Course 2 Labs Summary

# C2\_W1\_Labs

## C2\_W1\_Lab01\_Neurons\_and\_Layers

In 2019, Google integrated Keras into Tensorflow and released Tensorflow 2.0

Keras is a framework developed independently by François Chollet that creates a simple, layer-centric interface to Tensorflow. This course will be using the Keras interface.

* Importing MeanSquaredError & BinaryCrossentropy From tensor Flow
* Plotting a scatter plot using matplotlib.pyplot
* Linear Regression Using Tensor Flow Regression/Linear Model |
* Giving input to a layer, inputting only one example, in tensor flow Let's try the model on one example |
* getting/outputting the weights of a layer in tensor flow w, b= linear\_layer.get\_weights() |
* Setting weights to your own chosen values in tensor flow linear\_layer.set\_weights([set\_w, set\_b]) |
* Inputing/passing a whole training set to a layer in tensor flow linear\_layer(X\_train) |
* Linear plot using matplotlib plt\_linear |
* Logistic Regression Using Tensor Flow, using sequential model Neuron with Sigmoid activation |
* Scatter plot for Binary Classification fig,ax = plt.subplots(1,1,figsize=(4,3)) |
* Specifications of a model in tensor flow e.g. no. of layers etc. model.summary() |

## C2\_W1\_Lab02\_CoffeeRoasting\_TF

Building a small neural network using tensor flow.

* Normalization of Data using tensor flow Normalize Data |
* Defining/Creating Two layered neural network using tensor flow model = Sequential( |
* What is meant by Epochs and batches Epochs and batches |
* You have a row or column vector, all of the entries of the vector have values between [0,1] ,

You want to convert the “entry >= 0.5” into ‘1’ & the “entry < 0.5” into ‘0’ (predictions >= 0.5) |

## C2\_W1\_Lab03\_CoffeeRoasting\_Numpy

Building a small neural network using Numpy.

## C2\_W1\_Assignment

Use a neural network to recognize two handwritten digits, zero and one.

* NumPy Broadcasting Tutorial (Optional)