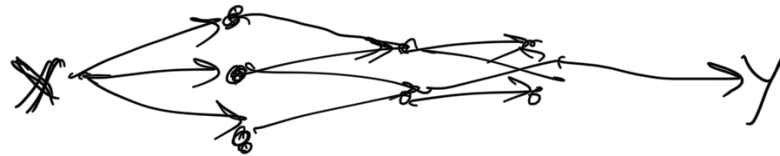


$$y = f(x)$$

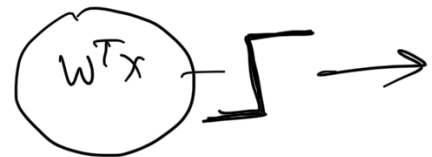
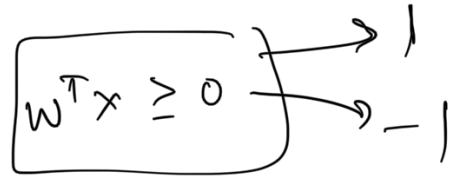
Neural Networks.



$$\underline{\underline{W^T x}}$$

Thresholded
perception

$$\begin{aligned} &w_1 x_1 \\ &+ w_2 x_2 \\ &+ w_3 x_3 \\ &+ w_4 x_4 \\ &+ w_5 x_5 \end{aligned}$$

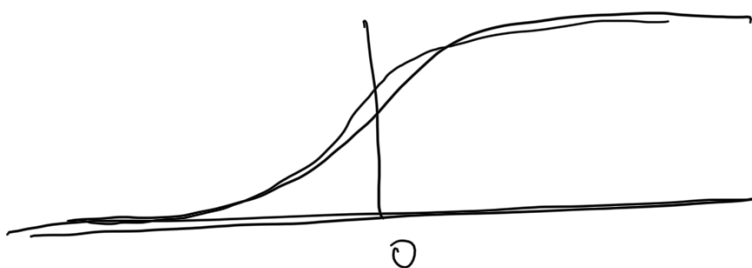


Unit

Layer

Sigmoid unit

$$\sigma(z) = \frac{1}{1 + \exp(-z)}$$



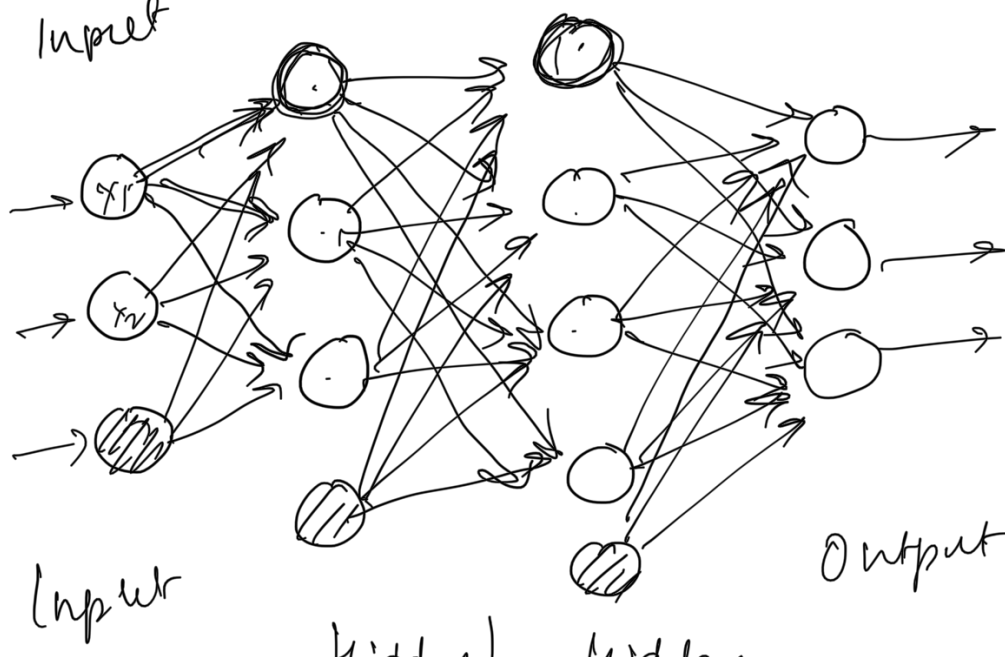
March 12 Friday

- PA2 is out

- Mid-term next Friday

$D=2$

Input



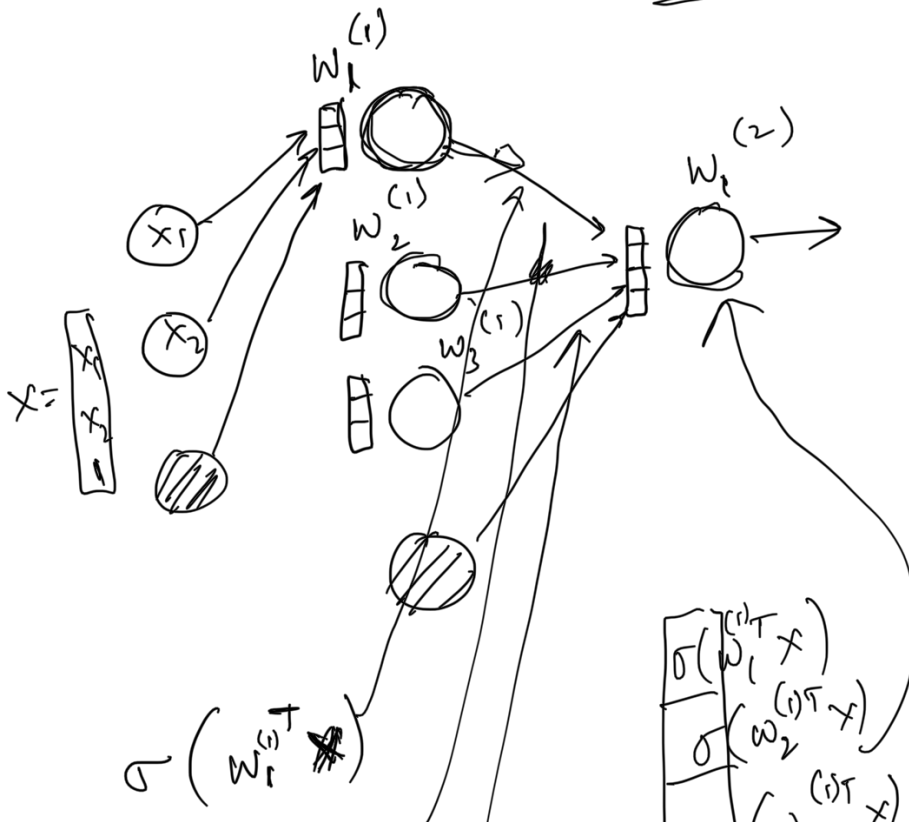
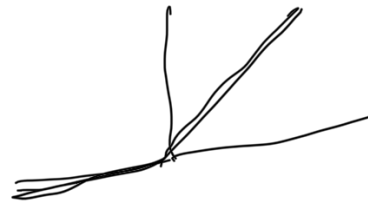
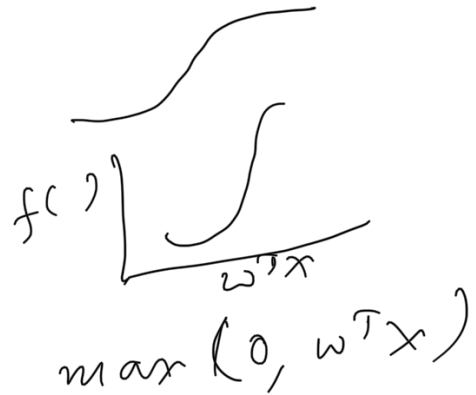
hidden hidden

of units in a layer \equiv width of a layer

Sigmoid

tanh

Relu

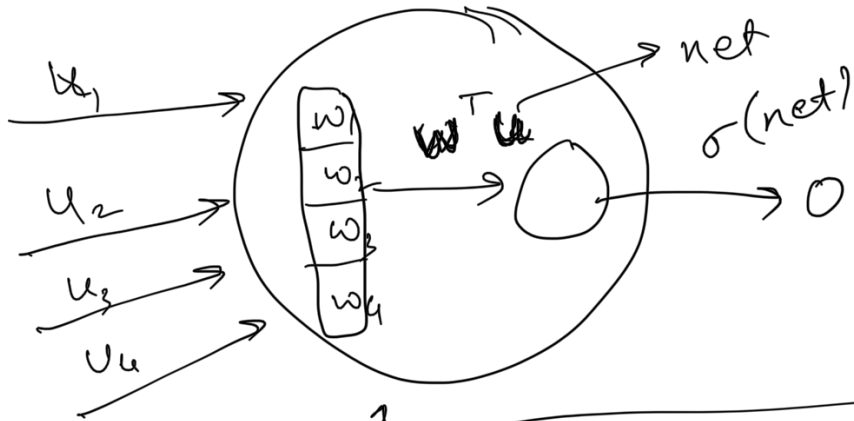


$$\sigma(w_2^{(1)T} x)$$

$$\sigma(w_3^{(1)T} x)$$

$$\sigma(w_3)$$

$$1$$



unit, node, neuron