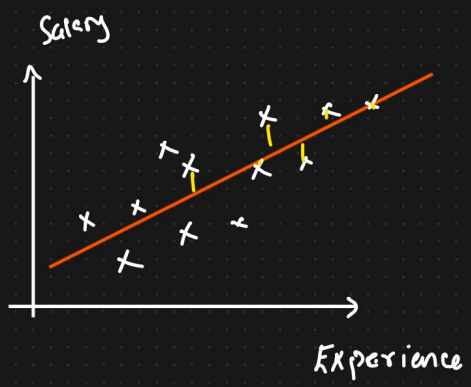
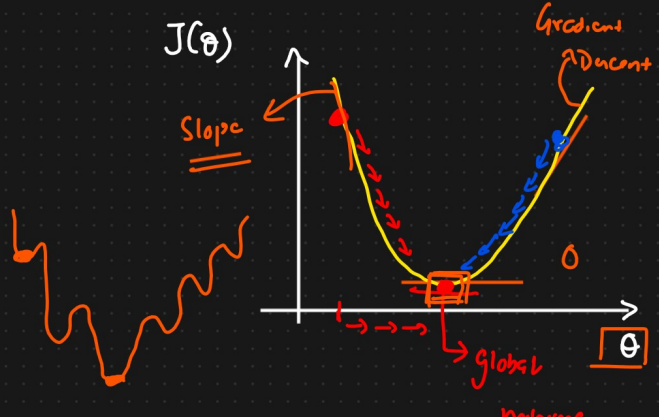
Mean Squared Error, Mean Absolute Error and RMSE





MSE — Error

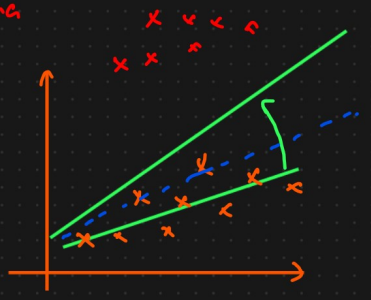
$$J(\theta) = \frac{1}{n}\sum_{i=1}^{n}(y_i - \hat{y}_i)^2$$

① Mean Squared Error

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

INR

Salary y_i



Advantages

① Differentiable.

② It has one local and global minima.

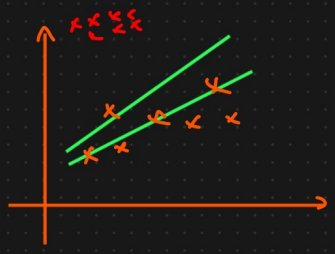
Disadvantages

① Not Robust to outliers

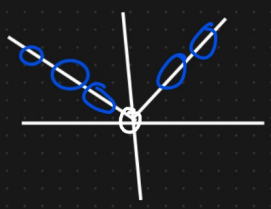
② It changes its unit

② Mean Absolute Error (MAE)

Cost fn $MAE = \frac{1}{n}\sum_{i=1}^{n}|y_i - \hat{y}_i|$



Subgradient



Advantage

① It is Robust to outliers

② It will be same unit

Disadvantage

① Convergence usually take more time

② Optimization is a Complex process.

③ RMSE

$$RMSE = \sqrt{MSE}$$

Assignment