

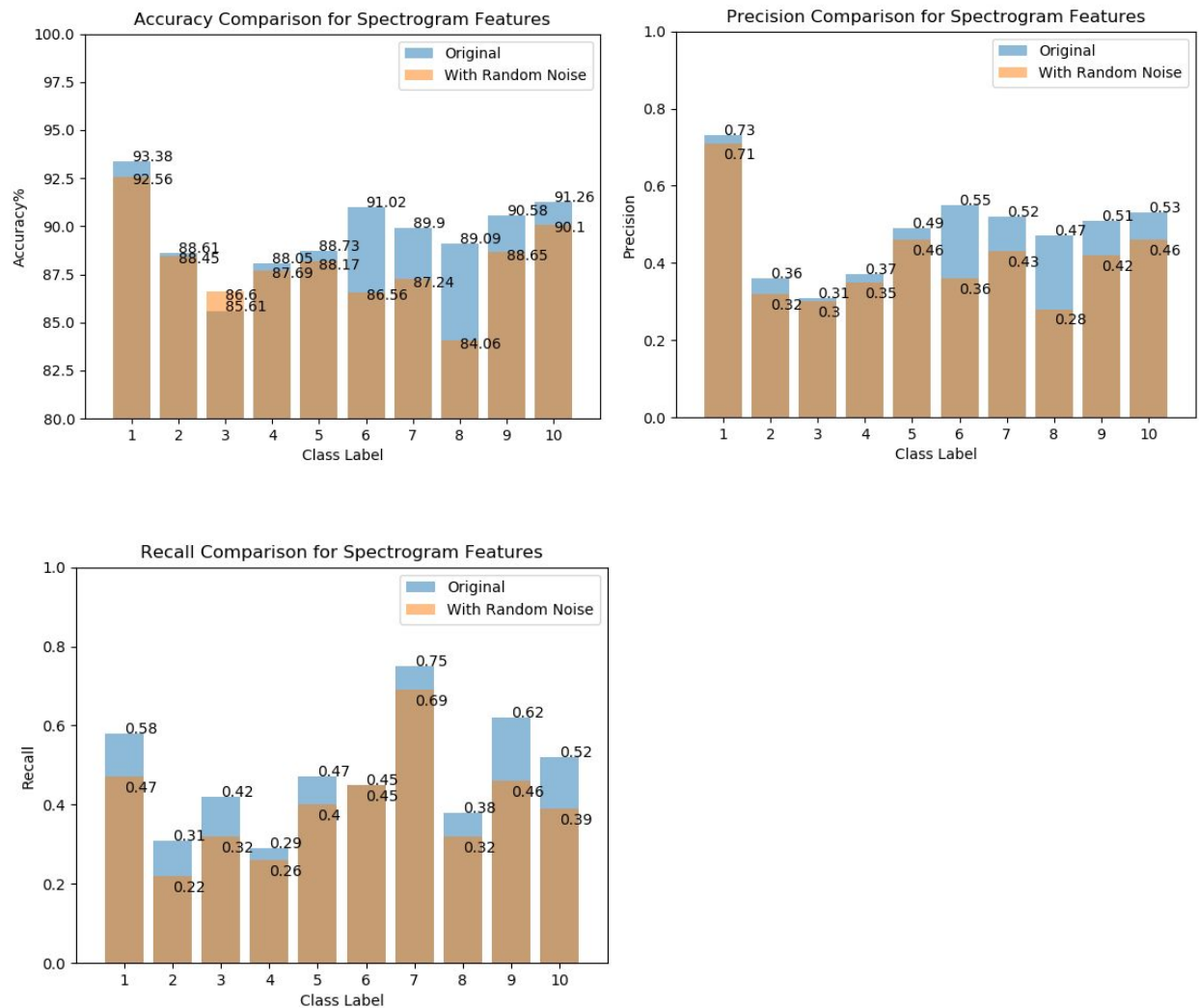
MCA Assignment - 2

Arushi Chauhan
2016019

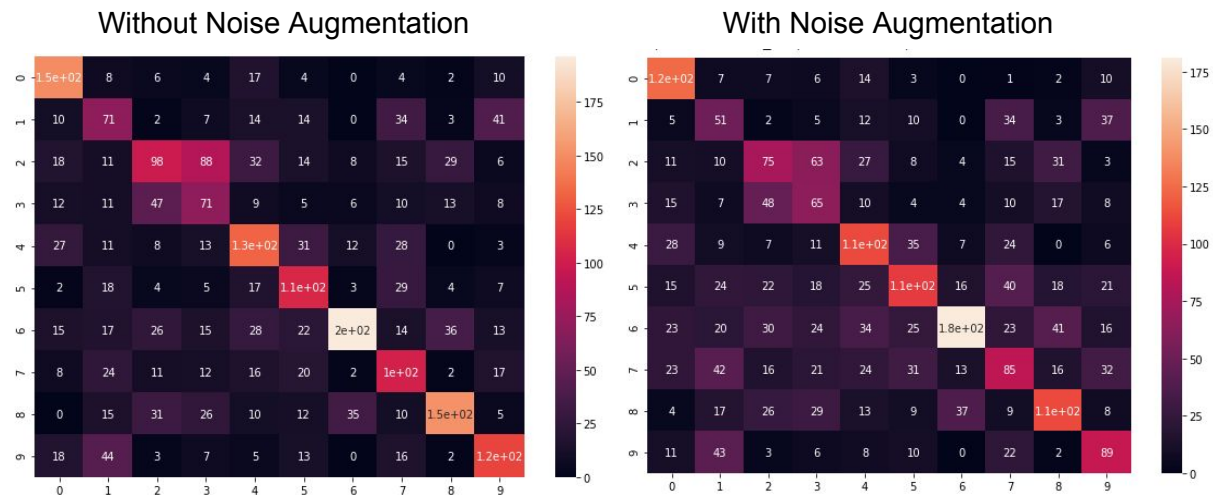
Spectrogram Features

Results

Accuracy: 40.25% (with noise augmentation), 48.11% (without noise augmentation)



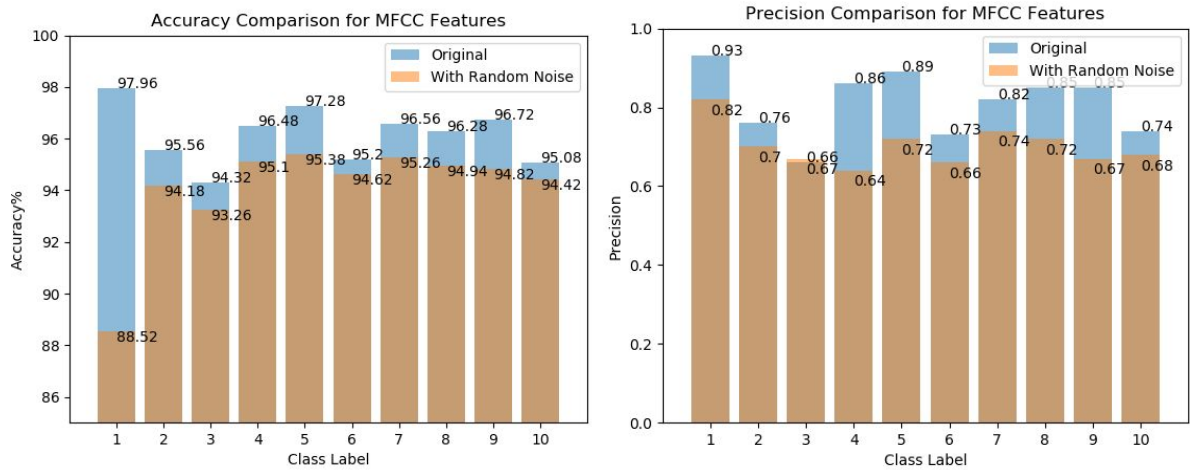
Confusion Matrices

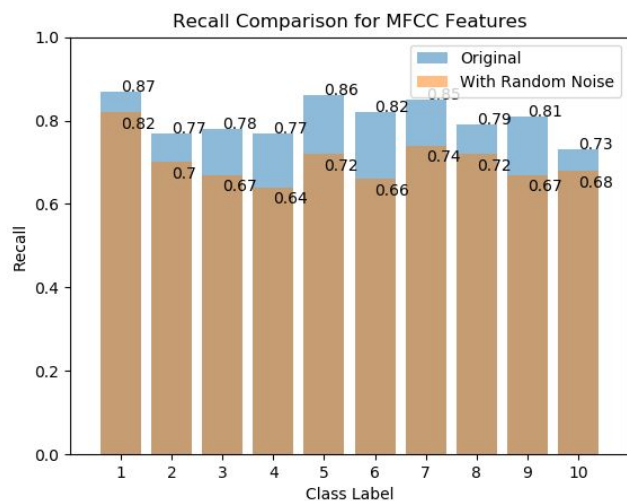


MFCC Features

Results

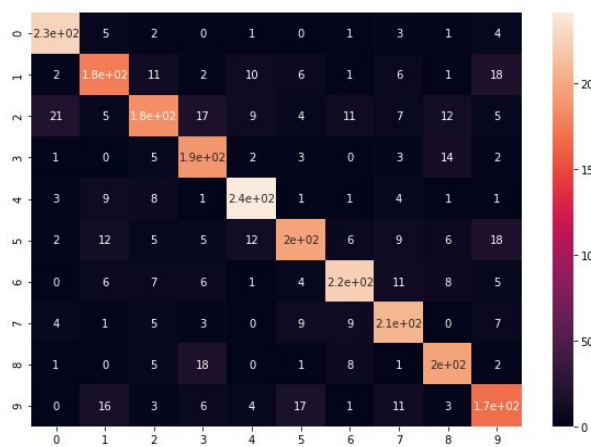
Accuracy: 70.28%(with noise augmentation), 80.67% (without noise augmentation)



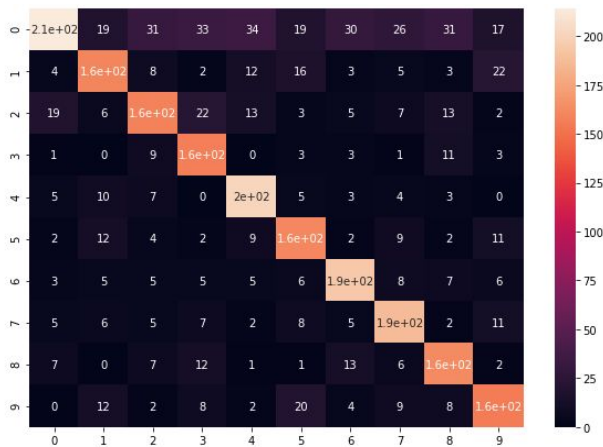


Confusion Matrices

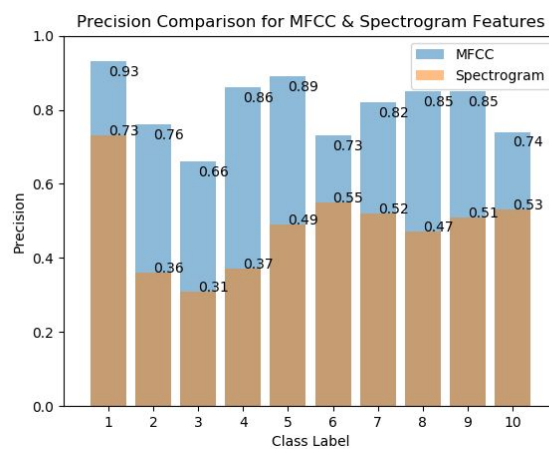
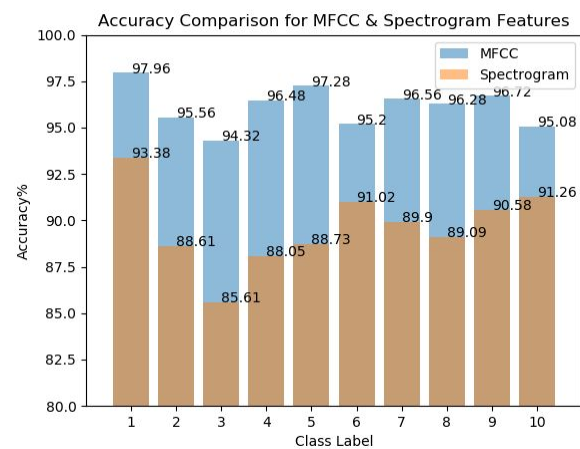
Without Noise Augmentation

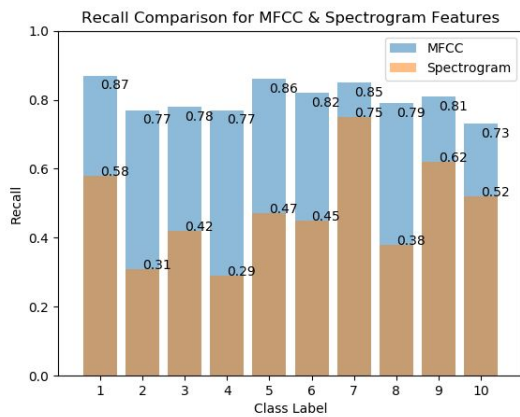


With Noise Augmentation



Spectrogram vs MFCC Comparison





Noise Augmentation Process

Noise was added to 30% of the training and validation samples randomly. Since there were six noise samples, one of them was chosen randomly for a given training/validation sample. The resultant wave was a 60:40 combination of original sound and chosen noise sample.

Observations:

1. MFCC consistently outperforms spectrogram in terms of higher accuracy, precision and recall for all classes. Hence, it can be considered as a better feature in comparison to spectrogram.
2. Models performed better without noise augmentation in terms of higher accuracy, precision and recall reported in original models as compared to models trained on noise augmented data.

Spectrogram Plots

