CCAI-312 PROJECT

MOTORCYCLE PRICE PREDICTION

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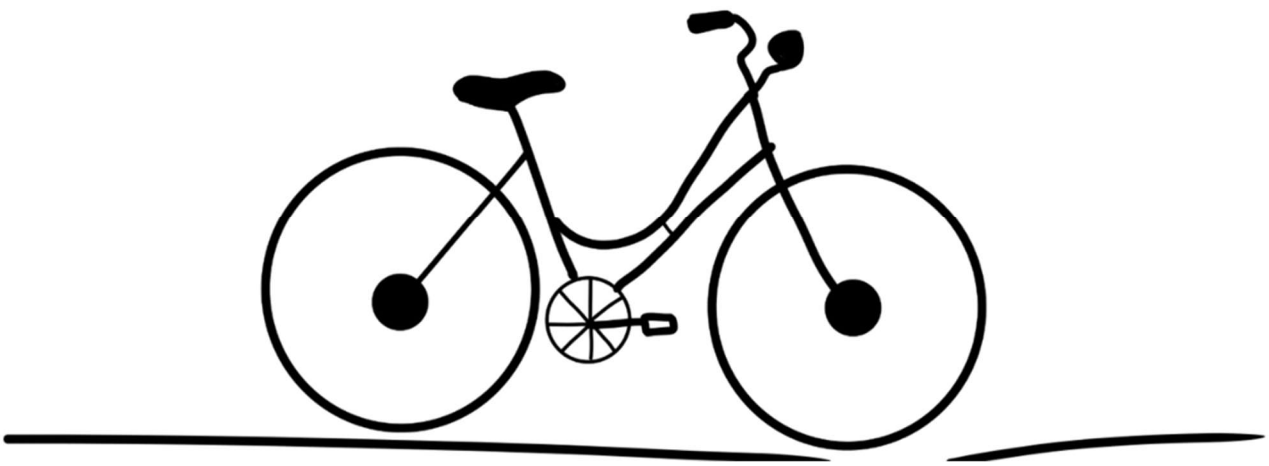

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1. Introduction

This dataset contains information about used motorcycles This data can be used for a lot of purposes such as price prediction to exemplify the use of linear regression in Machine Learning. The datasets contains the information like name, selling price, year, seller type, owner, km driven and ex showroom prices. The datasets also has nulls values which was removed in the pre-processing steps.

2. Problem Description

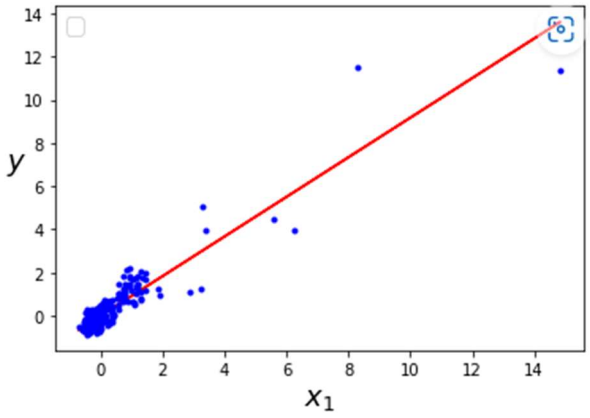
This resolved the problem of estimating the best used motorcycles prices.

3. Data Description

The columns in the given dataset are as follows:

- name
- selling price
- year
- seller type
- owner
- km driven
- ex showroom price

4. Method



a. Pre-processing: Cleaning of data, drop off the nulls rows and performed standard scaling of data to bring ranges in simple ranges
b. Implemented linear regression, performed with polynomials features and lasso regression. Taken root mean square as our evaluation matric.

5. Experiment and results

- Linear Regression RME: 0.84
- Datasets has no uneven shape, so that is why polynomial doesn't work for our case.

6. Discussion

in our dataset, we started by describing the data, after analyzing the data we can see that there is a correlation between ex_showroom_price and the selling_price, we applied the linear regression to it and we tried to improve the performance of the model

but we noticed that the error is quite high for lasso regression because we have small dataset, couldn't be able to generalize.

the linear regression works perfect, since we have removed all the null values which further shrinks the data.

7. Conclusion

In conclusion, linear regression works better in predicting selling price of motorbikes. Linear regression works better in a smaller number of datasets.

8. References

- "Pattern Recognition Labs" (Labs 1-10, Pattern Recognition, College of Computer Science and Engineering, Jeddah, 2022).
- https://www.youtube.com/watch?v=L3OtLaCbJC8&t=2120s