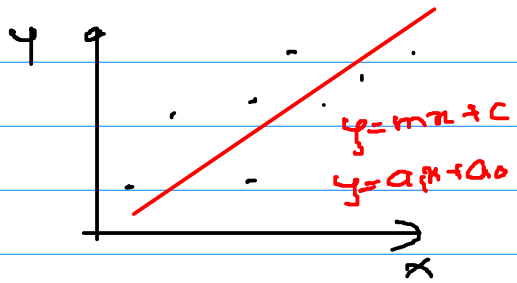
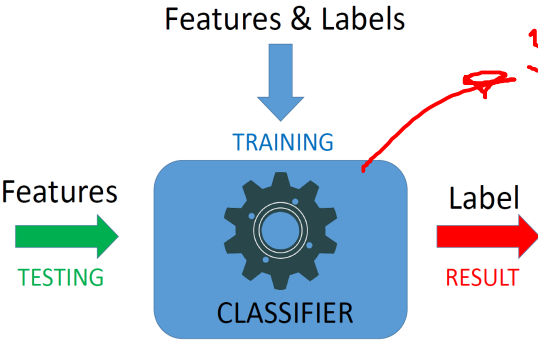
Linear Regression for multiple feature / multivariable dataset

Features : $x_1, x_2, x_3, x_4, x_5, x_6, x_7$

Label : y





$y = f(x_1, x_2 \dots x_7)$

$y = a_1x_1 + a_2x_2 + a_3x_3 \dots + a_7x_7 + a_0$

Find 8 coefficients

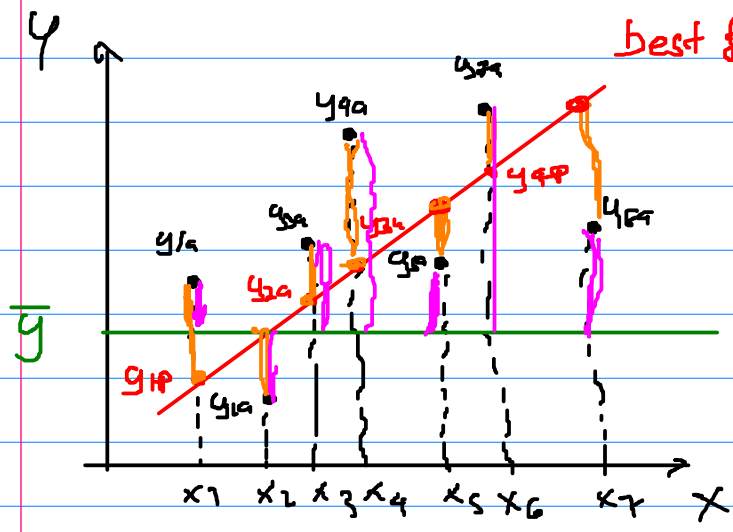
$\frac{\partial SE}{\partial a_1} = 0 \rightarrow a_1 = ?$

$\frac{\partial SE}{\partial a_2} = 0 \rightarrow a_2 = ?$

$\vdots$

$\frac{\partial SE}{\partial a_0} = 0 \rightarrow a_0 = ?$

R2 Score



$$R2 = 1 - \frac{SE_{\hat{y}}}{SE_{\bar{y}}}$$

$$\bar{y} = \frac{\sum_{i=1}^{n} y_{ia}}{n}$$

$\hat{y} = y_{ia} - y_{ip}$

$\bar{y} = y_{ia} - \bar{y}$