39-1_도커 이미지 사용메뉴얼_v1.2

1.1. 도커 컨테이너 실행하는 방법

```
docker image import pytorch_nerf.tar nia39-1/ubuntu/pytorch/nerf

#도커 이미지 명
#nia39-1/ubuntu/pytorch/nerf

#도커 컨테이너 명
#pytorch_nerf

#도커 컨테이너 만들기
docker run --gpus all --name pytorch_nerf -v $(pwd):/home/ -p 3901:8888 -it nia39-1/ubuntu/pytorch/nerf:latest /bin/bash


# 컨테이너가 꺼져있는 경우 도커 실행하기
#(optional) docker start pytorch_nerf
#(optional) docker exec -it pytorch_nerf bash

cd /home/NIA_39-1_NeRF

#python 확인 후 버전이 2.x 버전일 시 아래와 같이 명령어를 입력함.
root@fa46372dc77e:/home/NIA_39-1_NeRF# python --version
Python 2.7.17

root@fa46372dc77e:/home/NIA_39-1_NeRF# alias python=python3
root@fa46372dc77e:/home/NIA_39-1_NeRF# python --version
Python 3.8.16

#파이썬 라이브러리 설치
pip install -r requirements.txt
```

1.2. 도커 컨테이너에서 AI 모델실행 방법

```
# --gpu_num은 내가 사용하고자 하는 gpu의 번호
# --config 타겟 에셋의 환경설정 파일
# --training 학습 시 True로 설정함
# --testing 학습 된 모델로 시험 시 True로 설정함
# --rendering 학습된 모델로 렌더링시 True로 설정함
# "asset_x_x.yaml" 파일에 들어가서 학습하고자하는 에셋의 환경 설정을 변경할 수 있음



#경로 /home/NIA_39-1_NeRF
# 모델 학습시
# NVIDIA V100 이상 되는 GPU로 가능함.
#python run_NeRF.py  --gpu_num 0 --config ./config/asset_1_1.yaml --training True

# ./logs/model/ 폴더안에 학습완료된 모델이 포함되어 있음.
# NVIDIA V100 이상 되는 GPU로 가능함.
# 학습된 모델 테스트시
python run_NeRF.py  --gpu_num 0 --config ./config/asset_1_1.yaml --testing True
python run_NeRF.py  --gpu_num 0 --config ./config/asset_1_2.yaml --testing True
python run_NeRF.py  --gpu_num 0 --config ./config/asset_2_1.yaml --testing True
python run_NeRF.py  --gpu_num 0 --config ./config/asset_2_2.yaml --testing True
python run_NeRF.py  --gpu_num 0 --config ./config/asset_3_1.yaml --testing True
python run_NeRF.py  --gpu_num 0 --config ./config/asset_3_2.yaml --testing True
python run_NeRF.py  --gpu_num 0 --config ./config/asset_4_1.yaml --testing True
python run_NeRF.py  --gpu_num 0 --config ./config/asset_4_2.yaml --testing True
python run_NeRF.py  --gpu_num 0 --config ./config/asset_5_1.yaml --testing True
python run_NeRF.py  --gpu_num 0 --config ./config/asset_5_2.yaml --testing True
```

```
#실행결과 로그

root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_nerf.ppython run_NeRF.py  --gpu_num 0 --config ./config/asset_1_1.yaml --testing True
python3: can't open file 'run_nerf.ppython': [Errno 2] No such file or directory
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_1_1.yaml --testing True
...get data (tgt_class) : 1-11-16_17_white-vivid-sport-goggles_1_2_1_polygon
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 28.461 ssim : 0.967
ds_name : TestSet psnr : 23.238 ssim : 0.941

Testing Done!
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_1_2.yaml --testing True
...get data (tgt_class) : 2-14-10_24_Yellow-TopBottom-Solid-Square-Stool_1_2_1_nurbs
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 32.308 ssim : 0.980
ds_name : TestSet psnr : 35.600 ssim : 0.989

Testing Done!
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_2_1.yaml --testing True
...get data (tgt_class) : 1-7-20_20_beige-body-juicer_2_2_1_nurbs
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 33.839 ssim : 0.983
ds_name : TestSet psnr : 33.379 ssim : 0.983

Testing Done!
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_2_2.yaml --testing True
...get data (tgt_class) : 2-16-12_22_square-pillow-bean-bag_2_4_1_polygon
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 29.486 ssim : 0.971
ds_name : TestSet psnr : 28.218 ssim : 0.965

Testing Done!
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_3_1.yaml --testing True
...get data (tgt_class) : 1-5-16_12_knitted-toy-cat-stand_3_2_1_polygon
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 36.563 ssim : 0.991
ds_name : TestSet psnr : 36.756 ssim : 0.990

Testing Done!
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_3_2.yaml --testing True
...get data (tgt_class) : 2-21-2_7_retro-style-mint-oven_3_3_1_polygon
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 30.799 ssim : 0.951
ds_name : TestSet psnr : 32.915 ssim : 0.966

Testing Done!
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_4_1.yaml --testing True
...get data (tgt_class) : 1-7-21_9_pink-cylinder-rice-cooker_4_2_1_nurbs
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 30.942 ssim : 0.971
ds_name : TestSet psnr : 31.689 ssim : 0.972

Testing Done!
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_4_2.yaml --testing True
...get data (tgt_class) : 2-17-6_15_silver-round-streetlight_4_4_1_polygon
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 36.408 ssim : 0.990
ds_name : TestSet psnr : 32.472 ssim : 0.981

Testing Done!
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_5_1.yaml --testing True
...get data (tgt_class) : 1-5-23_20_minicooper-luggage-minicar_5_1_1_nurbs
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 29.904 ssim : 0.970
ds_name : TestSet psnr : 29.174 ssim : 0.967

Testing Done!
root@fa46372dc77e:/home/NIA_39-1_NeRF# python run_NeRF.py  --gpu_num 0 --config ./config/asset_5_2.yaml --testing True
...get data (tgt_class) : 2-16-2_24_leather-white-wood-3+-seater-recliner_5_5_1_polygon
```

```
this is colmap camera data..
Images shape: (21, 180, 180, 3) Poses shape: (21, 4, 4) Focal length: 202.61784008221662
ds_name : ValSet psnr : 31.243 ssim : 0.974
ds_name : TestSet psnr : 28.808 ssim : 0.966

Testing Done!
```