

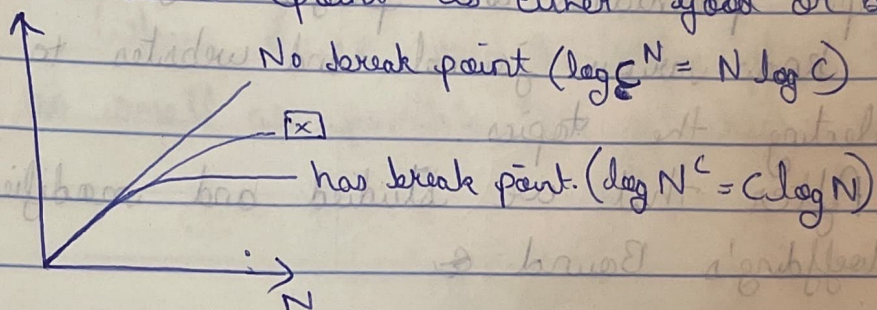
Lecture - 6 - KnXpXa

Token:-

KnXpXa

Summary:-

In the sixth lecture we revisited Hoeffding's Inequality after that we tried to find the upper bound of a bad event using the union bound. We later evaluated the hypothesis based on break point as either good or bad



The one with No break point will grow exponentially.

The one with break point will grow polynomially.

Then we revisited Feasibility of Learning where we defined 2 steps as Generalization and Approximation.

The VC Dimension is denoted by $d_{VC}(H)$ for a hypothesis set H . It is the largest value of N , for which $m_H(N) = 2^N$.

For polynomials Then after the derivation we updated the eqⁿ to:

$$E_{out}(g) \leq E_{in} + \sqrt{\frac{1}{N} \log \frac{m_H(2N)}{\delta}}$$

$$m_H(N) = N^{d_{VC}}$$

$$E_{\text{out}}(g) \leq E_{\text{in}} + O\left(\sqrt{\frac{d_{\text{vc}} \log N}{N}}\right)$$

Then we solved some sample complexity.