

Weekly Report

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1 Progress

- Check the accuracy using ellipse fitting and wavelet reconstruction under close-set and open-set condition.
 - The data are segmented by 5 seconds, with an overlap of 1.5 seconds. All predictions are made for every single segment.

2 A Result under close-set condition

2.1 Only applying ellipse fitting

I got 18.21% by just applying ellipse fitting under close-set condition.

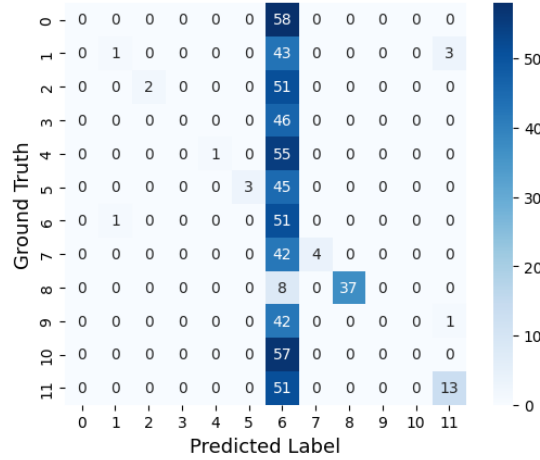


Figure 1: Confusion Matrix when using ellipse fitting under close-set condition

2.2 Applying wavelet reconstruction after applying ellipse fitting

I got 83.41% by applying ellipse fitting and wavelet reconstruction under close-set condition.

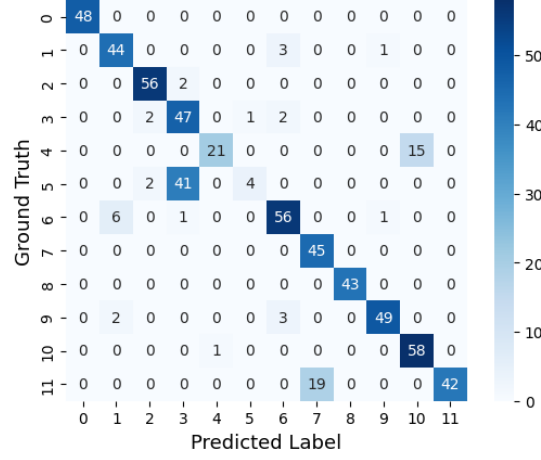


Figure 2: Confusion Matrix when using ellipse fitting and wavelet reconstruction under close-set condition

3 A Result under open-set condition

I got 44.06% by applying same preprocessing method above under open-set condition. Six subjects' data were used in training, the other six in testing only. In fig. 2, Label 6 indicates unknown people.

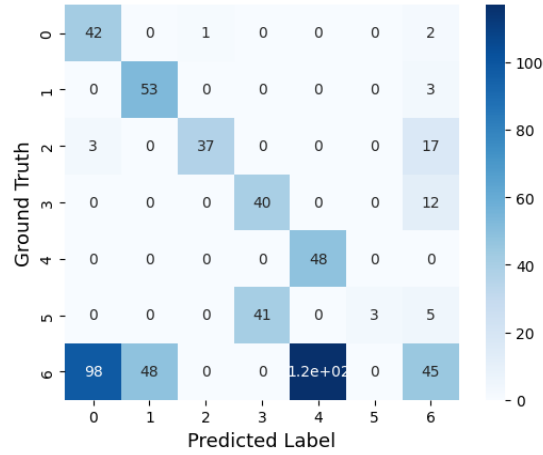


Figure 3: Confusion Matrix when using ellipse fitting and wavelet reconstruction under open-set condition

4 Next Plan

- As you can see from the figure below, I think wavelet reconstruction has a role to remove undesired frequency band signals, I will confirm the effectiveness of wavelet reconstruction by comparing it with ellipse fitting and BPF application.

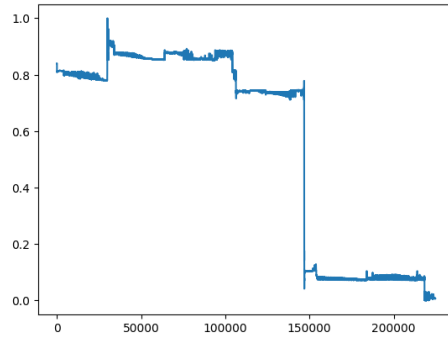


Figure 4: Waveform just applying ellipse fitting

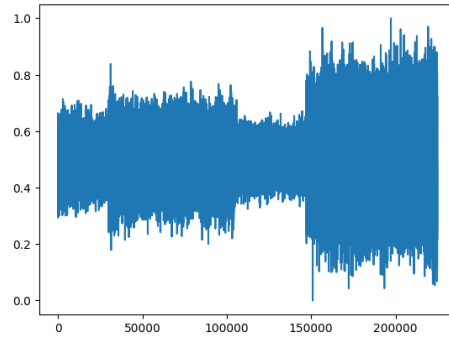


Figure 5: Waveform applying ellipse fitting and Wavelet reconstruction