DATA SCIENCE WITH PYTHON : LINEAR REGRESSION ALGORITHM #1567

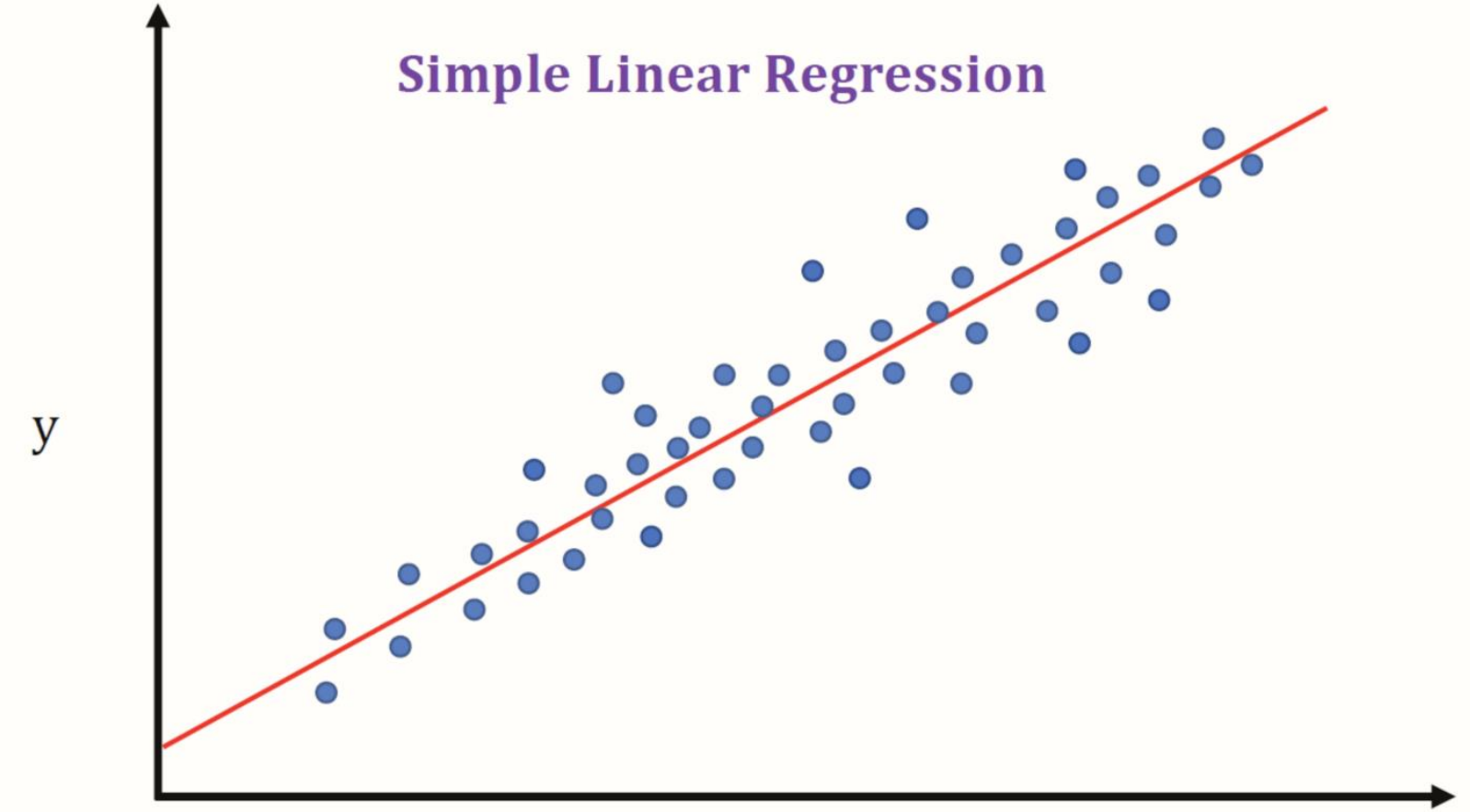
Name: Deepthi M

Batch number: 05

Serial number: 172

Linear Regression

Linear Regression is supervised machine learning model.



Linear Regression:

- Linear Regression makes predictions when output variable is continuous in nature.
- It shows a linear relation between dependent variable and independent variables.
- Equation:

Y = a + bX

Types of linear regression:

- Simple linear regression
- Multiple linear regression.

- Equation of simple linear regression:

$Y = a + bX$

- Equation of multiple linear regression:

$Y = a + bX_1 + cX_2 + \ldots\ldots$

How to measure linear regression?

Error functions and accuracy functions:

- Mean error.
- Mean absolute error.
- Mean square error.
- Root mean square error.
- Mean percentage error.
- Mean absolute percentage error.

Assumptions for best fit of linear regression:

- Multi-collinearity.
- Homoscedasticity.
- Normal distribution.
- Auto-correlation.

Advantages:

- Easy to implement when we have a linear relationship in the dataset.
- Easy to interpret the output coefficient.

Disadvantages:

- Outliers have a huge effect on the model performance.
- It does not give a complete description of relationship between variables.