

Report for machine learning

18643053 Tatsuki Harada

Experiment

I experimented that segmenting of human motion with Wii Balance Board (WiiBB). I segmented 5 motions. There are Stand on right foot, Stand on left foot, Cross balance on right foot, Cross balance on left foot and Walking. There are indicated in the figure 1.

In experiment, I collect three human's data. Measurement was carried out at 15 seconds. For the first 5 seconds, Subjects did not move. And next 5 seconds, they moved. For the last 5 seconds, they did not move as first. Repeat the above process five times each subject. It can collect fifteen data each movement.

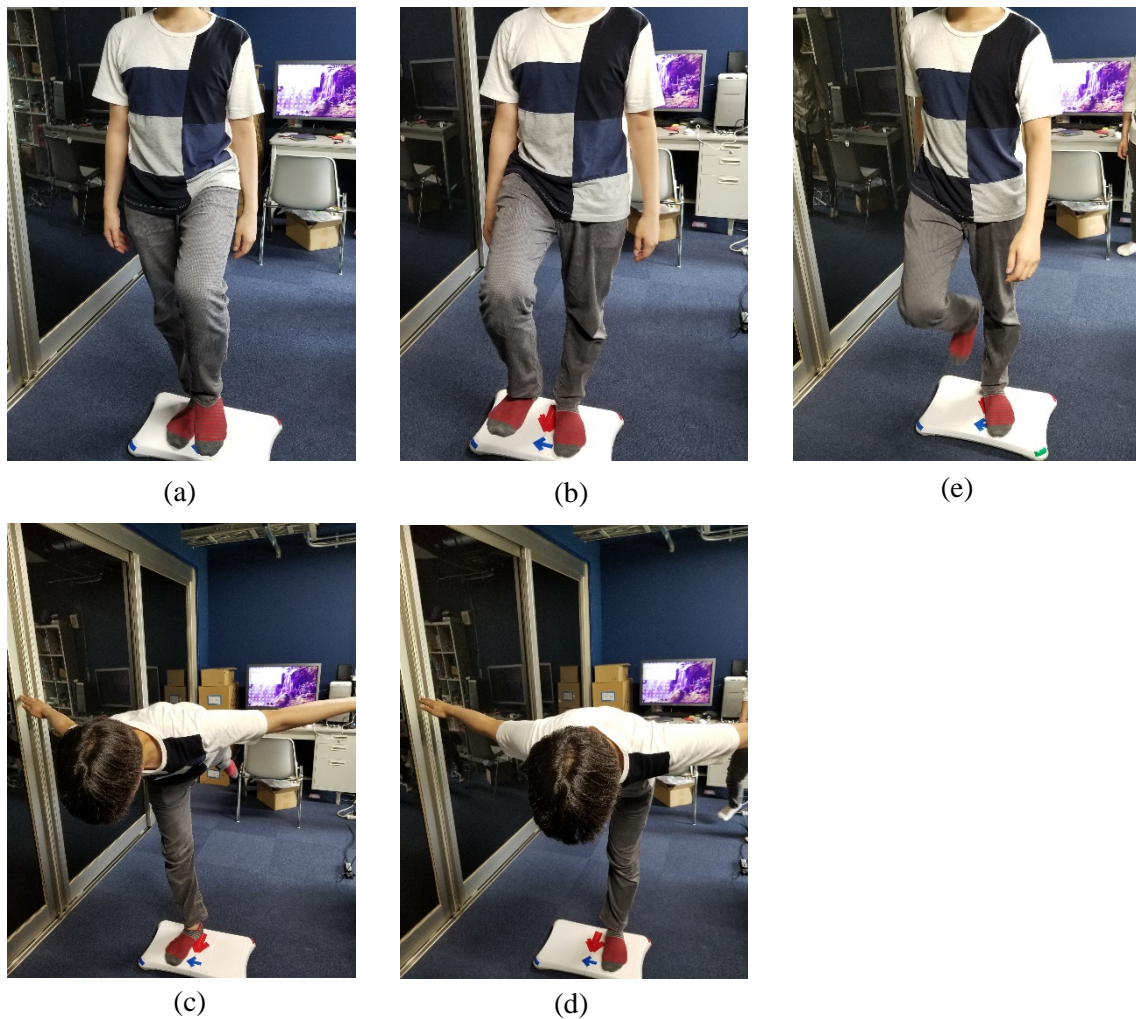


Figure 1 Movements: (a)Stand on right foot, (b)Stand on left foot, (c)Cross balance on right foot, (d)Cross balance on left foot (e)Walking

Data collected

Collected data are analyzed by CNN. The data are normalized and make a all of uniform length. In addition, I made label of the data and add to the data.

Results

The results of machine learning are in the figure 2 and figure 3. It shows model accuracy and prediction results.

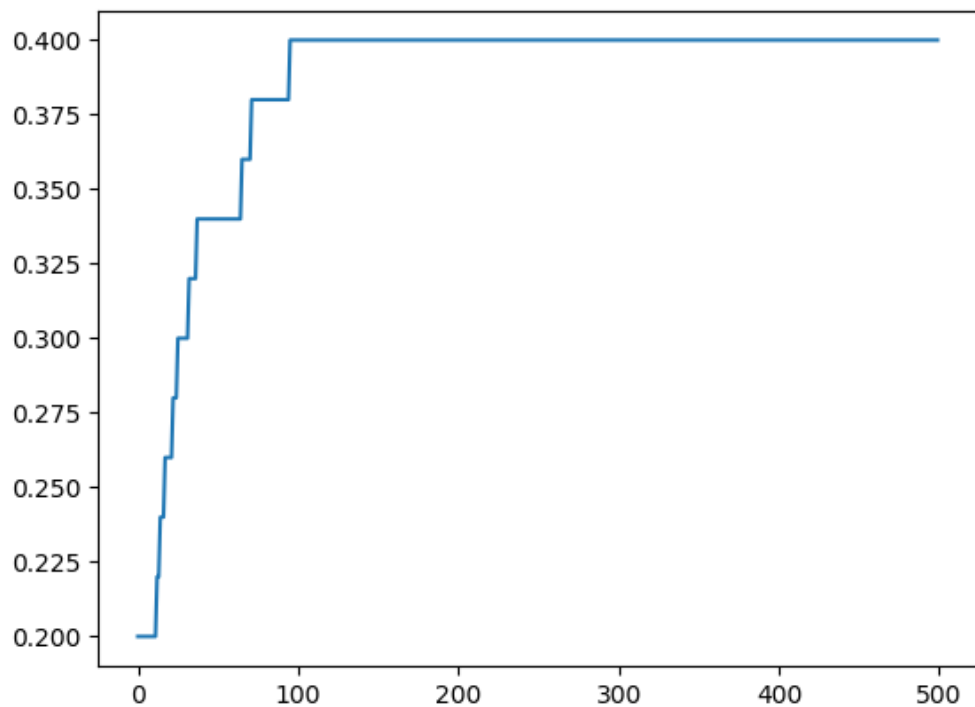


Figure 2 model accuracy

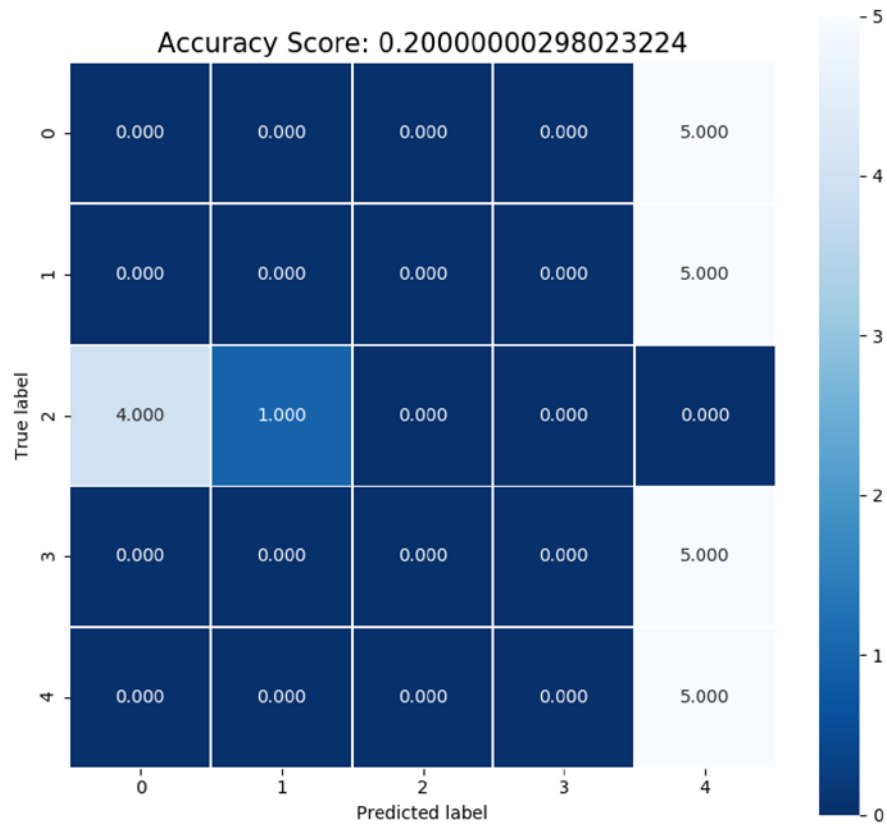


Figure 3 Prediction results

Those figure shows that it model is not accurate. It is considered to have two reasons. The first reason is that it is insufficient the data. The second reason is that the data are very similar. The data are only the weight shift of the left and right. So, it is difficult to distinguish the movement.