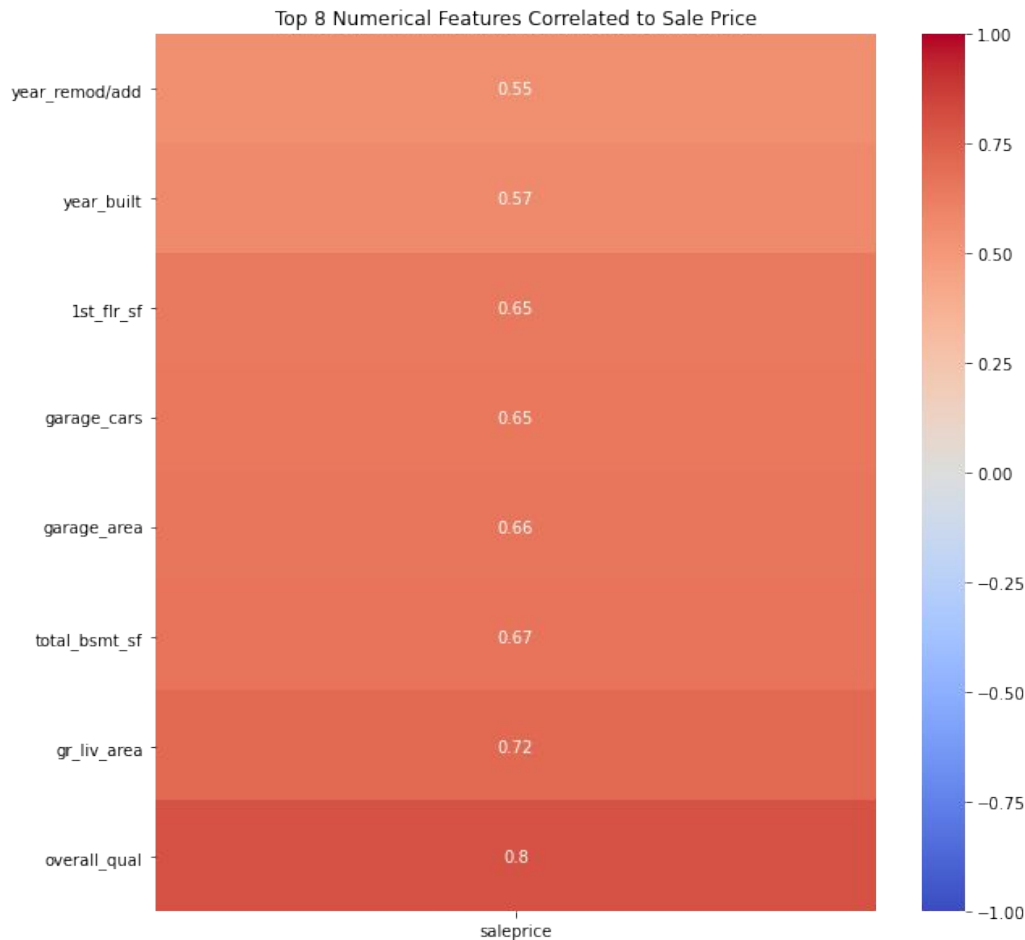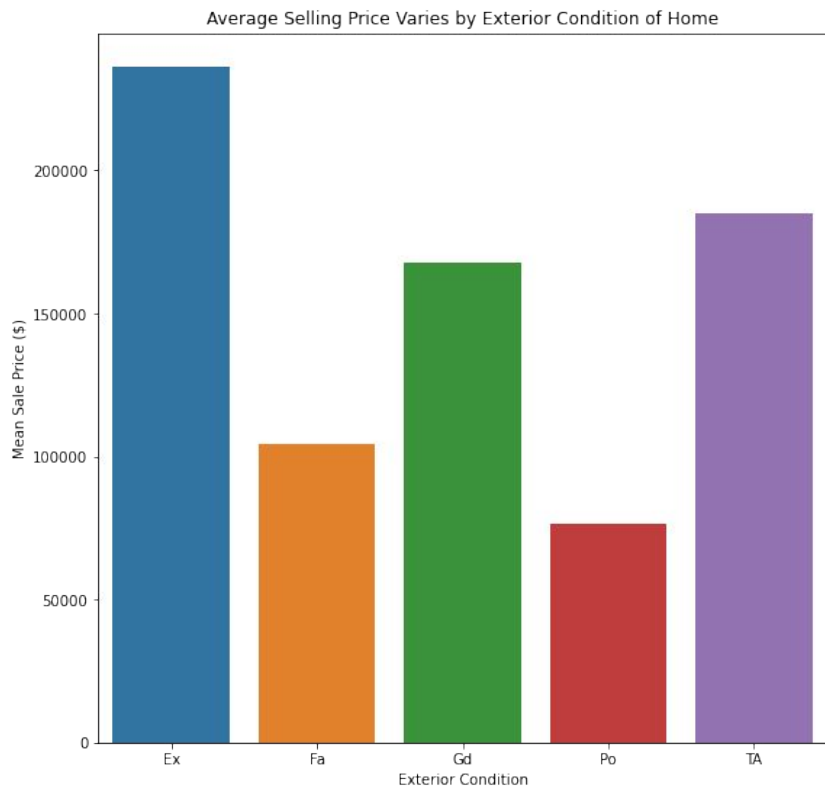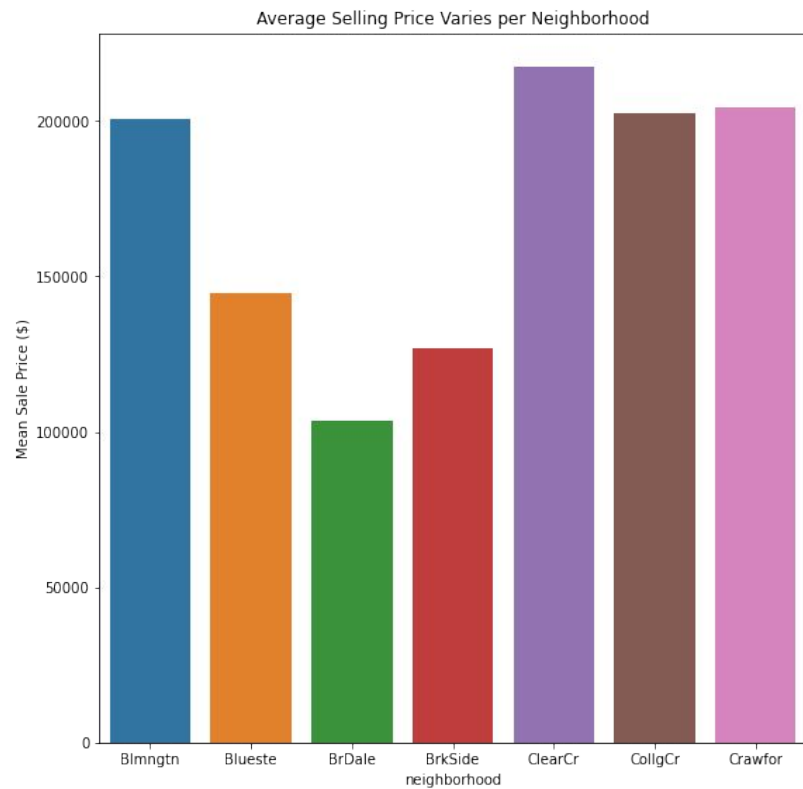# Predicting Value:
Aiding Home Appraisers Objectively Determine the Value of a Home in Ames, Iowa

Ethan Kuehl

Data

- 81 features
- 2051 samples

Top 8 Numerical Features Correlated to Sale Price

	saleprice
year_remod/add	0.55
year_built	0.57
1st_flr_sf	0.65
garage_cars	0.65
garage_area	0.66
total_bsmt_sf	0.67
gr_liv_area	0.72
overall_qual	0.8

Average Selling Price Varies per Neighborhood

Average Selling Price Varies by Exterior Condition of Home
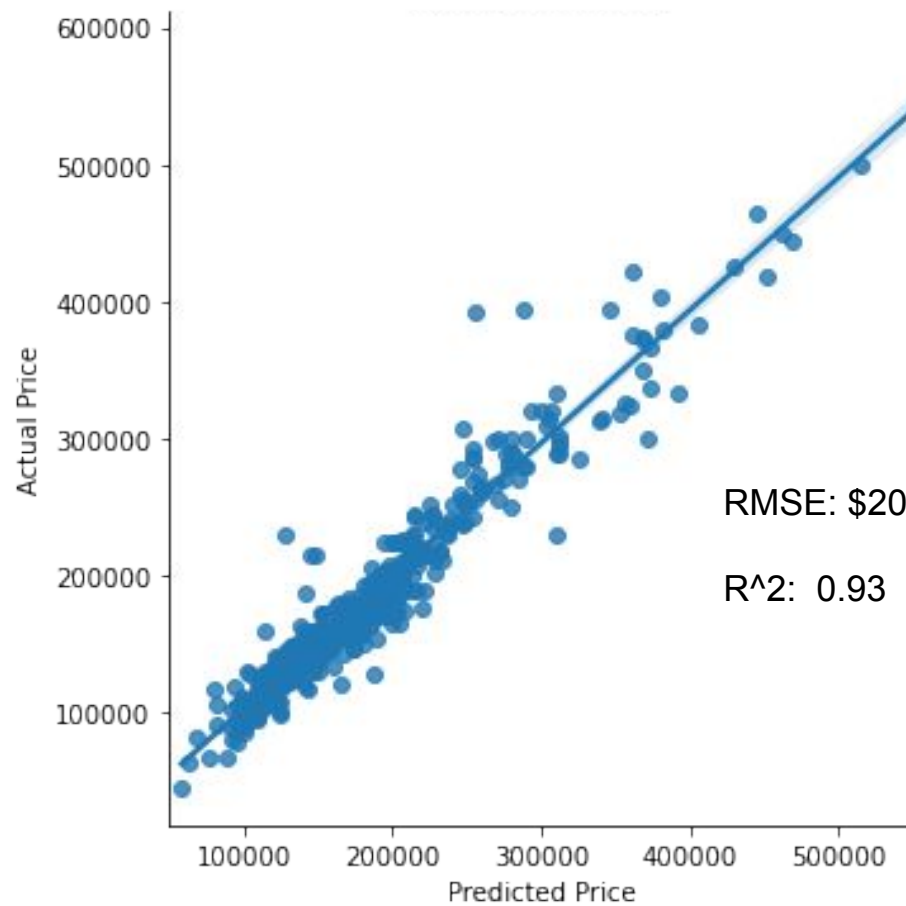
Modeling Likely Home Prices

- Data
  - Home appraisal checklist for Ames, Iowa
- Measuring Success
  - Accuracy
    - How much variation in a home's sale price can my model account for?
    - What is the standard error?
  - Efficiency

Model Tuning

- Iterative process
- Created 6 models in all
  - Each model accounted for the unique features differently
- Trade-off between accuracy and performance

Production Model

RMSE: $20351.76

R^2: 0.93

Conclusions

- My production model is a substantial asset to home appraisers
- Important caveats:
    - Appraisers have to be using the same home appraisal checklist
    - This model was designed specifically for the city of Ames, Iowa.