FIGURES OF CHAPTER 4

FUNDAMENTALS OF NEURAL NETWORKS

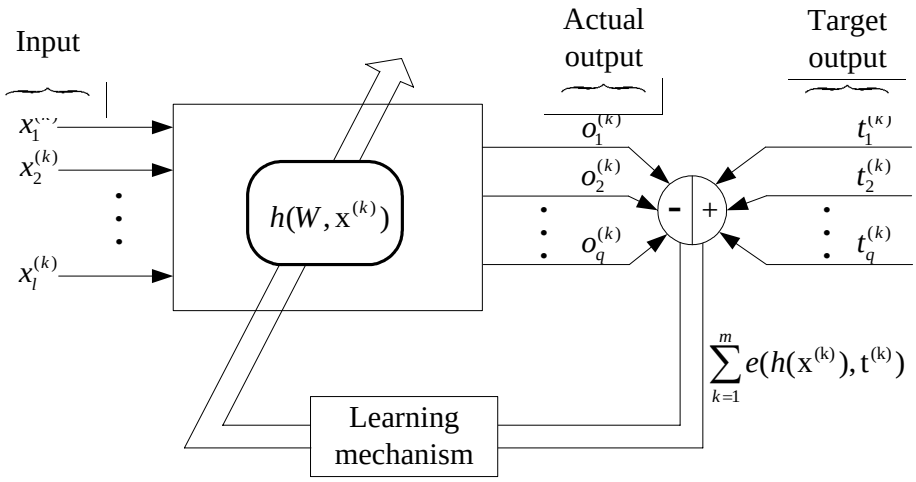

Figure 4.1. Schematic representation of a supervised ANN

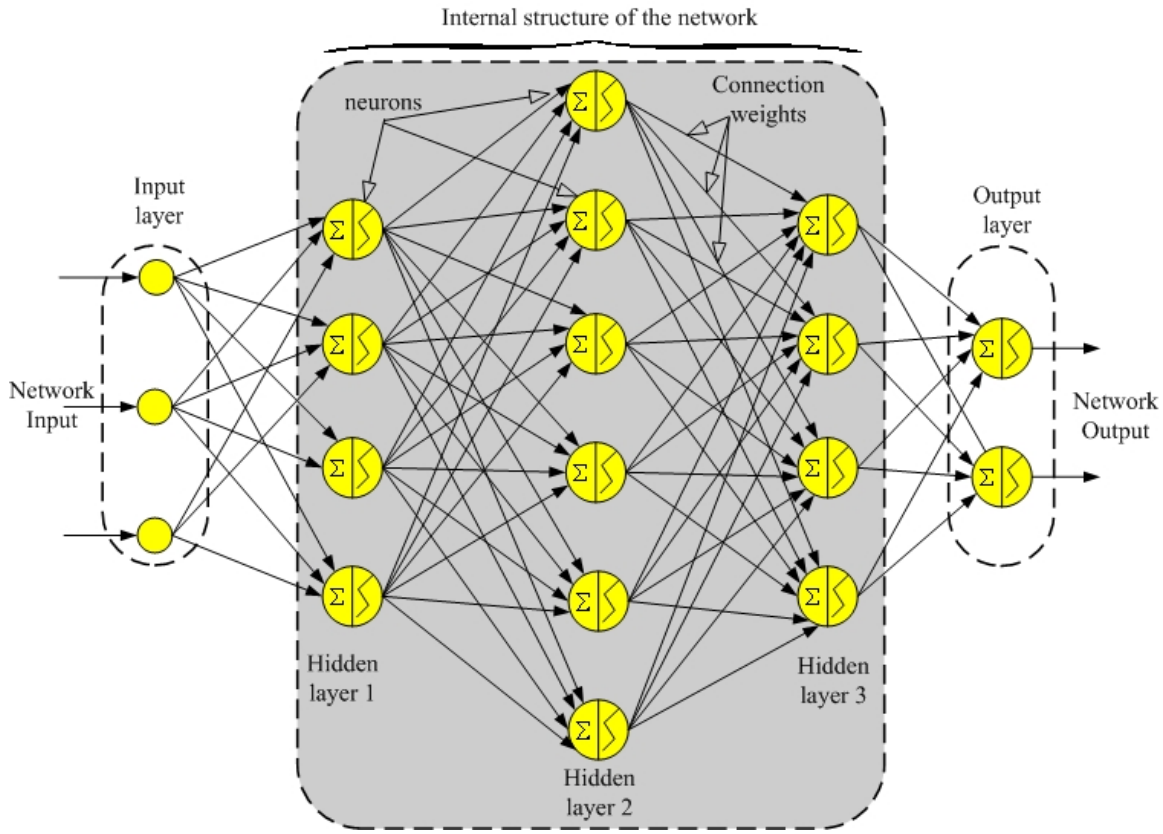

Figure 4.2. Typical representation of a feedforward (unidirectional) artificial neural network with three inputs and two outputs

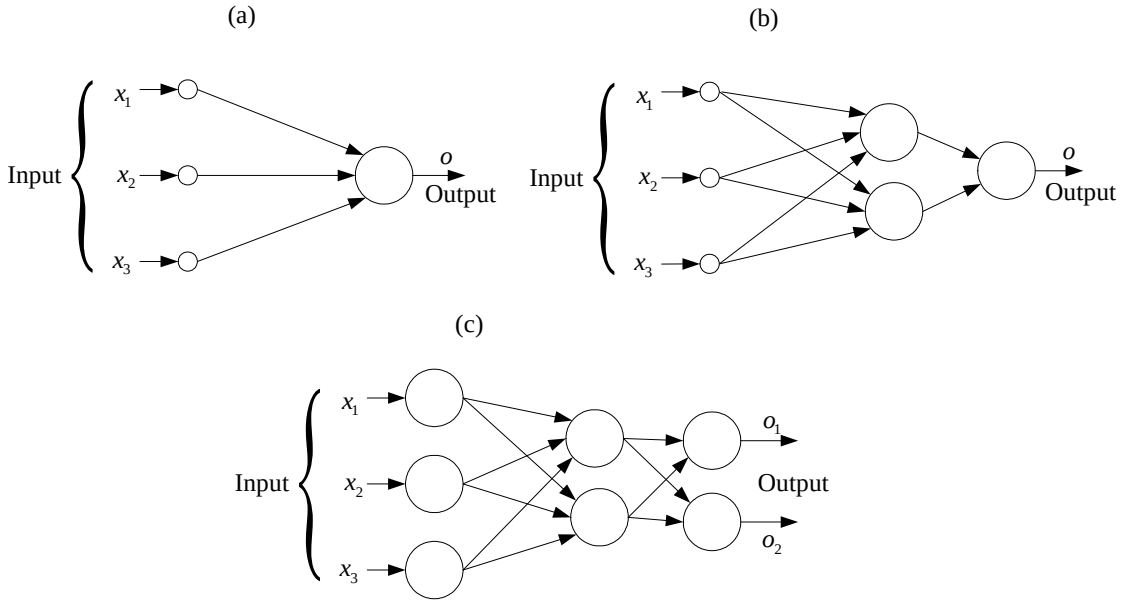

Figure 4.3: A typical structure of neural networks with feedforward topology, (a) multi-input, single output, no hidden layer, (b) multi-input, single output, one hidden layer, (c) multi-input, multi-output, one hidden layer

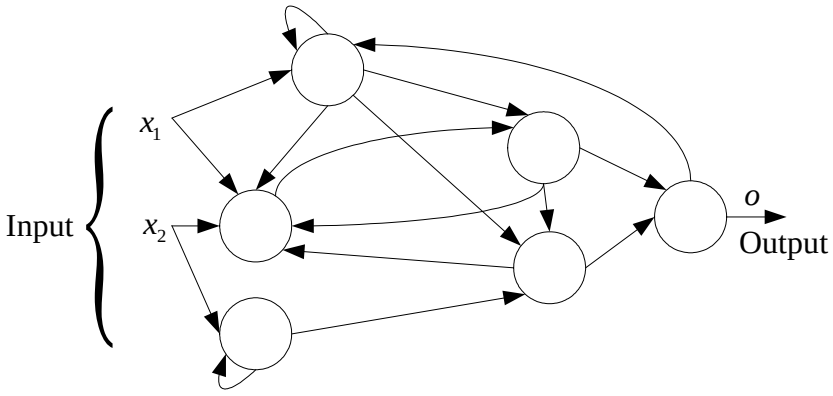

Figure 4.4. A typical neural network with recurrent topology

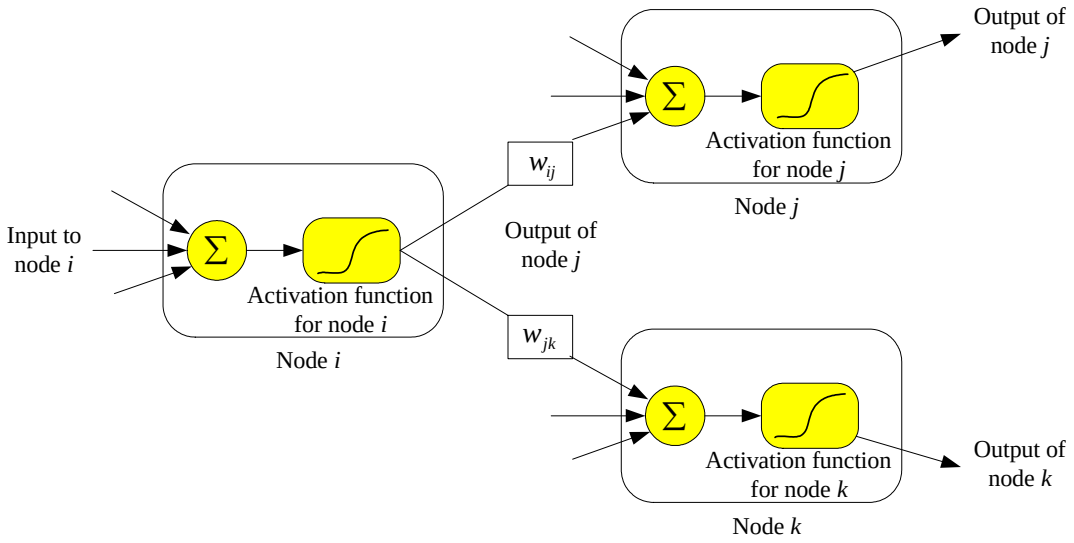

Figure 4.5. Interconnections between neurons

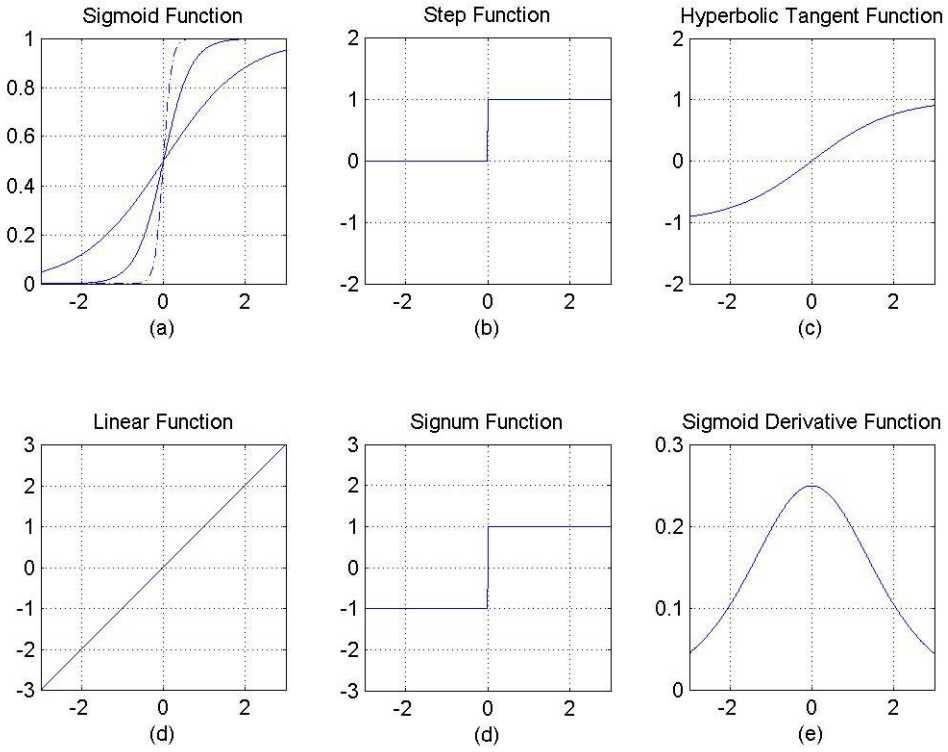

Figure 4.6. Typical profiles of eight activation functions.

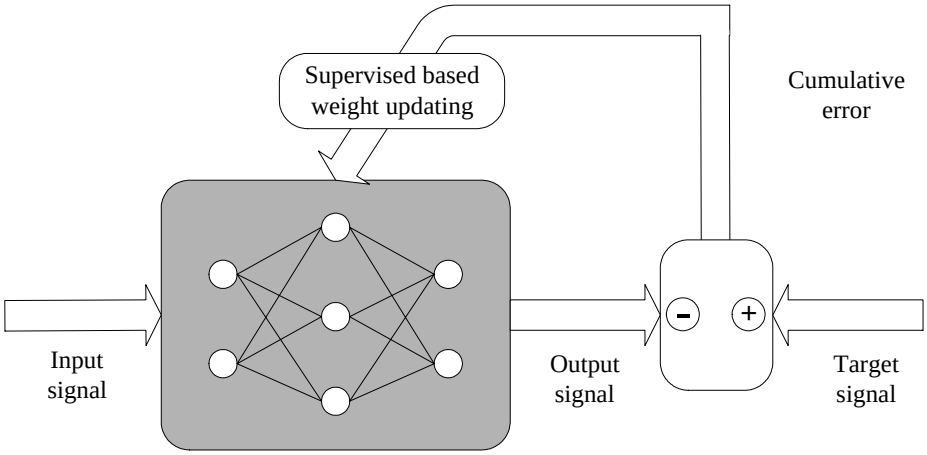

Figure 4.7. Schematic representation of supervised learning

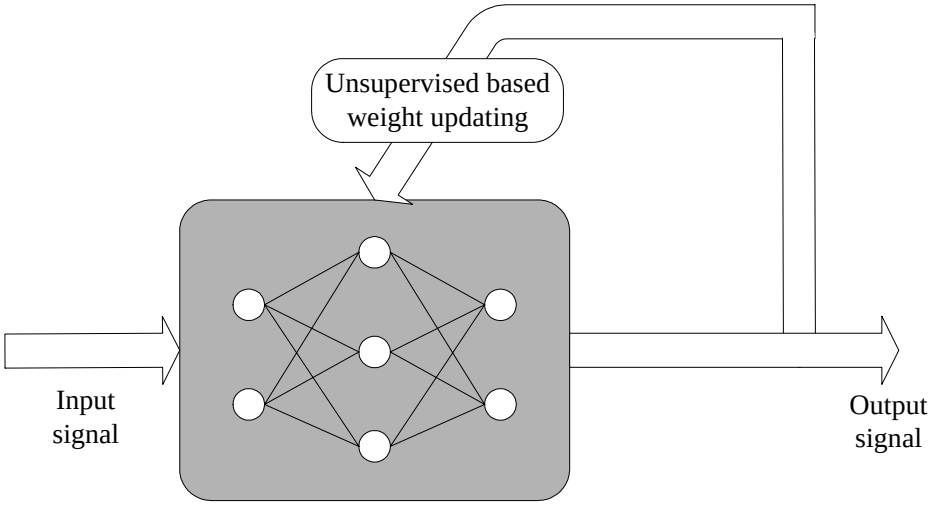

Figure 4.8. Schematic representation of unsupervised learning

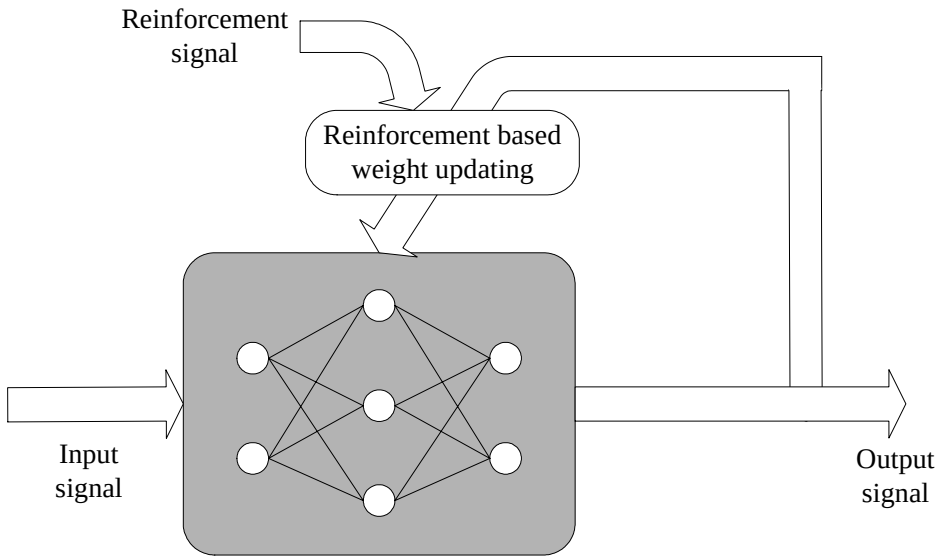

Figure 4.9. Schematic representation of reinforcement learning

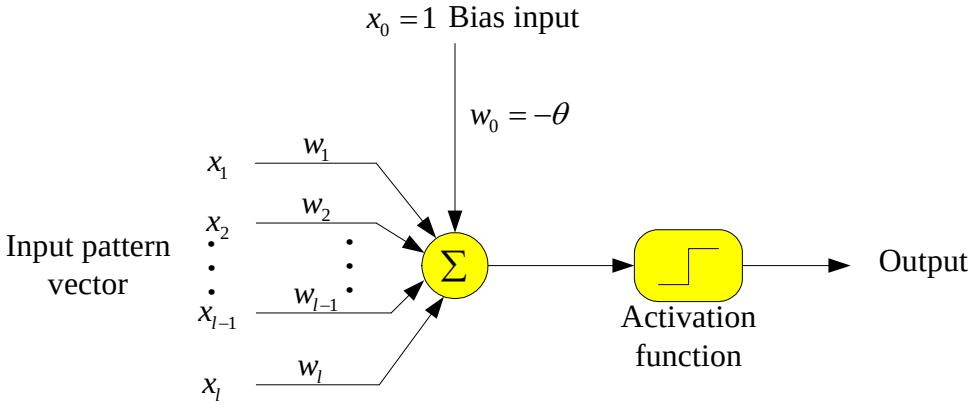

Figure 4.10. McCulloch-Pitt neuron

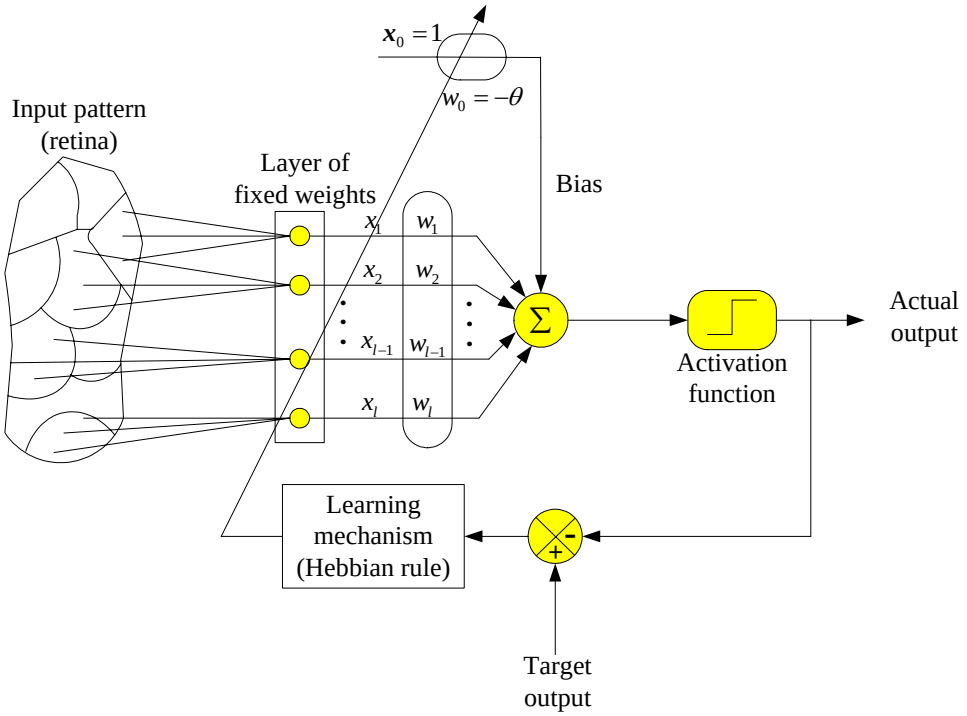

Figure 4.11. Representation of the Perceptron.

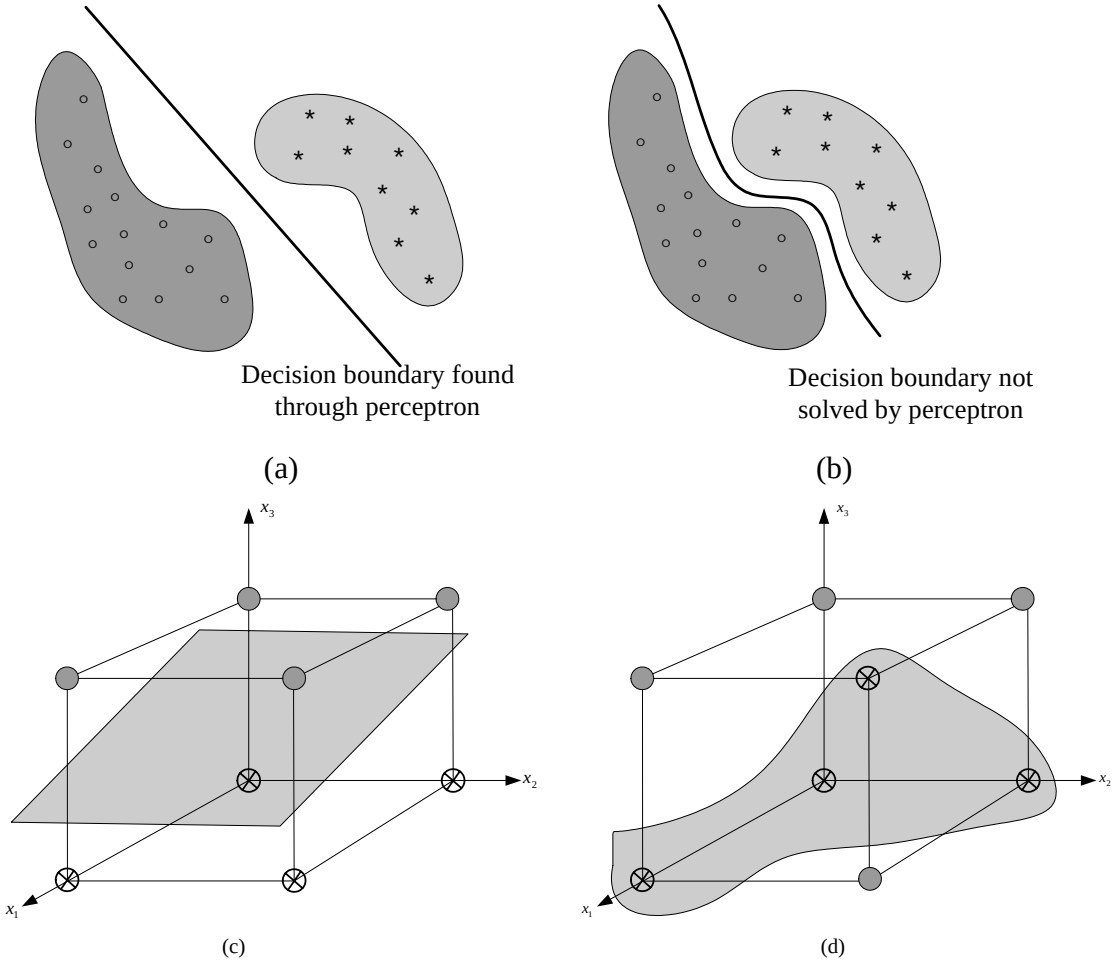

Figure 4.12: (a) linearly vs. (b) nonlinearly separable patterns in 2D space
(c) linearly vs. (b) nonlinearly separable patterns in 3D space

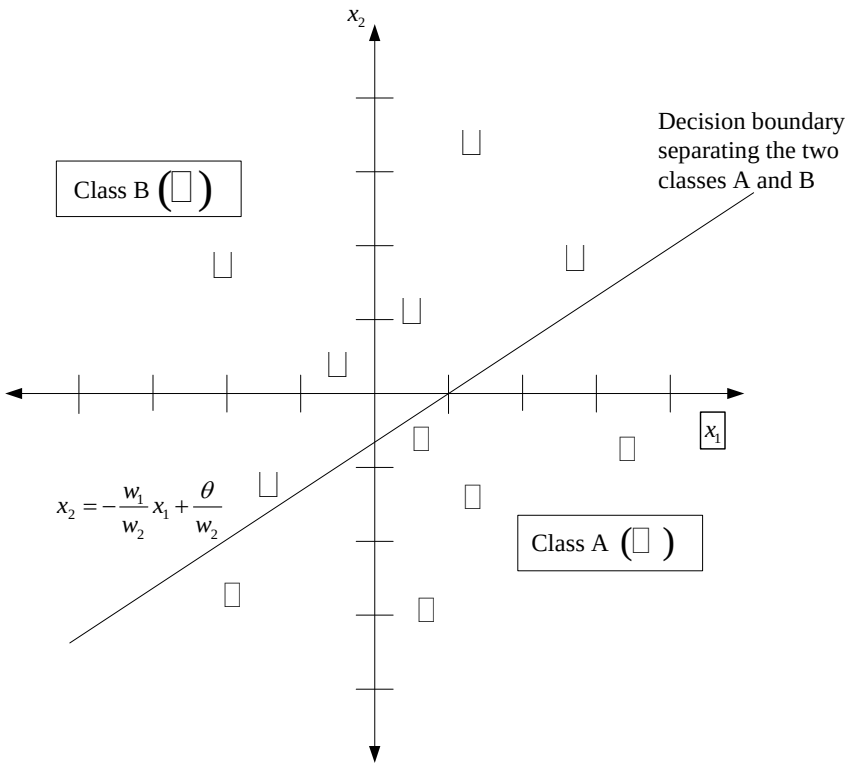

Figure 4.13 Perceptron decision boundary adequately classifying linearly separable pattern

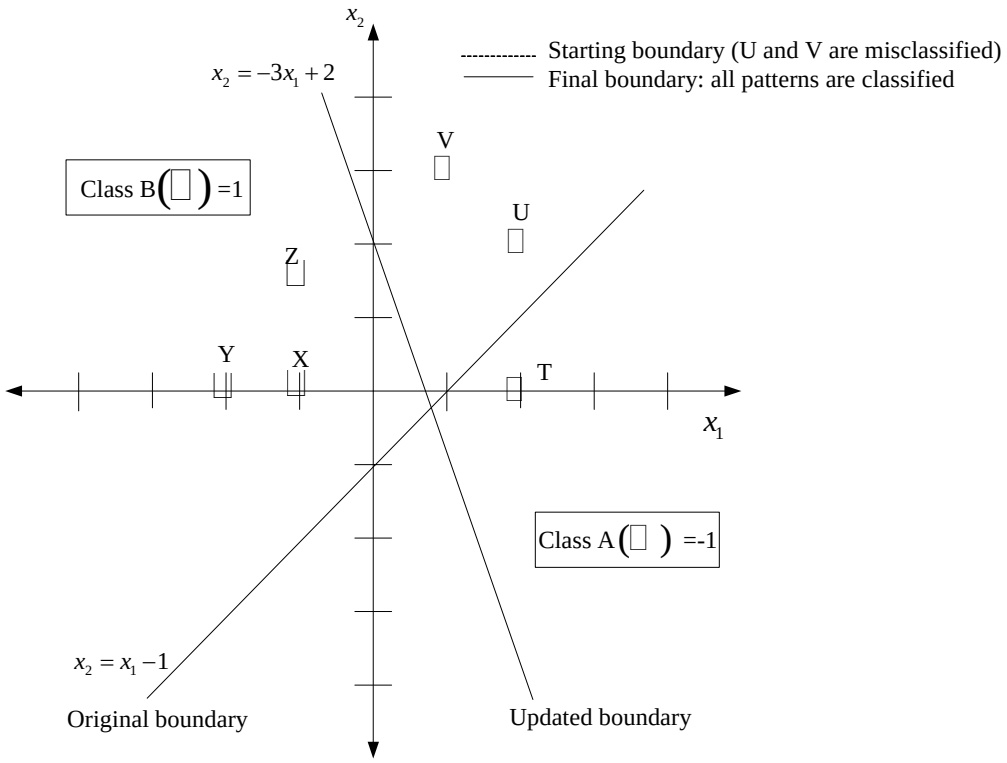

Figure 4.14. Example illustrating the change of the boundary
Separating classes A and B

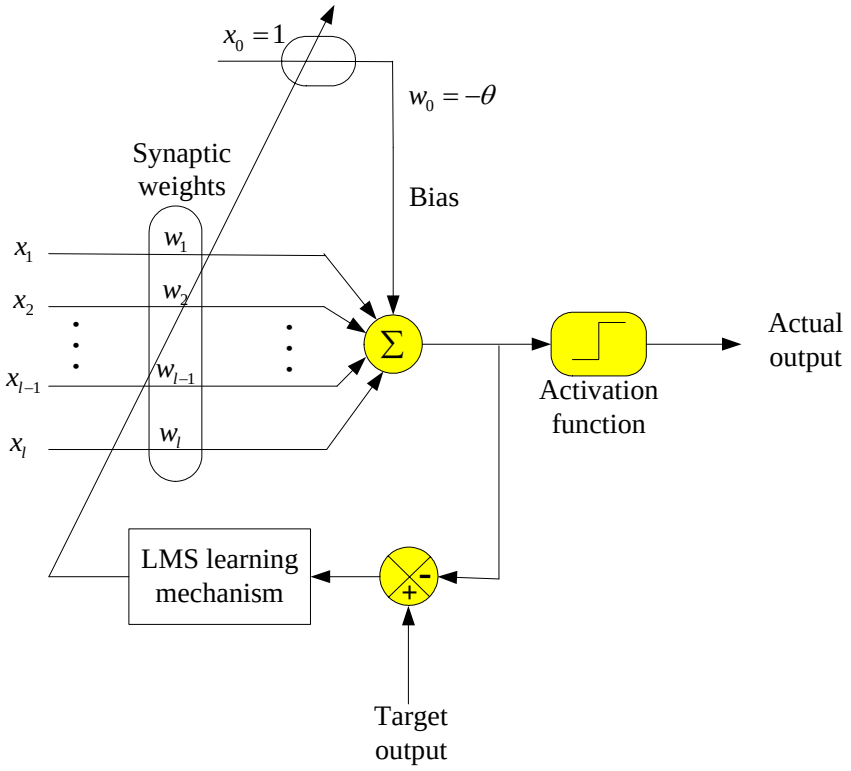

Figure 4.15. Schematic representation of the adaline.

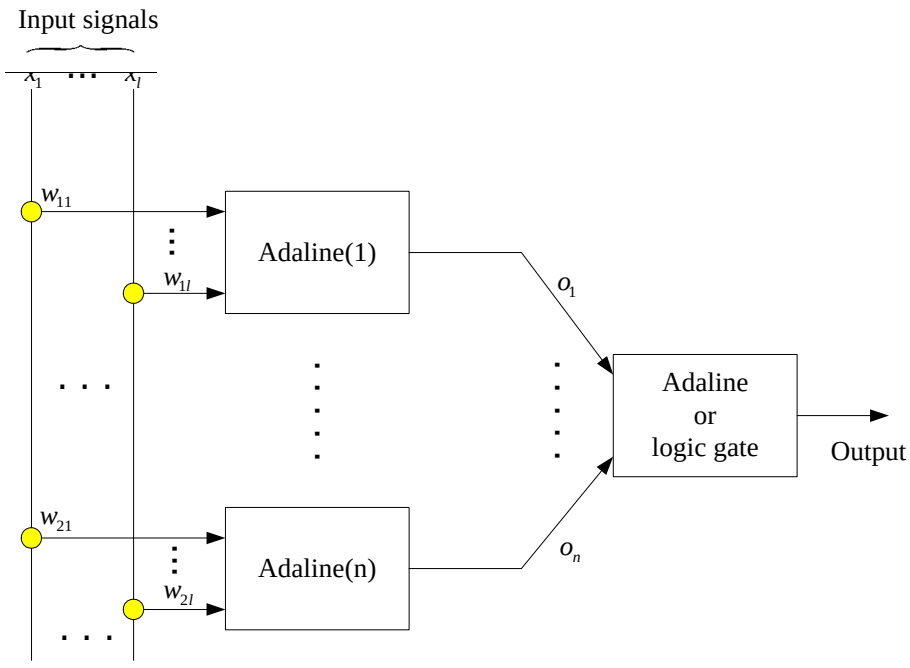

Figure 4.16. Schematics of the Madaline.

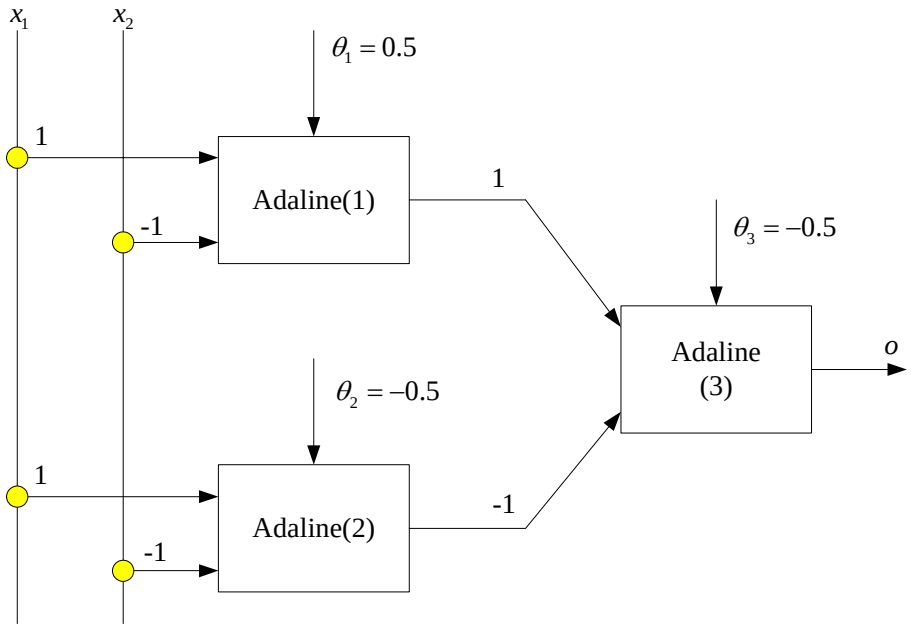

Figure 4.17. Example of madaline for execution of the ‘XOR’ logic gate.