

PRICE MODELING IN AMES, IA

LINEAR REGRESSION MODELING & OPTIMIZATION

WHAT'S YOUR WORTH?

- Predicting the value of homes in Ames, IA
- Identifying features that affected housing prices
- Identifying neighborhoods that increase or decrease home price
- Creating a model for future housing predictions

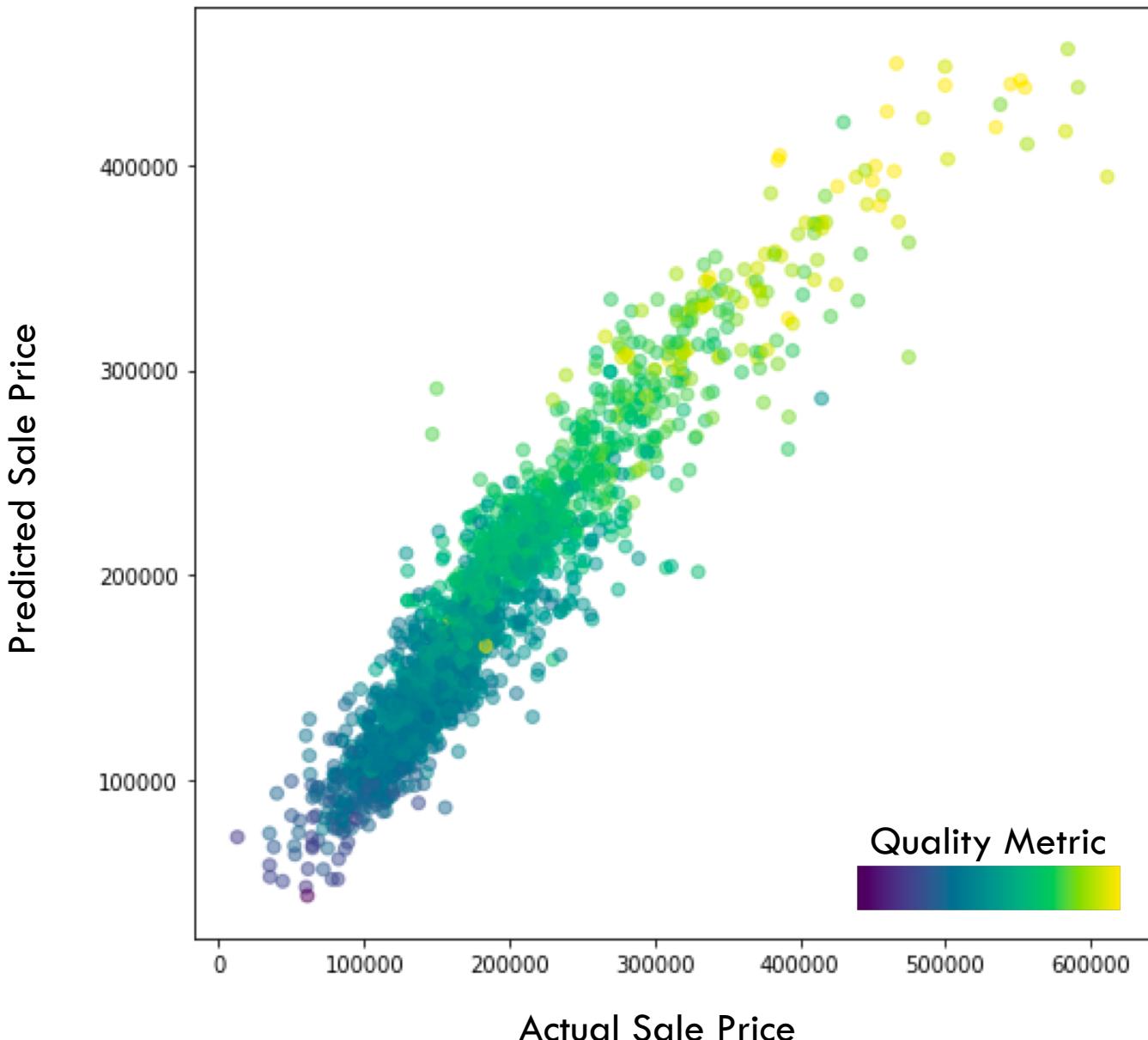
PROCESS

1. Define Goals & Questions
2. Data Collection
3. Data Cleaning
4. Exploratory Data Analysis
5. Defining Features
6. Construct Model & Develop Predictions
7. Evaluate Model Performance
8. Answer the Question

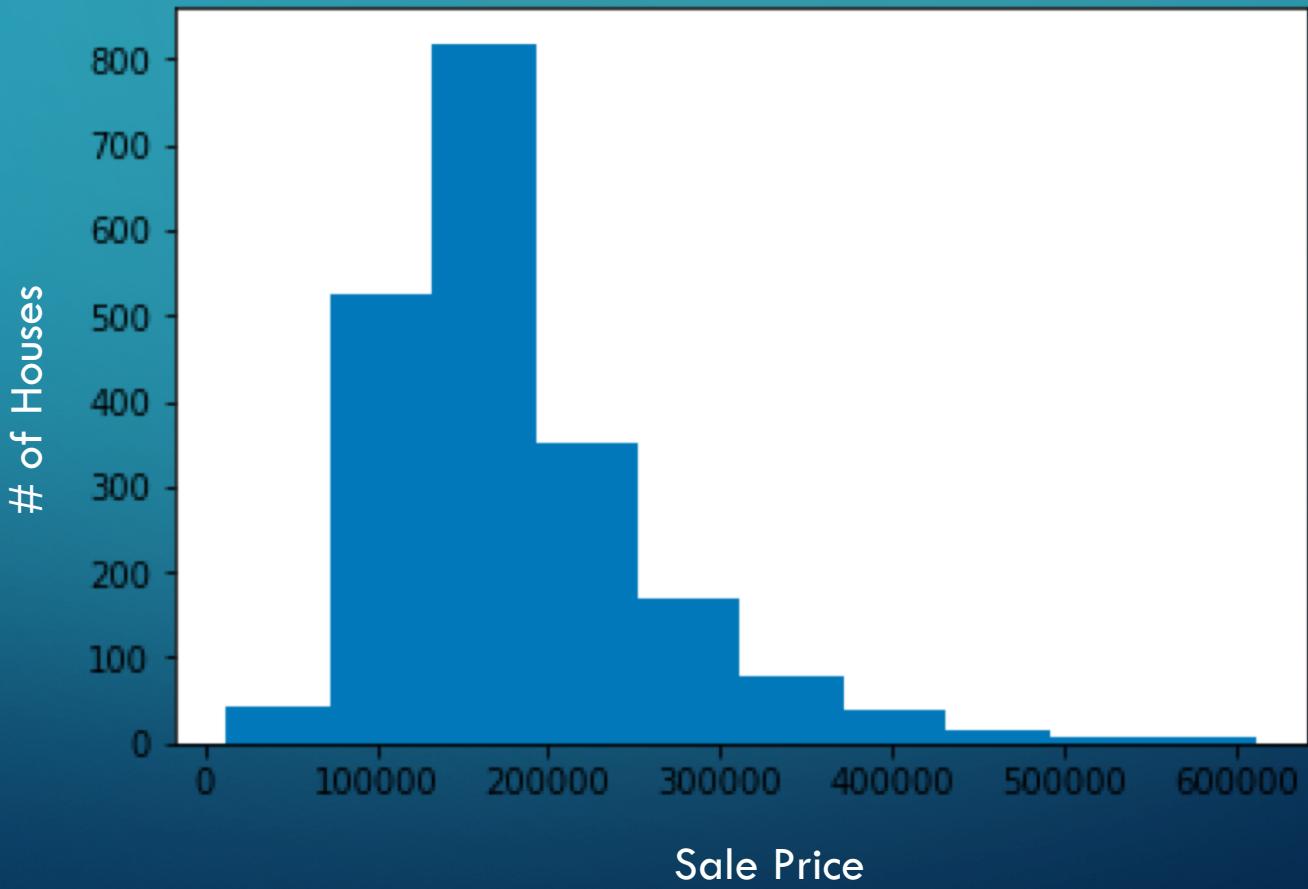


MODEL PERFORMANCE OVERVIEW

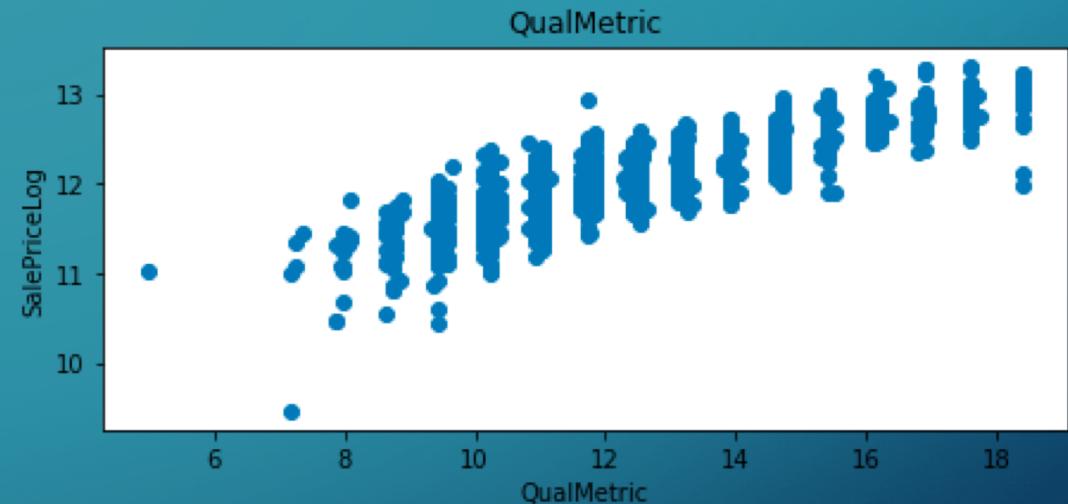
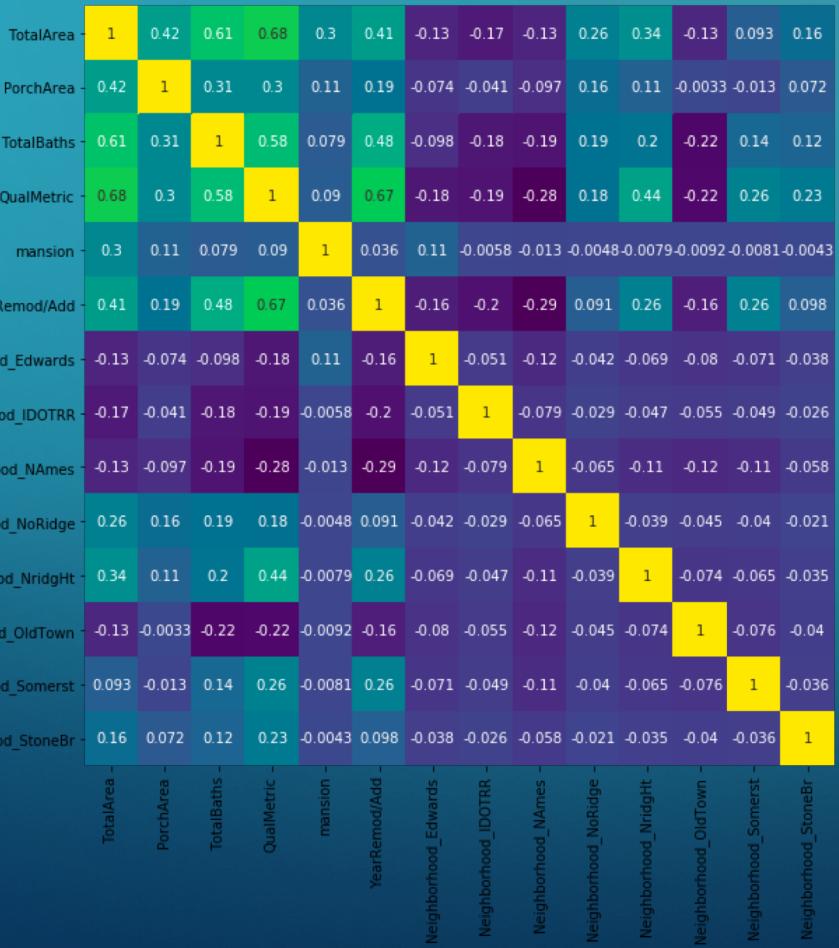
- Model predicts 87% of the variance
- No critical outliers identified
- Incorporates 14 features
 - 4 Meta Features
 - 8 Neighborhoods
 - Mansion Error Stabilizer
 - Year Remodeled / Added



A PRIMER ON SALE PRICE



A REVIEW OF KEY FEATURES



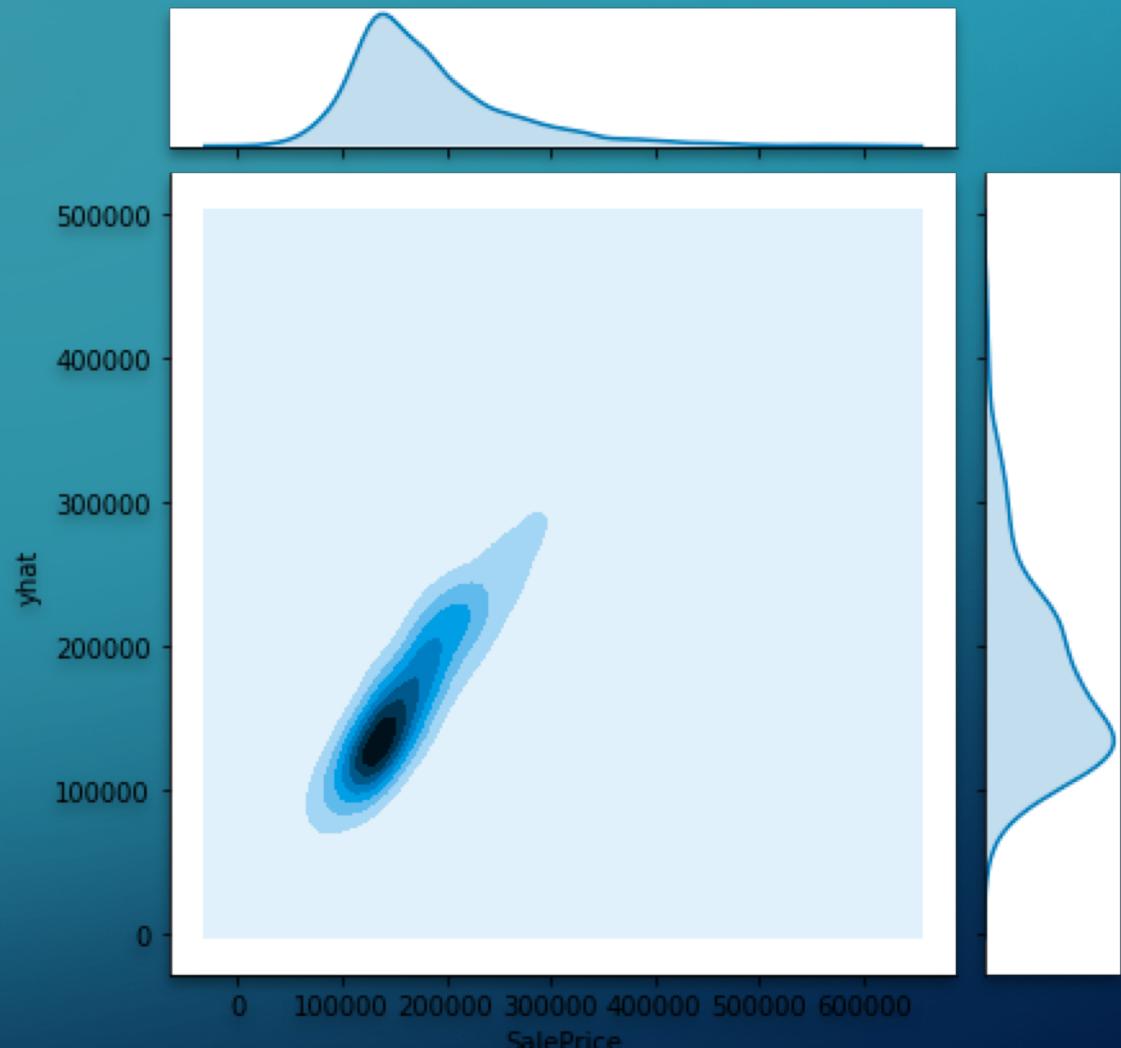
WHAT FEATURES AFFECT PRICE?

Feature	Strength of Effect
Total Area	0.179
House Quality	0.142
Year Remod / Add	0.033
Total Baths	0.031
Porch / Deck Area	0.025
Mansion	-0.042

Neighborhood	Strength of Effect
Northridge Heights	0.019
Stone Brook	0.015
Northridge	0.014
Northwest Ames	0.008
Somerset	-0.002
Edwards	-0.013
Iowa DOT and Rail Road	-0.024
Old Town	-0.033

APPLICABILITY OF MODEL

- Central features are highly portable
- Many features can be pared down with small effect on model accuracy
- Data collection could be less intensive
- Model engineered to easily translate to new geographies



FUTURE RESEARCH

- Clean and refine model – many features were ignored entirely
- Incorporate more variables – collect different data
- Apply model to new geography
- Track changes in housing prices and changes in feature effect over time



THANK YOU