

Advanced Machine Learning: Homework Problem Set IV

Guidelines: You have to submit hardcopy of the solutions (printed or hand-written) by April 10, 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 Standard Optimal learning algorithm. Show that the algorithm enjoys a mistake bound $M_{SOA}(\mathcal{H}) \leq \text{LDim}(\mathcal{H})$.

Problem 2:

Find a hypothesis class \mathcal{H} and a sequence of examples on which the number of mistake of the Halving/Majority online learning algorithm equals $\log_2(|\mathcal{H}|)$.