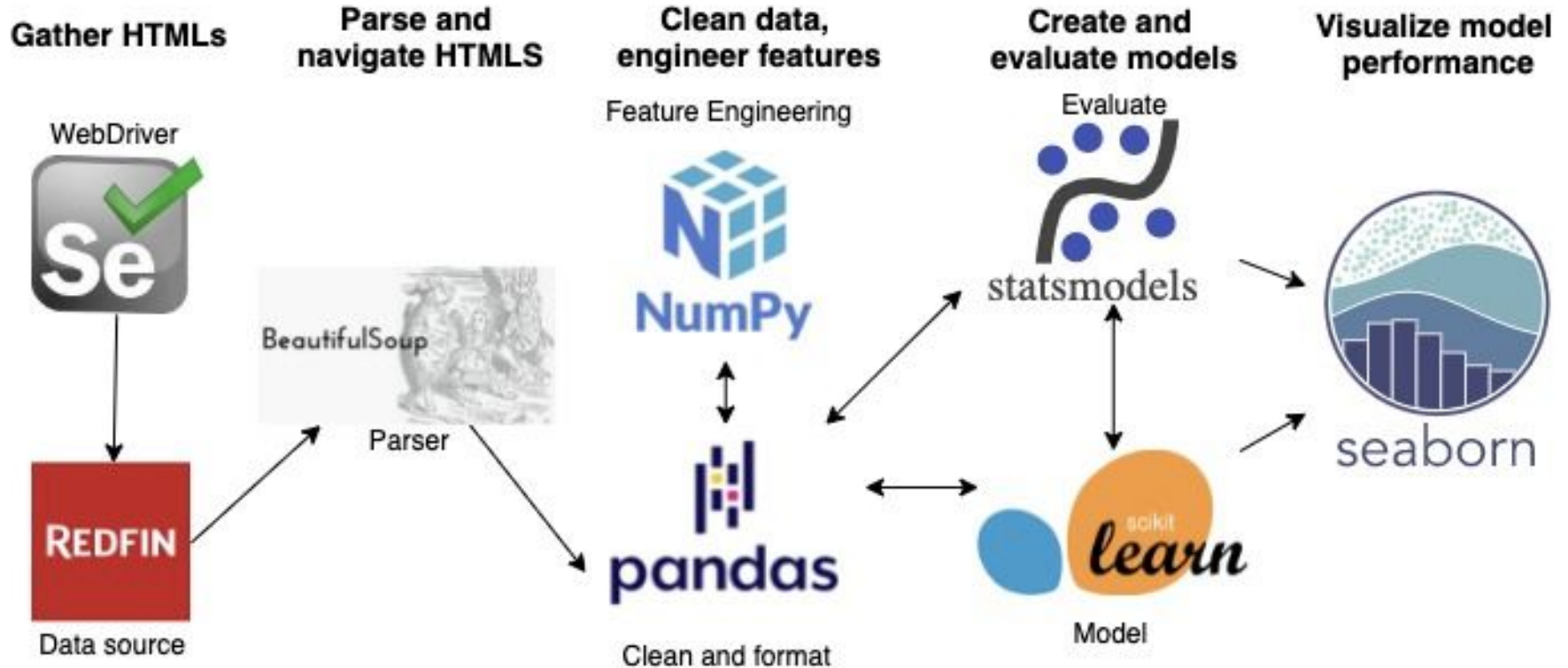
The situation:

- Record-low inventory has created huge competition for houses on sale
- Buyers must move quickly, homes are selling FAST!
- About ~65% of homes are being sold ABOVE asking price

My analysis:

- Scrape redfin.com to collect information on sold homes from the past three months
- Calculate the percent difference between selling price and asking price, the target feature
- Create a linear regression model using machine learning that predicts the percent difference between selling and asking price.

Data and Workflow



Target Variable and Features

Target

(Sold Price - Listed Price)

—————
Listed Price

or

(Sold Price - Changed Price)

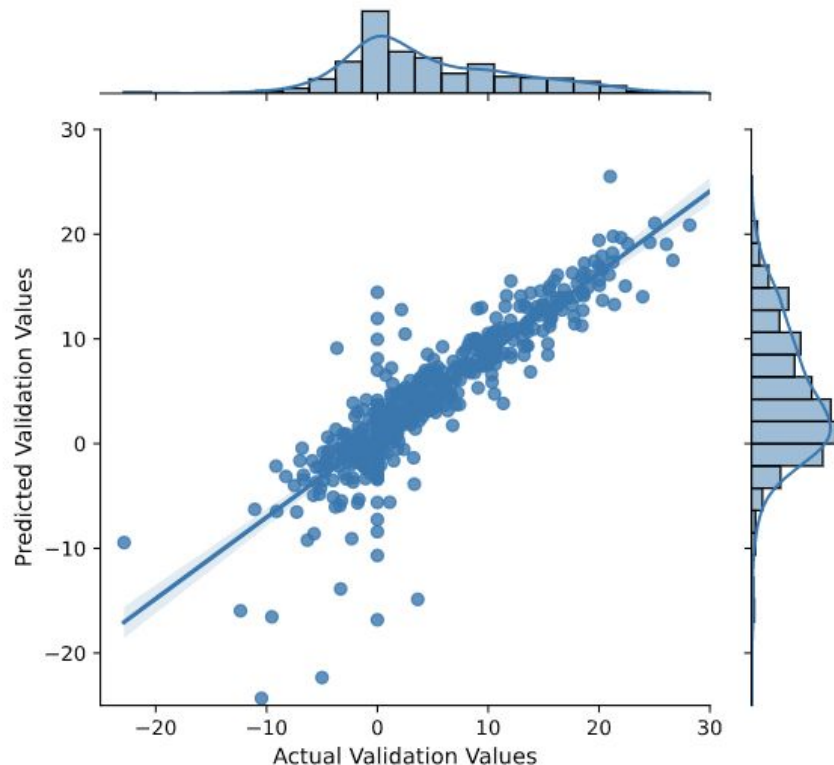
—————
Changed Price

Features

Listed price	Beds	Baths	Home Size
Property Type	Website Views	Likes on Redfin	Walk Score
Area of Portland	Year Built	Price/ square foot	Lot Size

Model of choice - Performance on validation data

Percent difference between selling and asking price

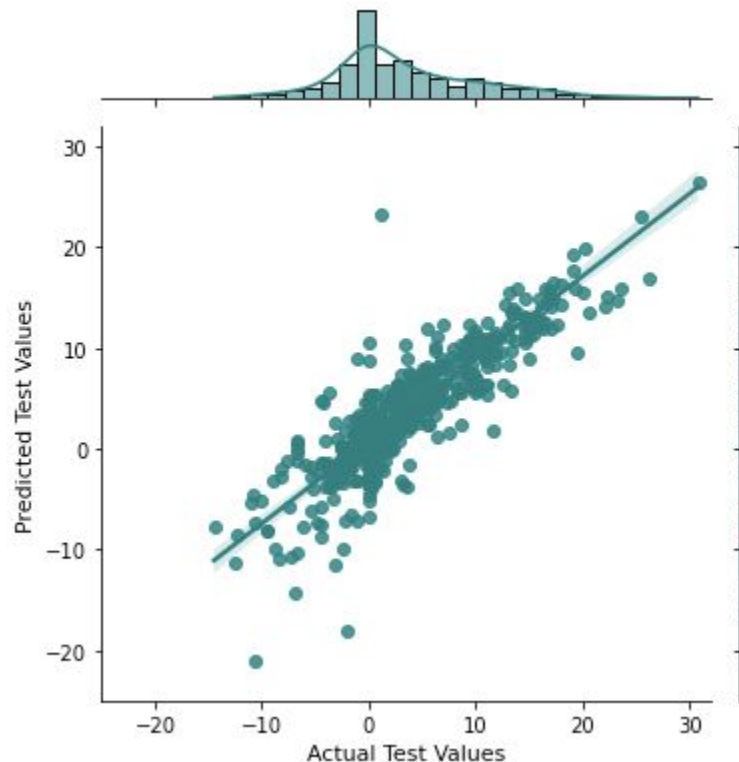


Metric	Training	Validation
R^2	0.784	0.782
RMSE	3.52%	3.53%
MAE	2.36%	2.37%

R^2 cross-validation results: 0.709 \pm 0.068

Model of choice - Performance on test data

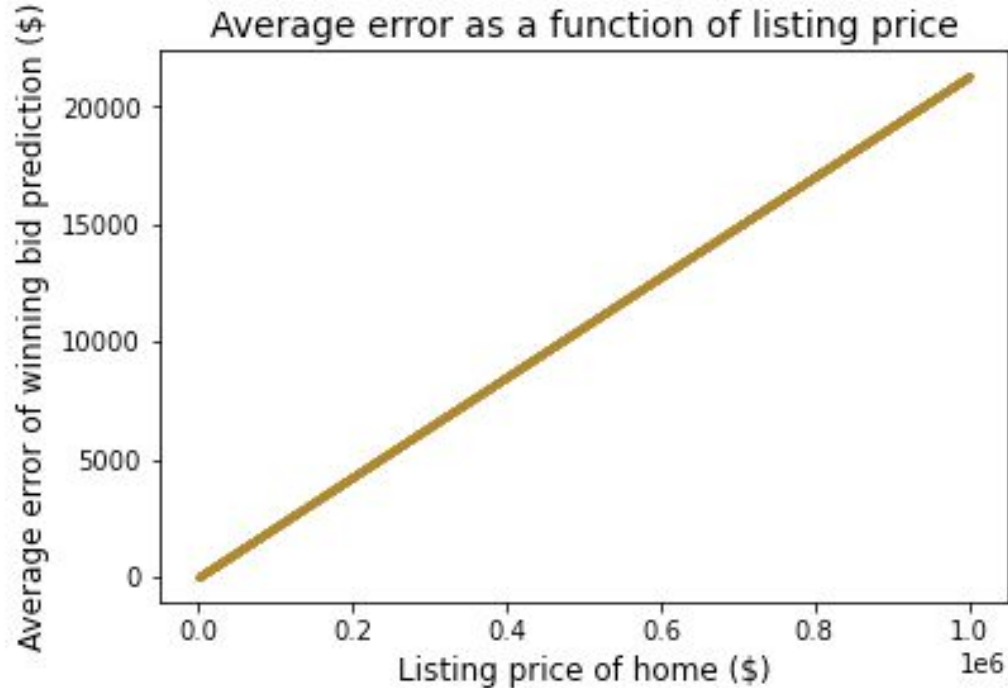
Percent difference between selling and asking price



Metric	Model	Test
R^2	0.788	0.732
RMSE	3.50%	3.52%
MAE	2.13%	2.25%

R^2 cross-validation results: 0.732 \pm 0.056

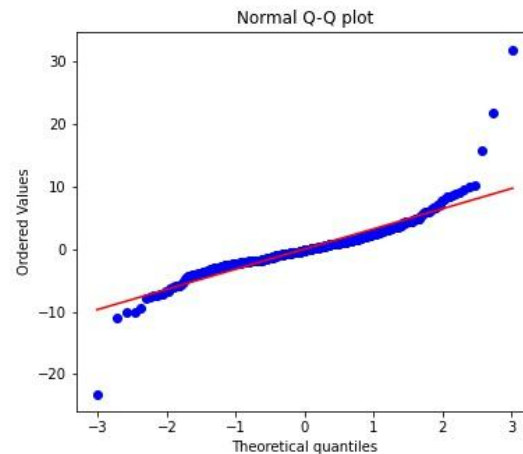
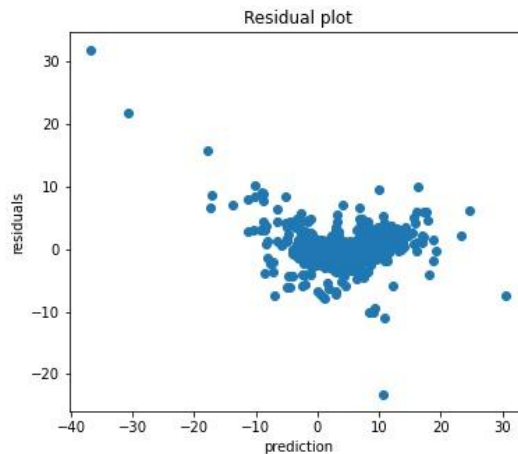
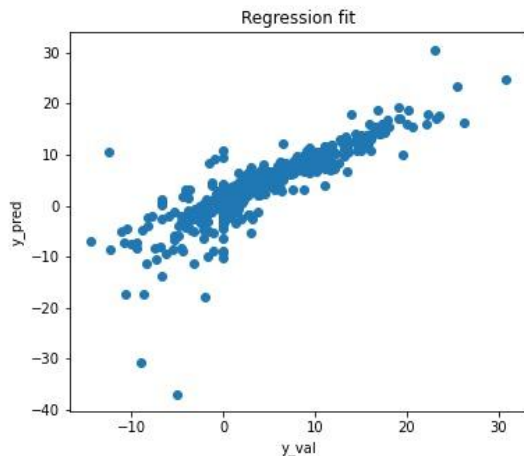
Predictive value of the linear regression model



The final winning bid price for a home with an asking price of \$500,000 will have an average magnitude of error that translates to ~\$12,000

Future Directions

- Include additional features such as population density, crime rate, and % down payment as feature in the linear regression model
- Use regularization to reduce number of features and increase interpretability
- Determine why residuals are higher at the extreme ends of the test data, especially the lower end



Portland homes are selling above asking prices

