

# **Predicting Housing Prices in Ames, Iowa**

**Mortgage rates are currently at  
the lowest since 2016.**

**That means some people may be  
interested in refinancing their house for  
a better mortgage rate.**

**But this process takes a long time, and  
requires an expert to come to your home  
to appraise the value of your house.**

**How might we predict housing prices so that we can outreach to those interested in refinancing?**

## **RATINGS**

Overall Quality

Exterior Condition

Basement Quality

## **FEATURES**

Full Bathrooms

Year Built

Neighborhood

Zone

Lot Area (Square Feet)

General Living Area (Square Feet)

Bedrooms v. Bathrooms

Garage Quality x Cars

Garage Type

Has Remodel

Has Pool

# Where are the “Beverly Hills” neighborhoods of Ames, Iowa?

1. Calculate average price per square foot(sf) on training data
2. Rate each neighborhood:

**“High”:**

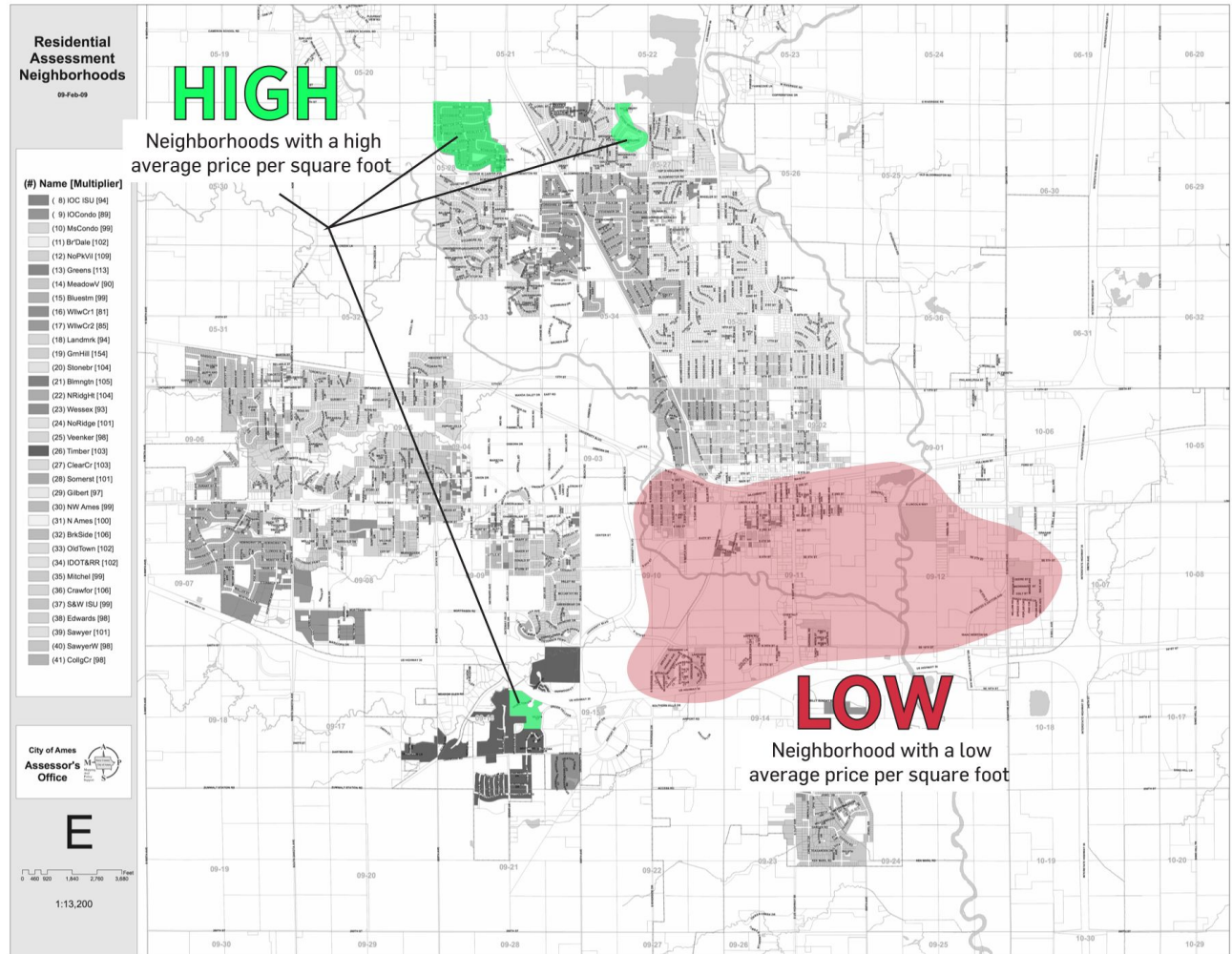
Price per sf 1 standard deviation above mean

**“Medium”:**

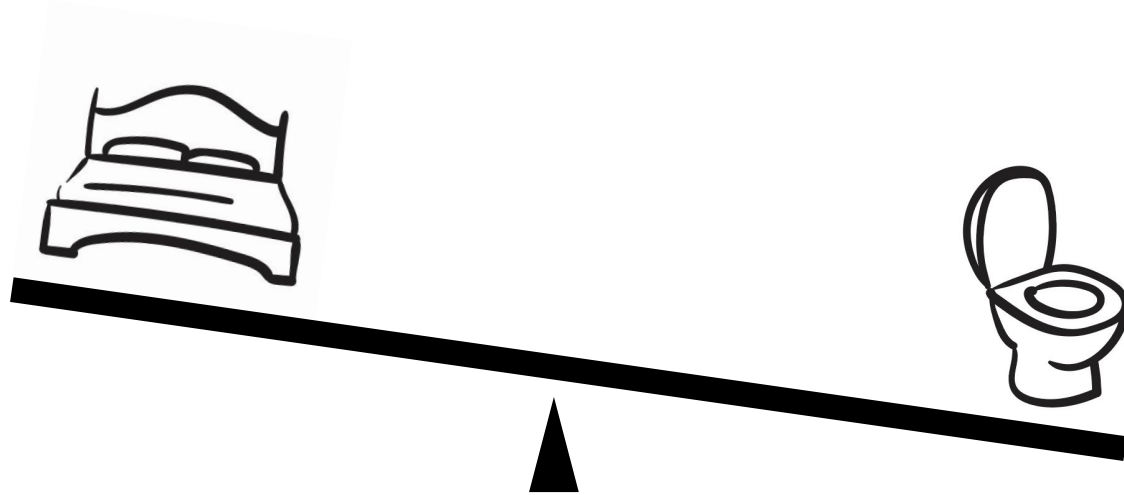
Average price per sf

**“Low”:**

Price per sf 1 standard deviation below mean



# BEDROOMS v. BATHROOMS



= # of total bedrooms / # of full bathrooms



# GARAGE QUALITY AND CARS

5 Excellent

4 Good

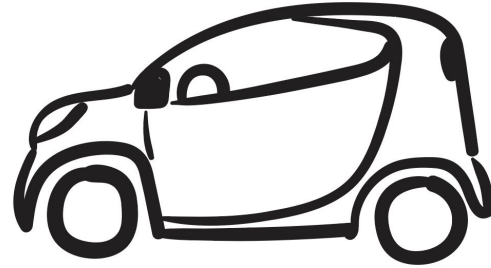
3 Average

2 Fair

1 Poor

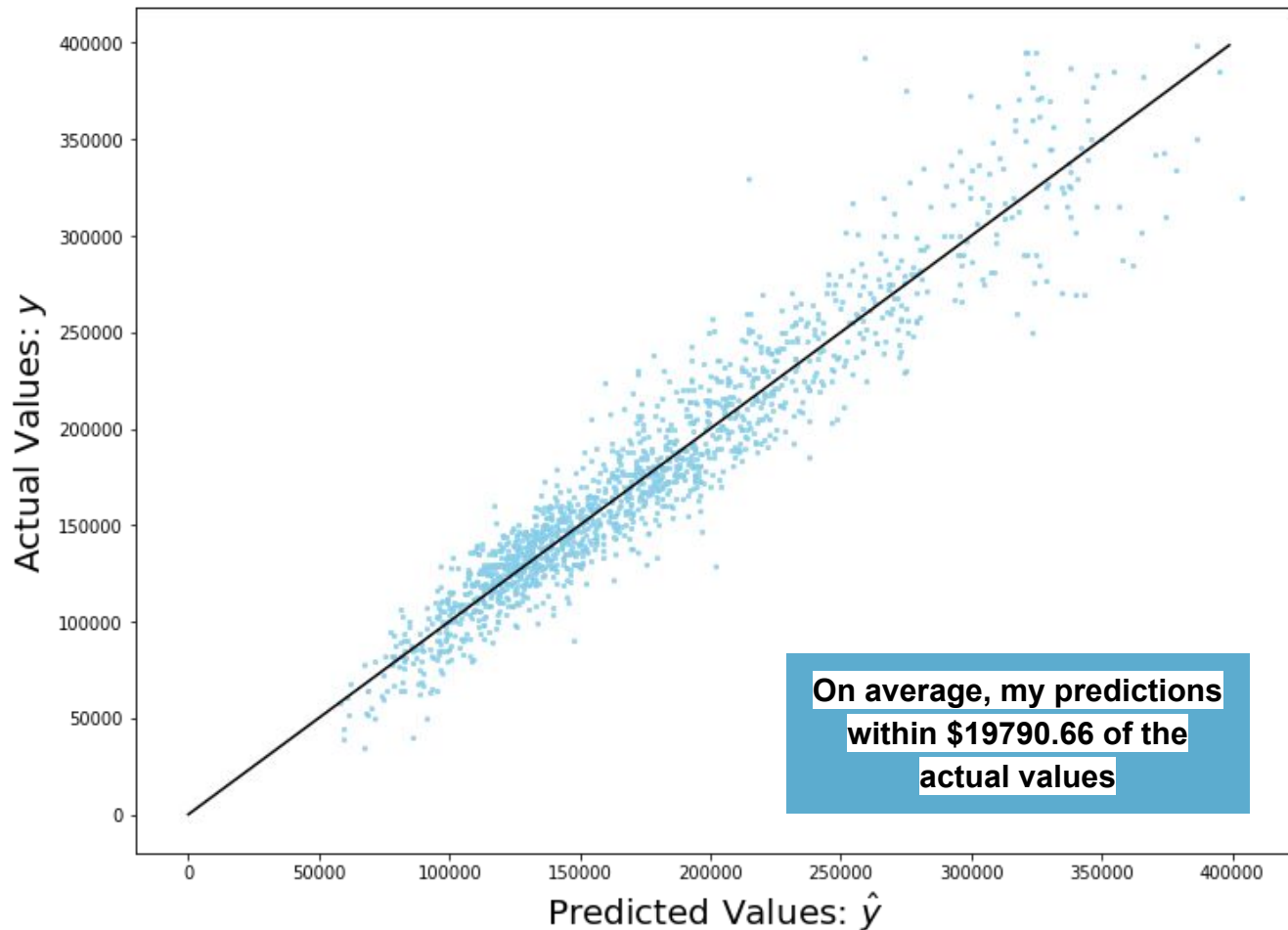
0 No Garage

**X**

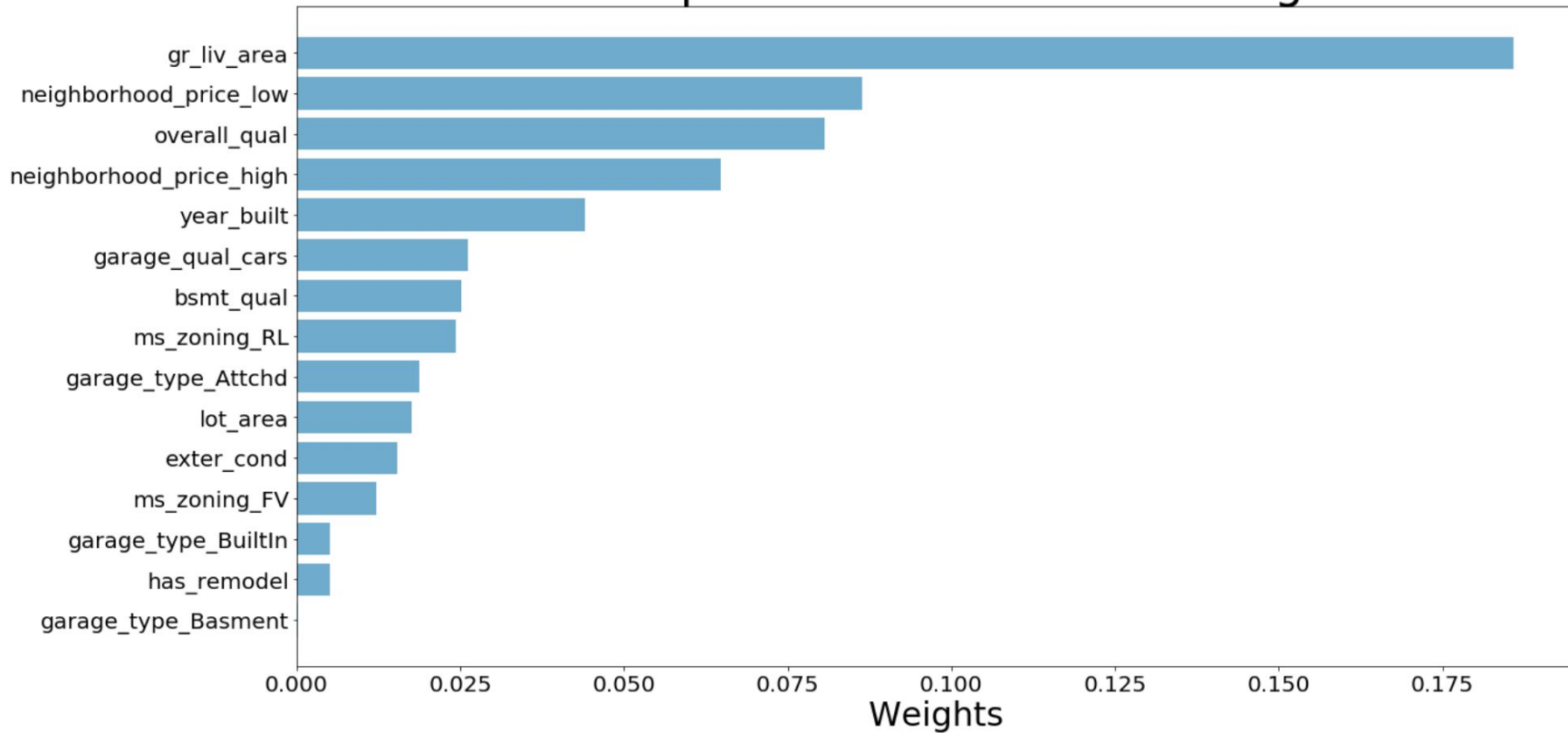


= garage quality \* # of cars

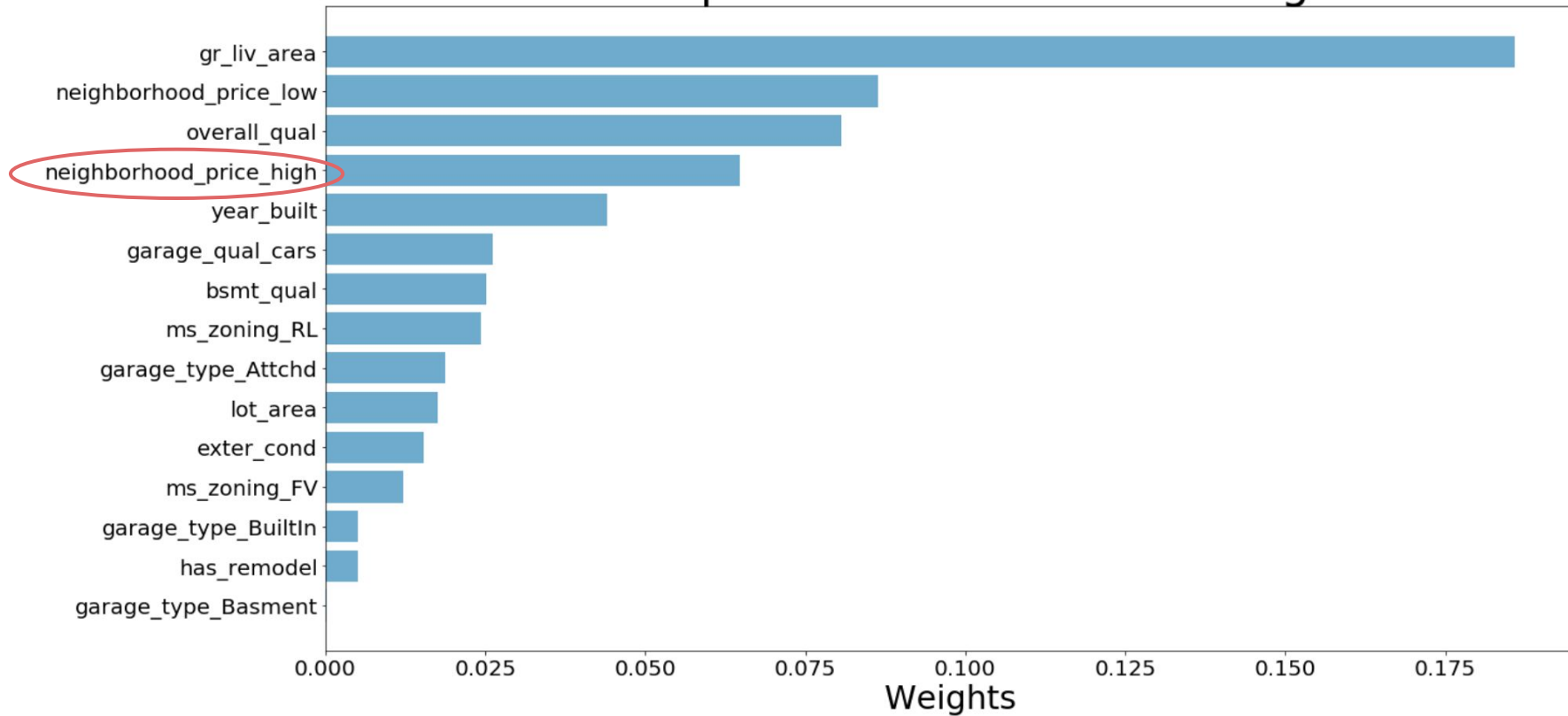
## Predicted Values vs. Actual Values



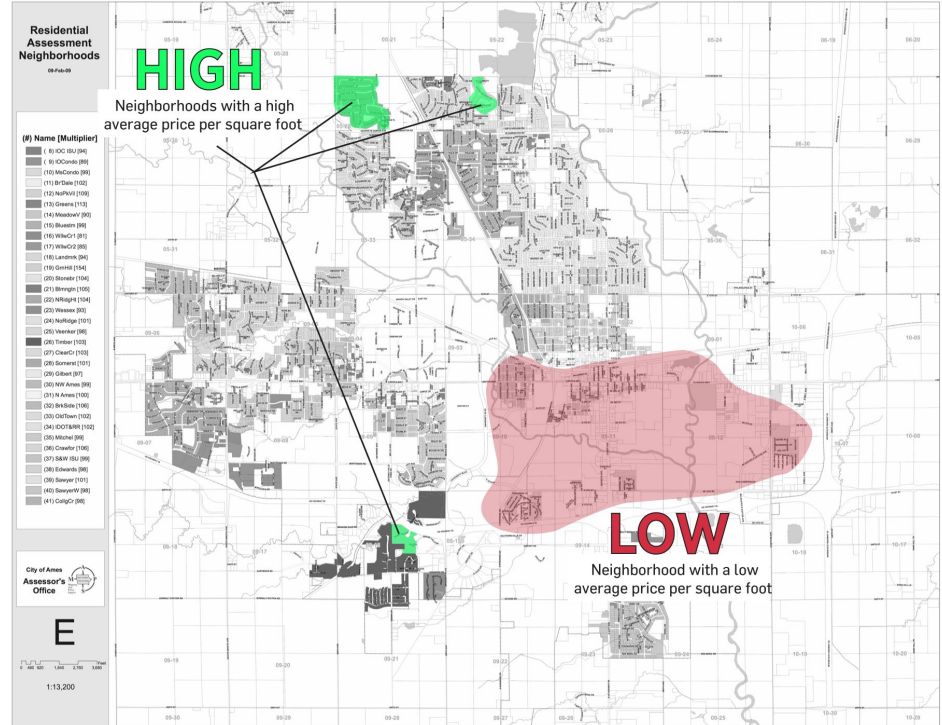
## Most Important Features and Weights



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Since this data was last updated (in 2010), which neighborhoods have changed from a low or medium neighborhood to a high one?



**Target homeowners in neighborhoods that have increased in average price per square foot since 2010.**



**Build an online tool to help homeowners  
estimate their house values and  
mortgage rates.**



**Enter zip code**



1. Square foot
2. Year built
3. Garage type
4. No.bedrooms
5. No. bathrooms
6. No. cars
7. Remodel year

## Rate overall quality

Very Poor

Average

Very Excellent



1



2



3



4



5



6



7



8



9



10

Your home is estimated value of:

**\$600,532!**

Based on this estimate,  
you could qualify for a mortgage rate of

**3.2%**

when you bank with us!

# Next steps:

1. Run this model on new data in 2020
2. Include outside research (housing stock, new neighborhood features, etc.)