

Abstract

According to Haykin (1994), a neural network is a massively parallel distributed processor that has a natural propensity for storing experiential knowledge and making it available for use. It resembles the brain in two respects :

1. Knowledge is acquired by the network through a learning process.
2. Interneuron connection strengths known as synaptic weights are used to store the knowledge.

This paper attempts to give an introduction about neural network for the beginners, especially users from psychology field. Thus, we mainly concentrate on the concept and usage of neural networks, very few technical terms and complex mathematical formula are presented. However, some essential equations are presented for readers' reference. A brief introduction of neural network or connectionism and their impact on modern psychology will be given. Then several basic neural network theories will be explained. We would also touch different learning mechanism, network pruning and other essential neural network concepts. For the simulation task, SNNS (Stuttgart Neural Network Simulator) was chosen for several reasons, which would be discussed in content. Two simple XOR neural network (2-1-1 and 2-2-1) were used for illustrate the usage of the software. At the end, we would look into the practical use of neural network.