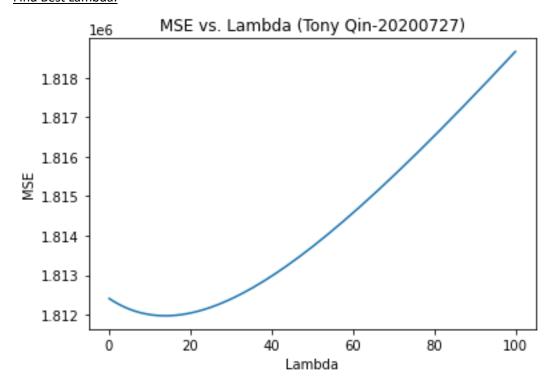Tony Qin

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Problem2: Regularized Regression_ writeup

<u>Find Best Lambda:</u>

Based on the range of Lambda values tested, the best lambda value is 13.489628825916533, which yields an MSE of 1811976.5702684515 as shown on the plot above.

<u>Equation of best fitted model:</u>

$\hat{y}(x)$ = 5115.651$x1$ - 201.498$x2$ − 207.155$x3$ -1338.290$x4$ + 219.186$x5$ - 66.364$x6$ + 500.910$x7$+74.306$x8$ − -459.072$x9$ + 3928.077

The predicted price for a 0.25 carrot, 3 cut, 3 color, 5 clarity, 60 depth, 55 table, 4 x, 3 y 2 z diamond is 437.28, which was determined lambda of linear ridge regression to get minimal MSE.

(Normalize predicted input value for x1~x9 = [-1.15372087 -1.22213684 -1.1017549 -1.54042767 -2.43581425 -2.21169544 0.67493254 0.43644429 0.23566017])