ML Algorithms

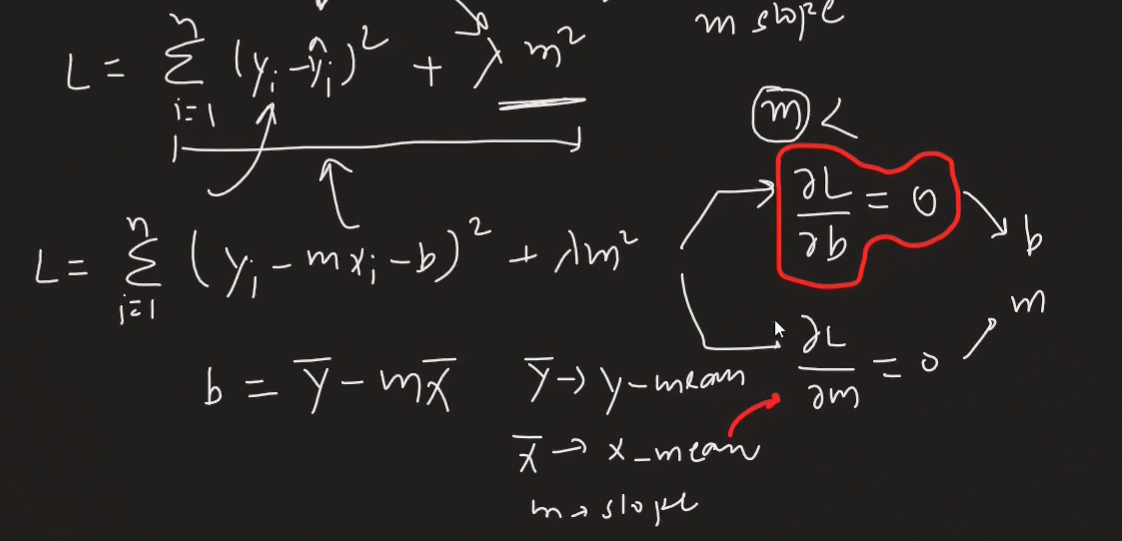
Ridge regularization proof:

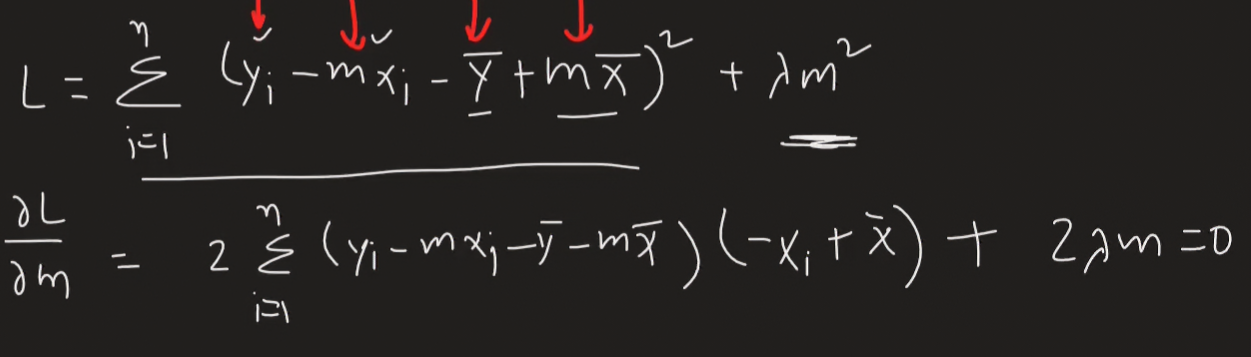
Dl/Db is same as we proved in previous algos as there is no change

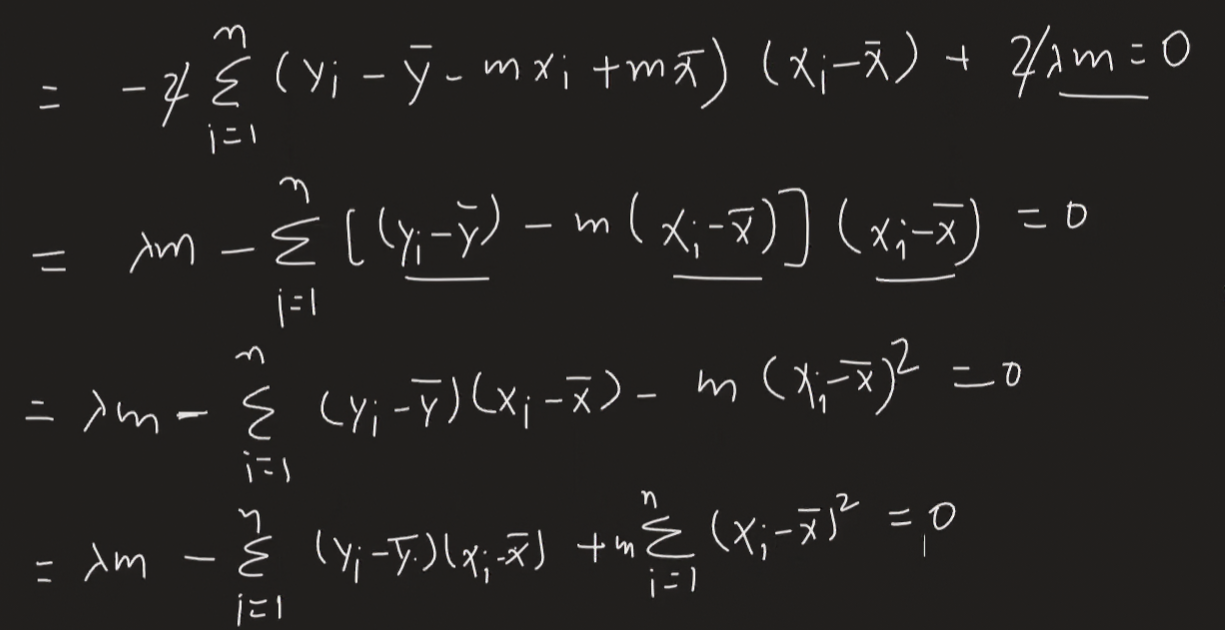
And b comes out to be:

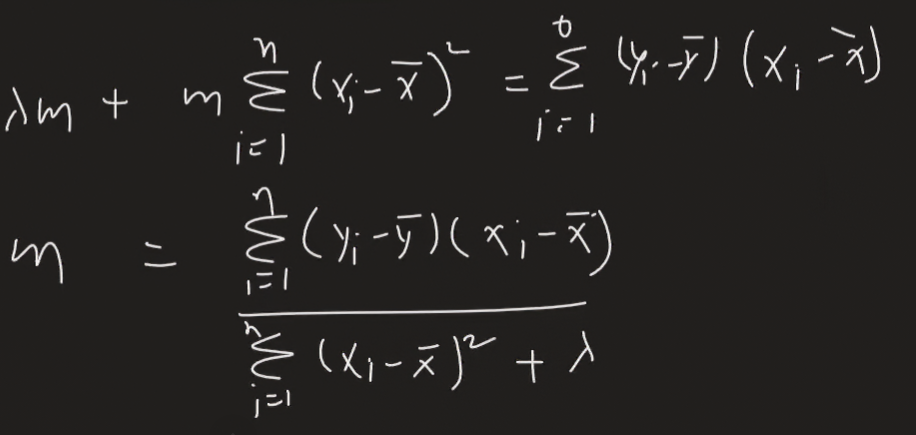
b = Ybar – m(Xbar), here Ybar = y mean and Xbar = X mean

Will focus on Dl/Dm:



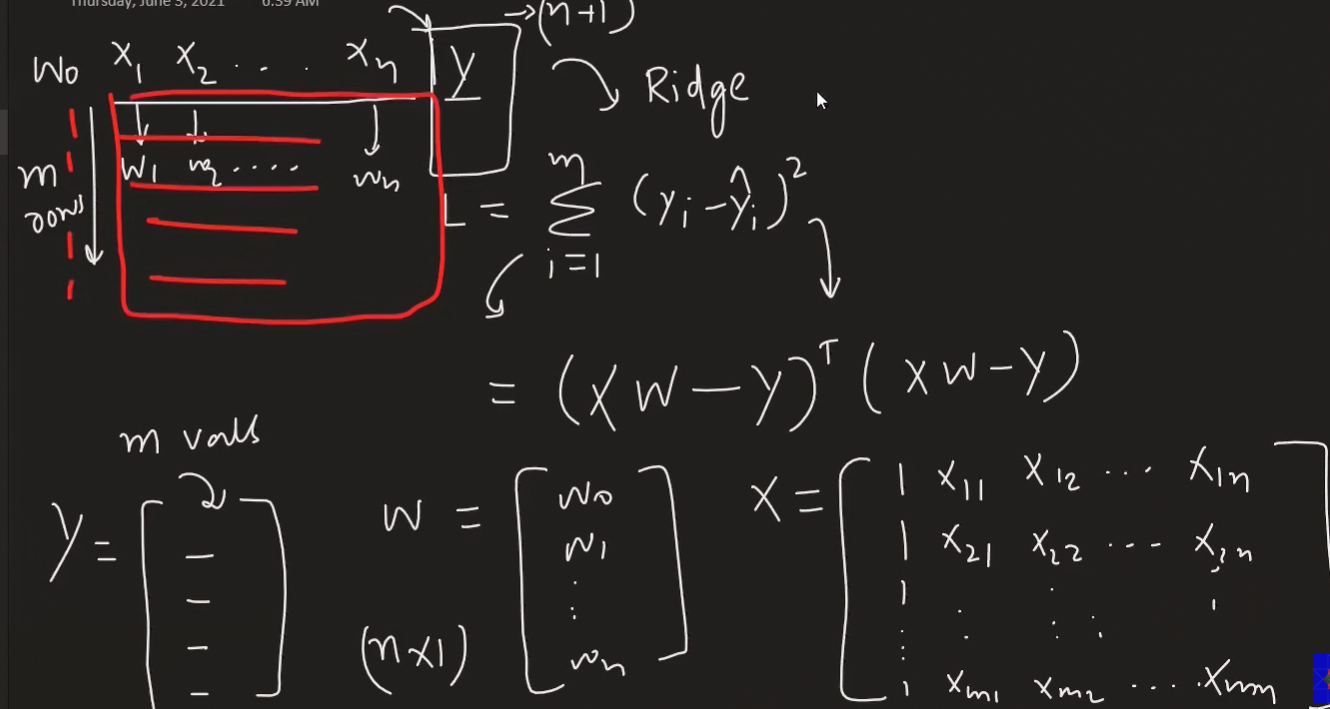






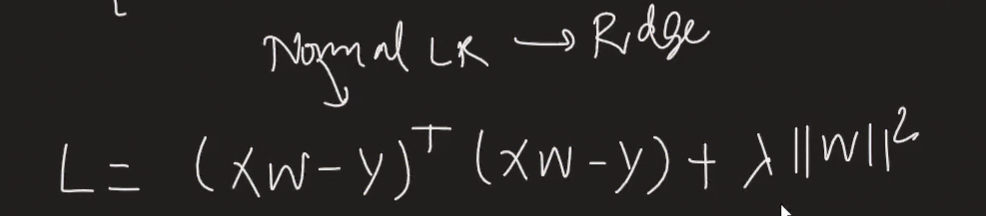
Here m is inversely proportional to lambda.

Ridge Regularization for nD data



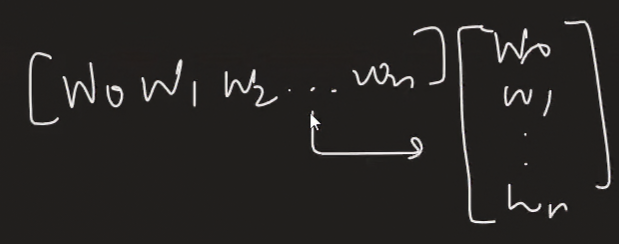
This is the formula et \* e

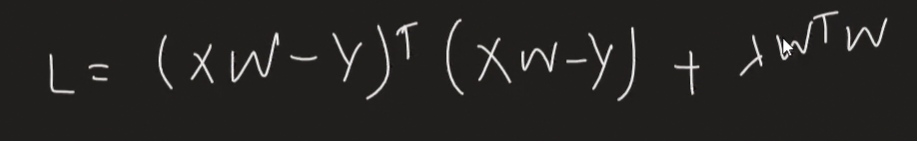
Adding Ridge regression hyperparameter to it

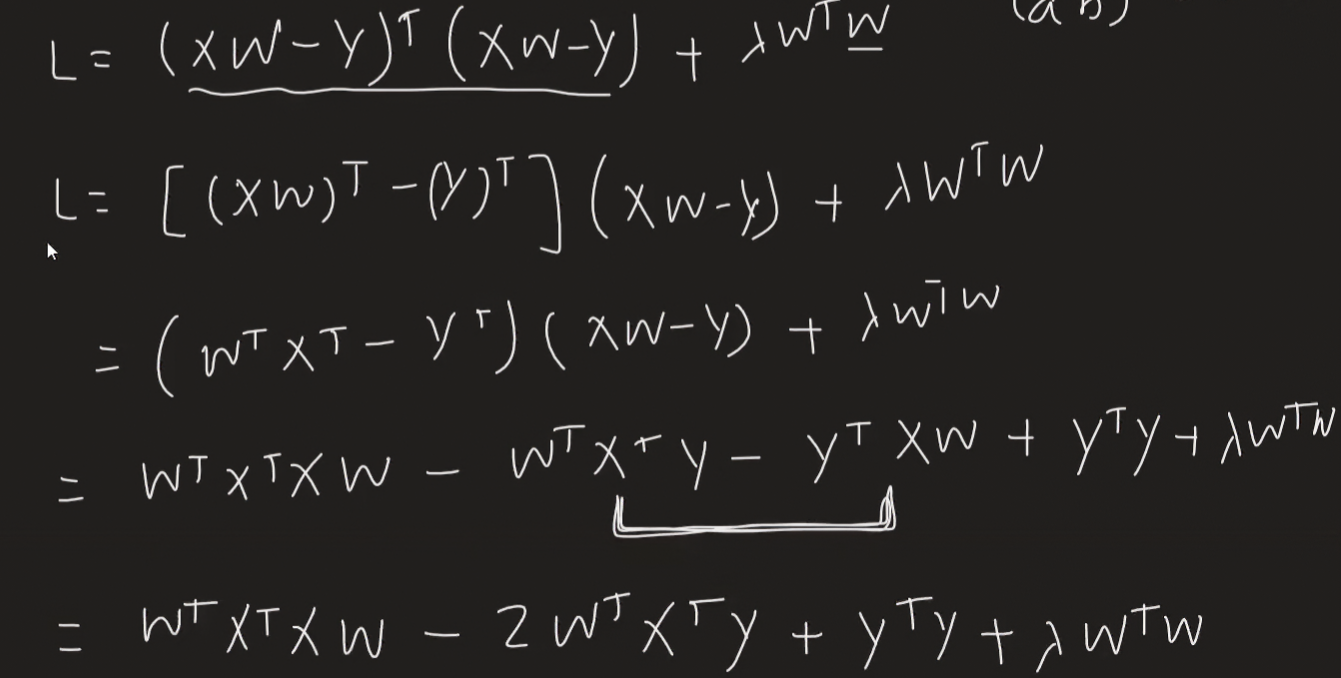


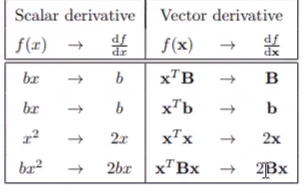
Matrix of w2 can be written as = wt \* w

As it represent the below figure



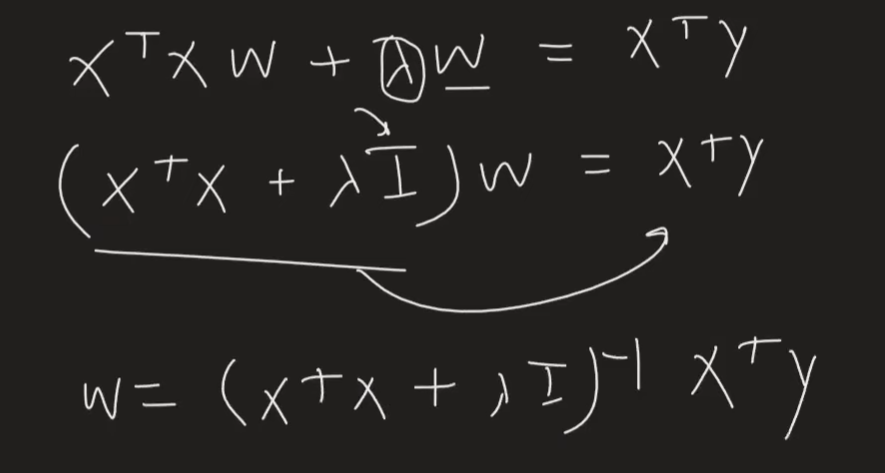






These are some formulae for vector differentiation on upcoming proof





Ridge Regularization using GD:

