Neural Networks are what gave some silicon rocks the ability to think (not exactly!). The earlier models of linear regression and random forests, still needed humans to identify the features which they thought were and were not important. Artificial Neural Networks gave computers the power to identify the important features themselves.

They are somewhat identical to human brain, and we still don’t know about both of them right now. Artificial Neural Networks have neurons also known Nodes, and all they do is to take input from the layer before it, calculate Y = WX+B, and apply activation function before sending it to next layer. The X here is the vector of inputs received from the layer behind, W is the weight or importance to each of the input and B is bias, which could be interpreted as error correction.

The heart of a nodes lies in its activation function. Different activation function has different properties, like sigmoid gives a smooth continuous function which converges into either 0 or 1. RELU is used so that only non-negative inputs activate the node. Hyperbolic tan is used to get values between -1 to 1, means that a node can reduce the value passed in next node.

My favorite part about Deep Learning is how it transformed Computer Vision through CNNs. It gave computers the ability to actually see and recognize objects like we do.