

Surprise Housing Regression Assignment

Problem Statement

Surprise Housing Company, a US-based entity, aims to leverage data analytics to purchase houses below their actual values and resell them for profit. The objective is to develop a regression model using regularisation techniques to predict the actual value of prospective properties based on a dataset containing sale details of houses in Australia. The company seeks to identify significant variables influencing house prices and assess how well those variables describe house prices.

General Information

- Objective: Predict the price of a house based on various features.
- Datasets Used: Surprise Housing Dataset, containing records of house sales in Australia.
- Problem Statement:
 - Identify significant variables predicting house prices.
 - Assess the effectiveness of those variables in describing house prices.

Conclusions

- Built and evaluated Linear Regression, Ridge, and Lasso models.
- Ridge model outperformed others, offering simplicity and optimization.
- Important predictors:
 - Neighborhood
 - Square footage of ground floor, 1st floor, and 2nd floor.
 - Basement build quality, foundation, exterior, overall quality, and house style.
 - Garage size.

Technologies Used

- Python - 3.11.5
- Pandas - 2.0.3
- Matplotlib - 3.7.2
- Seaborn - 0.12.2

Acknowledgements

This project was based on the Surprise Housing Regression model Assignment from upgrad.com.