i) MAE (Mean Absolute Error)

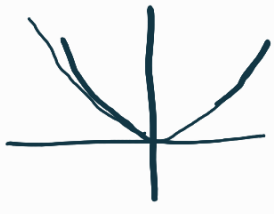
$$MAE = \frac{\sum_{i=1}^{n} |Y_i - \hat{Y}_i|}{n}$$

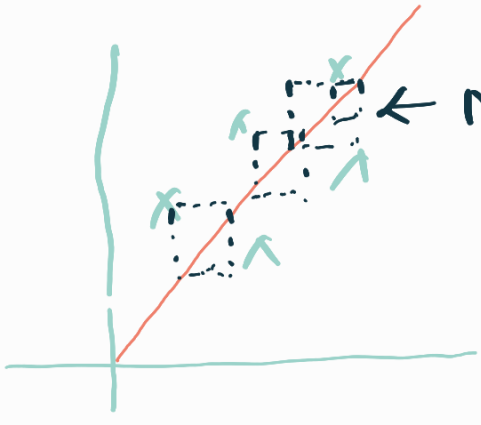
Adv :- i) O/p Comes in same unit
ii) Robust to outlier.

Dis :- Graph is not differentiable

ii) MSE (Mean Squared Error)

$$MSE = \frac{\sum_{i=1}^{n} (Y_i - \hat{Y}_i)^2}{n}$$





← MSE minimize this Squared area

Adv :- we can use this as loss fx bcz it is differentiable

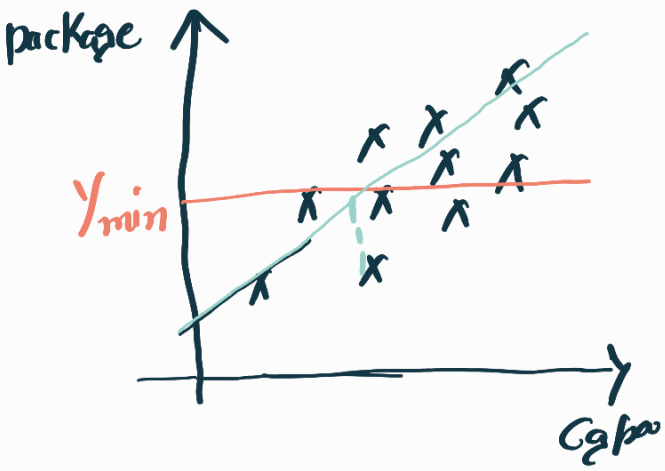
Dis :- i) O/p is Squared in unit
ii) Not robust for outliers

iii) RMSE = $\sqrt{MSE}$ adv :- o/p Comes in same unit

$= \sqrt{\frac{\sum_{i=1}^{n} (y_i - \hat{y}_i)^2}{n}}$ Dis :- Not robust to outliers.

iv) R2 Score :- {Co-effi of determination, Goodness of fit Known as}

Cgpa | package (Lpa)



$R2 = 1 - \frac{SS_R}{SS_M}$ — SS_R → Sum of Square Error in regression line; SS_M → Sum of Square Error in mean line

$R2 = 1 - \frac{\left[\sum_{i=1}^{n} (y_i - y_i)^2\right]_{regression}}{\left[\sum_{i=1}^{n} (y_i - \hat{y}_i)^2\right]_{mean}}$

Ixle try to make R2 Score near to 1 it's Known as good if R2 Score is near to 0 then our Regression line and Mean line both are Equal that is not good for model.

$0 \xleftarrow[\text{Not good}]{} R_2 \xrightarrow[\text{good}]{} 1$

Subbae R2 - 0.80 → Cgpa able to Explain

Cgpa / LPA lot of lpa in package varierre

V) Adjusted R2 Score

Cgpa / lpa

$$R2_{adj} = 1 - \left[\frac{(1-R_2)(n-1)}{(n-1-K)}\right]$$

n → no. of rows
K : independent
K = 1, 2, 3

if we add irrelevent column in o/p R2adj will decrease it mostly used to calculate when we have multiple o/p in data, it's a good practice to calculate both R2 and R2adj and after decide.