

Title: Rating prediction using supervised machine learning techniques

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1 Motivation

It contains data about mobile apps that are being used by people. We want to predict the rating (“Rating”) for any app once we know the “Category” it belongs to, “No. Of Reviews”, “No of Installs”, “Size”, “Price”, “Days since Last Update”.

2 Approach

Supervised learning approach is the types of machine learning in which machines are trained using well “labelled” training data, and on basis of that data, machines predict the output. The respective algorithms in supervised machine learning to predict the **rating** is discussed in the subsections 2.0.1, 2.0.2 and 2.0.3.

2.0.1 Linear Model-Linear Regression(LR)

Linear-Regression will take in its fit method arrays X, y and will store the coefficients of the linear model in its coefficient member:

2.0.2 Ensemble method-Random Forest(RF)

In random forests, each tree in the ensemble is built from a sample drawn with replacement from the training set. Furthermore, when splitting each node during the construction of a tree, the best split is found either from all input features or a random subset of size.

2.0.3 Neural Network Model-Multi-layer Perceptron

MLPRegressor trains iteratively since at each time step the partial derivatives of the loss function with respect to the model parameters are computed to update the parameters.

3 Implementation

To develop understanding of how a process is done. Flow diagram of steps in implementation process is systematically shown in Figure 1 below.

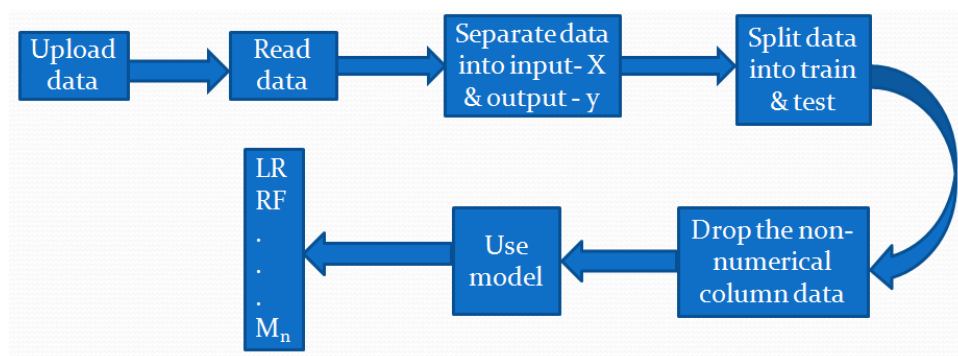


Figure 1: Flow diagram

4 Results:

- The output of predicated-rating for respective model is in notebook.
- Python Code - [click here](#)
- Data - [click here](#)

5 Conclusion

The rating of mobile app data for respective models are successfully predicated.

6 Acknowledgement

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7 References

- Machine Learning for Physicists 2021
- Scikit learn website