PYTORCH

1. Experiments results are…

Classification report for Spectrograms with no augmentation

	precision	recall	f1-score	support
car	0.87	0.94	0.90	174
truck	0.85	0.70	0.77	82
motorcycle	0.88	0.88	0.88	8
macro avg	0.86	0.84	0.85	264
weighted avg	0.86	0.86	0.86	264

Total accuracy: 0.86

Classification report for Spectrograms with augmentation

(time shift and masking out with horizontal and vertical black bars (time and frequency))

	precision	recall	f1-score	support
car	0.94	0.89	0.91	185
truck	0.75	0.86	0.80	70
motorcycle	0.70	0.78	0.74	9
macro avg	0.80	0.84	0.82	264
weighted avg	0.88	0.88	**0.88**	264

Total accuracy: 0.875

Classification report for Spectrograms with no augmentation and hop_length=512 (n_fft/2)

	precision	recall	f1-score	support
car	0.77	0.98	0.86	166
truck	0.88	0.52	0.65	87
motorcycle	1.00	0.18	0.31	11
macro avg	0.88	0.56	0.61	264
weighted avg	0.82	0.79	0.77	264

Total accuracy: 0.79

TENSORFLOW

1. Experiments results are…

Classification report for MFCCs

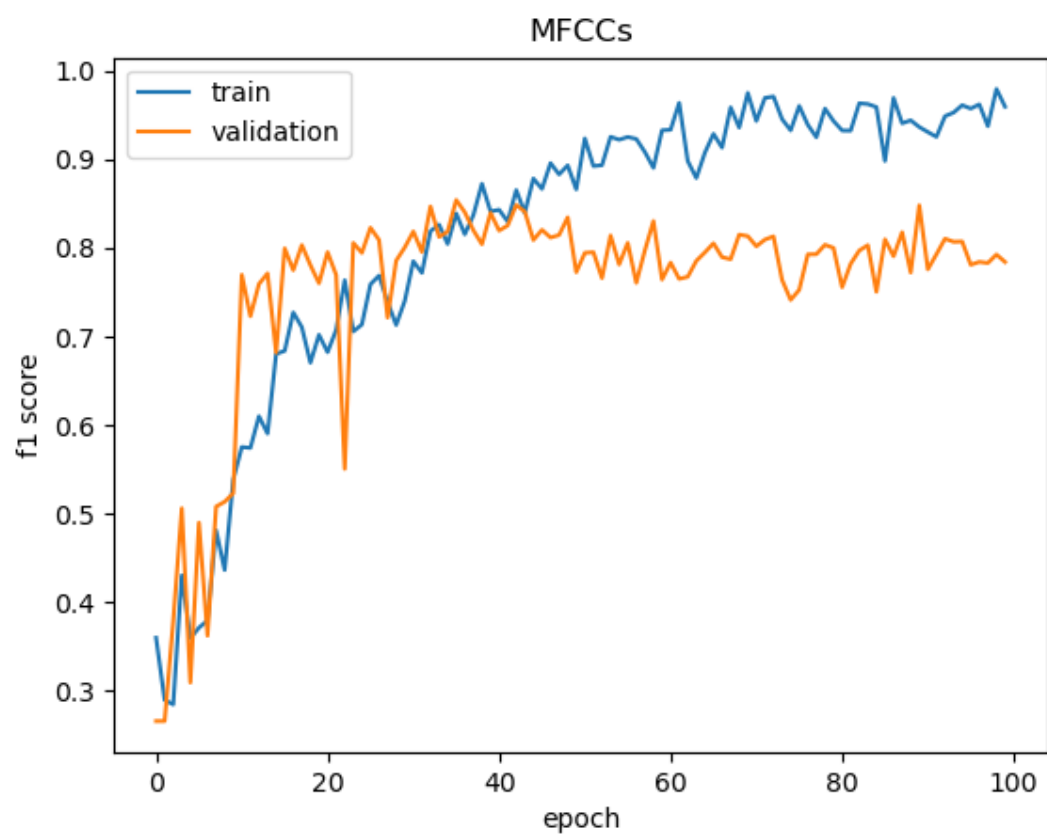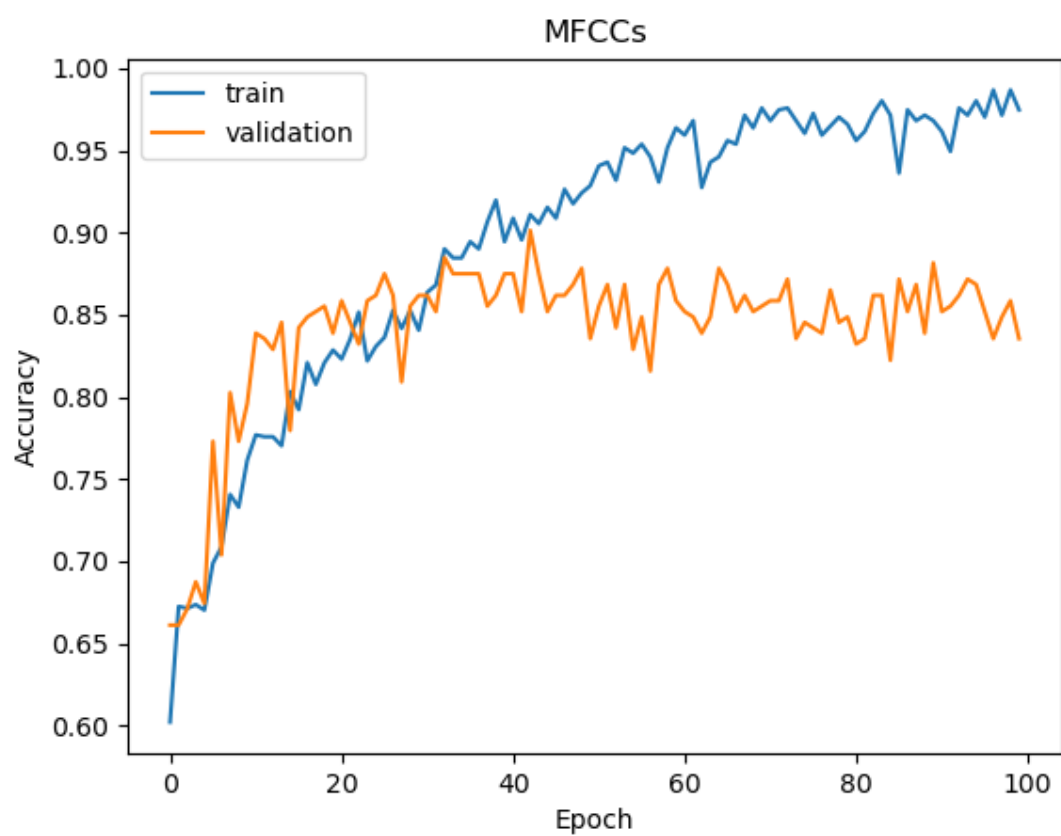|	precision	recall	f1-score	support
car	0.89	0.88	0.88	136
truck	0.66	0.71	0.69	52
motorcycle	1.00	0.71	0.83	7
accuracy			0.83	195
macro avg	0.85	0.77	0.80	195
weighted avg	0.83	0.83	**0.83**	195

Total accuracy = 0.83
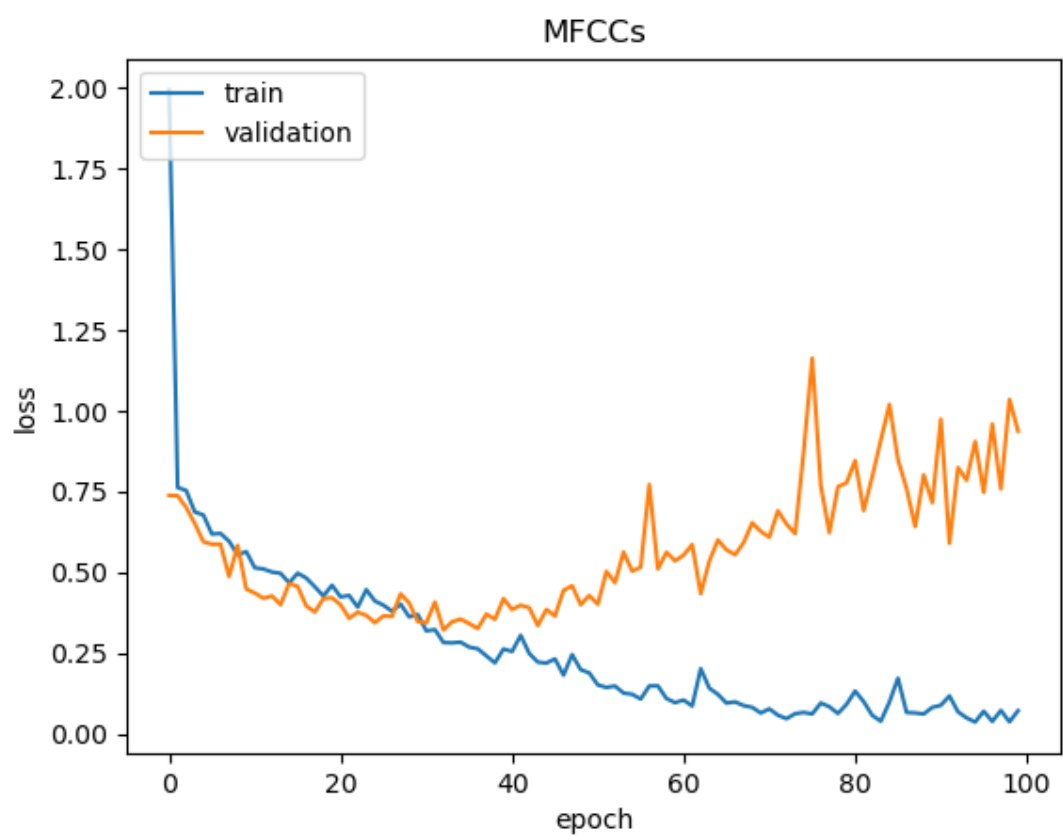f1_score(y_testt, y_pred, average='macro') = 0.7999999999999999

f1_score(y_testt, y_pred, average='micro') = 0.8256410256410256
f1_score(y_testt, y_pred, average='weighted') = 0.8274074074074075

Test set confusion matrix

Training and validation

MFCCs

MFCCs

MFCCs
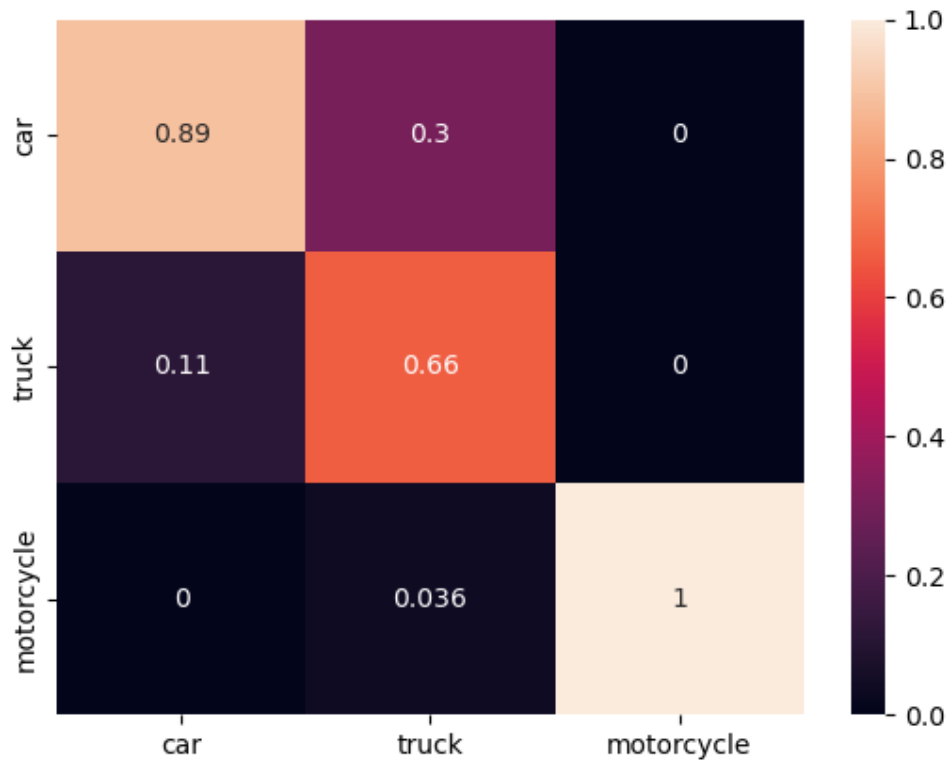
Classification report for Spectrograms

	precision	recall	f1-score	support
car	0.87	0.96	0.92	136
truck	0.87	0.65	0.75	52
motorcycle	0.83	0.71	0.77	7
accuracy			0.87	195
macro avg	0.86	0.78	0.81	195
weighted avg	0.87	087	**0.87**	195

Total accuracy = 0.87
f1_score(y_testt, y_pred, average='macro') = 0.8108558108558109
f1_score(y_testt, y_pred, average='micro') = 0.8717948717948718

Test set confusion matrix

Training and validation