Advanced Machine Learning: Homework Problem Set III

Guidelines: You have to submit hardcopy of the solutions (printed or hand-written) by March 26, 2019 beginning of lecture class. Write your name and roll number clearly on top of the solution. Be clear and precise in your solution.

Problem 1:

Describe the Adaboost learning algorithm.

Problem 2:

Let S be a training set and assume that at each iteration of the Adaboost algorithm, the weak learner returns a hypothesis having error at most $1/2 - \gamma$. Then the training error of the output hypothesis of Adaboost after T iterations is at most -

$$L_S(h_S) \leq \exp\left(-2\gamma^2 T\right)$$

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