Report

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Lecture -2

Report :-

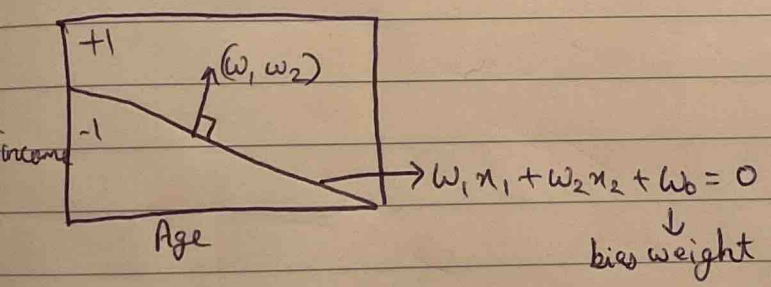
A brief recap about learning algorithm.

$$h(x) = \text{sign}\left(\left(\sum_{i=1}^{d} w_i x_i\right) - \text{threshold}\right)$$

if sign → +ve (approval)
sign → -ve (rejection)

* decision problem is selecting a g from a set of Hypothesis (H)

$$h(x) = \text{sign}(w^T x) \quad \text{(dot product)}$$



* Perceptron learning algorithm :- iterating all the possible hypothesis to classify points clearly by changing weights.

We change the weights accordingly. If we need +ve value then the angle should be $< 90°$
If we need -ve value then the angle should be $> 90°$
If we need 0 (linear seperator) then the angle should be $= 90°$

$$P[|\nu - \mu| > \varepsilon] \leq 2e^{-2\varepsilon^2 N}, \text{ for any } \varepsilon > 0$$

Hoeffding/chernoff proved that ν tends to be close to μ, most of the time.