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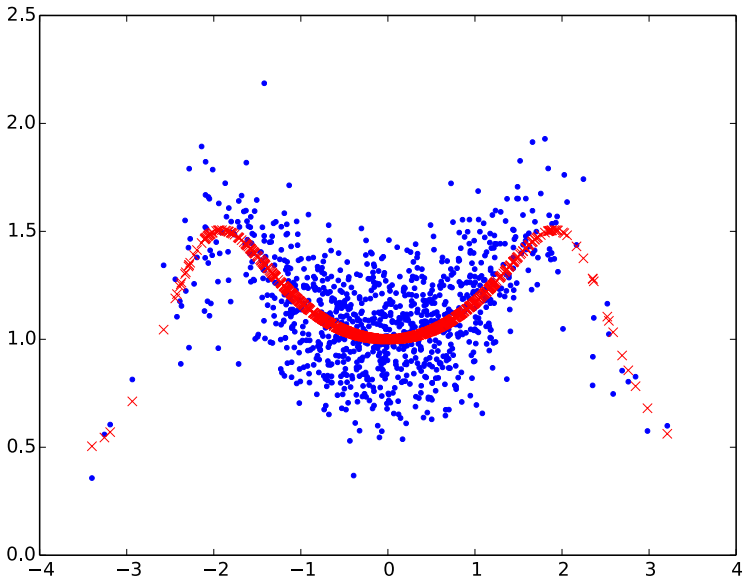
Homework 04
Artificial Intelligence
1 November 2016

Problem Set

1)

a) For part a, I simply changed the part of the provided code from (x, y, ytrue = genDataSet (100)) -> (x, y, ytrue = genDataSet (1000)). Running that python code produced the graph to the right.



b) Using 10-fold CV, I found the three best values of k-neighbors that yield the best E_{out} to be [0.33037785041340262, 0.22163234331278633, 0.2216149760376227], which was located at indices 1, 255, and 253, respectively. However, the results change accordingly to the dataset provided.

c) The best value for CV E_{out} is 0.33037785041340262. Again, this value is subject to change according to the dataset.