zl9901 Homework3 Report

1 Activity recognition using the hidden Markov model (HMM)

The confusion matrix is shown as followed:

HMM Model		Prediction Label		
		walking	downstairs	sitting
Actual Label	walking	299	197	0
	downstairs	177	294	0
	sitting	0	43	448

Accuracy = (299+294+448) / (1458) = 0.71399177

197 from the confusion matrix is the number which walking and walking downstairs are getting confused.

177 from the confusion matrix is the number which walking downstairs and walking are getting confused.

43 from the confusion matrix is the number which sitting and walking downstairs are getting confused.

2 Activity recognition using the long short-term memory (LSTM) networks

The confusion matrix is shown as followed:

LSTM Model		Prediction Label		
		walking	downstairs	sitting
Actual Label	walking	490	6	0
	downstairs	1	470	0
	sitting	0	2	489

Accuracy = (490+470+489) / (1458) = 0.99382716

6 from the confusion matrix is the number which walking and walking downstairs are getting confused.

1 from the confusion matrix is the number which walking downstairs and walking are getting confused.

2 from the confusion matrix is the number which sitting and walking downstairs are getting confused.

From the confusion matrix shown above, we can see that the accuracy of LSTM is much higher than HMM model.