

Exercise lecture 7 = NOT Perceptron

implementing NOT boolean function as NN perceptron = we know that NOT has only one input, contrary to "AND" and "OR" which have two inputs ( $x_1$  and  $x_2$ ). Note over as  $net_i = \sum_{i=0}^n w_i x_i = ?$  ( $n=1$ )

$w_0 x_0 + w_1 x_1 = w_0 + w_1 x_1$ ,  $x_1 \in \{0, 1\}$ , if  $w_1 = -1$  and  $w_0 = +0.5 \Rightarrow$

$x_1 = 1 \Rightarrow 0.5 + (-1)(1) = -0.5 < 0 \Rightarrow \text{output} = 0 \Rightarrow \text{Not}(1) = \bar{x}_1 = 0$

$x_1 = 0 \Rightarrow 0.5 + (-1)(0) = +0.5 > 0 \Rightarrow \text{output} = 1 \Rightarrow \text{Not}(0) = \bar{x}_1 = 1$

So we can consider the weights of each parameter equal to -1 and  $w_0 = b = 0.5$

