What are Neural Networks

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A neural network is a network or circuit of neurons, or in a modern sense, an artificial neural network, composed of artificial neurons or nodes.

Thus a neural network is either a biological neural network, made up of real biological neurons, or an artificial neural network, for solving AI problems.

The connections of the biological neuron are modeled as weights. A +ve weight reflects an excitatory connection, while negative values mean inhibitory connections.

All inputs are modified by a weight and summed. This activity is referred to as linear combination.

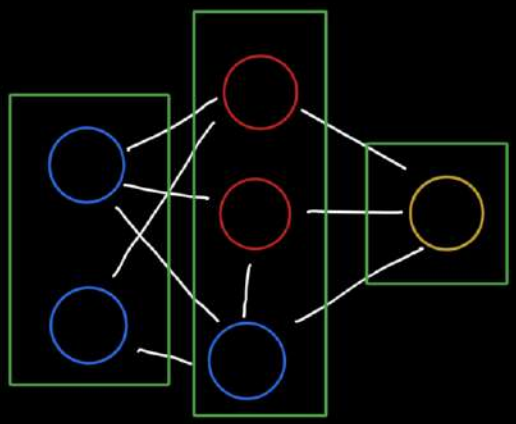
Finally an activation function controls the

as linear combination.

Finally, an activation function controls the amplitude of the output. For eg: an acceptable range of O/P is usually b/w 0 & 1, or it could be -1 and 1.

I/P → Numerical encoding → Learns representation (patterns / features / weights) → Representation outputs → outputs

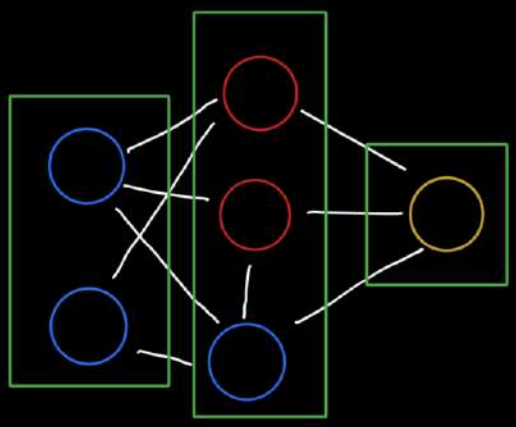
* Anatomy of Neural Networks:



I/P layer (data goes in here)
units/neurons = 2

output layer (outputs learned representation or prediction probabilities)
units/neurons = 1

Hidden layer(s) (learns patterns in data)
units/neurons = 5



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Note: "patterns" is an arbitrary term, you'll often hear "embedding", "weights", "feature representation", "feature vectors" all referring to similar things.