The human brain is quite possibly the most complex machine ever created. It is capable of processing incredible amounts of data in amazingly short time. Computer scientists have often attempted to model algorithms after the human brain to take advantage of that processing power and speed. This has resulted in what is known as artificial Neural Networks.

Neural Networks are made up of nodes, referred to as Neurons. These Neurons simulate synapses in the brain. These Neurons are constructed into layers, with one layer for input, one layer for output, and all other layers in between are referred to as hidden. To simulate the brain, all Neurons in one layer are connected to all the Neurons in the next layer. The Neurons communicate by sending signals to the next layer.

In order to further model the human brain, many layers can be added between the input and output layers. The result of this is referred to as Deep Learning. Deep refers to the idea that the amount of hidden layers is ‘deep’. Increasing the number of layers increases the amount of processing done on the input, allowing the network to provide more specific and intelligent output.

At times it can be hard to tell the difference between machine learning and deep learning. Deep learning is a subfield of machine learning, and both are a subfield of artificial intelligence. The distinguishing factor between deep learning and machine learning is that deep learning allows the network to learn and make intelligent decisions on its own.