

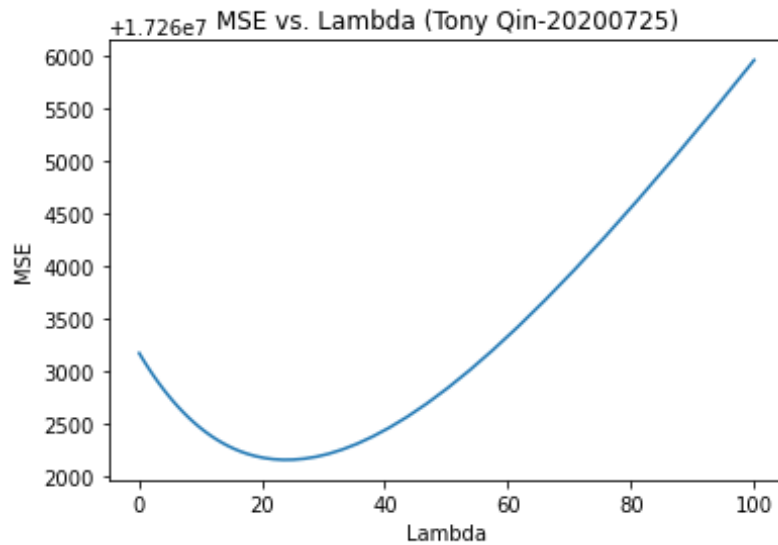
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Problem2: Regularized Regression_ writeup

Find Best Lambda:



Based on the range of Lambda values tested, the best lambda value is 23.442288153199225, which yields an MSE of 17262155.074013334 as shown on the plot above.

Equation of best fitted model:

$$\hat{y}(x) = 5083.64x_1 - 196.96x_2 - 207.08x_3 - 1271.27x_4 + 205.96x_5 - 89.16x_6 + 501.19x_7 + 74.59x_8 - 458.16x_9$$

The predicted price for a 0.25 carat, 3 cut, 3 color, 5 clarity, 60 depth, 55 table, 4 x, 3 y 2 z diamond is -25226.39671, which was determined by the lambda of linear ridge regression to get minimal MSE.