WEEK 2

# INTRODUCTION

This week is going to be very important as you will be getting the very basics of the most vital component of this AI era, which is known as the **Neural Network.** Before that we will have a quick glance at **Logistic Regression** which is an example of a classification model.

# LOGISTIC REGRESSION

Logistic regression is in many ways similar to linear regression, but differ in some ways. It gives an output of 0 to 1, where 0 being False or 1 being True.

Reference:

The below link will help you understand why to go with logistic regression. Reading till that would be suffice.

<https://medium.com/data-science-group-iitr/logistic-regression-simplified-9b4efe801389>

<https://medium.com/greyatom/logistic-regression-89e496433063>

## Loss Function

<https://towardsdatascience.com/understanding-binary-cross-entropy-log-loss-a-visual-explanation-a3ac6025181a>

## Activation Functions

<https://medium.com/@snaily16/what-why-and-which-activation-functions-b2bf748c0441>

# NEURAL NETWORKS

## Introduction

You complete it.They should get the overall idea of the working of neural network this is a really really good source.

Going through the below videos is more than suffice to understand neural network.

<https://www.youtube.com/watch?v=ALQ_RNSRE40>

<https://www.youtube.com/playlist?list=PLZHQObOWTQDNU6R1_67000Dx_ZCJB-3pi>

<https://towardsdatascience.com/the-basics-of-deep-neural-networks-4dc39bff2c96>

## Gradient Descent Neural Network

<https://developers.google.com/machine-learning/crash-course/reducing-loss/video-lecture>

Please refer the sub topics of Reducing Loss.

**Tensorflow Playground**

[This](https://playground.tensorflow.org/#activation=tanh&batchSize=10&dataset=circle&regDataset=reg-plane&learningRate=0.03&regularizationRate=0&noise=0&networkShape=4,2&seed=0.70424&showTestData=false&discretize=false&percTrainData=50&x=true&y=true&xTimesY=false&xSquared=false&ySquared=false&cosX=false&sinX=false&cosY=false&sinY=false&collectStats=false&problem=classification&initZero=false&hideText=false) will help you understand how everything comes together.

# PRACTICAL

Linear Regression Notebook:

<https://colab.research.google.com/drive/1zFnm6rfszd-NMZnvG8VOteDihOXsEEfx>