

## set up

```
git clone https://github.com/xfhelen/MMBench.git
cd applications/TransFuser/transfuser-2022
chmod +x setup_carla.sh
./setup_carla.sh
conda env create -f environment.yml
conda activate tfuse
pip install torch-scatter -f https://data.pyg.org/whl/torch-1.11.0+cu102.html
pip install mmcv-full==1.5.3 -f
https://download.openmmlab.com/mmcv/dist/cu102/torch1.11.0/index.html
```

## Dataset

You can download the dataset (210GB) by running:

```
chmod +x download_data.sh
./download_data.sh
```

## Test

there are 3 stages(encoder fusion head). it is controlled by “stage”  
(which is located at ~/team\_code\_transfuser/transfuser.py, line 136).

stage is used to analyze 3 stages (encoders fusion head),change it to test different stages.

```
stage=1 : encoder
stage=2 : fusion
stage=3 : head
stage=4 : all 3 stages used(normal conditions)
```

we provide 3 types of tests, which are (1)ncu, (2)nsys and (3)pytorch profiler.

### 1. nsight compute

to use nsight compute(ncu) test, follow the 3 steps below:

(1)change “stage” to what you want to test.

(2)cd /team\_code\_transfuser.

(3)sudo (path to ncu)/ncu --metrics (parameters) (path to python/python3) python  
Nvidia\_train.py (parameter) .

and here is an example to use ncu test:

```
sudo /usr/local/cuda-11.6/nsight-compute-2022.1.1/ncu --metrics
```

```
smsp__sass_average_data_bytes_per_sector_mem_global_op_st.pct,smsp__inst_executed.avg.p
er_cycle_active,dram__throughput.avg.pct_of_peak_sustained_elapsed,smsp__sass_average_da
ta_bytes_per_sector_mem_global_op_ld.pct,sm__warps_active.avg.pct_of_peak_sustained_acti
ve /home/tangpeng/miniconda3/envs/tfuse/bin/python Nvidia_train.py --batch_size 10 --logdir
/home/niuimo/transfuser-2022/logdir --root_dir /home/tangpeng/transfuser/data/
--parallel_training 0 --epoch 1 > transfuser_1.csv
```

## 2. nsight systems

(1)change "stage" to what you want to test.

(2)cd /team\_code\_transfuser.

(3)(path to nsys) nsys profile --stats=true (path to python) python Nvidia\_train.py  
(parameter)

here is an example to use nsys:

```
/usr/local/cuda-11.6/bin/nsys profile --stats=true python Nvidia_train.py --batch_size 10
--logdir /home/niuimo/transfuser-2022/logdir --root_dir /home/tangpeng/transfuser/data/
--parallel_training 0 --epoch 1
```

## 3. pytorch profiler

(1)change "stage"

(2)cd /team\_code\_transfuser.

(3)(path to python) python pytorch\_profiler\_train.py (parameter)

```
python pytorch_profiler_train.py --batch_size 10 --logdir
/home/niuimo/transfuser-2022/logdir --root_dir /home/tangpeng/transfuser/data/
--parallel_training 0 --epoch 1
```