

# 4 ADALINE

19  $\alpha = 0.5$  pesos inicializados a cero

$x_1$	$x_2$	$x_3$	$x_4$	$1$	$t$	$y_{in}$	$\Delta w_1$	$\Delta w_2$	$\Delta w_3$	$\Delta w_4$	$\Delta b$	$w_1$	$w_2$	$w_3$	$w_4$	$b$
1	1	1	1	1	1	0	$1/2$	$1/2$	$1/2$	$1/2$	$1/2$	$1/2$	$1/2$	$1/2$	$1/2$	$1/2$
-1	1	-1	-1	1	1	$-1/2$	$-3/4$	$3/4$	$-3/4$	$-3/4$	$3/4$	$-1/4$	$5/4$	$-1/4$	$-1/4$	$5/4$
1	1	1	-1	1	-1	$9/4$	$-13/8$	$-13/8$	$-13/8$	$13/8$	$-13/8$	$-15/8$	$-3/8$	$-15/8$	$11/8$	$-3/8$
1	-1	-1	1	1	-1	$11/8$	$-19/16$	$19/16$	$19/16$	$-19/16$	$-19/16$	$-49/16$	$65/8$	$-11/16$	$3/16$	$-25/16$
1	1	1	1	1	1	$-4.31$	$2.66$	$2.66$	$2.66$	$2.66$	$2.66$	$-0.41$	$3.47$	$1.96$	$2.84$	$1.69$
-1	1	-1	-1	1	1	$0.16$	$-0.42$	$0.42$	$-0.42$	$-0.42$	$0.42$	$-0.83$	$3.89$	$1.54$	$2.42$	$1.51$
1	1	1	-1	1	-1	$3.70$	$-2.35$	$-2.35$	$-2.35$	$2.35$	$-2.35$	$-3.18$	$1.54$	$-0.80$	$4.77$	$-0.19$
1	-1	-1	1	1	-1	$0.02$	$-0.51$	$0.51$	$0.51$	$-0.51$	$-0.51$	$-3.69$	$2.05$	$-0.29$	$4.26$	$-1.35$

Frontera después de dos épocas:

$$-3.69x_1 + 2.05x_2 - 0.29x_3 + 4.26x_4 - 1.35 = 0$$

$$(1, 1, 1, 1) \Rightarrow y_{in} = 0.98 \Rightarrow y = 1 = t \quad \checkmark$$

$$(-1, 1, -1, -1) \Rightarrow y_{in} = 1.77 \Rightarrow y = 1 = t \quad \checkmark$$

$$(1, 1, 1, -1) \Rightarrow y_{in} = -6.19 \Rightarrow y = -1 = t \quad \checkmark$$

$$(1, -1, -1, 1) \Rightarrow y_{in} = -1.17 \Rightarrow y = -1 = t \quad \checkmark$$

↓  
los pesos parecen no converger a unos pesos en concreto, pero la regla de aprendizaje clasifica bien todos los ejemplos