機器學習概論 Introduction to Machine Learning

Assignment 5 - EEG Signal Classification

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1. Model Implementation

	LSTM	EEGNet
epoch	100	100
training time	15m 19.3s	3m 3.5s
accuracy	0.9079	0.9671
numbers of	85958	2118
parameters		
training loss	1.8	1.8
curve	1.6 - 1.4 - 1.4 - 1.0 -	1.6 - 1.4 - 1.4 - 1.5 - 1.0 - 1.5 - 1.0 - 1.5 - 1.0 -
others	The EEGNet has lesser number of parameters, but got a higher	
	accuracy and efficiency than the LSTM model. It is also worthy to	
	notice that the loss curve of the LSTM model decreases slowlier.	

2. Model Competition

From the previous implementation, we can see that EEGNet could have a higher accuracy. So, the model I used here was based on the EEGNet. Though, I added one more LSTM layer to the EEGNet, since the EEG signal may depend on time. The input dimension was adjusted to (200, 22) as a result. Also, the output of the LSTM layer would be reshaped to fit into the input of the EEGNet. The LSTM+EEGNet model iterated 100 times and could reach 0.9868.