CSE 5526 HW2 Report

In this lab, I first fit the function with dynamic variance, i.e. the variance of each cluster for the variance of each basis function. There are in total 10 fittings, and in order to save space, I will list two figures for reference. I will also list two figures with same variance for reference on the right side.

Chart, line chart, histogram

Description automatically generated Chart, line chart

Description automatically generated

You could go to the notebook for all the figures.

As you can see, the fixed variance fit the model more smoothly.

Then I will list the sse for each case:

Text

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The data on the left side is for dynamic variance and those on the right are for fixed variance

Generally speaking, as we increase the number of cluster, the sse goes down, but this may result in overfitting. As we increase the learning rate, the model converges more quickly.