Machine Learning Algorithm

1. Simple Linear Regression

1.1 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 colab etc)
d . Data Sets (single variable(X) input and single variable(Y) target)

1.2 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.

1.3 Steps of algorithm implementations from zero to hero

Step 1. Import all necessary Libraries.
Step 2. Load the datasets into working environments or create manually datasets.
Step 3. Demonstrate or view the datasets records into the working environment.
Step 4. Visualize the dataset on the scatterplot or any graph plot .
Step 5. Clean the datasets or Data Munging.
Step 6. Split the datasets into independent (X) and dependent (Y) (optional).
Step 7. Split the datasets into training and testing sets (optional)
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. Testing the algorithm

1.4 Some Mathematicals concept of this algorithm

- Simple Linear formula :

  y = mx+c (where y = output, x= input , m= slope or coeff_, and c= intercept)

- Simple Linear Regression formula in terms of machine learning.

  y = ß0 +ß1x + ∈ (where y= output, x= input, ß1= slope, ß0 = constant or intercept, ∈ = Error term)

Salary = ß0 + ß1* YearsExperince + ∈