

# Assignment No. 2

## Neural Network based Binary Classification

As we have discussed during the lecture, that Neural Networks can be used to perform binary or multi-class classification problems. In this assignment, you will practice training a Neural Network to perform anomaly classification under supervised learning domain.

The dataset to be used in this assignment is an open-source dataset present at the following link:

<https://sites.google.com/view/iot-network-intrusion-dataset>

The dataset is a network intrusion dataset that contains information about network packets being transmitted from one location to another. You will see columns with headers like source port, source IP, Destination port and Destination IP etc.

The last three columns of this dataset contain information about Label, Category and Sub-category. You will consider the **label** column as the desired output column or target column and will classify the data as normal or anomaly.

So it becomes supervised learning (as labels are provided) binary classification (two classes i.e. normal and anomaly) problem which can easily be solved with a multilayer perceptron or neural network.

You are free to use any library for data manipulation or for the neural network which we discussed earlier during the lectures. Please write your code in python (Jupyter Notebook or Colab) and make sure that the code is fully commented.

Please let me know if you face any problem or have any kind of query either by email or call. We will also discuss this assignment in detail during the Q/A session.