5/3/22

$$SST = SSE + SSM$$

$$\sum_{i=1}^{n} (y_i - \bar{y})^2 = \underbrace{\sum_{i=1}^{n} (y_i - \hat{y}_i)^2}_{\text{small}} + \underbrace{\sum_{i=1}^{n} (\hat{y}_i - \bar{y})^2}_{\text{large}}$$

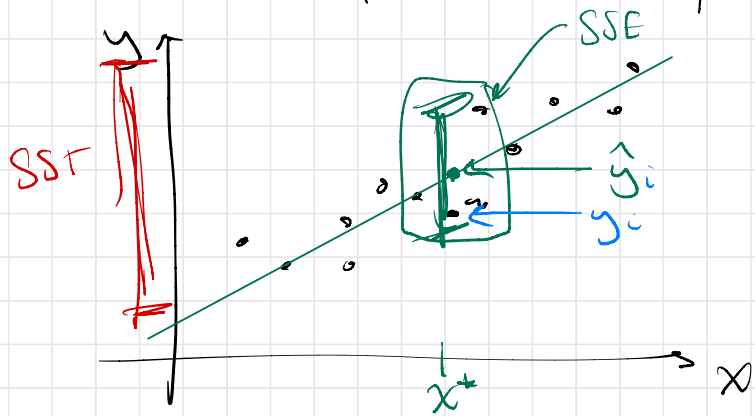
y_i = observed response for i^{th} obs. , $i = 1, \dots, n$

$\hat{y}_i$ = predicted response using model $= f(\underline{x}_i)$

$$R^2 = \frac{SSM}{SST} = 1 - \frac{SSE}{SST}$$

↳ proportion of variation in the response that is explained by the model

SLR



$\hat{y} = a + bx$

$$\text{Adjusted } R^2 = 1 - \frac{SSE/n-p}{SST/n-1}$$

p = # of coefs