Linear regression

Linear regression

- Linear regression models are used to show or predict the relationship between two variables or factors. The variable that is being predicted is called the dependent variable.
- The variables that are used to predict the value of the dependent variable are called independent variables.
- In linear regression, each observation consists of two values. One value is for the dependent variable and one value is for the independent variable.
- In this simple model, a straight line approximates the relationship between the dependent variable and the independent variable.

Multiple linear regression

- When two or more independent variables are used in regression analysis, the model is no longer a simple linear one. This is known as multiple regression.
- Moreover, Multiple Linear Regression is an extension of Simple Linear regression as it takes more than one predictor variable to predict the response variable.
- In Multiple Linear Regression, the target variable(Y) is a linear combination of multiple predictor variables x1, x2, x3, ...,xn.

Linear regression

- In this model, we need to find a straight line which best fits most of the observations. This line is called linear regression line and it is obtained by least square method.
- The equation to find the straight line is
- y=b0+b1x
- b0 is y intercept
- b1 is the slope .
- Slope will be positive for positive relationship between variables. Example the square feet area of house related to the rental.
- Slope will be negative for negative relationship between variables. Example the time spent by student in social network and his/her grade in examination


Salary vs Expereience (Training Dataset)
Salary(In Rupees)
120000
100000
80000
60000
40000
2
4
6
8
10
Years of Experience