**Day 11**

**What to do?**

Learn about activation functions.

**Activation Functions:**

To those who saw the video yesterday about back propagation, you might have seen that the summation of weights and biases are plugged in a function like at every layer of each neuron. That function is called as activation function in neural networks. These functions are a way for networks to perform non-linearity and complex properties. Based on the problem, there are various activation functions to choose from.

1. **Tanh:**

Also called as hyperbolic tangent function. Sometimes is considered better than sigmoid, due to the range of -1 to 1.

1. **Sigmoid:**

Also called as logistic function. It outputs a value between 0 and 1. Usually used at the output layer when the network is implemented for binary classification.

1. **Relu:**

It is abbreviated for “Rectified Linear Unit”. The function produces outputs between 0 to infinity (all positive values). It is most used for hidden layers.

1. **Leaky Relu:**

Leaky Relu is the modified version of Relu function, where it allows values more output values. When a = 0.01, it is Leaky Relu, else it is Randomized Relu.

1. **Softmax:**

If sigmoid is used for binary classification problems at output layer, softmax is used for multi-class classification problems at the output layer.