

Predicting house pricing in Denver, Colorado



Which features best
explain the house
prices in Denver?

The data: 2912 houses

The screenshot shows the Zillow website homepage. At the top, there is a navigation bar with links for "Buy", "Rent", "Sell", "Mortgages", "Agent finder", and "More". To the right of the navigation bar are links for "List your rental", "Advertise", "Sign in or Join", and a help icon. The main visual is a large photograph of a two-story house with a white garage door and a dark grey exterior, surrounded by trees and bushes. Overlaid on the image is the text "Find your way home". Below the image is a horizontal button bar with four options: "Buy" (highlighted in blue), "Rent", "Sell", and "Zestimate". At the bottom of the page is a search bar containing the text "Denver CO" and a "Search" button.

Zillow

Buy Rent Sell Mortgages Agent finder More

List your rental Advertise Sign in or Join ?

Find your way home

Buy Rent Sell Zestimate

Denver CO

Search

Features

Numerical

- Size (sqft)
- Beds
- Baths

Year Built

School District
Ranking
GreatSchools ratings

Categorical

Parking Spaces
0 (on / off street), 1, 2, 3+

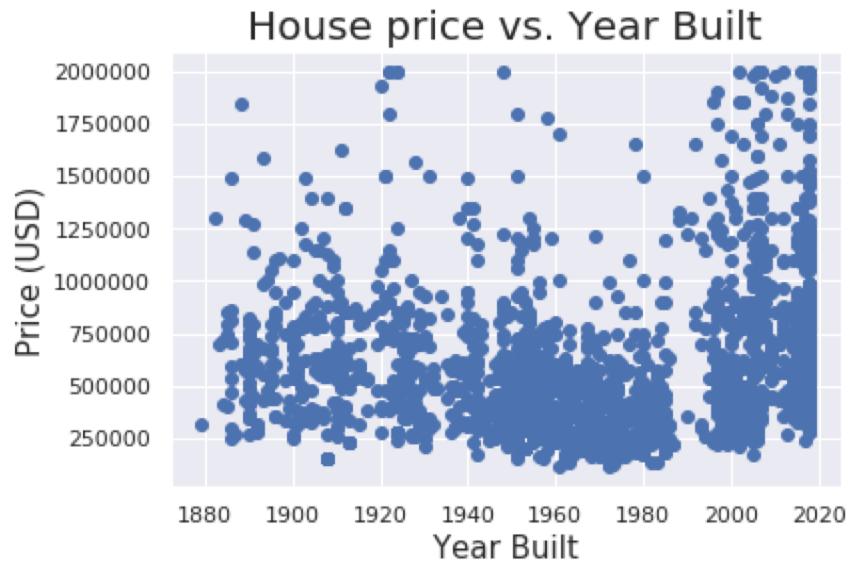
Type of house:
Single family, Condo,
Townhouse, other

Type of cooling:
Central, non central

Taking a look at the data



Linear relationship



Polynomial relationship

Modeling

Linear

R2: 44% (cv=5)

- Lack of interactions
- Not capturing the polynomial relationships

Polynomial

R2: 79% (cv=5)

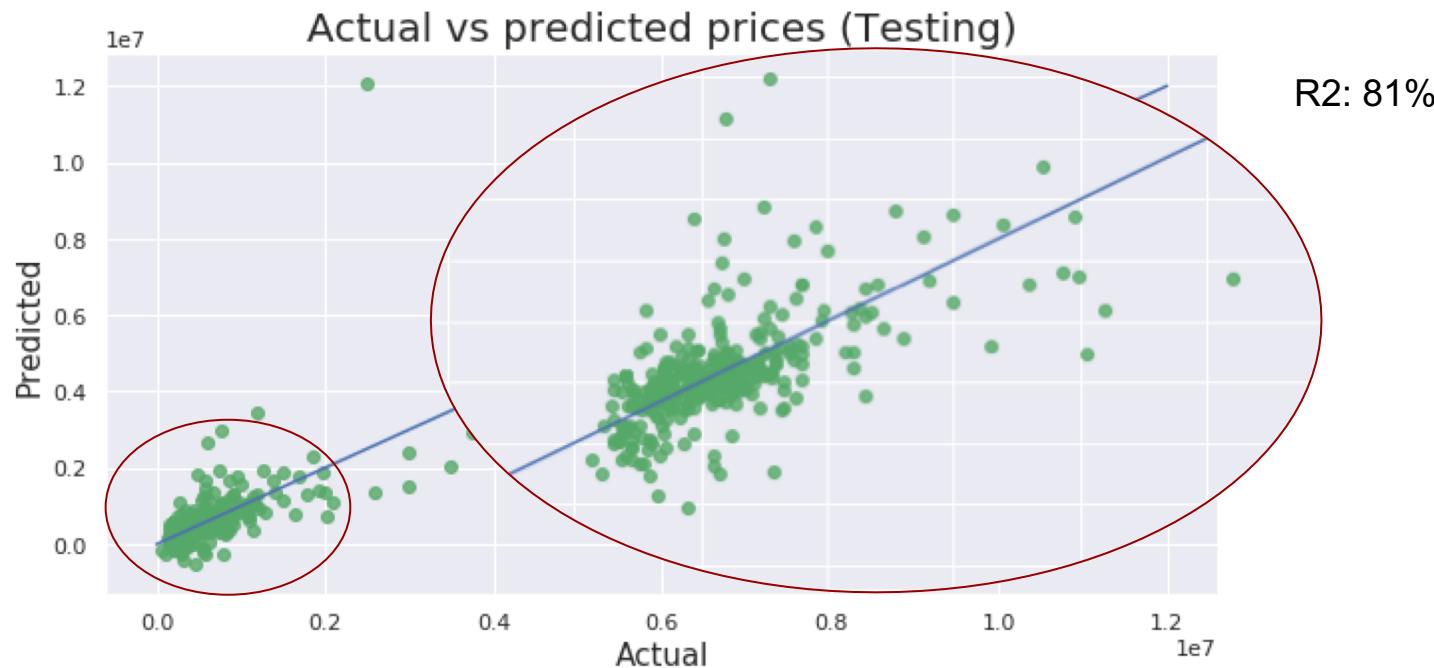
- Too complex (>100 variables)
- Slightly over predicting
- Multicollinearity

Lasso Regularization

R2: 79% (cv=5)

- Simpler (46 significant coefficients)
- Still over predicting a little

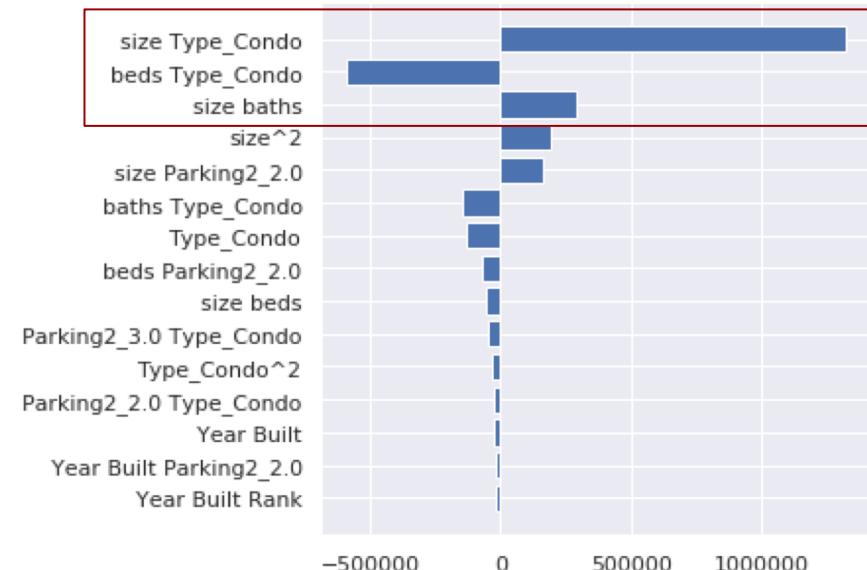
Performance



Conclusions

Interactions matter the most

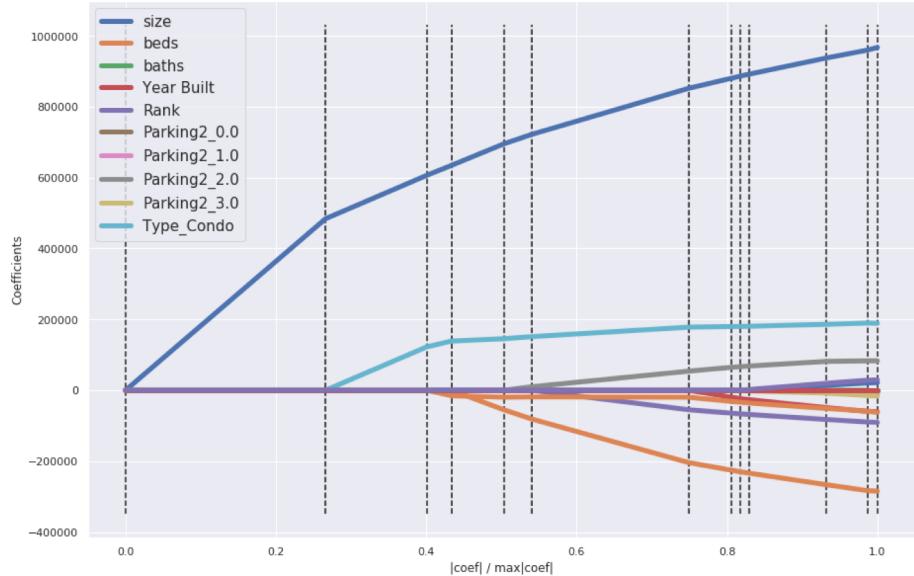
Top 15 relevant variables



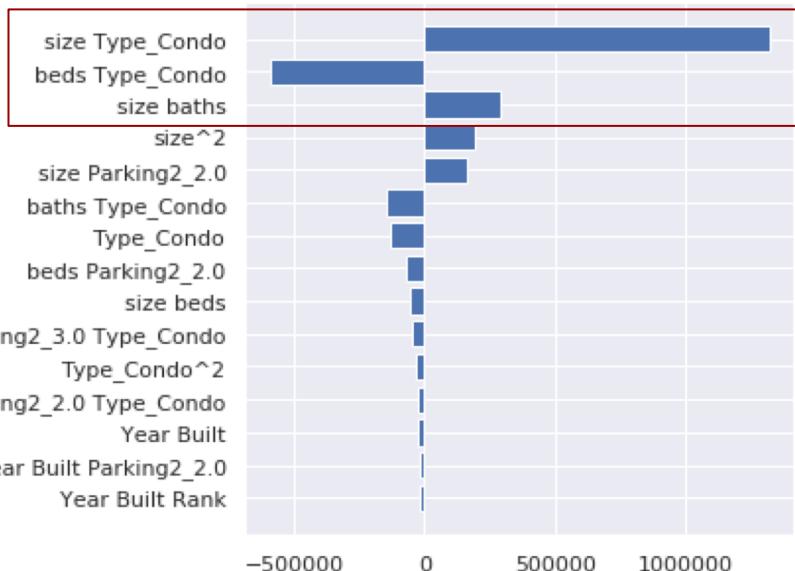
Conclusions

Size and Condo are the most relevant

Lars Path



Top 15 relevant variables





Questions?

Thanks!