AML 2023: Assignment 2
CMI

Due Date: Oct 31, 2024

1. The SMS Spam Collection Dataset
   https://www.kaggle.com/datasets/uciml/sms-spam-collection-dataset
   contains a list of sms-messages and whether or not they are spam.
   a. Build a classifier using a RNN model
   b. Build a classifier using a LSTM model
   c. NOTE: both models above should have a similar number of parameters, (exactly same is not necessary)
   d. Compare the performance of the two models, and show some example results

2. Your next task is to create a RNN and an LSTM models, that given the first half of an SMS, produces the remaining SMS
   a. Here, you have to have a special <END> character or token, to allow your model to indicate the end of output
   b. Compare the performance of your LSTM and RNN models, and note that they should have similar number of parameters

3. Create a Conditional GAN for MNIST for Fashion MNIST.
   https://www.kaggle.com/datasets/zalando-research/fashionmnist

   Recall that, in a conditional GAN, we give the generator a random codeword from the latent space, as well as a label indicating which class of image we want, and the generator tries to create an image of this class.
   - The Discriminator is given pairs of (Image, Label) to classify as real or fake
   - For each class, show 4 examples of generated images from random codewords

Instructions:
- You have to submit a jupyter notebook (ipynb) with all your code and outputs of the code
- You should also submit a 1 page writeup documenting what you have done
- If you don't include the outputs you will get partial credit
- You can work in groups of 2 or 3
- Only one member of the group should submit the assignment
- Please mention the names and roll-numbers of all group members
- You are free to build upon examples shown in class
- Please confirm with the TAs that your submission has been received on time.
- No requests for re-submitting the assignment later because of various reasons will be entertained.