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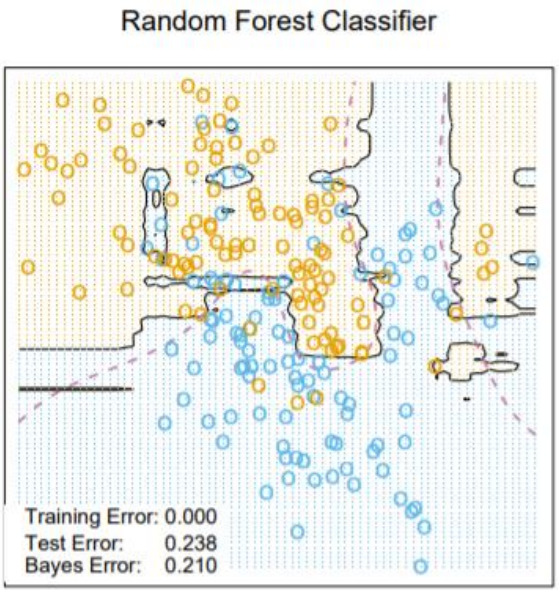
EE/CS599

Project week 1

Possible figures for recreation

1-

Figure:



Citation: Hastie, et al. Elements of Statistical Learning, Figure 15.11

Inputs and outputs: random forest on mixture data. The average process assigns weights which vote for the prediction.

Data Sources:

I would like to recreate the random forest classifier because classifiers are less sensitive to variance, allowing them to be more accurate on the predictions. Random forest classifiers have various applications, one that personally interest me is in the evaluations of species or groups (ie political affiliation, or survival data in the wild for animals). For this data set I plan to retrieve it from https://web.stanford.edu/~hastie/ElemStatLearn/

2-

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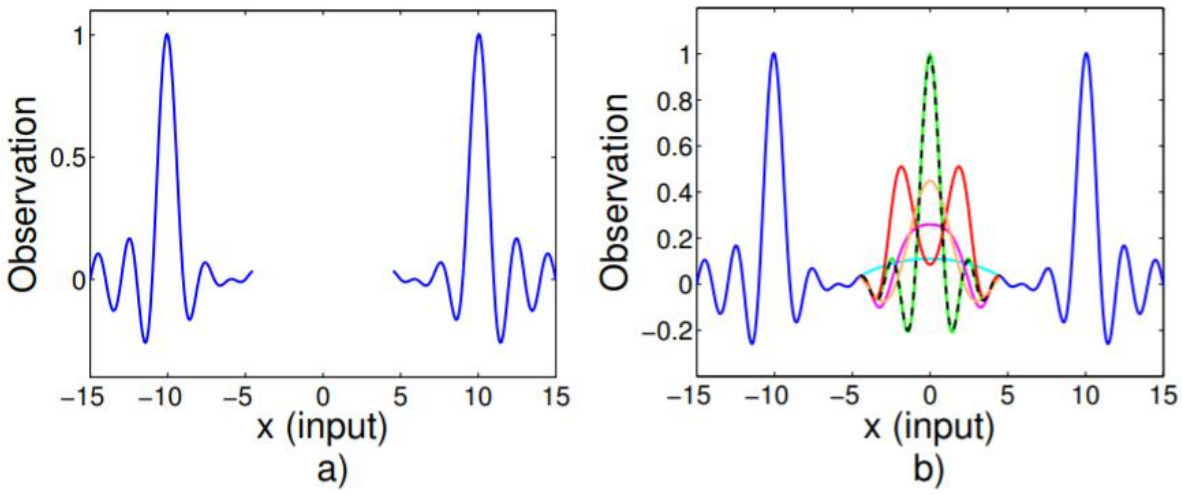

Citation: Wilson, Andrew Gordon; Adams, Ryan Prescott. *Gaussian Process Kernels for Pattern Discovery and Extrapolation*. arXiv:1302.4245v3 [stat.ML] 31 Dec 2013. *Figure 4*

Inputs and outputs:

The first input will be the a complex sinc function (y(x) = sinc(x + 10) + sinc(x) + sinc(x − 10)). Then assign the gaussian method with sm kernels, Matern, squared quadratic, rational quadratic, and periodic kernels to solve for the gap. Then comparing the different results with the actual results and see which is closest to the original

Data Sources:

The figure will be simulated by creating y(x) = sinc(x + 10) + sinc(x) + sinc(x − 10). Then by filling in the gap with various current machine learning methods. Going to be set on the xy plane for a sinc function. The benefits of this sort of process is for better predictions with the gaussian method that can be applied to real life assessments.