

# Home, Home Alone

Jordan Ordonez  
Sept. 27, 2024

# Problem Space

How might we use ML  
To help buyers and sellers in the real estate market?



# Vision

01. Derive Key Insights  
From Real Estate Market

02. Use ML to predict  
Sale Price  
Number of Homes Sold

03. Aid Buyers and Sellers  
To Informed Decisions

# Impact

Improving the accuracy of a machine learning model with the goal of significantly surpassing baseline accuracy across property sale prices, and number of property sales would greatly serve millions of buyers and sellers in the United States, potentially generating hundreds of millions of dollars by making better use of inventory resources, marketing strategies, and decreased number of pending sales.



# Project RoadMap

01

Data Collection  
Data Cleaning  
Feature Engineering

02

Exploratory Data Analysis  
Uncover key Insights

03

Initial Modeling  
Refinement of Models used  
Analyzing Performance  
Interpreting Results

04

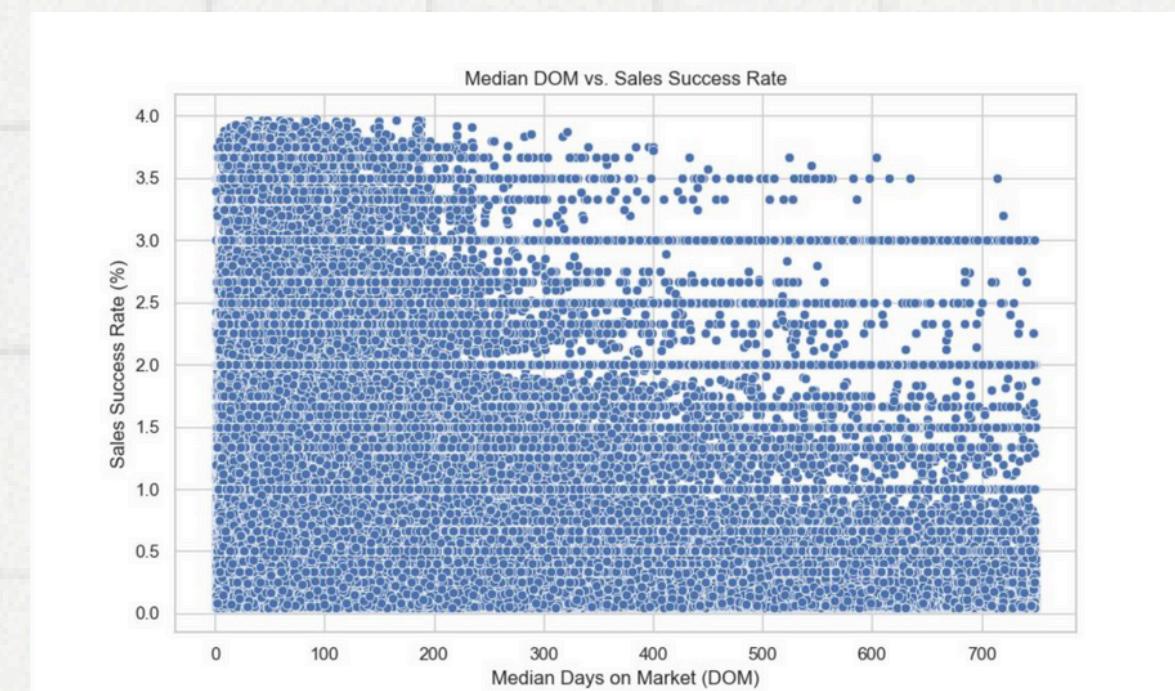
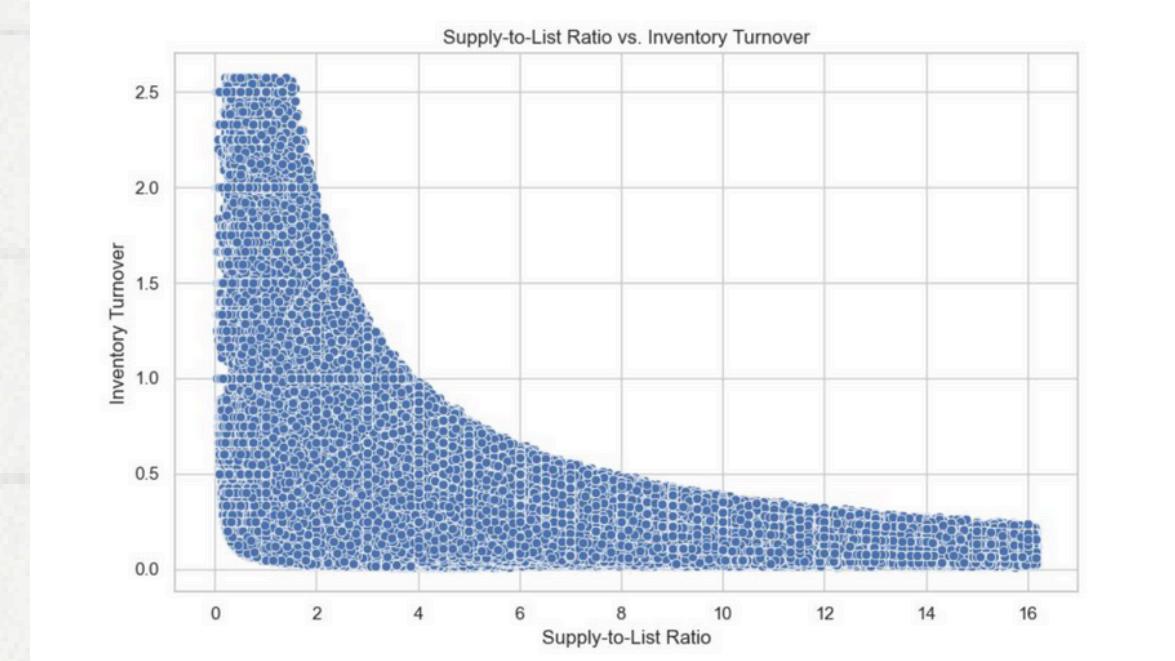
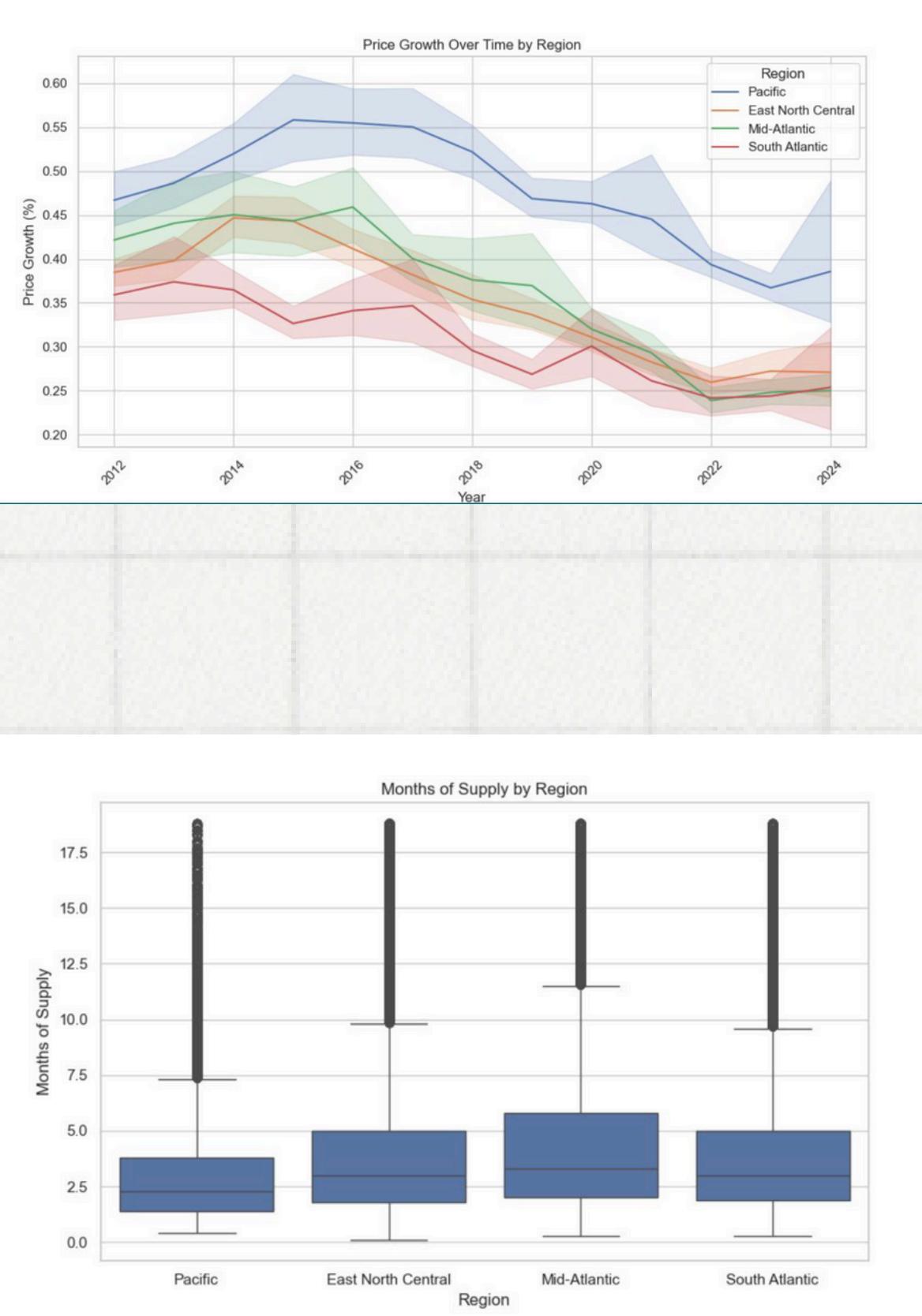
Next Steps



# The Data

- Source
- Dates
- Preprocessing Considerations

# Key Insights



## Linear Regression

Homes Sold  
MSE: 96.38731  
R-squared: 0.7657

Median Sale Price  
MSE: 5983453454.9103  
R-squared: 0.8477

## KNN Regression

Homes Sold  
MSE: 68.3776  
R-squared: 0.8351

Median Sale Price  
MSE: 6447105609.7577  
R-squared: 0.8365

## PCA

Homes Sold  
MSE: 115.6929  
R-squared: R-squared: 0.7188

Median Sale Price  
MSE: 6067498918.1589  
R-squared: 0.8456

## Neural Nets

- Overfit On Both Target Variables
- R-squared > .99



# Final reflections and future steps



**Thank you  
very much!**