Derivations

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1 Given formulas to use

$esticatePrice(mileage) = \theta_0 + (\theta_1 \times mileage)$

$tmp\theta_0 = learningRate \times \frac{1}{m} \times \sum_{i=0}^{m-1}(estimatePrice(mileage[i]) - price[i])$

$tmp\theta_1 = learningRate \times \frac{1}{m} \times \sum_{i=0}^{m-1}(estimatePrice(mileage[i]) - price[i]) \times mileage[i]$

2 Mean Square Error

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

where:

n amount of observation quantities

Y_i observed quantities

$\hat{Y}_i$ predicted quantities

Hence,

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

which looks familiar, since it basically is the given formulas.