

# PERCEPTRON $(x_1 \text{ AND } \neg x_2)$

| $x_1$ | $x_2$ | $x_1$ | $\text{AND } \neg x_2$ |
|-------|-------|-------|------------------------|
| 0     | 0     | 0     | 0                      |
| 0     | 1     | 0     | 0                      |
| 1     | 0     | 1     | 1                      |
| 1     | 1     | 1     | 0                      |

$$w_0 = 0$$

dla  $x_1=1, x_2=0$  wynik = 1

$$w_0 + 1 \cdot w_1 + 0 \cdot w_2 = 1$$

$$w_0 + w_1 = 1$$

$$0 + w_1 = 1 \quad | \quad w_1 = 1$$

dla  $x_1=0, x_2=1$

$$w_0 + 0 \cdot 1 + 1 \cdot w_2 \leq 0$$

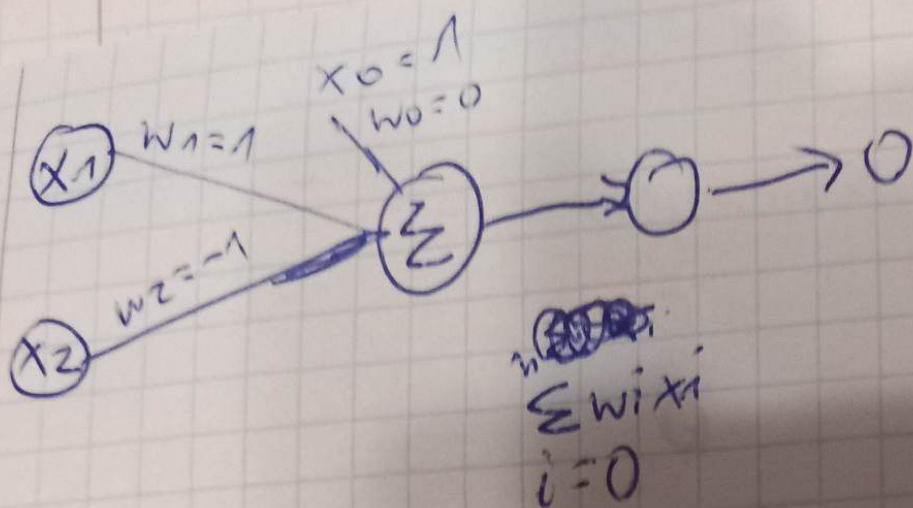
$$0 + 0 + w_2 \leq 0$$

$$w_2 = -1$$

| $x_1 w_1$       | $x_2 w_2$           | $w_0 + x_1 w_1 + x_2 w_2$ |   |
|-----------------|---------------------|---------------------------|---|
| $0 \cdot 1 = 0$ | $0 \cdot (-1) = 0$  | $0 + 0 + 0 = 0$           | 0 |
| $0 \cdot 1 = 0$ | $1 \cdot (-1) = -1$ | $0 + 0 - 1 = -1$          | 0 |
| $1 \cdot 1 = 1$ | $0 \cdot (-1) = 0$  | $0 + 1 + 0 = 1$           | 1 |
| $1 \cdot 1 = 1$ | $1 \cdot (-1) = -1$ | $0 + 1 - 1 = 0$           | 0 |

$$w_0 + w_1 x_1 + w_2 x_2 > 0$$

$$w_0 = 0 \quad w_1 = 1 \quad w_2 = -1$$



$$y = \begin{cases} 0 & \text{if } \sum_{i=0}^n w_i x_i \leq 0 \\ 1 & \text{otherwise} \end{cases}$$