# Lab 11 – Deep Learning

For this comparison, a 70/30 testing split was used to collect the average F1 scores for a scikit-learn Multi-layer Perceptron model and a Keras/TensorFlow neural network across 5 different testing splits. The MLP achieved an average score of 75.8% while Keras underperformed that mark at 72.8%. This is interesting, as Keras is typically touted as the more complex and sophisticated neural network. It is not, however, unexpected. This is because Keras is highly configurable, capable of using any combination of a number of optimization metrics including accuracy, as used here, as well as mean standard error, recall, precision, and area under the curve just to name a few. This effectively means that while MLP might have a higher floor, and does in fact achieve higher performance in this small sampling, it is reasonable to assume that a Keras network when optimally configured would achieve a higher performance ceiling.