CS 6501 - Learning Theory: Homework 2

Spring 2019

Due: Friday, February 8, 2019

Exercise 1. (10 points) Exercise 2.2 (page 48) from Tom Mitchell’s book. (Note that there are two questions in this exercise.)

Exercise 2. (10 points) Exercise 2.3 (page 48) from Tom Mitchell’s book.


Exercise 4. (10 points) Let $\mathcal{H}$ be the hypothesis class in which we can find conjunctions of up to $n$ Boolean variables. Let the target concept $c$ be also a conjunction of up to $n$ Boolean variables; that is, $c \in \mathcal{H}$. Provide a sequence of examples $E$ such that the size $|E|$ of $E$ is upper bounded by some polynomial in $n$ but the size $|G|$ of the $G$ set that is maintained by the CANDIDATE-ELIMINATION algorithm grows exponentially in $n$. 