Machine Learning Algorithm

2. Multivariate or Multi-variable Linear Regression

2.1 Prerequisites

a . System (Computer system)
b . Python Interpreter (Python 3 language skills, Pandas, Numpy,Scikit-learn etc)
c . IDE software (Jupyter Notebook or spider or pycharm or google collab etc)
d . Data Sets (single variable(X) input and single variable(Y) target)

2.2 Practical Daily Life or Business Uses

a . Price of objects (Like House price, Cloths price,Oil price, Vehicle Price etc)
b . Amount of sales (Like Cars sales,House sales,Cloths sales, Medicines etc)
c . Interest rate of Bank's Loan , Economic Growth, Score prediction of match etc.
d . Salary estimation of employees , Size of Human's Cloths etc.
e . How much relationship between boyfriend and girlfriend etc.
f . Movies Ratings, Marks of students in board examinations etc.
g . Business growth, Investment plan, advertisement cost etc.

2.3 Steps of algorithm implementations from zero to hero

Step 1. Import all necessary Libraries.
Step 2. Create manually datasets using pandas library.
Step 3. Demonstrate the shape of data sets at least 5 records in the environment.
Step 4. Data Preprocessing.
Step 4.1 Exploring the missing values
Step 4.2 Cleaning the missing values or fill the missing values.
Step 5. Split the datasets into Independent and dependent variable .
Step 6. Shape of Independent and dependent variable
Step 7. Split the datasets into Training and Testing Part.
Step 8. Train the algorithm.
Step 9. Retrieve the intercept
Step 10. Retrieve the slope
Step 11. Predicted the value of algorithm.
Step 12. Comparing, visualization of actual value and predicted value on the graph.
Step 13. Evaluate the algorithm.
Step 14. Test the algorithm.

2.4 Some Mathematicals concept of this algorithm

- Multiple Linear Regression

$$y = ß0 + ß1x1 + ß2x2 + \ldots\ldots\ldots + ∈$$ (where y= output, x= input, ß1, ß2= slope,

ß0 = constant or intercept, ∈ = Error term)

Car Price = ß0+Car_ID*ß1+CarLength*ß2+CarWidth*ß3+CarHeight*ß4+Cylinder - Number*ß5+EngineSize*ß6+HorsePower*ß7 +∈