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$[1\ 1\ 1\ -1\ 1\ -1] = p_1$

$[1\ 1\ -1\ 1\ -1\ 1] = p_2$

$A_1 = [1\ 1\ -1\ -1\ -1\ -1]$

$A_2 = [1\ -1\ 1\ -1\ 1\ -1]$

$A_3 = [1\ 1\ -1\ 1\ -1\ -1]$

$x > 1 = 1$

$x < 0 = -1$

$x(0,1) =$ mismo valor

$N = 6$

$N_p = 2$

$$W = \begin{bmatrix} \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & -\frac{1}{2} & \frac{1}{2} & -\frac{1}{2} \\ \frac{1}{2} & \frac{1}{2} & -\frac{1}{2} & \frac{1}{2} & -\frac{1}{2} & \frac{1}{2} \end{bmatrix}$$

• bias $\frac{N}{2} = \frac{6}{2} = \begin{bmatrix} 6/2 \\ 6/2 \end{bmatrix}$

• U(0) Estado inicial

$A_1 = [1\ 1\ -1\ -1\ -1\ -1]$

$$\frac{1}{N} = \frac{1}{6}\left(\begin{bmatrix} 1/2 & 1/2 & 1/2 & -1/2 & \frac{1}{2} & -1/2 \\ 1/2 & 1/2 & -1/2 & 1/2 & -1/2 & 1/2 \end{bmatrix} \cdot \begin{bmatrix} 1 \\ 1 \\ -1 \\ -1 \\ -1 \\ -1 \end{bmatrix} + \begin{bmatrix} 6/2 \\ 6/2 \end{bmatrix}\right)$$

$$\frac{1}{6} \cdot \begin{bmatrix} 1 \\ 1 \end{bmatrix} + \begin{bmatrix} 6/2 \\ 6/2 \end{bmatrix} = \frac{1}{6} \cdot \begin{bmatrix} 4 \\ 4 \end{bmatrix} = \begin{bmatrix} 0.66 \\ 0.66 \end{bmatrix}$$

U0) = ft(0.66, 0.66)

u(0) = [0.66, 0.66]

→ Salida segunda capa.

$\varepsilon = \frac{1}{N-1} = \frac{1}{6-1} = \frac{1}{5}$

u(0) = [0.66, 0.66]

$U_1(1) = (0.66 - 1/5(0.66) = ft(0.528) = 0.528$

$U_2(1) = (0.66 - 1/5(0.66) = ft(0.528) = 0.528$

(0.528, 0.528) → Sigue iterando

-[0.528, 0.528]

$U_1(2) = (0.528 - 1/5(0.528) = ft(0.4224) = 0.4224$

$U_2(2) = (0.528 - 1/5(0.528) = ft(0.4224) = 0.4224$

-[0.4224, 0.4224.] → Hay 2 salidas ∴ Sigue iterando

$U_1(3) = (0.4224 - 1/5(0.4224) = ft(0.33) = 0.33$

$U_2(3) = (0.4224 - 1/5(0.4224) = ft(0.33) = 0.33$

[0.33, 0.33] → Itera

$U(4) = (0.33 - 1/5(0.33) = ft(0.26) = 0.26$

$U(4) = (0.33 - 1/5(0.33) = ft(0.26) = 0.26$

[0.26, 0.26] → Itera

$U(5) = (0.26 - 1/5(0.26) = 0.20$

$U(5) = (0.26 - 1/5(0.26) = 0.20$

[0.20, 0.20] → Itera

$U(6) = ft(0.20 - 1/5(0.20) = 0.16$

$U(6) = ft(0.20 - 1/5(0.20) = 0.16$

[0.16, 0.16] → Itera.

$U(7) = ft(0.16 - 1/5(0.16) = 0.12$

$U(7) = ft(0.16 - 1/5(0.16) = 0.12$

[0.12, 0.12] → Itera

$U_1(8) = ft(0.12 - 1/5(0.12) = 0$

$U_2(8) = ft(0.12 - 1/5(0.12) = 0$

∴ 2 Salidas con cero puede asociar con cualquier patron

• Estado INICIAL.

$A_2\ [1\ -1\ 1\ -1\ 1\ -1]$

$$\frac{1}{6}\begin{bmatrix} 1/2 & 1/2 & 1/2 & -1/2 & 1/2 & -1/2 \\ 1/2 & 1/2 & -1/2 & 1/2 & -1/2 & 1/2 \end{bmatrix} \cdot \begin{bmatrix} 1 \\ -1 \\ 1 \\ -1 \\ 1 \\ -1 \end{bmatrix} + \begin{bmatrix} \frac{6}{2} \\ \frac{6}{2} \end{bmatrix}$$

$$= \frac{1}{6} \cdot \begin{bmatrix} 2 \\ -2 \end{bmatrix} + \begin{bmatrix} \frac{6}{2} \\ \frac{6}{2} \end{bmatrix} = \frac{1}{6}\begin{bmatrix} 5 \\ 1 \end{bmatrix} = \begin{bmatrix} 0.83 \\ 0.16 \end{bmatrix}$$

U(0) = ft(0.83, 0.16)

U0 = [0.83, 0.16]

$U_1(1) = ft(0.83 - 1/5(0.16) = 0.79$

$U_2(1) = ft(0.16 - 1/5(0.83) = 0$

[0.79, 0] ∴ Se tiene una salida y A2 asocia con P1.

• Estado inicial

$A_3 = [1\ 1\ -1\ 1\ -1\ -1]$

$$\frac{1}{6}\begin{bmatrix} 1/2 & 1/2 & 1/2 & -1/2 & 1/2 & -1/2 \\ 1/2 & 1/2 & -1/2 & 1/2 & -1/2 & 1/2 \end{bmatrix} \cdot \begin{bmatrix} 1 \\ 1 \\ -1 \\ -1 \\ -1 \\ -1 \end{bmatrix} \cdot \begin{bmatrix} \frac{6}{2} \\ \frac{6}{2} \end{bmatrix}$$

$$= \frac{1}{6}\begin{bmatrix} 0 \\ 2 \end{bmatrix} + \begin{bmatrix} 6/2 \\ 6/2 \end{bmatrix} = \frac{1}{6}\begin{bmatrix} 3 \\ 5 \end{bmatrix} = \begin{bmatrix} 0.5 \\ 0.83 \end{bmatrix}$$

U0 = ft(0.5, 0.83) ; U0 [0.5, 0.83]

$U_1(1) = ft(0.5 - 1/5(0.83) = 0.334$

$U_2(1) = ft(0.83 - 1/5(0.5) = 0.33$ → Itera.

$U_1(2) = ft(0.334 - 1/5(0.33) = 0.188$

$U_2(2) = ft(0.33 - 1/5(0.334) = 0.66$ → Itera

$U_1(3) = ft(0.188 - 1/5(0.66) = 0.05$

$U_2(3) = ft(0.66 - 1/5(0.188) = 0.62$ → Itera.

$U_1(4) = ft(0.05 - 1/5(0.62) = 0$

$U_2(4) = ft(0.62 - 1/5(0.05) = 0.61$

[0, 61] ∴ Se tiene 1 salida y converge.

A3 asocia con P2