

Figure 1: A simple example of a sine function

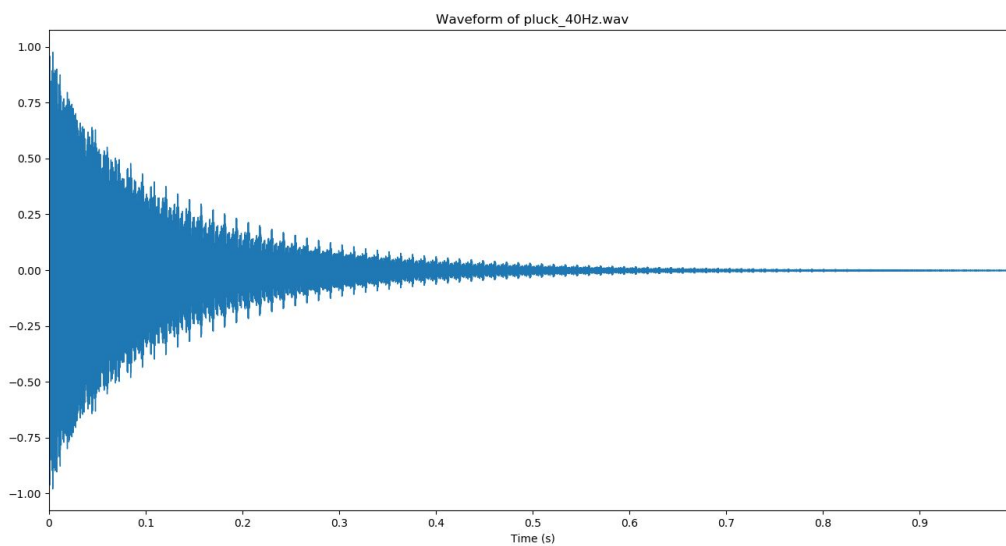


Figure 2: Waveform of a string plucked with frequency of 40Hz

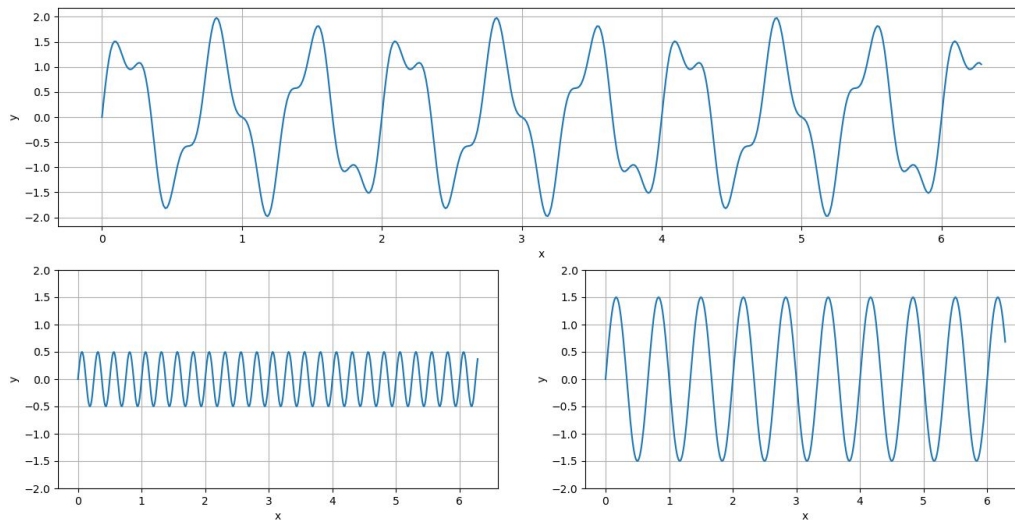


Figure 3: A complex sine function and its fourier transform breakdown

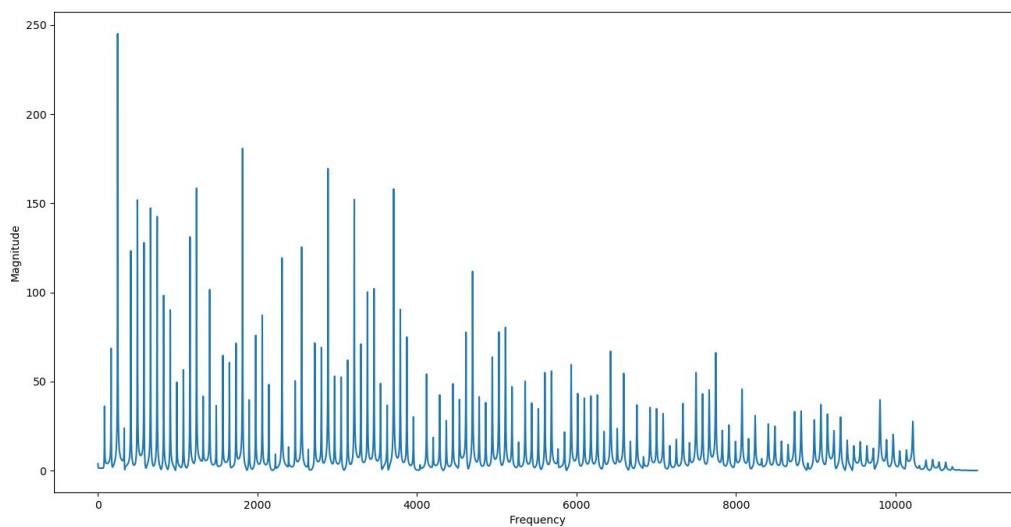


Figure 4: Power spectrum of a string plucked with frequency of 40Hz

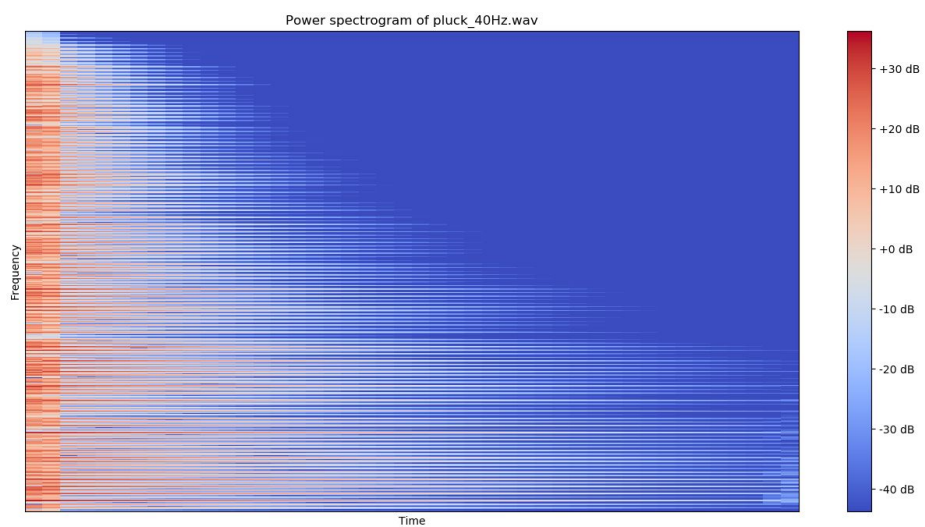


Figure 5: Power spectrogram of a string plucked with frequency of 40Hz

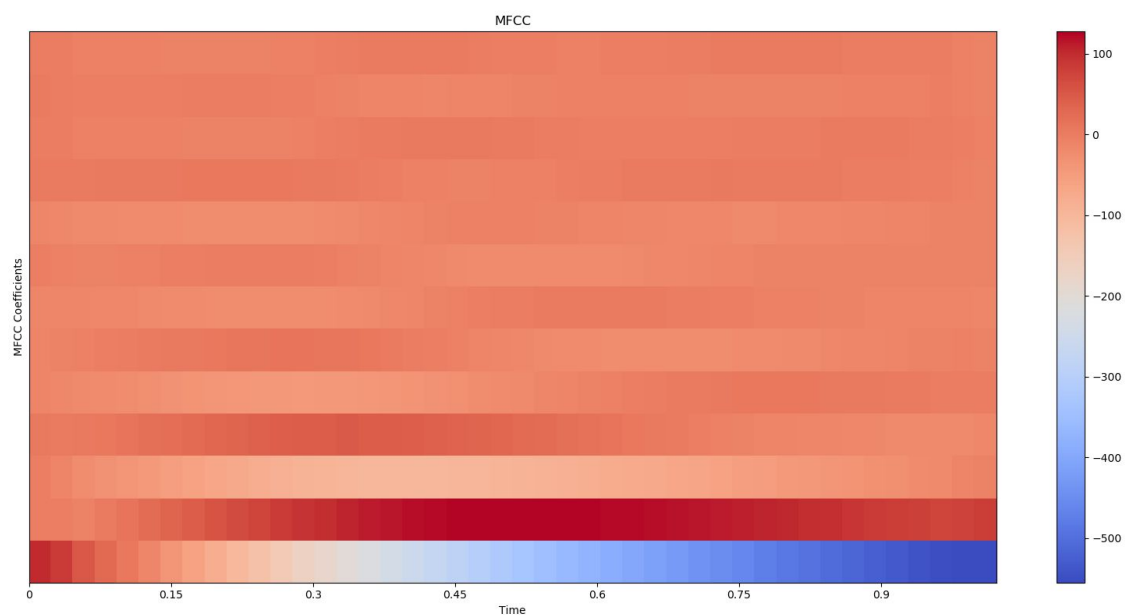


Figure 6: MFCC coefficient plot of a string plucked with frequency of 40Hz

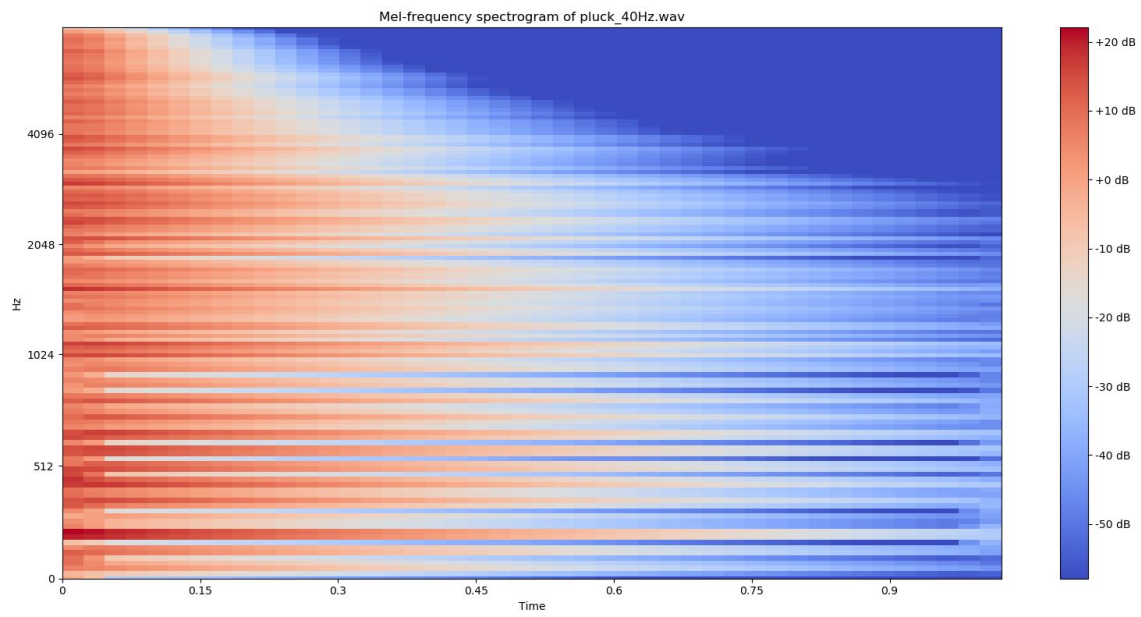


Figure 7: Mel-frequency spectrogram of a string plucked with frequency of 40Hz

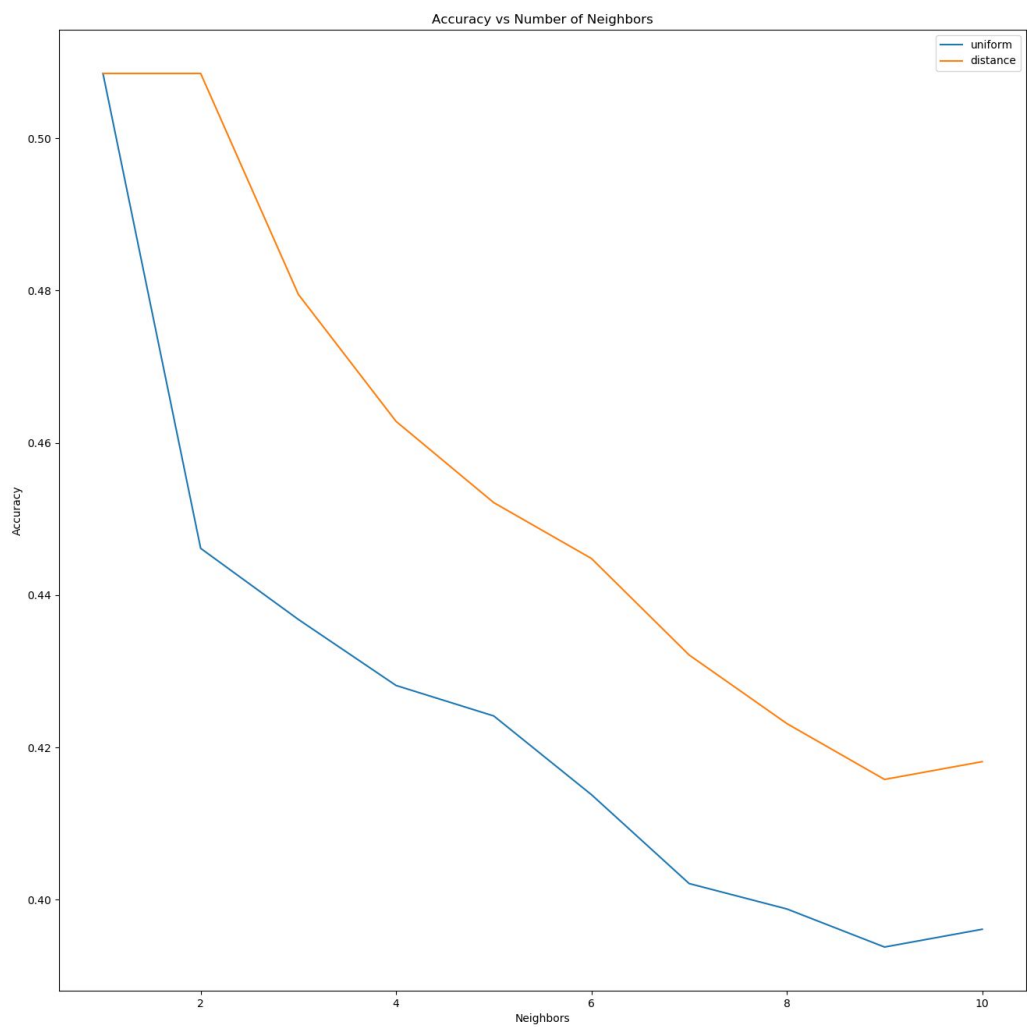


Figure 8: Accuracy of knn vs number of neighbors and weights used

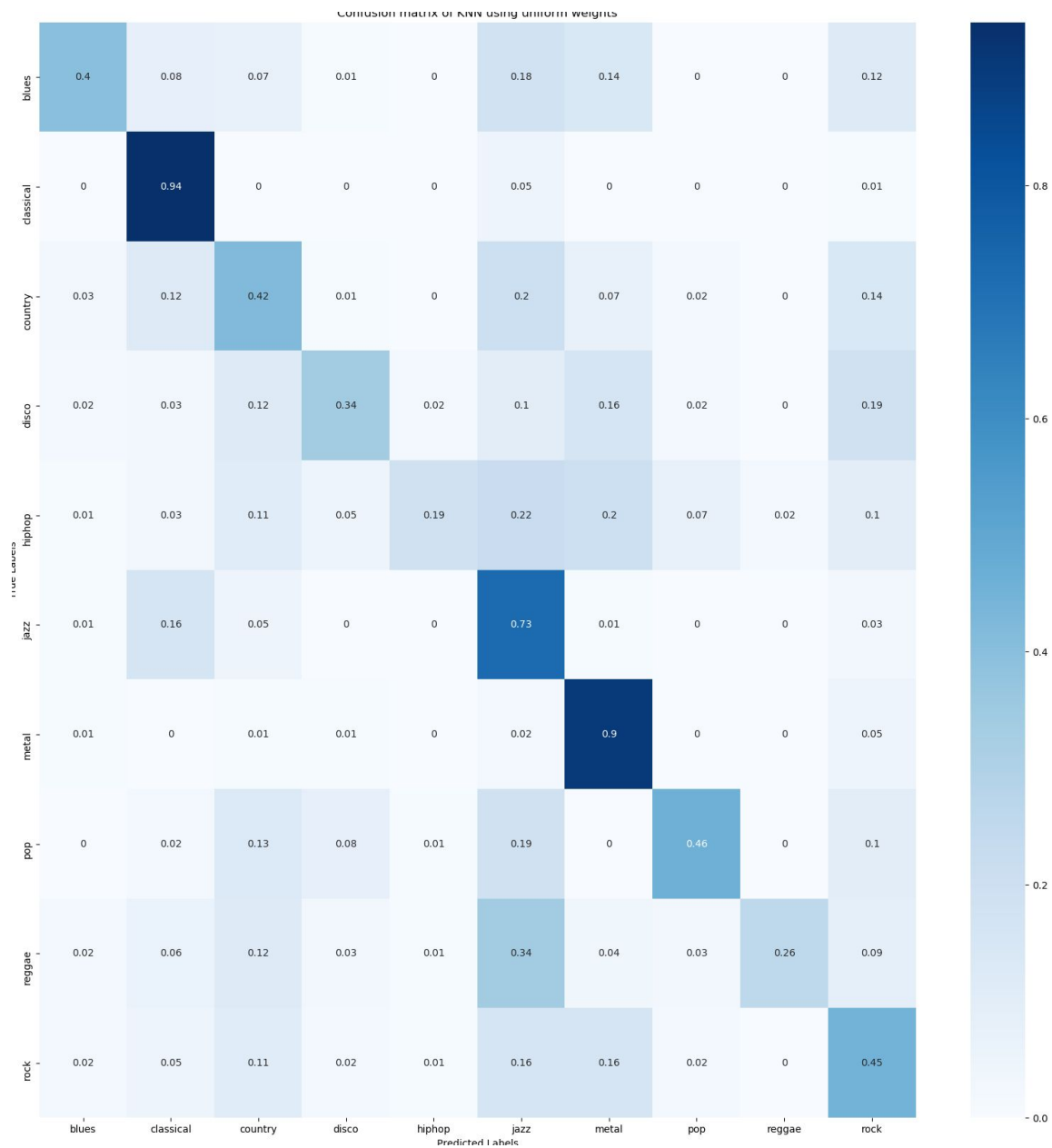


Figure 9: Confusion matrix for both uniform and distance weights knn

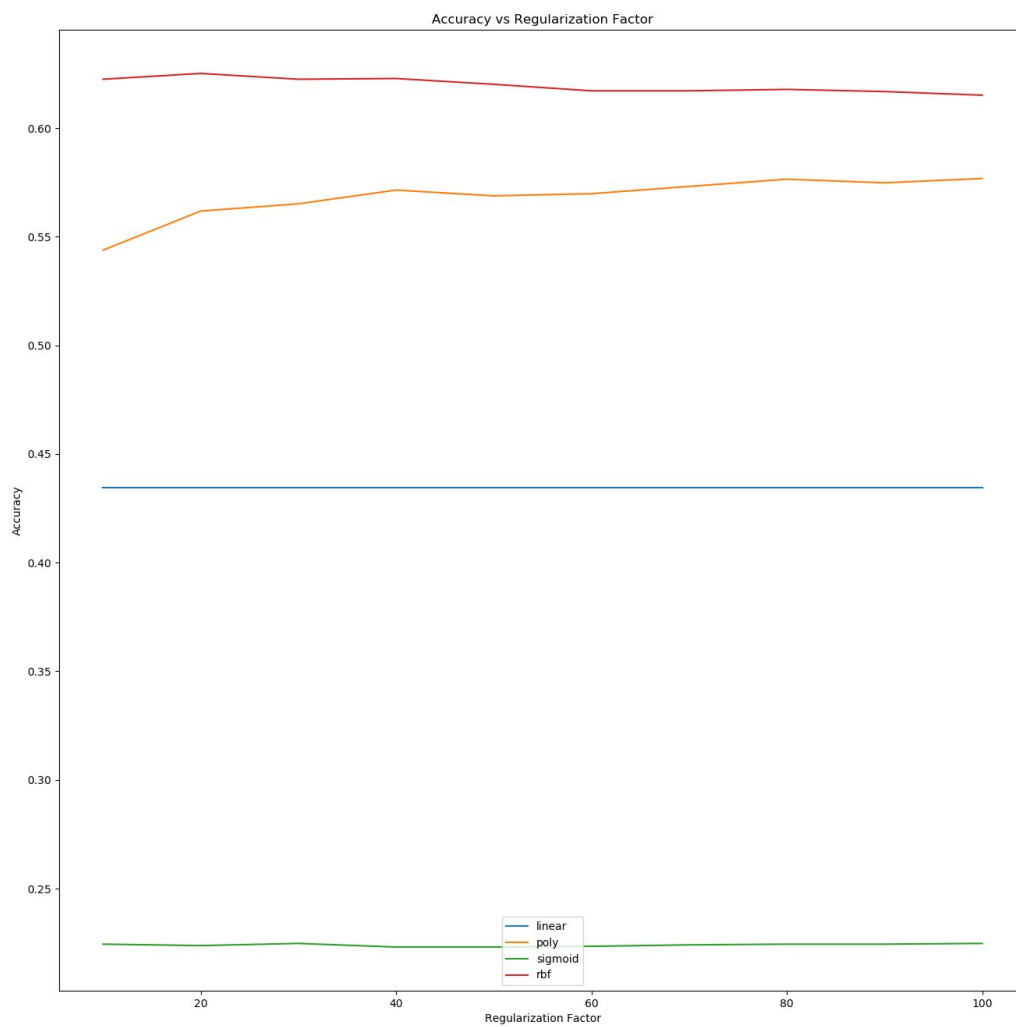


Figure 10: Accuracy of SVM vs kernel and regularization factor used

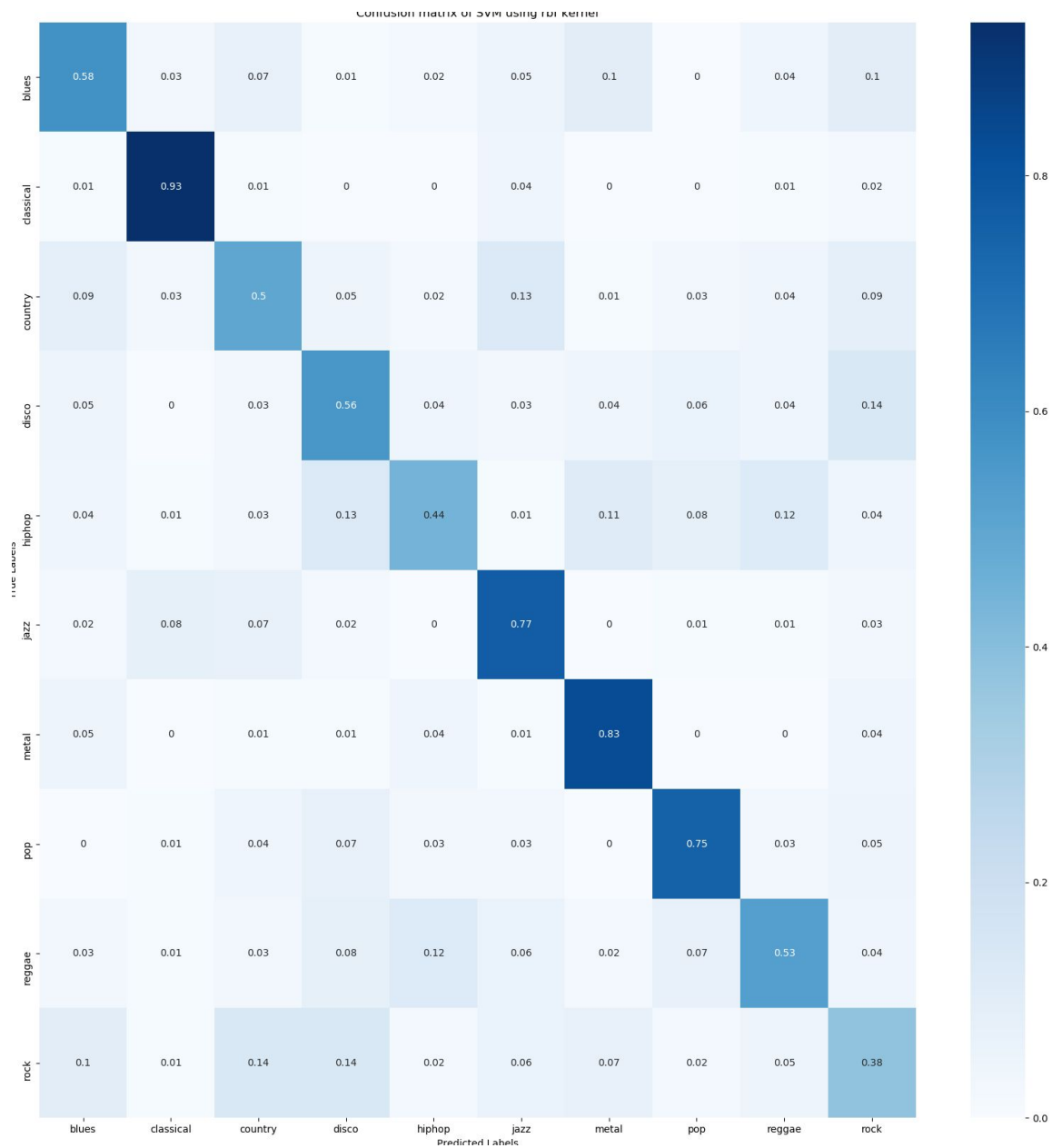


Figure 11: Confusion matrix for rbf kernel and regularization factor of 20



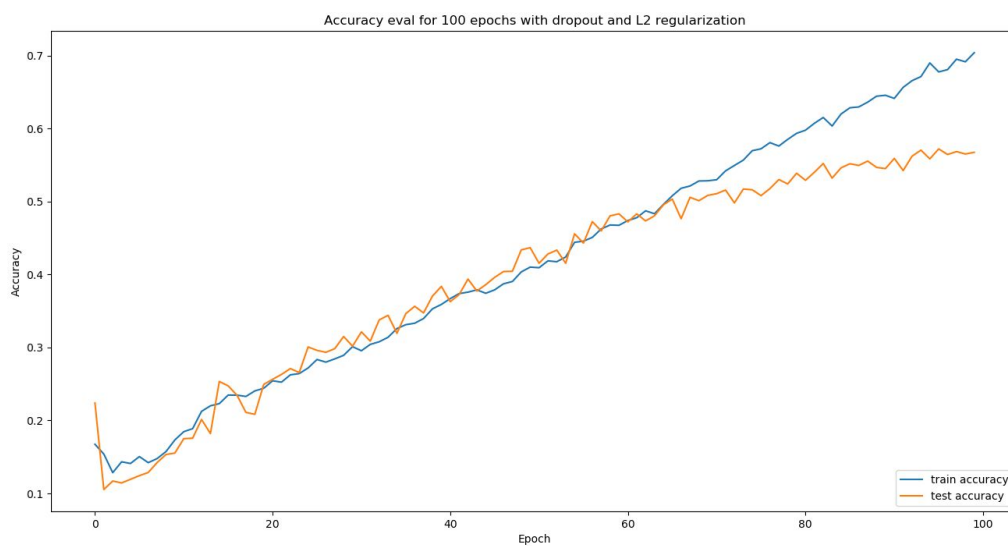


Figure 12: Accuracy plot of neural network over 100 epochs

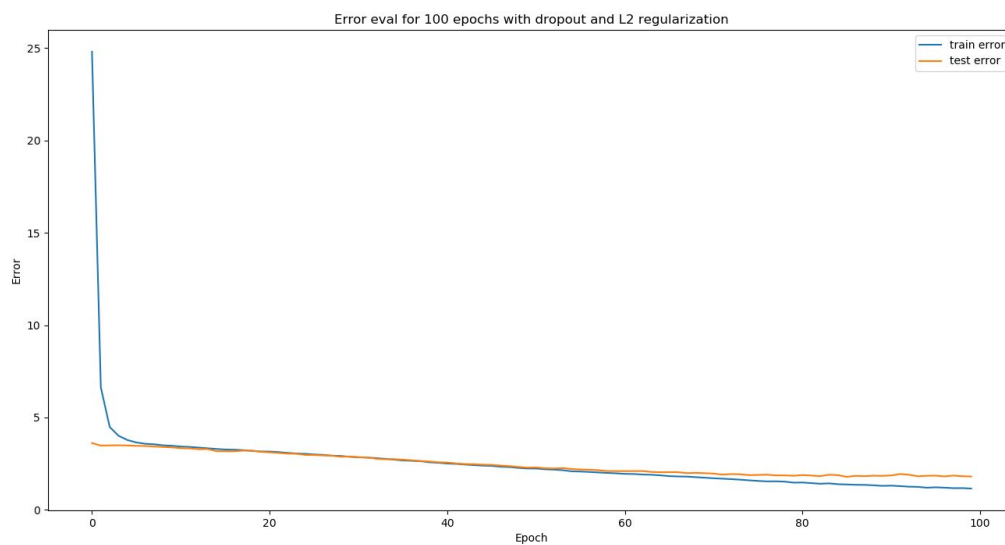


Figure 13: Error plot of neural network over 100 epochs

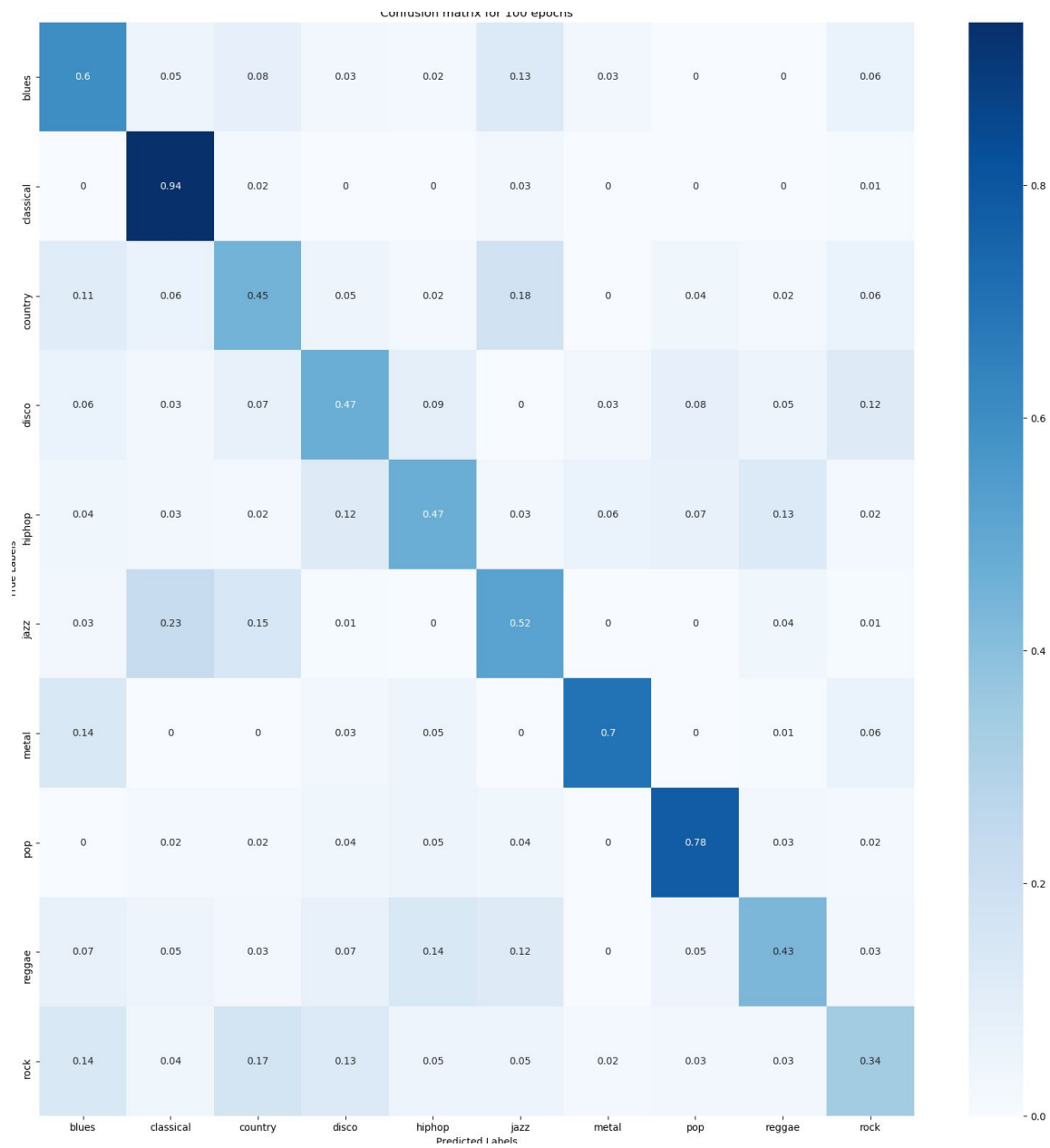


Figure 13: Confusion matrix of neural network after 100 epochs

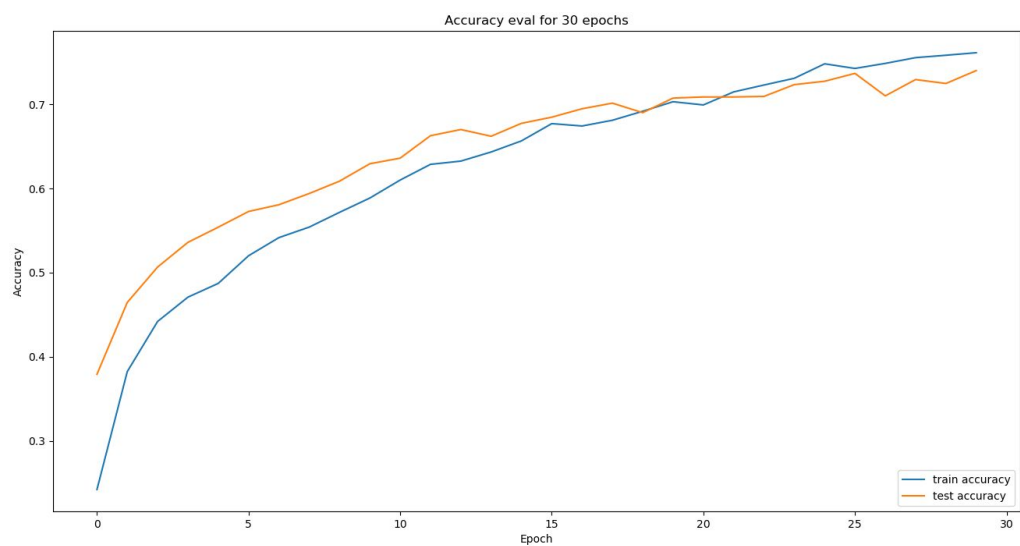


Figure 14: Accuracy plot of convolutional neural network over 30 epochs

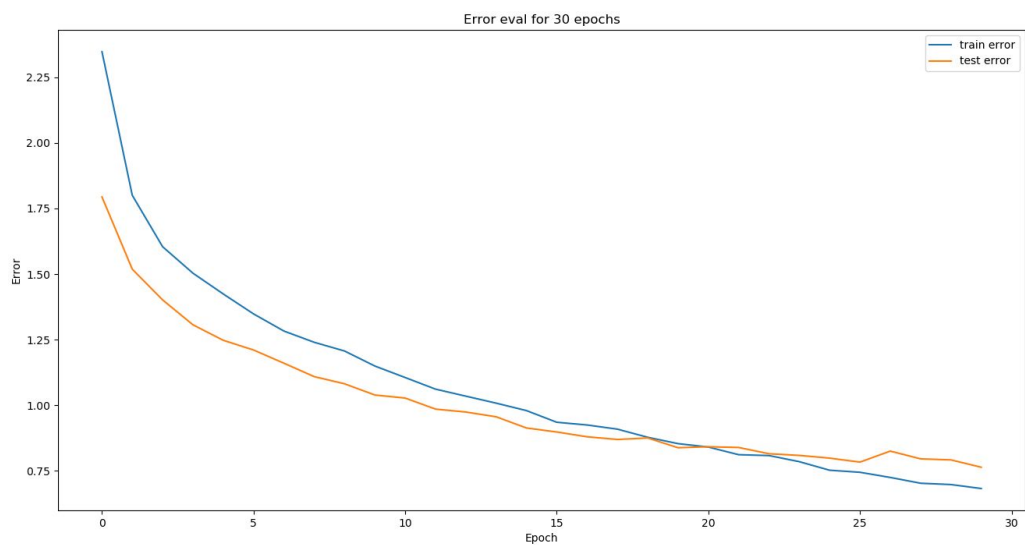


Figure 15: Error plot of convolutional neural network over 30 epochs

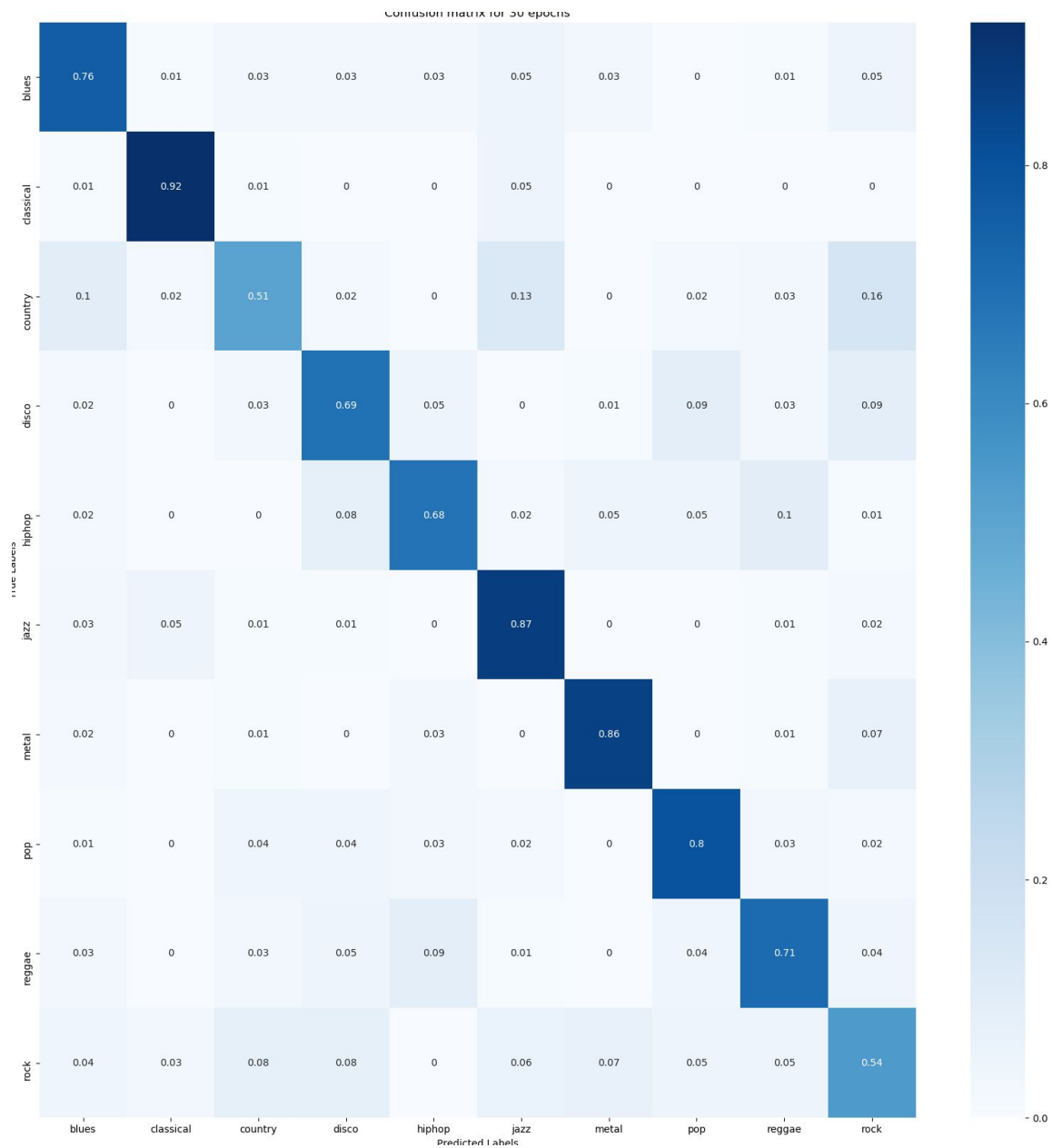


Figure 16: Confusion matrix of convolutional neural network over 30 epochs

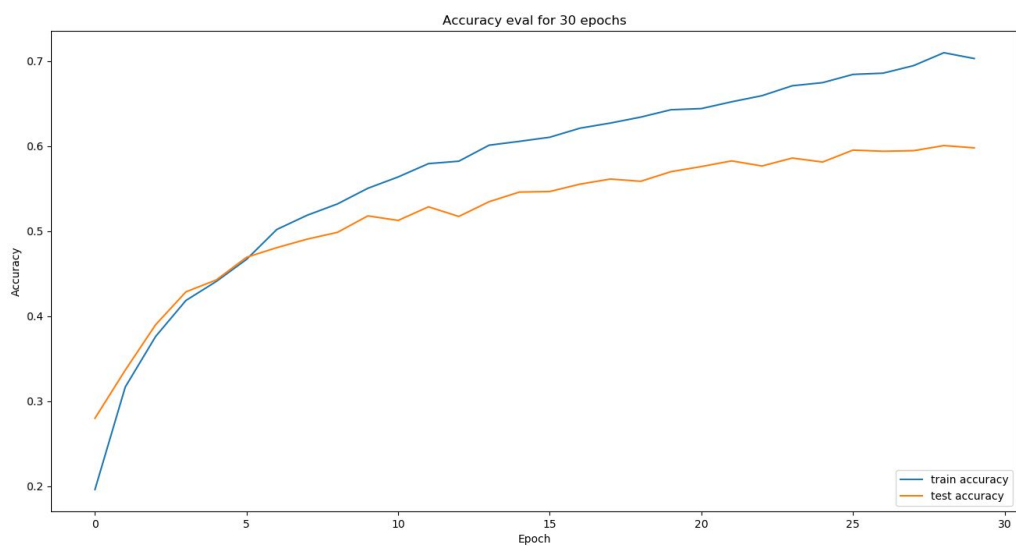


Figure 17: Accuracy plot of lstm recurrent neural network over 30 epochs

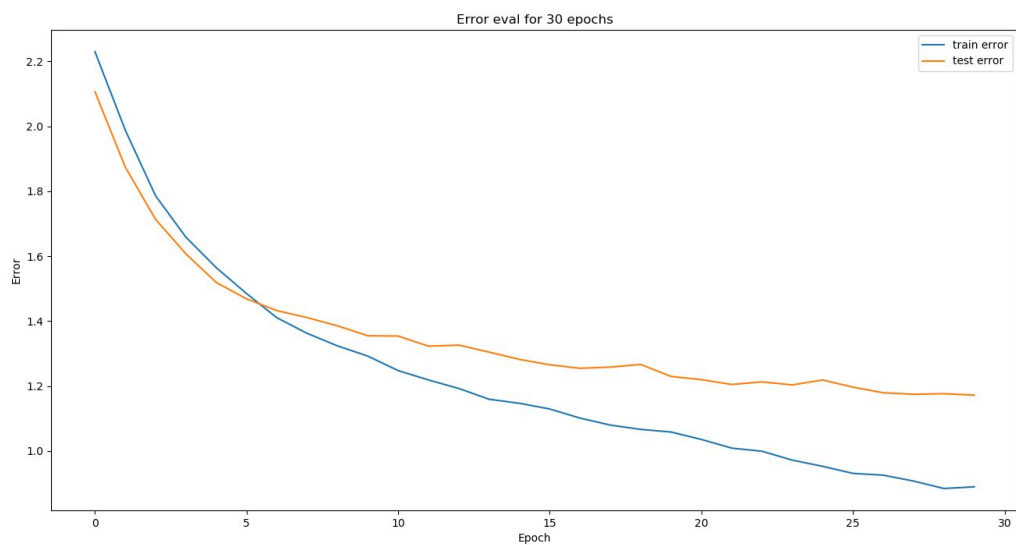


Figure 18: Error plot of lstm recurrent neural network over 30 epochs

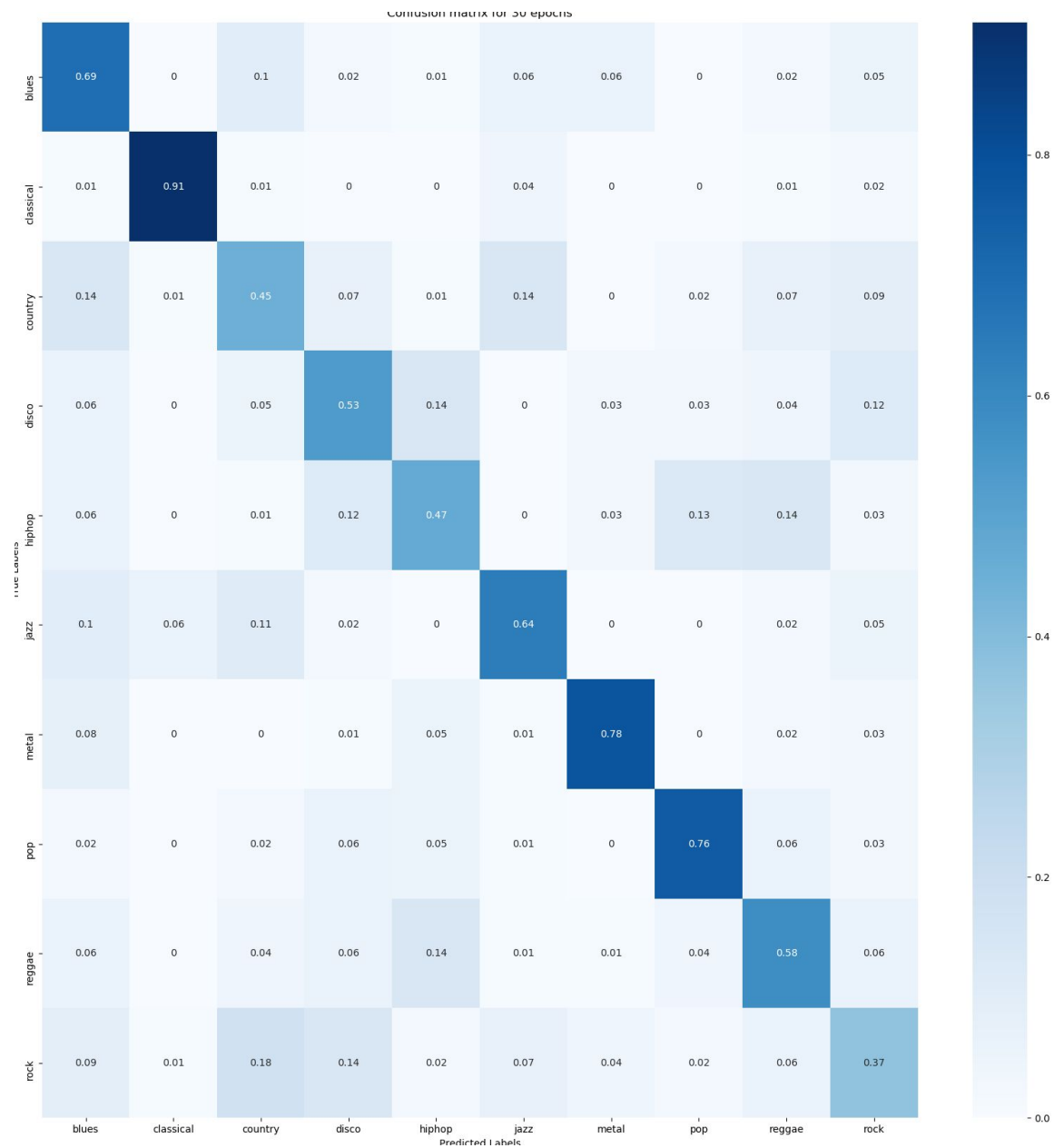


Figure 19: Confusion matrix of lstm recurrent neural network over 30 epochs