Predict House Price

By Using Linear Regression

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OUTLINE

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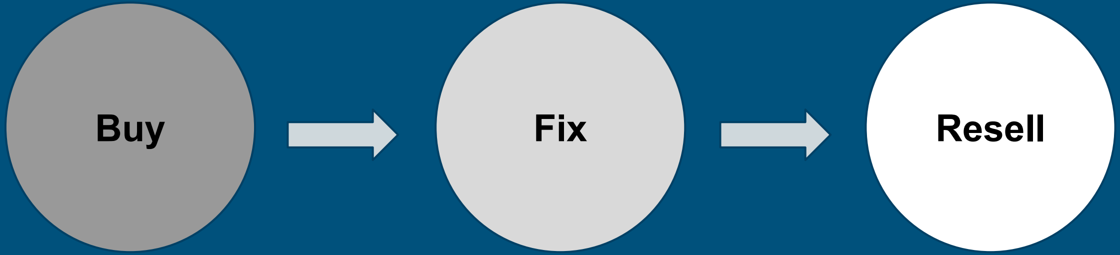
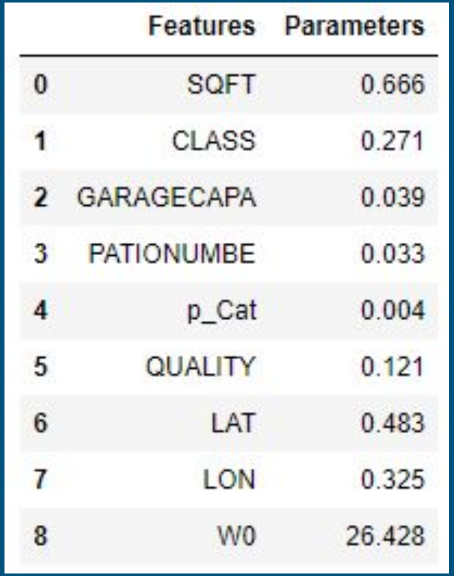
   a. Description
   b. Cleaning
   c. Feature Selection
3. Regression Model
   a. Cut Features
   b. Interpretation
   c. Result
4. Next

Business Problem





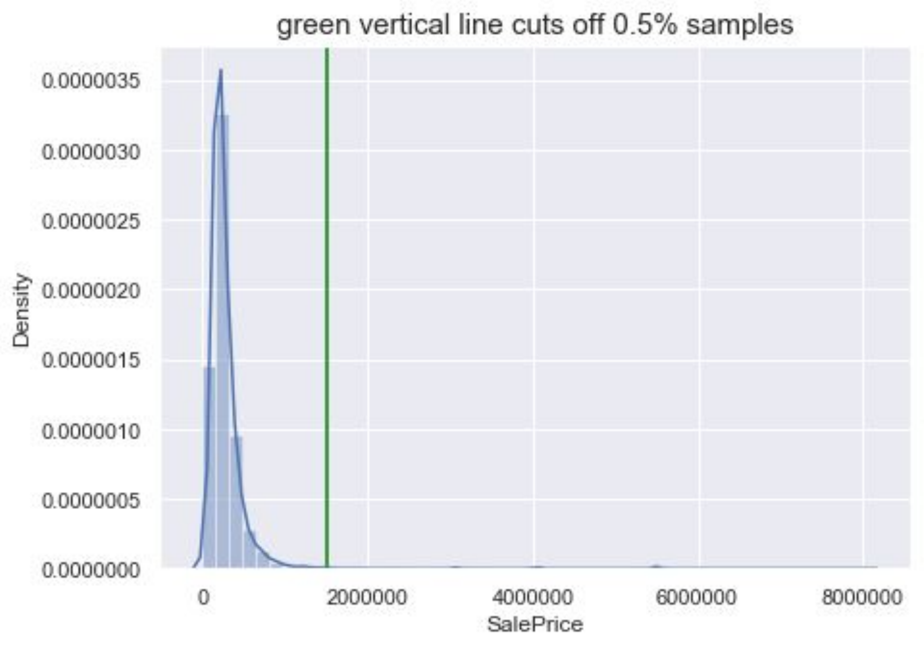
	Features	Parameters
0	SQFT	0.666
1	CLASS	0.271
2	GARAGECAPA	0.039
3	PATIONUMBE	0.033
4	p_Cat	0.004
5	QUALITY	0.121
6	LAT	0.483
7	LON	0.325
8	W0	26.428

Dataset (Description)

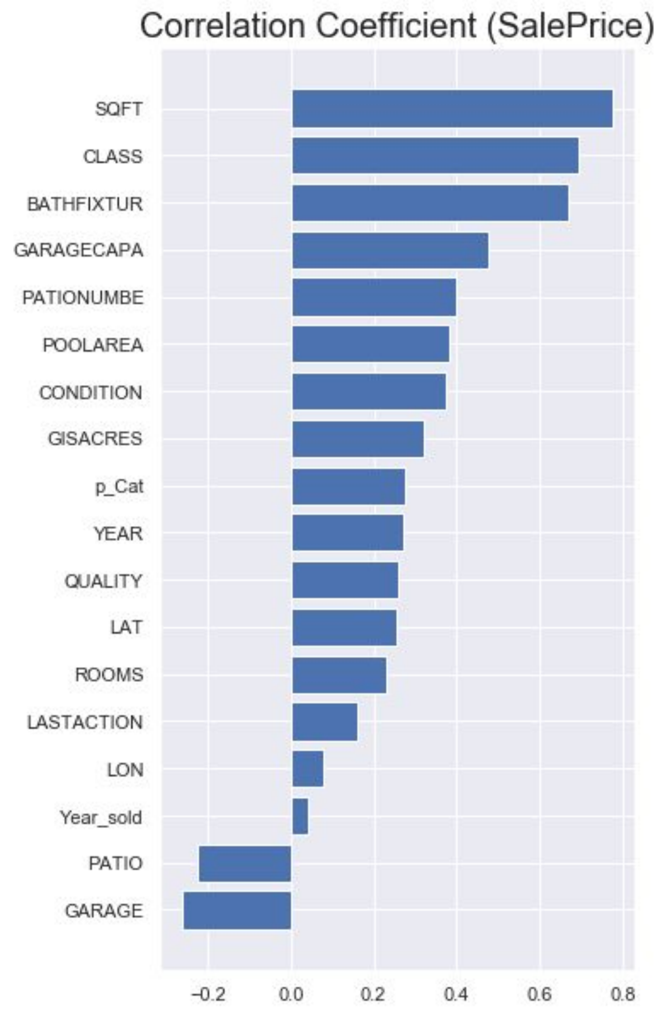
- 52,918 samples
- 49 features

Dataset (Cleaning)

- **Original samples: 52,918**
- Duplicated samples: 16,038
- Remove sale price < 1k
- Cut off extreme samples
- **Total removed: 16,416**
- **Remain: 36,502**



Feature Selection

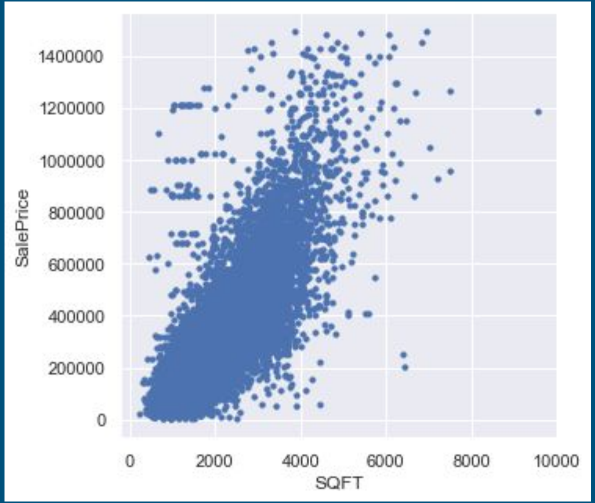


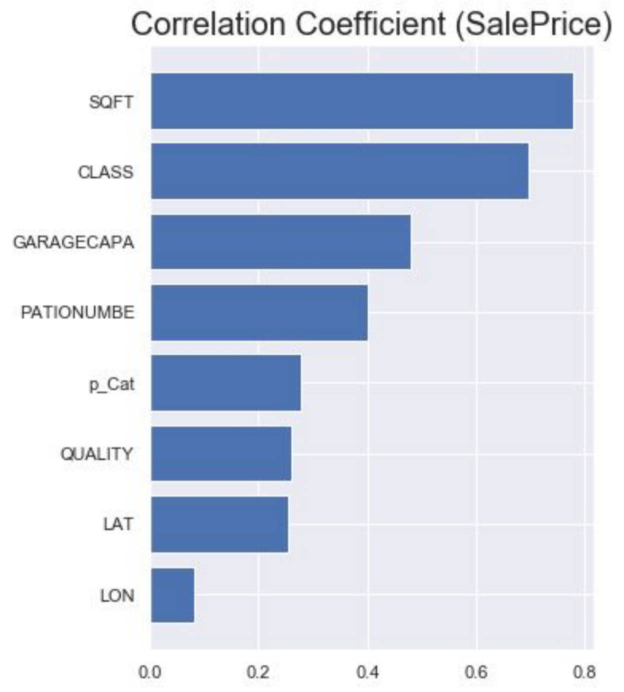
Dataset Split

- 70% train
- 30% test

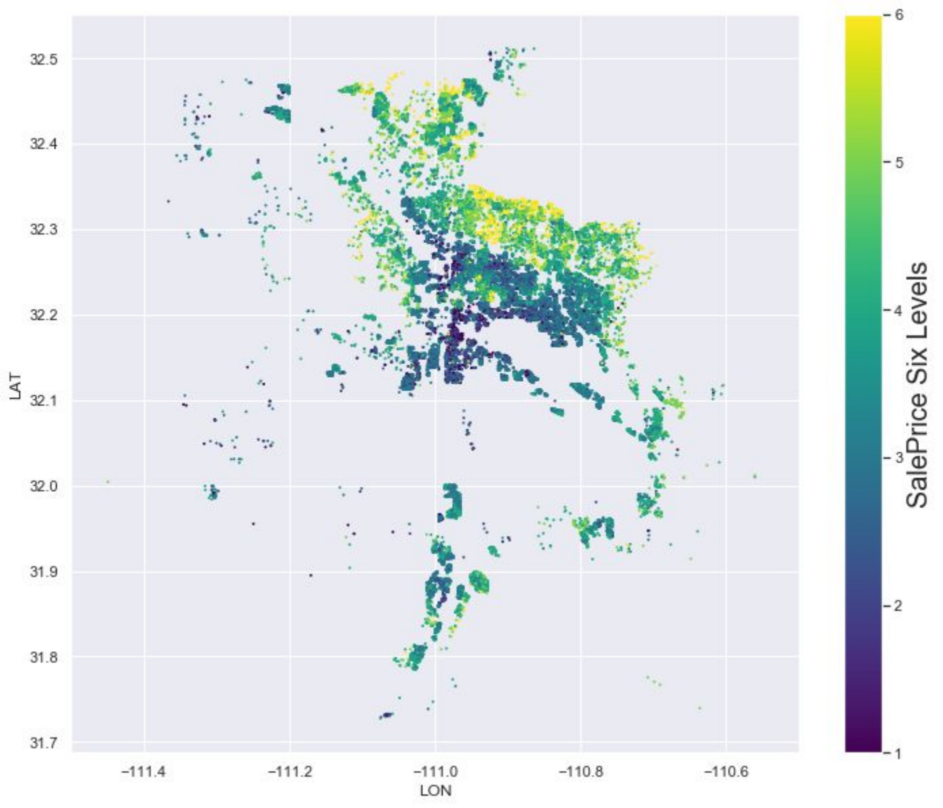
Regression Model

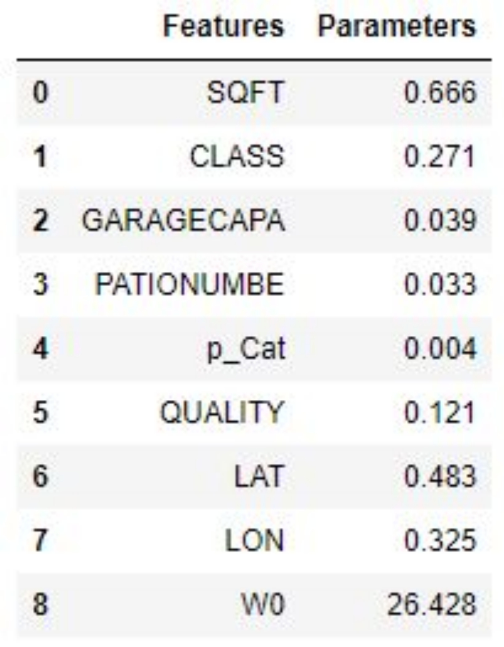
- Optimal selected feature (afte regression)
- log(SQFT), log(SalePrice)





Regression Model (Interpretation)





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Regression Model (Result)

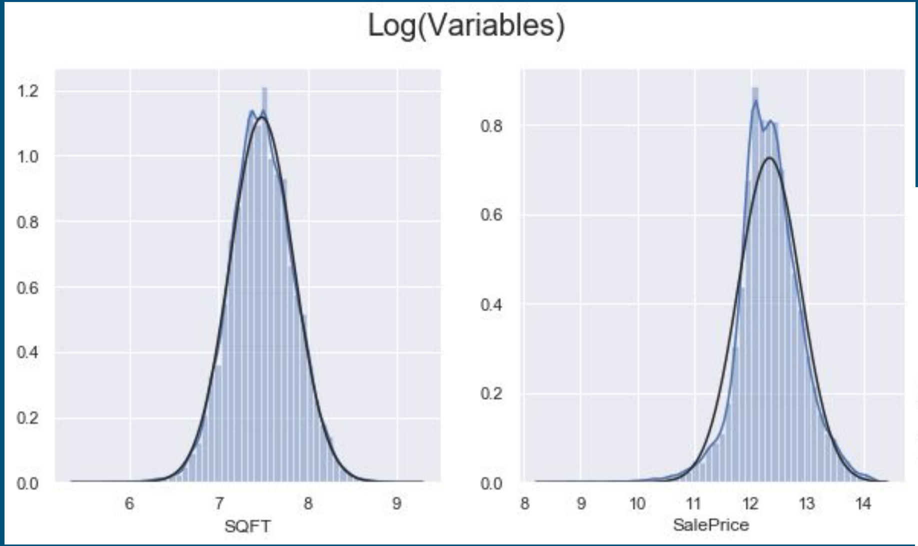
- Sale price = exp[parameters.dot(features)]
- **R square: 0.725**
- **Accuracy: 80%**

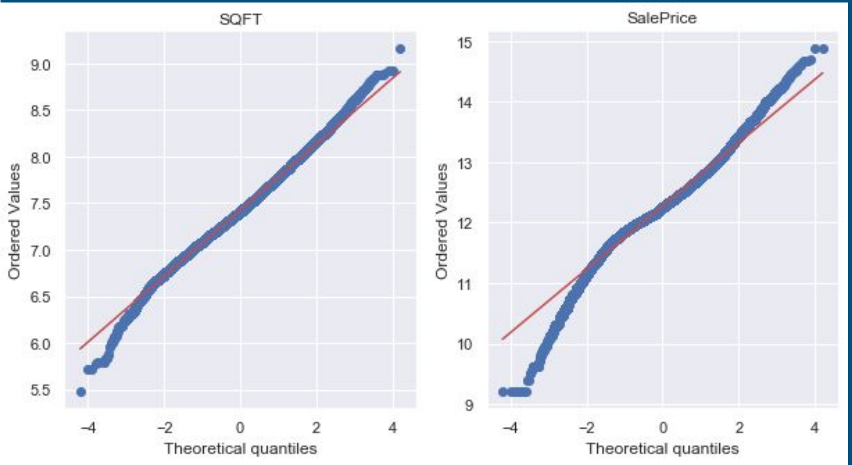
Summary

- Capture 80% house price
- Next
  1. Better feature selection
  2. Better models

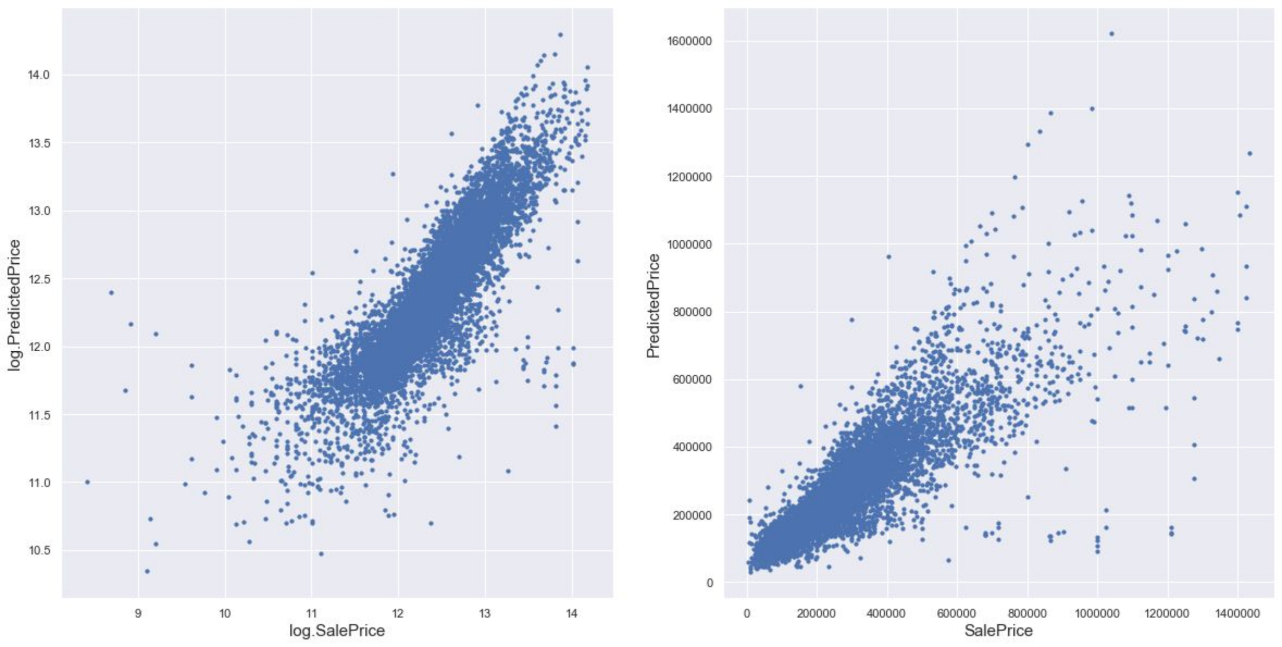
Q & A

Appendix (Transform Function for Normality)

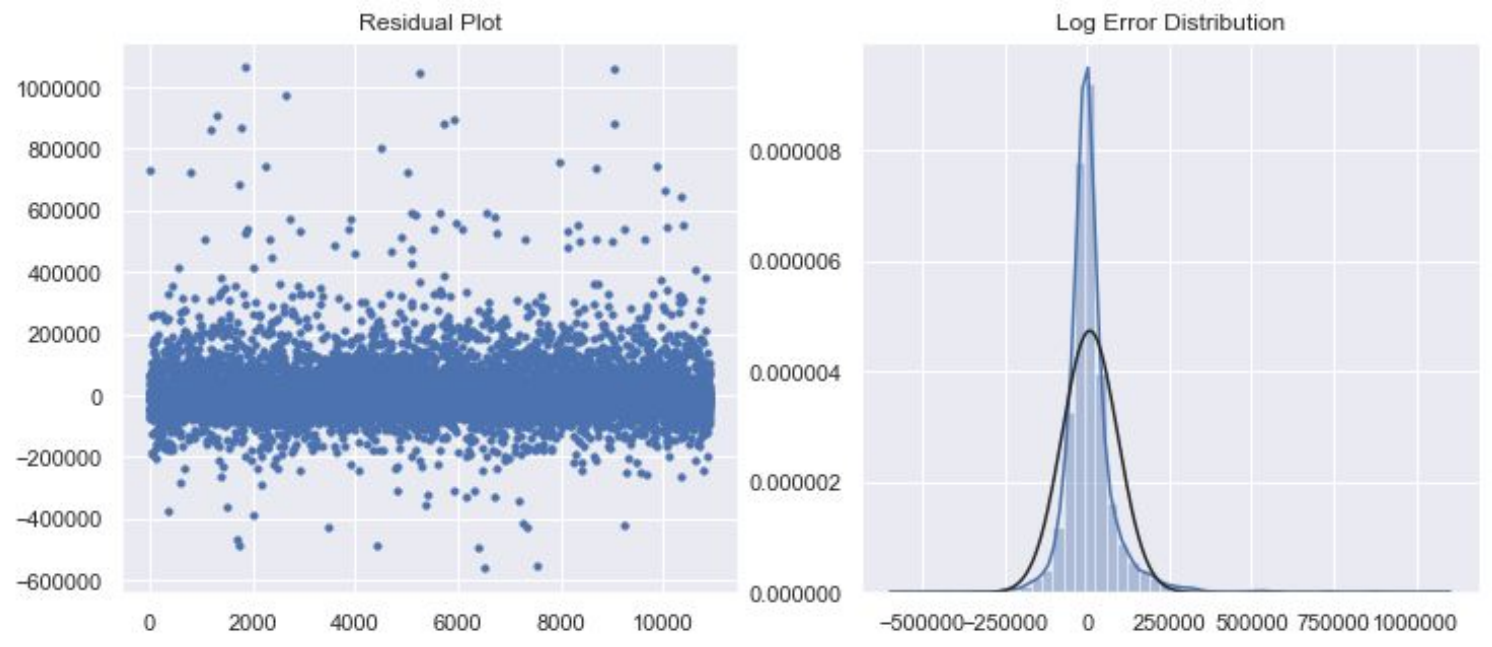




Appendix (Target vs Prediction)



Appendix (Residual Plot)



Residual Plot

Log Error Distribution