AI618. Individual Project Evaluation (35%)

All students should submit code and report individually. You must submit one zip file including code and report.

The name of your zip file should be "Project1_StudentID#_Name.zip"

1. Code submission policy

All students should submit executable codes with proper comments, so that TAs are able to reproduce the results.

Code must include all of the followings below.

- Training code for cycleGAN

- Training code for supervised learning

- Evaluation code for both models + pre-trained model weights (two models)

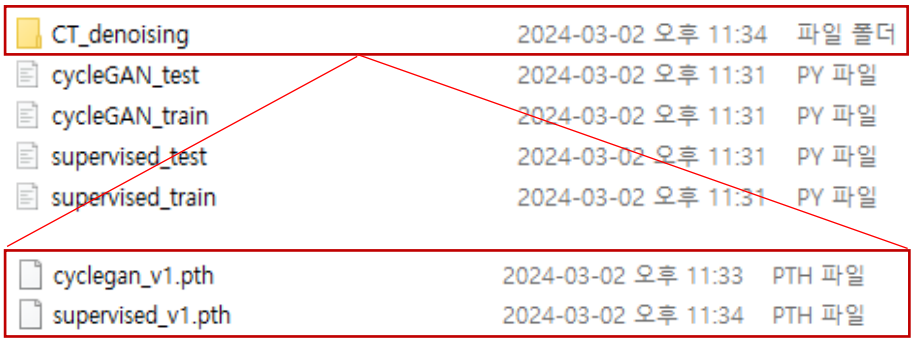

Figure 1. Example of the code submission directory

2. Report submission policy

All students should submit report about the results and methods. The report must be formatted as pdf and included in a zip file.

Report must include all of the followings below.

- **Brief explanation of the implementation of the code.**
- **Loss graph**
  - Check the networks converged stably.
  - If network reaches the optimal equilibrium state, the adversarial losses should be reached nearly 0.25
- **Qualitative evaluation**
  - Comparison between **output of cycleGAN, input, and ground truth**
  - Comparison between **output of cycleGAN and supervised learning**
- **Quantitative evaluation**
  - Peak signal to noise ratio (PSNR)
  - Structural similarity index (SSIM)
  - Average value of all test data (input, output of cycleGAN/supervised learning)

```
Mean PSNR between input and ground truth:
34.16952392478545
Mean SSIM between input and ground truth:
0.8931997874844594
Mean PSNR between network output and ground truth:
38.109309315058006
Mean SSIM between network output and ground truth:
0.9550265189001853
```

Figure 2. Example of the average value of all test data (input, output of cycleGAN)

Total 100pts for whole evaluation

If the total score exceeds 100 points, it is converted to 100 points.

1. Code Evaluation(40pts)

- Executable codes for training cycleGAN **(20pts)**
- Executable codes for training supervised learning **(5pts)**
- Executable codes for evaluating cycleGAN and supervised learning **(10pts)**
- Proper comments for each code **(5pts)**

2. Report Evaluation(30pts+5pts)

- Brief explanation of the implementation(code) **(10pts)**
- Loss graph and explanation **(5pts)**
- Qualitative evaluation and explanation **(10pts)**
- Quantitative evaluation and explanation **(5pts)**
- Discussion **(extra 5pts)**

3. Metric Evaluation(30pts)

If you don't submit model weights and evaluation code, we can't give any points about metric evaluation. Also, you should report your mean PSNR and SSIM in your report like Figure 2. If PSNR increases by 3.5dB compared to original and SSIM is over 0.95, you can receive full credit.