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Ames House Prices for Home Owners

Clare, Gerald, Jie Yong

Latest Market News

yahoo!money

Housing market 'extremely volatile' with private equity accounting for a third of the sales: Expert

Ronda Lee
August 19, 2022 · 2 min read

Inflation and recession fears turned a once red hot housing market into a cool down.

Fluctuating mortgage rates dropped below 5% and then up again, with the rate on the 30-year fixed mortgage at 5.22% from 4.99% the week prior.

"Housing used to be a very stable asset class and now it's extremely volatile," Glenn Kelman, CEO at Redfin, told Yahoo Finance Live (video above). "One reason is that institutions used to account for about a quarter of the sales, but now it's about a third. You have real estate investment trusts (REITs) all active in the single family home market."

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Summary · Companies

- Existing home sales fall 0.4% in August
- Median house price increases 7.7% from year ago
- Housing supply at 1.28 million, unchanged from year ago

REAL ESTATE

Homeowners lose wealth as rising interest rates weigh on home values

PUBLISHED WED, SEP 7 2022·10:22 AM EDT | UPDATED WED, SEP 7 2022·5:38 PM EDT

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KEY POINTS

- Some homeowners are losing wealth as high mortgage rates weigh on home values, at least on paper, as the once red-hot housing market cools.
- Sales have been slowing down for several months, with mortgage rates now double what they were at the start of this year.
- Data suggests so-called tappable home equity may have peaked in May

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The Challenge

Home owners are facing issues valuing their property due to the recent volatility of the housing market in the US. Our model will assist homeowners with getting the best price based on the latest market situation.

Our model takes into account the location, condition, age and much more to predict the price.

Our Mission

We are Blackfin, a *data first* real estate company.

We are here to help *you*, the homeowner, to get the best value for your property in the market through renovation, interior design and optimized property listings.

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Scope

1. Data Cleaning & Modifications
2. Exploratory Data Analysis
3. Modeling
4. Conclusions derived
5. Next steps

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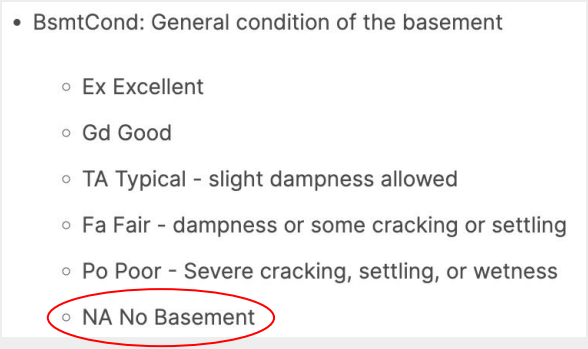
Data Cleaning &
Modifications

Data Cleaning

1. Replacing null values
    a. Understanding the Data Dictionary from Kaggle
    b. Most null values corresponded to ‘NA’
    c. Determine missing values
2. Identifying & Removing outliers
3. Identifying Features with Multicollinearity
4. Dummify Dataset
5. Scaling Numerical Features



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Exploratory Data Analysis

Dataset

Data set contains information from the Ames Assessor’s Office used in computing assessed values for individual residential properties sold in Ames, Iowa from 2006 to 2010.

Data

The data has 82 columns which include 23 nominal, 23 ordinal, 14 discrete, and 20 continuous variables (and 2 additional observation identifiers).

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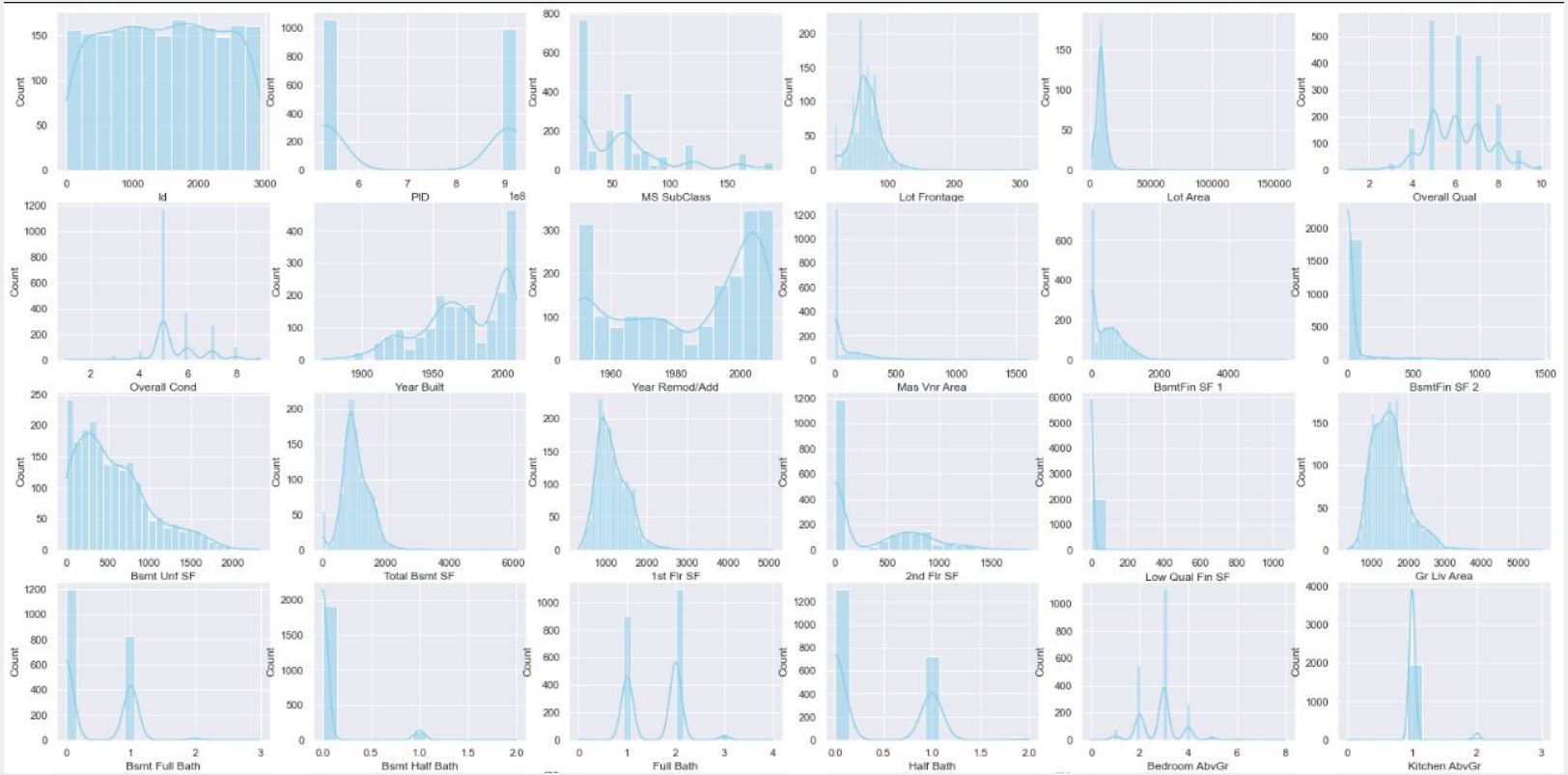

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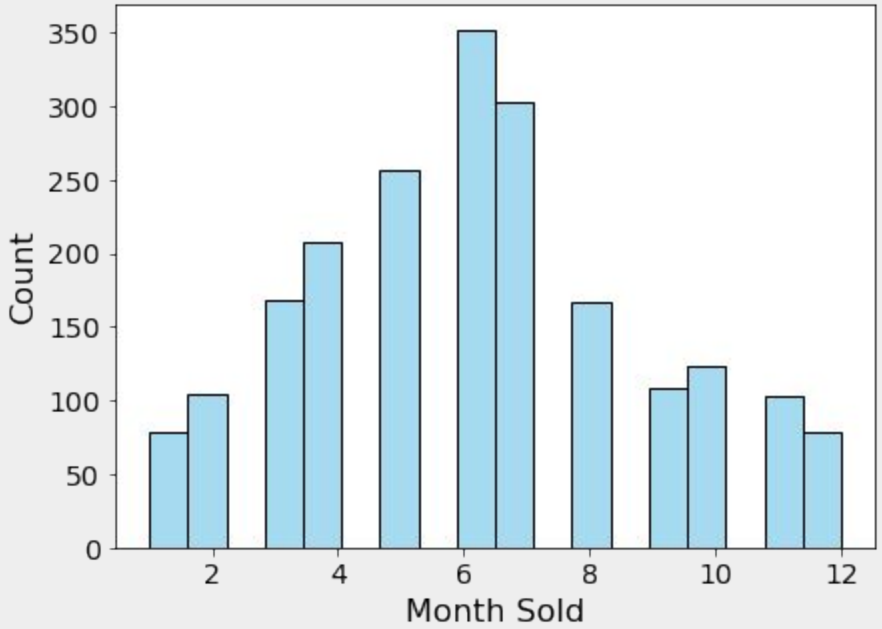

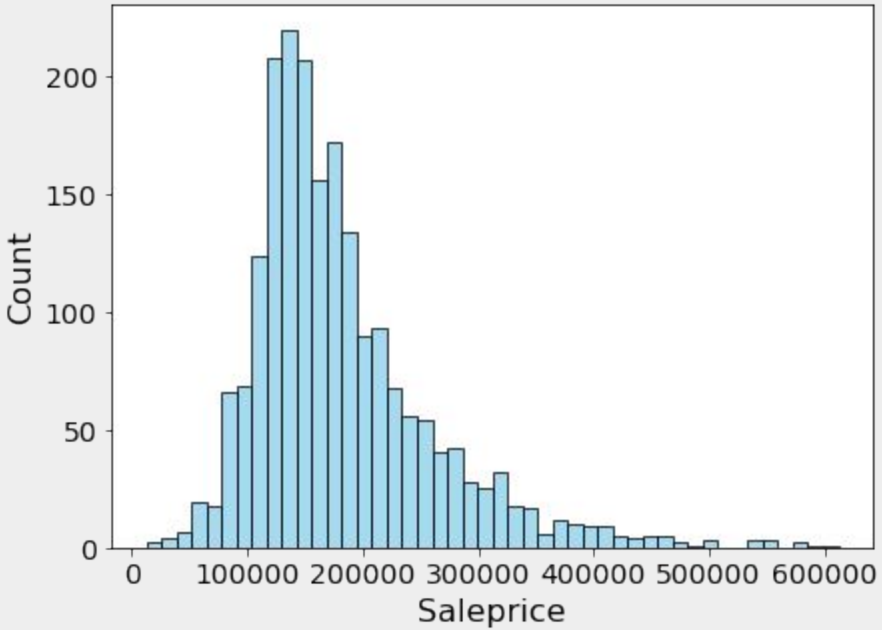

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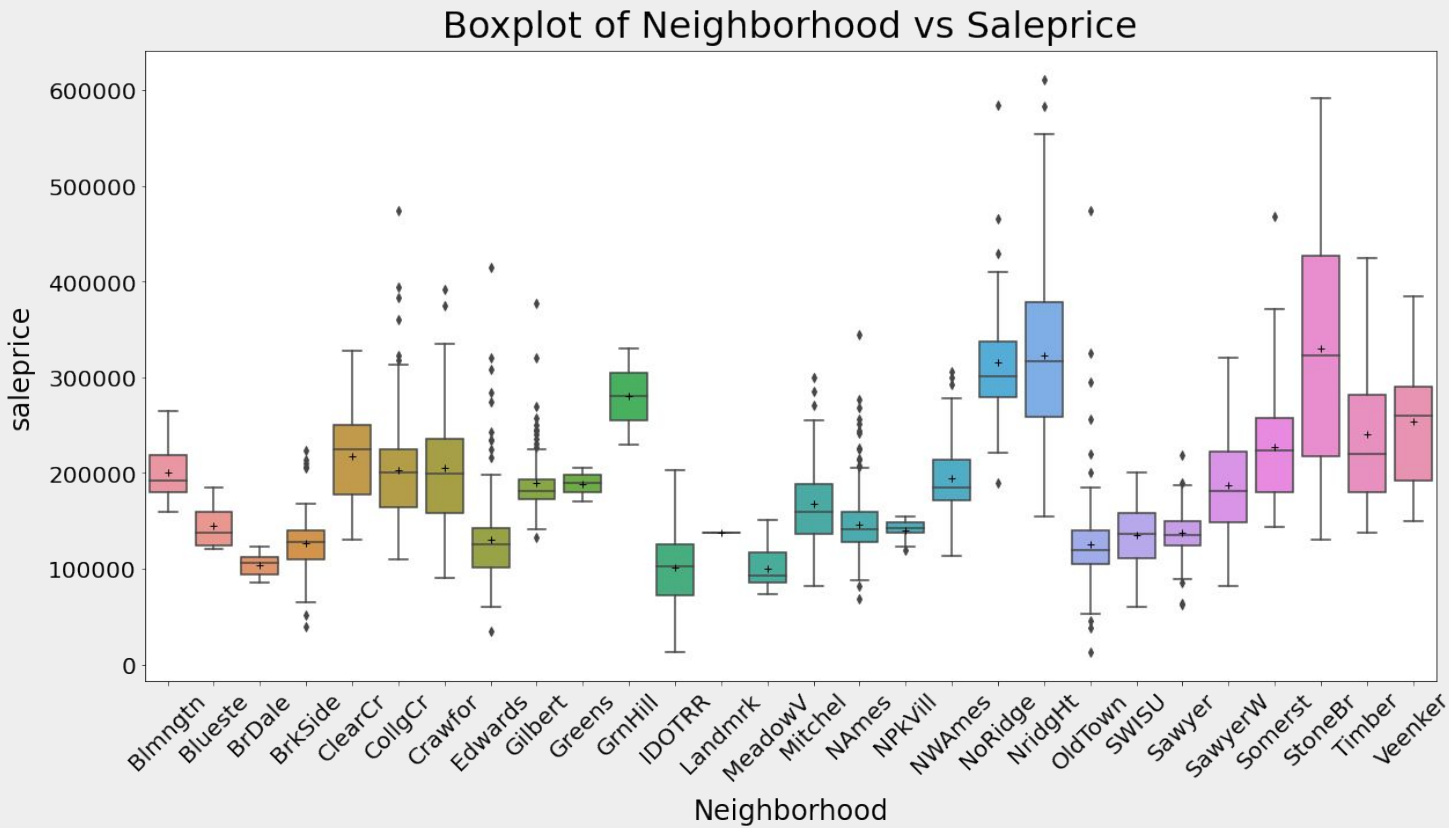

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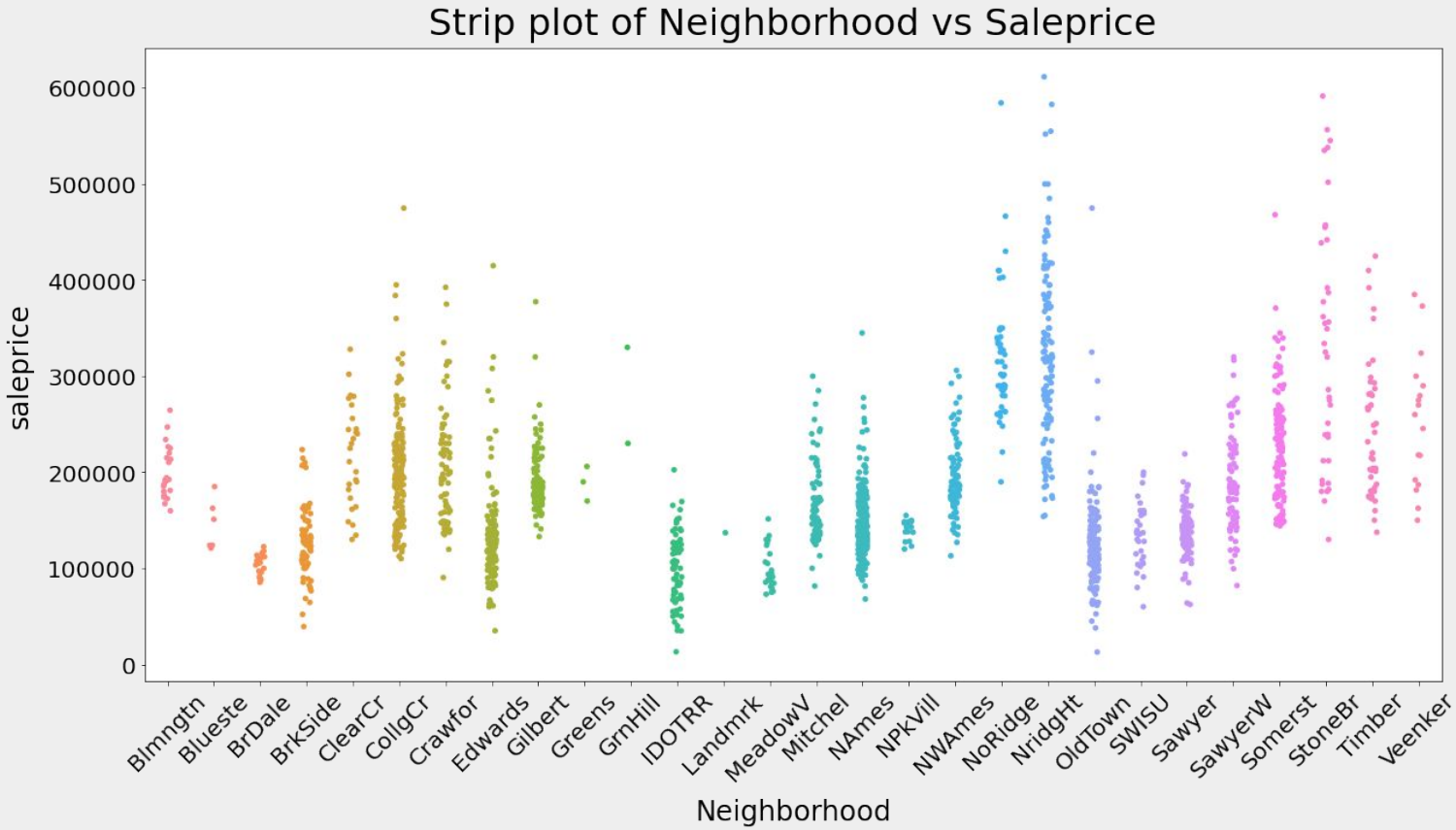

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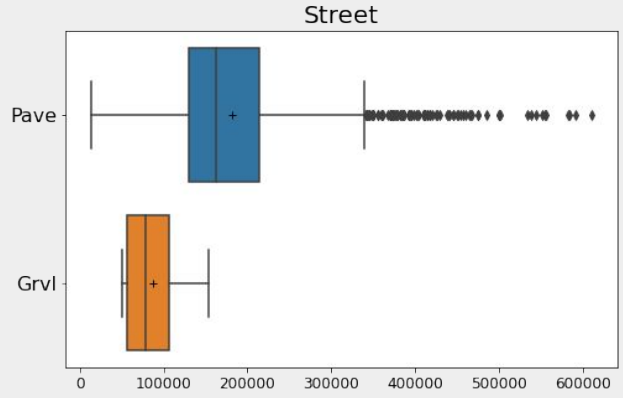

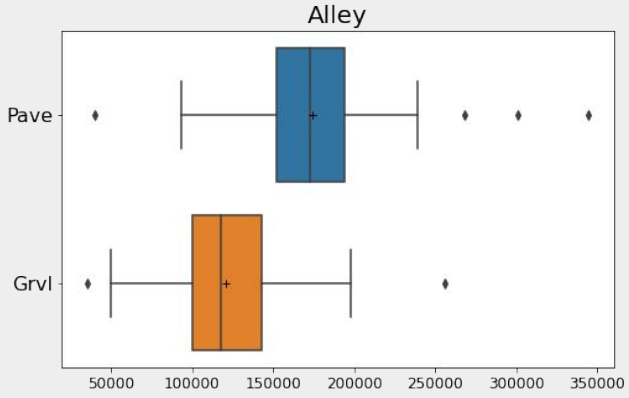

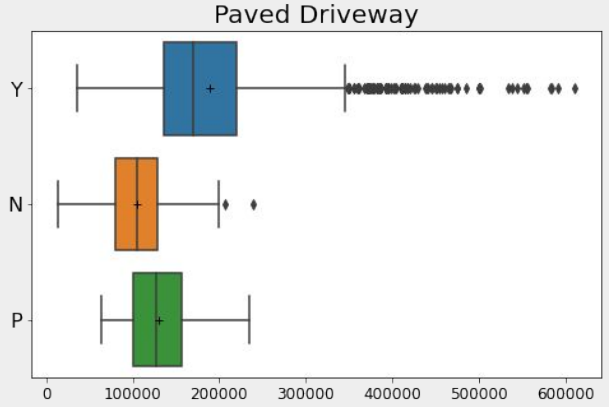

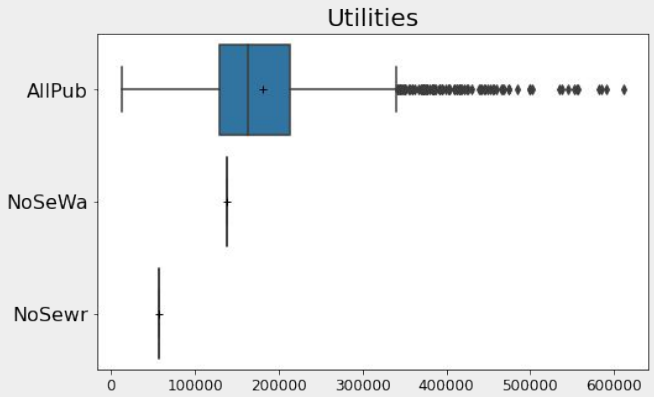

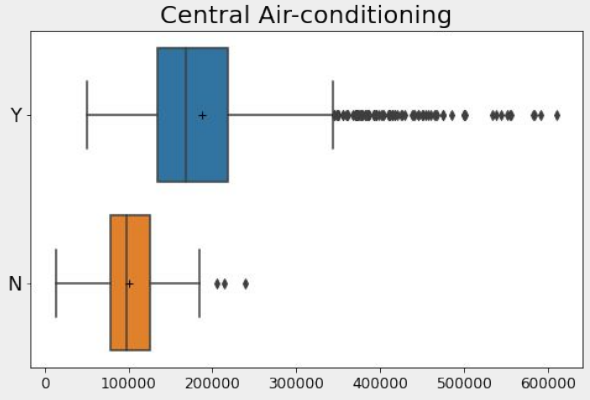

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Keys Takeaway:

1. Number of houses sold occurs most frequently at sale price that is close to $200k. Nonetheless, there were houses sold more than $0.5 million.

2. Most houses were sold during June and July.

3. Majority of houses sold were built/remodeled in 20th century with their overall quality and condition at least average.

4. Green Hills, Northridge, Northridge Height and Stone Brook have significantly higher average sale price compare to the other neighborhoods.

5. Houses with paved streets/alleys/driveways, equipped with all public utilities and central air-conditioning yield higher sale price than houses without.

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Modeling
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Modeling

Parameter Tuning
- Preprocessing
- Regression model

			Metrics	
Run Name	Source	Models	R2	↑ RMSE
Bayesian Ridge	C:\Users\...	sklearn	0.938	19403.6
Ridge Regression	C:\Users\...	sklearn	0.937	19625.5
Bayesian Ridge	C:\Users\...	sklearn	0.937	19775.1
Huber Regressor	C:\Users\...	sklearn	0.936	19803.5
Ridge Regression	C:\Users\...	sklearn	0.936	19898.9
Bayesian Ridge	C:\Users\...	sklearn	0.932	20011
Huber Regressor	C:\Users\...	sklearn	0.934	20165.6
Ridge Regression	C:\Users\...	sklearn	0.929	20462.2
Huber Regressor	C:\Users\...	sklearn	0.927	20656.4
Orthogonal Matching Pursuit	C:\Users\...	sklearn	0.928	20941.7
Orthogonal Matching Pursuit	C:\Users\...	sklearn	0.925	21513.6
Orthogonal Matching Pursuit	C:\Users\...	sklearn	0.92	21657.6
Gradient Boosting Regressor	C:\Users\...	sklearn	0.92	22076.5

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Modeling

Model	Best Regression	CV R2 result	Kaggle Private Score (RMSE)	Kaggle Public Score (RMSE)
Baseline model	Linear Regression	-6052502.05	415522585.39	649729334.37
GridSearchCV	Linear Regression	0.85	26206.55	31947.93
Multi Regression GridSearchCV	ElasticNet	0.87	24219.97	30202.74
Baseline Pycaret	Gradient Boosting Regressor	0.91	21867.08	28079.46
Pycaret w/o outliers	Bayesian Ridge	0.92	22611.63	26095.17
Pycaret w scaling & selection*	Bayesian Ridge	0.93	17983.57	22604.85

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Modeling

Download Model

Create API

Zip file

Deploy to Cloud

Visualise

Enter
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Challenge

Get the Highest Valued House in Ames right now!

2 Mins starts now!

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Conclusion

Most Important Features

Neighborhood (StoneBrook)

Size

Year Built

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Conclusion

Focus on what you can control. Budget using our tool

Exterior Quality

Kitchen

Basement

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Next Steps

- Update datapoints to more recent time period
- More feature engineering
    - Total years lived in = year sold - year built
    - Total Interior square footage = TotalBsmtSF + GrLivArea + GarageArea
    - Total Exterior square footage = LotArea + MasVnrArea + WoodDeckSF + OpenPorchSF + EnclosedPorch + 3SsnPorch + ScreenPorch + PoolArea
- Model to take into account macro economic factors
    - Interest Rates
    - Inflation Rates
    - GDP
    - Unemployment Rates
- Enquiry form for interested homeowners to contact Blackfin

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List with us today!