

## Neural Networks

A neural network is a term coined for the interconnected neuron structure in the brain. Work started on neural networks in early 1940s. The neural network is the basic and most important part of the brain. It is what helps the nervous system to process all the messages sent from the body to the brain. It is considered to be the most complex part of a human brain. Neural networks trigger emotions in a person. Extensive studies on the human brain have helped scientists to replicate the neural network to some extent, which is called the artificial neural network or ANN. Artificial neural network is information processing tool which makes it easier for machines to respond to any external stimulus. Artificial neural network is actually the brain of an artificially intelligent machine or robot. An artificial neural network or ANN can be used to solve complex mathematical problems, data processing and as discussed earlier it is also used in robotics. It is one of the most important scientific inventions to date. A lot of continuous improvements and modifications are being performed on neural networks since mid 2000s.

It is the neural network that changes the external stimulus to a message and then carries that message to the central nervous system. Scientists have tried to integrate the external stimulus with artificial neural network to give it human like properties. With the advancement in information technology artificial neural networks have seen a lot of improvement. Even though it is a scientific discovery, it is more similar to the human brain as compared to a computer. Computer solves problems on the basis of algorithms and the data already installed in it. It cannot process something that out of what has already been fixed in it. On the other hand artificial neural network actually help machines to **THINK** on their own. It is also one of the biggest reasons that one community of cognitive scientists believes that machines can have feelings.

Human Brain is actually believed to have the most complex system in the human body. One can only imagine the hard work and hardships that these scientists had to go through to invent something as complex as the human nervous system. There is a reason that scientists and computer engineers have spent millions of dollars and thousands of hours on making of such an astounding technology, it is because the invention can be used to treat a lot of medical problems related to the brain. Artificial neural networks have become the pillars for supporting of artificial intelligence. In the beginning artificial intelligence was based on algorithms and codes but now it is supported by a brain like structure called artificial neural network. Other tools like natural language speech processing and facial recognition are all supported by artificial neural networks. Human beings achieved a great milestone when they invented such a complex structure. Artificial neural networks may be complex in itself but it can also help human beings solve complex problems easily.

Some doctors believe that artificial neural networks can help revolutionize the field of medicines. They believe that they can get solutions to a lot of medical problems by using artificial neural networks. Even though we haven't reached a very advance stage in the field of artificial neural networks but there are discussions in the scientific community regarding the replacement of a biological neural network with an artificial neural network to see if the person would still be able to think in the same way or not. Even though we are not yet capable of doing this but with the booming advancement in information technology we can say that

the time is not far when we would be able to replace damaged biological neural networks with artificial neural networks.