# Weekly Report

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## 1 Progress

- Reimplement Inception Time[1], Xing-San used as a baseline method. (almost finished)

  I am currently asking Xing-San questions about what is not working.

- Finished reimplementing InceptionTime for close-set identification

## 2 Human identification based on 1D-CNN (InceptionTime)

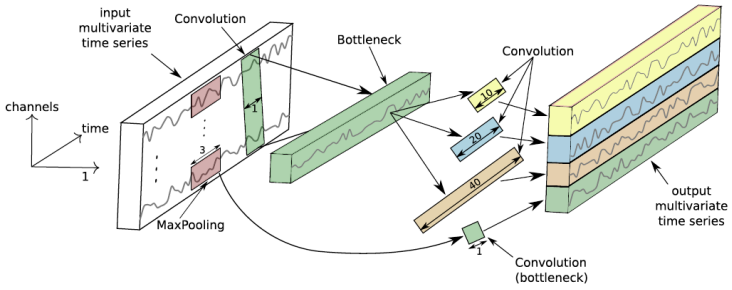


Figure 1: The architecture of InceptionTime

Using a model called Inception Time, we tried identifying 30 subjects using heartbeat signals generated from radar. We split the data 8:2, and used 4330 instances for training, 1083 instances for test. Table 1 shows the hyper parameters and Figure 2 shows the confusion matrix. We achieved 99.08% accuracy on close-set.

Table 1: Hyper parameter

| | |
|---|---|
| batch size | 64 |
| learning rate | 0.001 |
| epochs | 10 |
| Sampling rate | 250 Hz |
| window size | 5s |
| overlap | 1.5s |

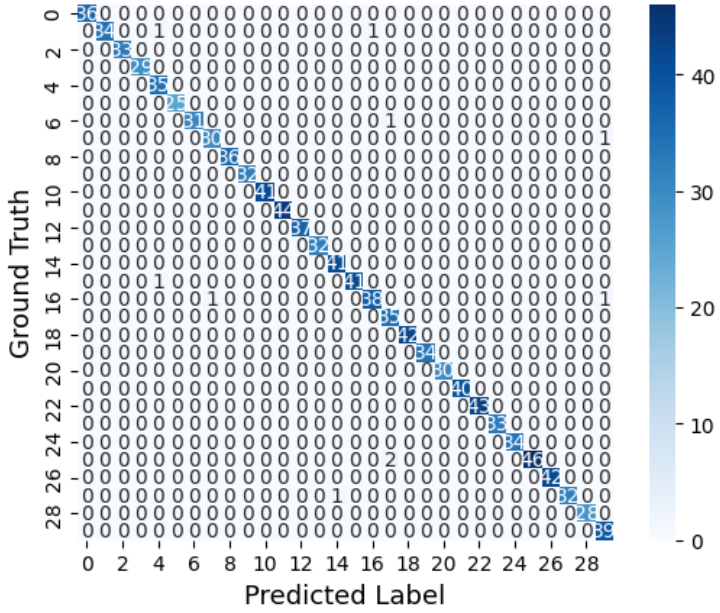


Figure 2: Confusion Matrix

# 3 Next Plan

- Finish reimplementation for Open-set
- Evaluate the performance of Inception Time on the 30-subjects dataset

# References

[1] Ismail Fawaz, H., Lucas, B., Forestier, G. et al. InceptionTime: Finding AlexNet for time series classification. Data Min Knowl Disc 34, 1936–1962 (2020). https://doi.org/10.1007/s10618-020-00710-y