9. Repeat exercise 15 of Part 2 (text classification with mostly linear classifiers), now using an MLP classifier implemented (by you) in Keras/TensorFlow or PyTorch.[3] You may use different features in the MLP classifier than the ones you used in exercise 15 of Part 2. Tune the hyper-parameters (e.g., number of hidden layers, dropout probability) on the development subset of your dataset. Monitor the performance of the MLP on the development subset during training to decide how many epochs to use. Include experimental results of a baseline majority classifier, as well as experimental results of your best classifier from exercise 15 of Part 2, now treated as a second baseline. Include in your report:

- Curves showing the loss on training and development data as a function of epochs (slide 49).
- Precision, recall, F1, precision-recall AUC scores, for each class and classifier, separately for the training, development, and test subsets, as in exercise 15 of Part 2.
- Macro-averaged precision, recall, F1, precision-recall AUC scores (averaging the corresponding scores of the previous bullet over the classes), for each classifier, separately for the training, development, and test subsets, as in exercise 15 of Part 2.
- A short description of the methods and datasets you used, including statistics about the datasets (e.g., average document length, number of training/dev/test documents, vocabulary size) and a description of the preprocessing steps that you performed.