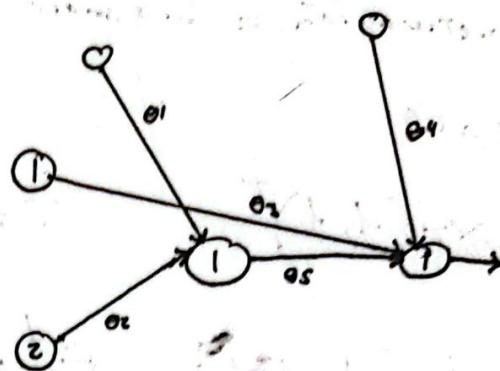


2022-01-24 - Práctica 2

f. act capa salida \rightarrow lineal
 f. act capa oculta \rightarrow sigmoid
 pesos iniciales $\forall \theta = 1.0$
 $x^t = (0, 1)$ $t = 1$

$p = 1.0$



Cálculo hacia delante

$$\Theta_1' = [1, 1] \quad \Theta_2' = [1, 1]$$

$$\phi_1' = \Theta_1'^t x = 1 \cdot 1 + 1 \cdot 1 = 2 \quad S_1' = \frac{1}{1 + e^{-2}} = 0.88$$

$$\phi_2' = \Theta_2'^t S_1' = 1 \cdot 1 + 0 \cdot 1 + 1 \cdot 0.88 = 1.88 \quad S_2' = 1.88$$

Cálculo del error

$$\delta_2' = (t - S_2') \cdot 1 = -0.88$$

$$\delta_1' = (\delta_2' \cdot \Theta_{2,1}') \cdot S_1'(1 - S_1') = (-0.88 \cdot 1) \cdot 0.88(1 - 0.88) = -0.0929$$

Actualización pesos

$$\Theta_4 = \Theta_4 + p \delta_2' S_1' \Theta_{1,1}' = 1 + 1 \cdot -0.88 \cdot 1 = 0.12$$

$$\Theta_5 = \Theta_5 + p \delta_2' S_1' = 1 + 1 \cdot -0.88 \cdot 0.88 = 0.2256$$

$$\Theta_3 = \Theta_3 + p \delta_1' x_1 = 1 + 1 \cdot -0.0929 \cdot 0 = 1$$

$$\Theta_2 = \Theta_2 + p \delta_1' x_2 = 1 + 1 \cdot -0.0929 \cdot 1 = 0.9071$$

$$\Theta_1 = \Theta_1 + p \delta_1' \Theta_{1,1}' = 1 + 1 \cdot -0.0929 \cdot 1 = 0.9071$$