

## Background & Business Case



#### • Background:

Experience = Ability to setsustainable price

#### • Problem:

First-time hosts lack
experience and new listings
lack reviews!

#### • Solution:

Sustainable Pricing Tool



### Use Cases

Sustainable Price-Setting

What price will consistently attract customers given the attributes of the listing.

New Listings - Enough Data?

Do the variables that exist for new listings belonging to new hosts have enough "signal" for a predictive model?

Data

Source InsideAirbnb.com

Instances Over 270,000 rental listings

Target price

## Models: Ridge and Lasso Regression

Both Aim for Optimal Importance while also...

- Ridge Regression:
  - ...Preventing coefficients with extreme values
- Lasso Regression:
  - ...Eliminating any unnecessary coefficients

### Results

#### Ridge Regression:

- RMSE: **265**
- R-Squared: **0.36**

#### Final Model:

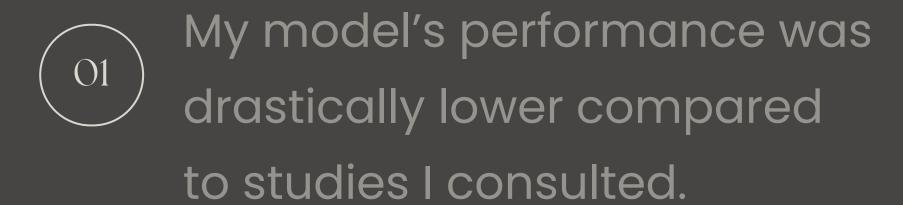
#### **Tuned Ridge Regression:**

- oalpha=10
- solver=svd
- RMSE: **258**
- R-Squared: **0.38**

#### Lasso Regression

- RMSE: 268
- R-Squared: **0.35**

## Conclusions



There weren't great gains in model performance were achieved: Lasso->Ridge->Tuned Ridge

# Recommendations and Next Steps

#### Tweak Approach to Problem:



- Which features are most important for highest priced listings?
- Subset by attributes listers can't change like location and property type.
- Different models for each city or region.



#### More Data:

- Review Data
- Additional Amenities

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Spatial Auto-correlation for lat/long values

## Thank You on s?



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