

# Common Good Reality

Find a home, not a house.

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# The problem:

Time spent matching a limited budget to the dream home.

# The solution:

Adding Descriptive data modeling as a feature in our online Home Buyers Toolbox

# The Model:

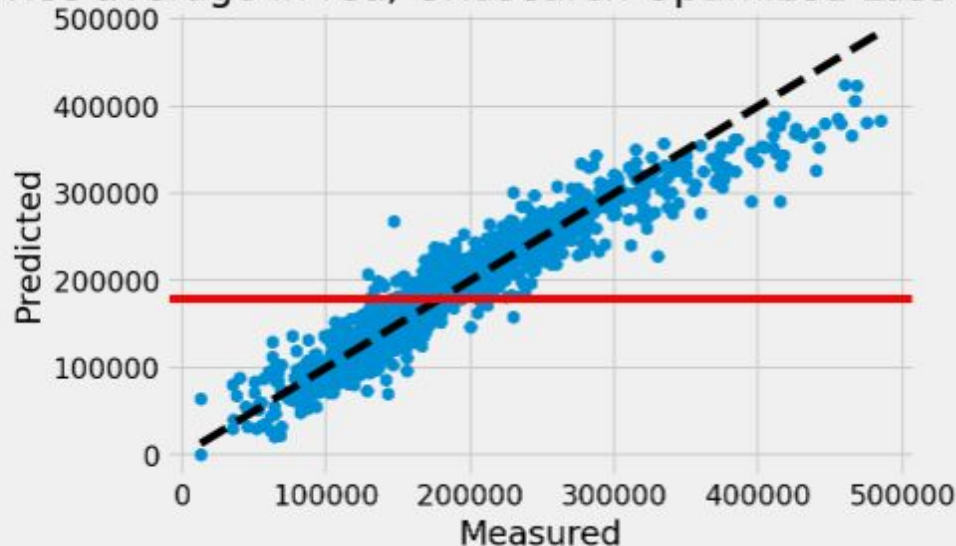
## Model Performance:

Cross Validated  $R^2$  Score of 89.4%

Benchmark Mean Root Square Error (RMSE) to beat: **\$73,422.04**

Common Good Reality Model RMSE: **\$22,783.31**

Sale price average in red, Gridsearch Optimized LassoCV in black



## 31 features included:

Dummy variables, 9

Discrete variables, 3

Continuous variables, 8

Ordinal variables, 11

# How to use this tool:

- 1) The client starts by inputting their budget
- 2) They fill out an online form selecting from the 31 available features.
- 3) The form builds their dream home, based on the available features, up to and limited by their allowed budget.
- 4) Then the Home Buyers Toolbox returns the closest 10 matches, in order, to the clients inputs from the list of available houses currently on sale.
- 5) The client starts their home search journey by visiting the top match in the returned list.



# Location, location, location!

## Neighborhood:

- +\$0 for least desirable
- +\$7,680 for moderate desirability
- +\$15,360 for desirable
- +\$23,040 for the most desirable neighborhood.

## Local Conditions:

- +\$0 if by a busy street or railroad.
- +\$3,209 for normal conditions
- +\$6,144 for positive condition such as a greenbelt or park



# Home type features

Type of house:

- Townhouse Inside Unit: +\$0
- Townhouse End Unit: +\$442
- Two-family Conversion: +\$1,794
- Single Family Detached: +\$3,003

If the house was remodeled:

- +\$2,962.88.

New houses cost more:

- Subtract \$1,677 for a one year increase in house age

10 Overall Quality bins:

- Very Poor: +\$0
- Poor: +\$13,421
- ...
- Excellent +\$107,368
- Very Excellent: +\$120,789

Value added if no deductions from damage:

- +\$3,075.95



# Select Exterior features

## Roof Style:

- Gambrel/Mansard/Gable +\$0
- Flat/Shed/Hip: +\$2,296

## Paved Driveway:

- Dirt/Gravel +\$0
- Partially paved +\$379
- Paved +\$758

## 5 Overall External Quality Bins:

- Poor: +\$0
- Fair: +\$3,075
- Typical: +\$6,152
- Good +\$9,227
- Excellent: +\$12,303

## Garage Vehicle Space:

- +\$1,602 per additional vehicle



# Select Interior features

## Basement Outdoor Exposure:

- No Basement: +\$0
- No Exposure +\$2,386
- Minimum Exposure: +\$4,774
- Average Exposure: +\$7,161
- Good Exposure +\$9,547

## Kitchen Quality:

- Poor: +\$0
- Fair: +\$6,426
- Typical: +\$12,853
- Good +\$19,279
- Excellent: +\$25,705

## Fireplace Quality:

- No Fireplace: +\$0
- Poor: +\$3,230
- Fair: +\$6,646
- Typical: +\$9,969
- Good +\$13,292
- Excellent: +\$16,615

## Additional Rooms:

- : +\$1,040 per additional room



# Other features Examined in the model:

Type of house:

- External Features, such as Masonry and Stucco design
- Area of lot connected to street
- Total lot area
- Garage space as good workshop finish or basic finish
- Heating quality
- Finished space
- Room size

# Final comments:

- The search for a house doesn't have to be as daunting as it appears.
- This model is scalable to other cities, with minor modifications
- Need to continue to develop this model and work with our web development team to get in production