

## Appendix I: The Summary of the Performance of CNN and RNN models

### 1. Convolutional Neural Network

#### 1.1 Summary of Performance of all the CNN Models We Test

CNN Model	Training/Test Accuracy	Training/Test Loss
CNN Model 1 (The best CNN model)	0.8359/0.6751	0.4852/0.8620
CNN Model 2	0.8411/0.6591	0.4452/10.949
CNN Model 3	0.8823/0.6298	0.3693/10.983
CNN Model 4	0.7144/0.4786	1.0234/1.2495

\* This table just show the result for four kinds of CNN model we tested, where the detailed architectures for these models can be found in Appendix II.

#### 1.2 Inter-person Performance of the Best CNN Model (Model 1)

Model	1	2	3	4	5	6	7	8	9	Average Inter-person Test Accuracy	Test Accuracy Using the Whole Dataset
CNN Model 1 (The best CNN model)	0.66	0.46	0.82	0.64	0.5957	0.5714	0.68	0.74	0.78	0.6616	0.6751

\* In the inter-person test, for each person, we use its corresponding data to train our best CNN model (Model 1) and test accuracy for each people, then calculate the average inter-person accuracy.

### 2. Recurrent neural network

#### 2.1 Summary of Performance of all the RNN Models We Test

RNN Model	Training/Test Accuracy	Training/Test Loss
RNN Model 1 (Simple RNN)	Inter-person: 0.9712/0.3450 All: 0.6202/0.3340	Inter-person: 3.7660/4.8712 All: 2.4711/3.0640
RNN Model 2 (Stacked RNN)	Inter-person: 0.9520/0.5040 All: 0.7476/0.4605	Inter-person: 1.4952/1.5211 All: 1.8052/2.5248

\* This table shows the result for two kinds of RNN models we test, where the detailed architectures for two models can be found in Appendix II. In the inter-person test, for each person, we use its corresponding data to train the RNN model and test accuracy for each people, then calculate the average inter-person accuracy.

#### 2.2 Inter-person Performance of the RNN Models

Model	1	2	3	4	5	6	7	8	9	Average Inter-person Test Accuracy	Test Accuracy Using the Whole Dataset
RNN Model 1 (Simple RNN)	0.38	0.32	0.30	0.48	0.319	0.347	0.42	0.26	0.277	0.345	0.334
RNN Model 2 (Stacked RNN)	0.50	0.40	0.52	0.44	0.523	0.51	0.52	0.54	0.574	0.504	0.46

\* In the inter-person test, for each person, we use its corresponding data to train the RNN model and test accuracy for each people, then calculate the average inter-person accuracy.