

Siddhardhan

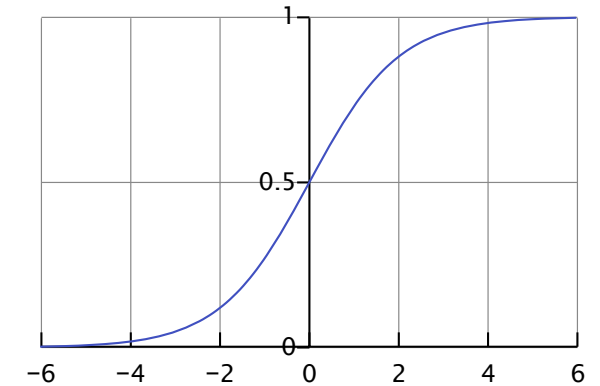
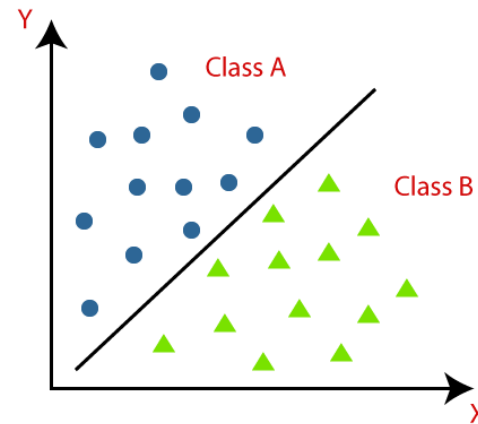
Logistic Regression - intuition



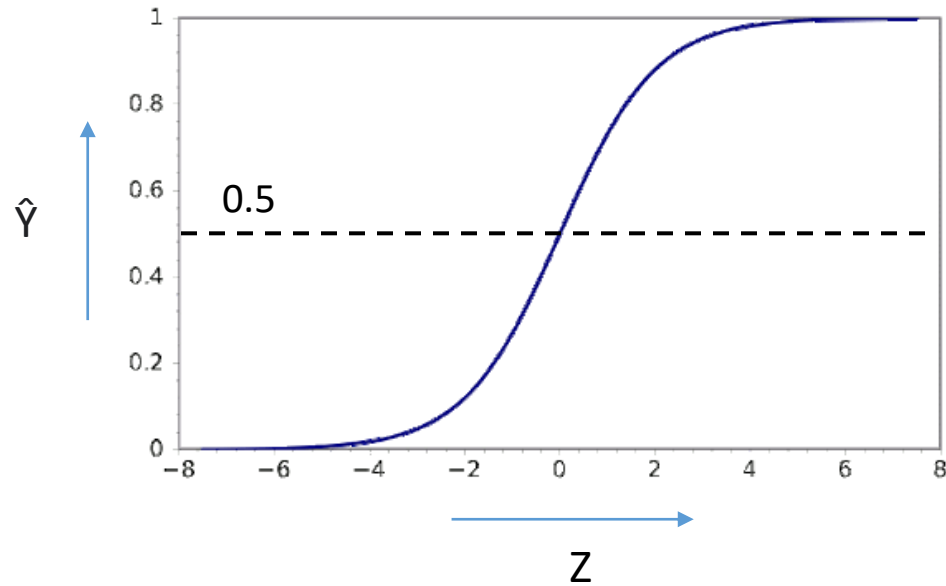
Logistic Regression

About Logistic Regression:

1. Supervised Learning Model
2. Classification model
3. Best for Binary Classification Problem
4. Uses Sigmoid function



Logistic Regression



$$\hat{Y} = \frac{1}{1 + e^{-Z}}$$

$$Z = w \cdot X + b$$

Sigmoid Function

\hat{Y} - Probability that ($y = 1$)

$$\hat{Y} = P(Y=1 \mid X)$$

X - input features

w - weights

(number of weights is equal to the number of input features in a dataset)

b - bias

$$\hat{Y} = \sigma(Z)$$

Logistic Regression

Advantages:

1. Easy to implement
2. Performs well on data with linear relationship
3. Less prone to over-fitting for low dimensional dataset

Disadvantages:

1. High dimensional dataset causes over-fitting
2. Difficult to capture complex relationships in a dataset
3. Sensitive to Outliers
4. Needs a larger dataset

