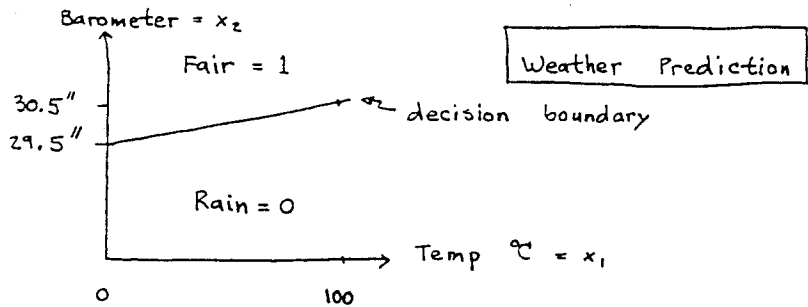


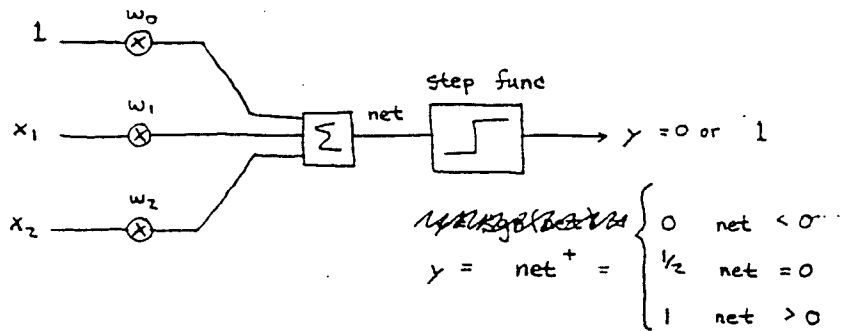
23 Mar 1990
Neil E Cotton

Perceptron -

Pattern Recognition by Neural Network ~~in Prototypal Problems~~



Perceptron weather predictor:



$$(w_1, w_2) = \frac{1}{k} (-1, 100) \perp \text{decision boundary}$$

On decision boundary $1 \cdot w_0 + x_1 w_1 + x_2 w_2 = 0$

Use $(x_1, x_2) = (0, 29.5)$ is on decision boundary.

$$1 \cdot w_0 + 0 \cdot w_1 + 29.5 \cdot w_2 = w_0 + \frac{29.5}{k} 100 = 0$$

Let $k = 29.5, w_0 = -100$

Summary: $w_0 = -100$

$$w_1 = \frac{-1}{29.5}$$

$$w_2 = \frac{100}{29.5}$$