INFO 284 – Machine Learning
Spring 2022

Lab week 11 (Mar 14th – Mar 18th)
Neural networks and Colab

For practical purposes it may be useful to work with Colab to develop common python code. In addition to being a collaboration tool it is also a service that gives access to computing resources. In particular, when learning neural networks this may useful.

So check out Colab (https://colab.research.google.com/notebooks/intro.ipynb), and use it for this week's lab.

One of the data sets we have worked with is the churn data set:

https://www.kaggle.com/blastchar/telco-customer-churn

We shall work with this data set also this week, but now with the use of neural networks.

Tasks:

1. Prepare the churn data for neural network learning (you may already have done much of this in lab 5).
2. Test out different neural network structures using scikit's MLPClassifier
    a. Vary the number of layers
    b. Vary the number of nodes in each layer
    c. Test out various activation functions
    d. Test out regularization (the alpha parameter in MLPClassifier allows for L2 regularisation of weights)