

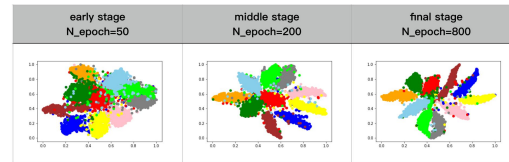
Q1.1:

Please make t-SNE plot the distribution of early, middle, final stage.

a. Evaluate the model on training dataset, collect features and labels

b. Make 3 t-SNE plots of the following training phase

Answer:



Q1.2:

Explain and analyze the distribution of features of three stages.

Hint: Is it a good feature extractor for classification task? Why or Why not?

Answer:

In the early stage, the distribution of features is formed. Despite each label still overlap with others, it is not difficult to observe that the features of each label close together to form a region. However, the boundary is not clear, regions either overlap with neighbors or connect to neighbors.

In the middle stage, the distribution of features is easy to observe. In this step, not only the features of each label close together to form a region, but also the boundary is very clear. But, some isolated points (single data) may occur in the region of other labels.

In the final stage, the distribution of features is fixed. Follow from the previous stage, the boundary of each region is very clear. We can easily draw the boundary. Also, the isolated points are no longer to occur in the region of other labels. (The probability is decreased rapidly)

It is a good feature extractor of classification task.

Because the boundary between labels is very clear and isolated. We successfully category the datas into ten regions, which correspond to the ten labels of ground truth.



## STUDENT

梁峻璋

## TOTAL POINTS

**4 / 4 pts**

## QUESTION 1

Visualize and analyze distribution of extracted features across different classes. **2 / 2 pts**

- 1.1 Make t-SNE plots of the distribution of extracted features of 3 stages across different classes. **1 / 1 pt**
- 1.2 Explain and compare the distribution of features on different stages. (Hint: Is is a good feature extractor for classification? Why or why not?) **1 / 1 pt**

## QUESTION 2

Visualize and analyze distribution of extracted features across different domains. **2 / 2 pts**

- 2.1 Make t-SNE plots of the distribution of extracted features of 3 stages across different classes. **1 / 1 pt**
- 2.2 Explain and compare the distribution of features on different stages. (Hint: Is it a good feature extractor for DA? Why or why not?) **1 / 1 pt**