Artificial Intelligence Masterclass

Introduction to Deep Learning

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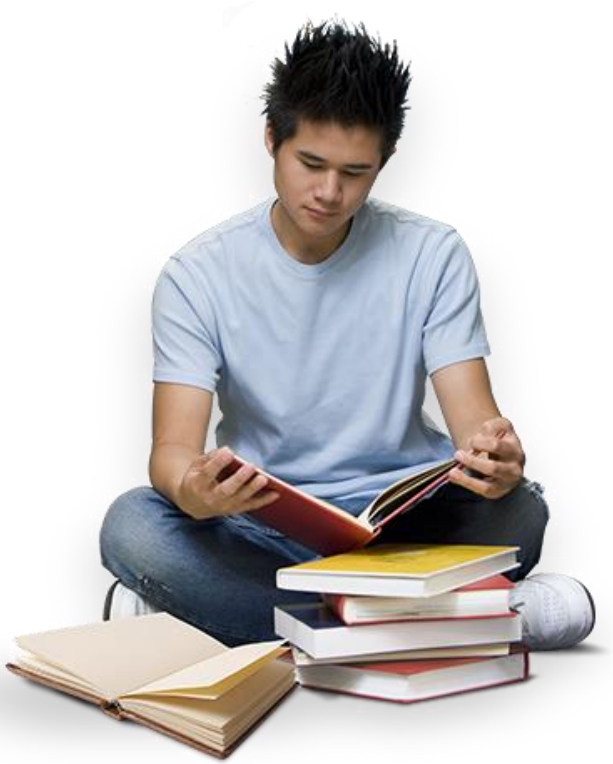
Deep Learning

Brain inspired systems which are intended to replicate the way that we humans learn. Consist of input and output layers, as well as (in most cases) a hidden layer consisting of units that transform the input into something that the output layer can use.

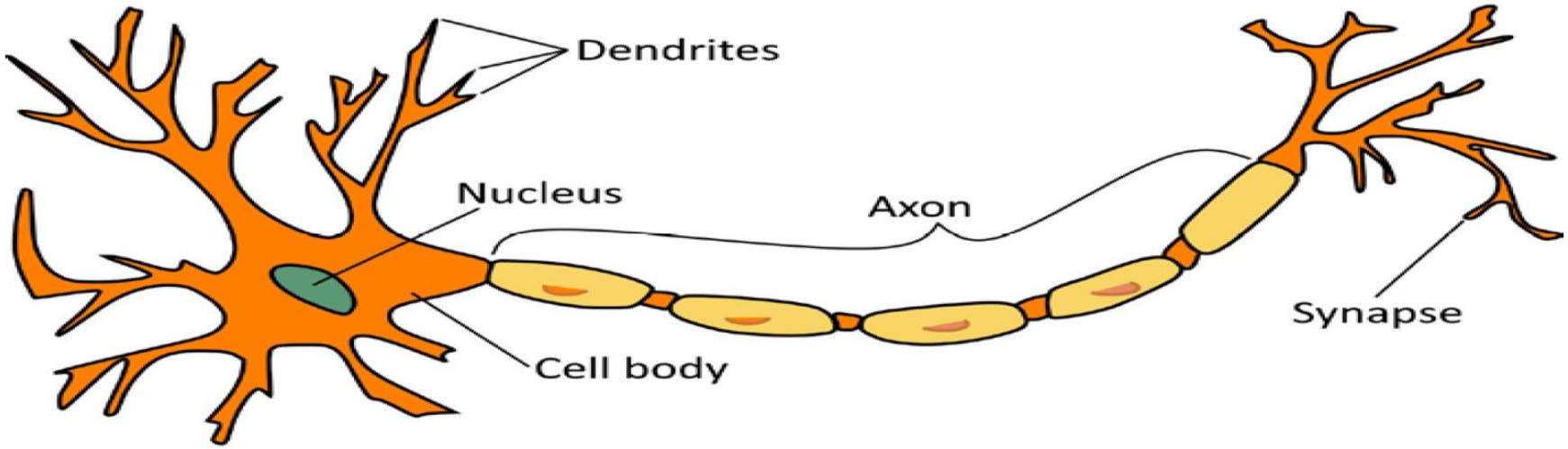
When a child is born, what does the child know? To our knowledge, the child knows only how to cry The child probably does not know its parents. When the child grows, the step by step learning process begins First, the child learns to drink milk Then the child learns to identify its parents Every time a child learns something, it is encoded into some portion of the brain. If we do not practice what we learned, we start to forget Consequently, by practice or training, we can hard code some selected things into our brains.

Deep Learning

Neuroscientists believe that learning stimulates new dendrite connections between neurons. Greater usage of the brain through learning and stimulation creates greater dendrite connectivity thus, as we learn more and more, we become more intelligent. Wisdom is not created through genetics Wisdom and knowledge are based on how we learn and how we practice what we learned.

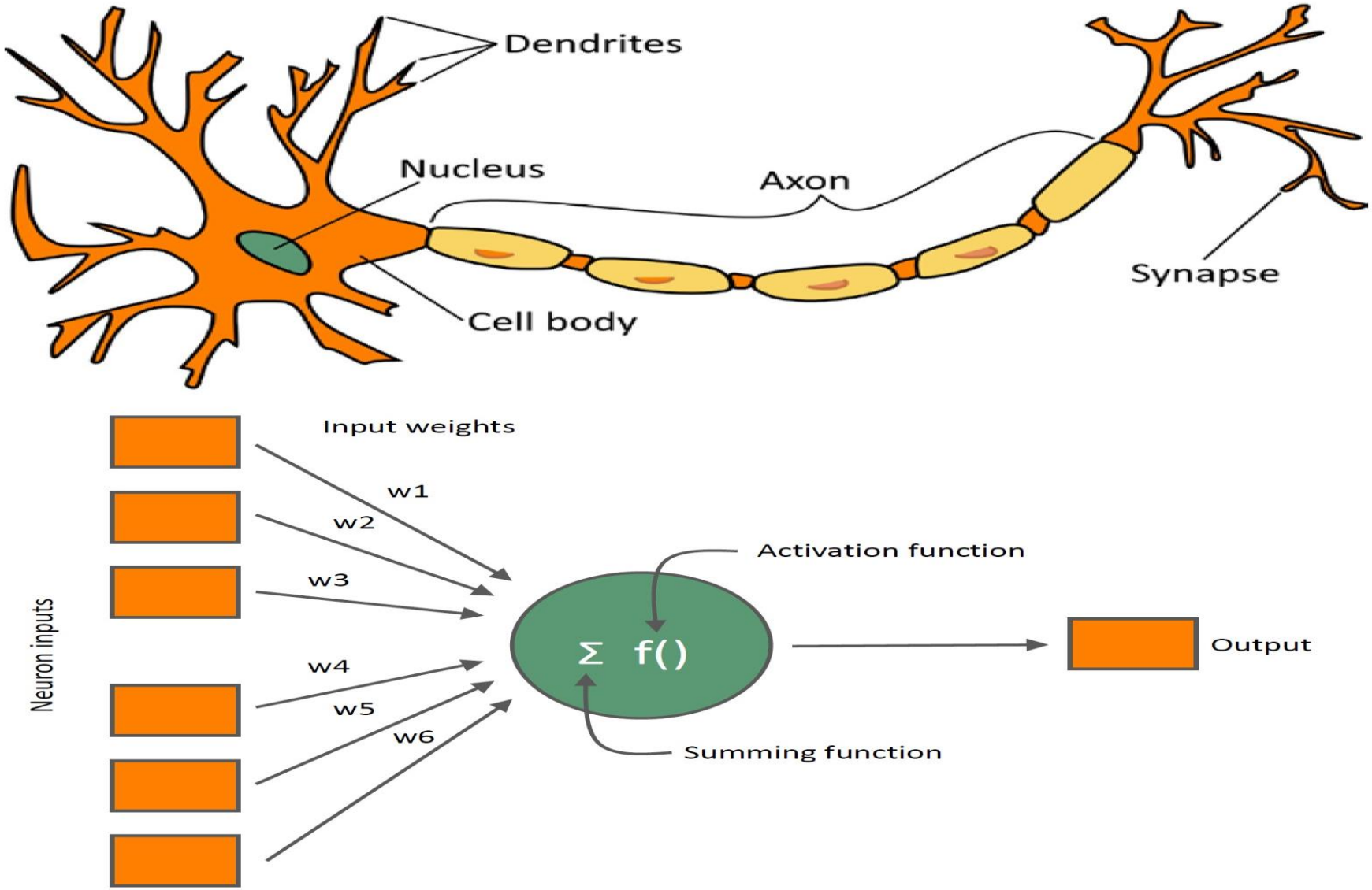


Deep Learning - Biological Neuron

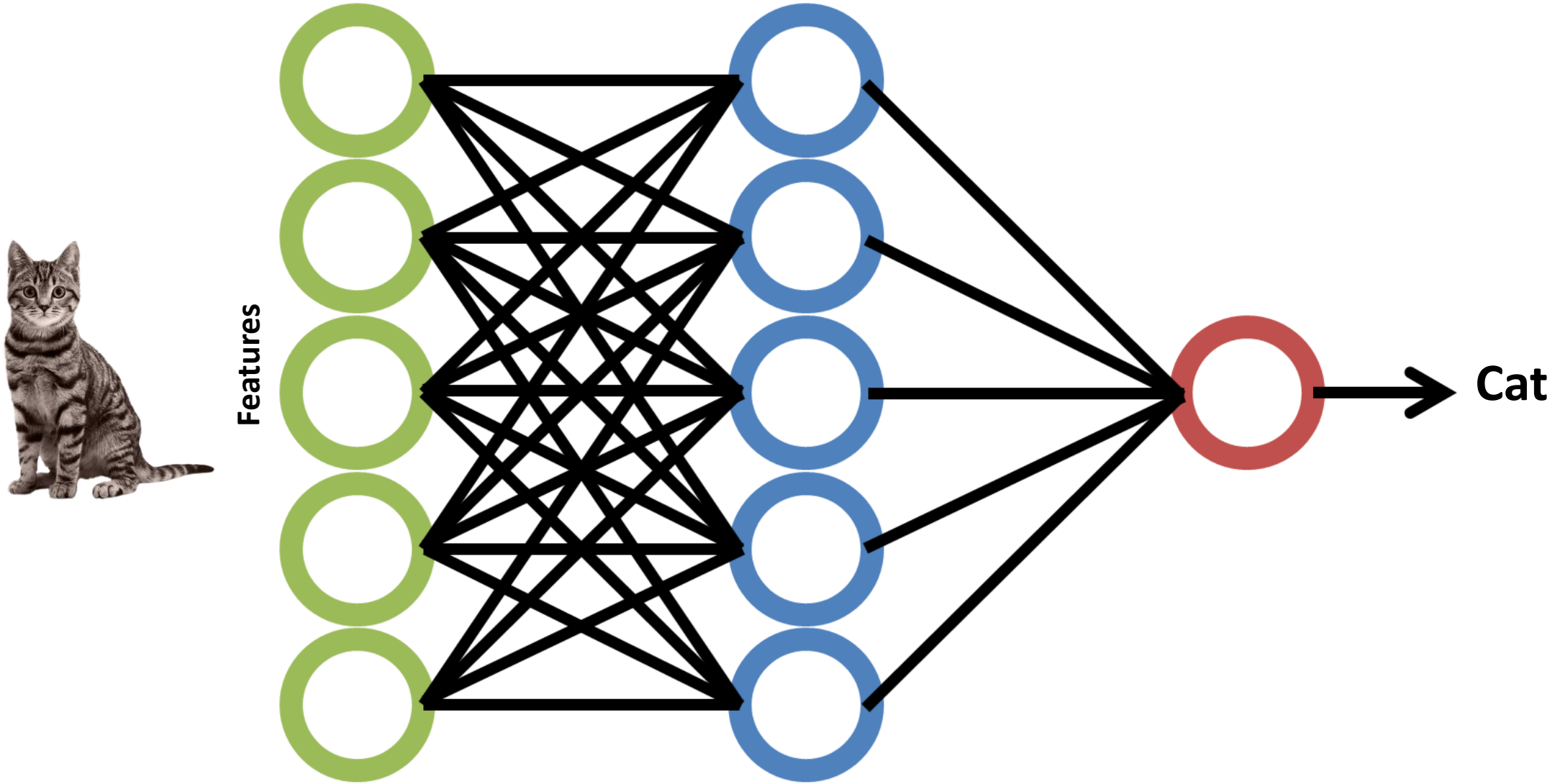


In Deep Learning, an artificial neuron is created which will follow the functions of the biological neuron.

Deep Learning - Biological Neuron VS Artificial Neuron



Deep Learning – Learning Process



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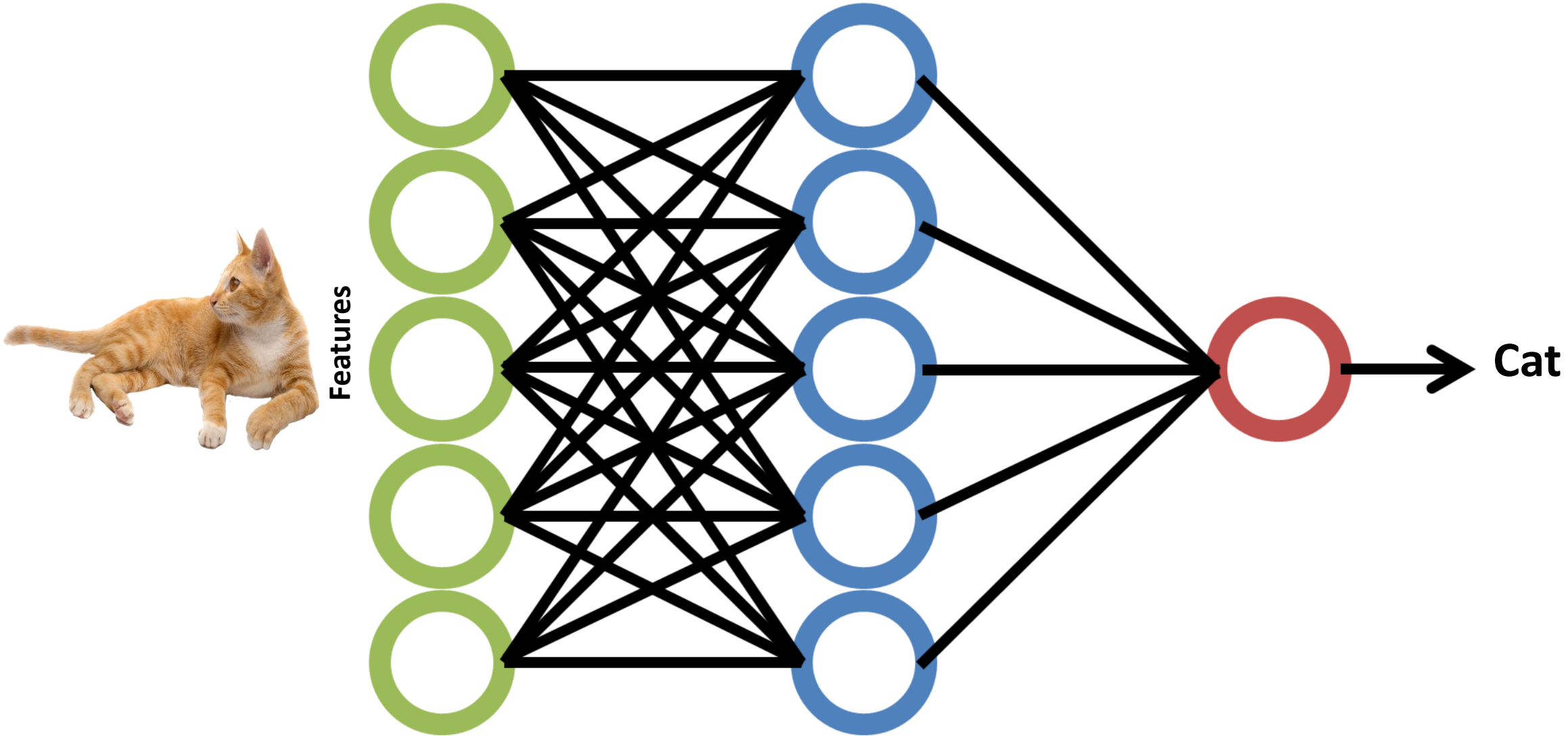
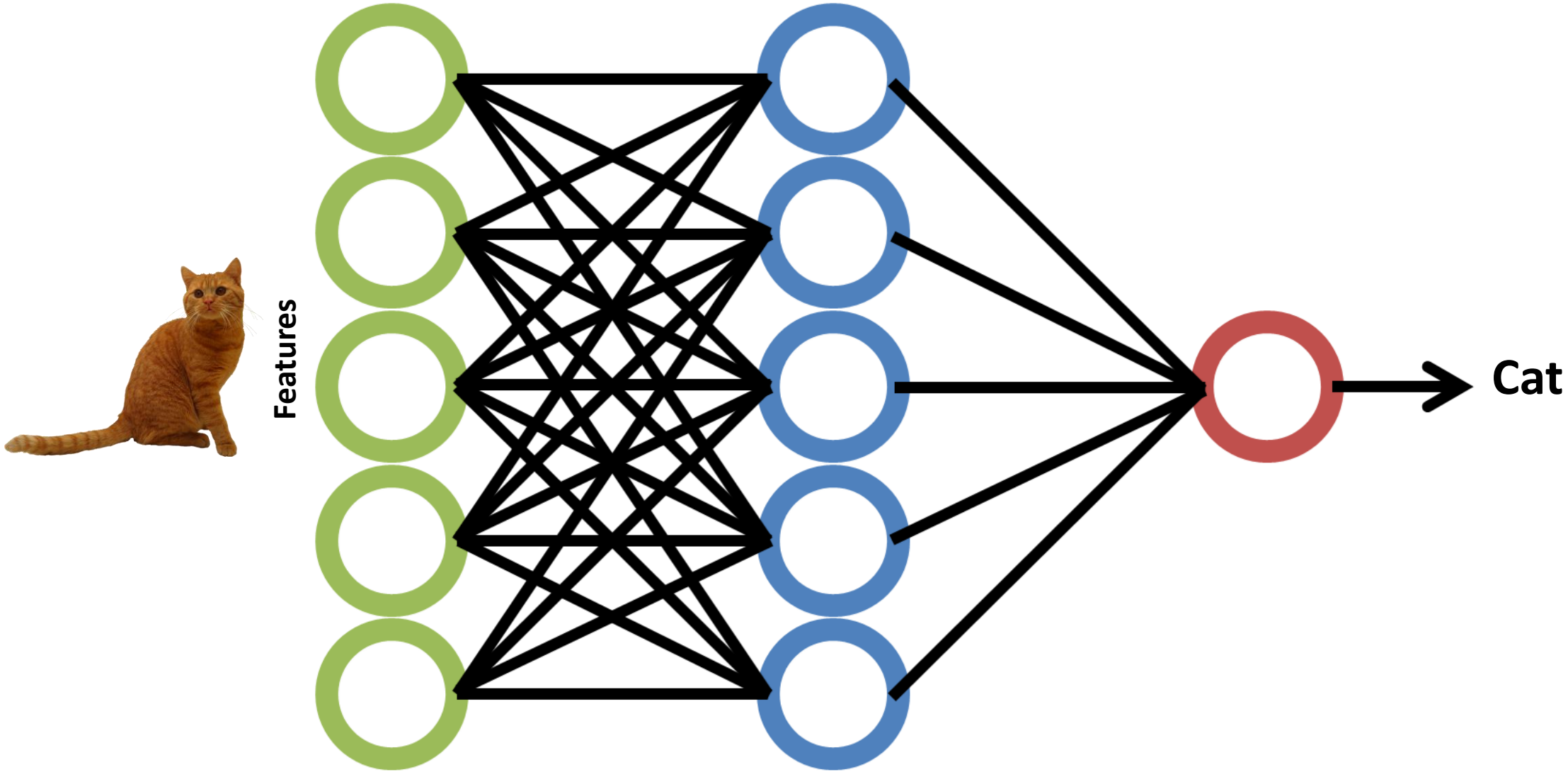


Deep Learning – Learning Process



Deep Learning – Learning Process

Trained System

What should be returned as the output?

Deep Learning – Learning Process

Trained System

Cat