HW4

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September 21, 2020

Abstract

This document contains my attempt at the homework 4 problems of the course Learning From Data (**CS156**) as taught by *Yaser Abu-Mostafa, Caltech.*

- **Generalization Error**

    1.[d], Using the VC-Bound Inequality the answer can be obtained

    2.[d], Devryoe's bound is the tighest, by graphing the functions it can be checked

    3.[c], Parrondo and Van den Broek's bound is the tighest, by graphing the functions it can be checked

- **Bits and Variance**

    4.[e], $\overline{g(x)}$=2.50x, simulation done t9hrough python

    5.[b], Variance is defined as $(\overline{g(x)}\text{-}f(x))^2$, wherein $f(x)$ is the target function, since the derivative of $sin(\pi x)$is approximately 3 and hence the sqaure of the difference comes out to be close to 0.3

    6.[c], Parrondo and Van den Broek's bound is the tighest, by graphing the functions it can be checked