

```
final_embedding_path exists
(venvprotein) czh@cjh2:~/clustering/trajectory/code/python/TrajCL-master$ python train.py --dataset geolife
[train.py:32 <module>()] -> python train.py --dataset geolife
[train.py:33 <module>()] -> =====
[train.py:34 <module>()] -> debug = True
dumpfile_uniqueid =
seed = 2000
device = cuda:0
root_dir = /home/czh/clustering/trajectory/code/python/TrajCL-master
checkpoint_dir = /home/czh/clustering/trajectory/code/python/TrajCL-master/exp/snapshots
dataset = geolife
dataset_prefix = 0_geolife
dataset_file = /home/czh/clustering/trajectory/code/python/TrajCL-master/data/0_geolife
dataset_cell_file = /home/czh/clustering/trajectory/code/python/TrajCL-master/data/0_geolife_cell100_cellspace.pkl
dataset_embs_file = /home/czh/clustering/trajectory/code/python/TrajCL-master/data/0_geolife_cell100_embdim256_embs.pkl
min_lon = 116.208047
min_lat = 39.831057
max_lon = 116.499288
max_lat = 40.0699999
max_traj_len = 200
min_traj_len = 20
cell_size = 100.0
cellspace_buffer = 500.0
trajcl_batch_size = 128
cell_embedding_dim = 256
seq_embedding_dim = 256
moco_proj_dim = 128
moco_nqueue = 2048
moco_temperature = 0.05
trajcl_training_epochs = 100
trajcl_training_bad_patience = 5
trajcl_training_lr = 0.001
trajcl_training_lr_degrade_gamma = 0.5
trajcl_training_lr_degrade_step = 5
trajcl_aug1 = mask
trajcl_aug2 = subset
trajcl_local_masksidelen = 1100.0
trans_attention_head = 4
trans_attention_dropout = 0.1
trans_attention_layer = 2
trans_pos_encoder_dropout = 0.1
trans_hidden_dim = 2048
traj_simp_dist = 100
traj_shift_dist = 200
traj_mask_ratio = 0.3
traj_add_ratio = 0.3
traj_subset_ratio = 0.7
test_expl_lcsc_edr_epsilon = 0.25
trajsimi_encoder_name = TrajCL
trajsimi_encoder_mode = finetune_all
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trajsimi_encoder_name = TrajCL
trajsimi_encoder_mode = finetune_all
trajsimi_measure_fn_name = edwp
trajsimi_batch_size = 128
trajsimi_epoch = 30
trajsimi_training_bad_patience = 10
trajsimi_learning_rate = 0.0001
trajsimi_learning_weight_decay = 0.0001
trajsimi_finetune_lr_rescale = 0.5
final_embedding_path = /mnt/data_hdd1/czh/TrajCL/data/0_geolife_2000_edwp
[train.py:35 <module>()] -> =====
[data_loader.py:12 read_traj_dataset()] -> [Load traj dataset] START.
[data_loader.py:26 read_traj_dataset()] -> [Load traj dataset] END. @=8, #=13386(13386/1338/2678)
[TrajCL.py:154 train()] -> [Training] START! timestamp=1712631950
Total Trainable Parameter Num: 2729997
[TrajCL.py:195 train()] -> [Training] ep-batch=0-100, loss=3.519, @=67.213, gpu=(20193, 24564), ram=5065
Epoch time: 60.19092359014433
[TrajCL.py:203 train()] -> [Training] ep=0: avg_loss=4.137, @=68.191/68.192, gpu=(20193, 24564), ram=5065
[TrajCL.py:195 train()] -> [Training] ep-batch=1-100, loss=2.955, @=66.618, gpu=(20659, 24564), ram=5067
Epoch time: 68.46968340873718
[TrajCL.py:203 train()] -> [Training] ep=1: avg_loss=3.232, @=68.478/136.713, gpu=(20659, 24564), ram=5066
[TrajCL.py:195 train()] -> [Training] ep-batch=2-100, loss=2.478, @=66.549, gpu=(20017, 24564), ram=5041
Epoch time: 68.4569535438085
[TrajCL.py:203 train()] -> [Training] ep=2: avg_loss=2.765, @=68.457/205.225, gpu=(20017, 24564), ram=5040
[TrajCL.py:195 train()] -> [Training] ep-batch=3-100, loss=2.196, @=64.121, gpu=(20429, 24564), ram=5066
Epoch time: 66.1169855826245
[TrajCL.py:203 train()] -> [Training] ep=3: avg_loss=2.363, @=66.118/271.396, gpu=(20429, 24564), ram=5066
[TrajCL.py:195 train()] -> [Training] ep-batch=4-100, loss=1.888, @=66.125, gpu=(20939, 24564), ram=5071
Epoch time: 68.99668383598328
[TrajCL.py:203 train()] -> [Training] ep=4: avg_loss=2.073, @=68.997/340.447, gpu=(20939, 24564), ram=5071
[TrajCL.py:195 train()] -> [Training] ep-batch=5-100, loss=1.599, @=65.331, gpu=(20941, 24564), ram=5069
Epoch time: 69.1704462390714
[TrajCL.py:203 train()] -> [Training] ep=5: avg_loss=1.744, @=67.179/407.685, gpu=(20941, 24564), ram=5068
[TrajCL.py:195 train()] -> [Training] ep-batch=6-100, loss=1.524, @=63.938, gpu=(20941, 24564), ram=5069
Epoch time: 65.84651708602985
[TrajCL.py:203 train()] -> [Training] ep=6: avg_loss=1.555, @=65.847/473.588, gpu=(20941, 24564), ram=5068
[TrajCL.py:195 train()] -> [Training] ep-batch=7-100, loss=1.452, @=66.146, gpu=(22853, 24564), ram=5040
Epoch time: 68.1319465637207
[TrajCL.py:203 train()] -> [Training] ep=7: avg_loss=1.417, @=68.133/541.777, gpu=(22853, 24564), ram=5040
[TrajCL.py:195 train()] -> [Training] ep-batch=8-100, loss=1.173, @=66.023, gpu=(22853, 24564), ram=5068
Epoch time: 67.87748265260418
[TrajCL.py:203 train()] -> [Training] ep=8: avg_loss=1.287, @=67.879/609.710, gpu=(22853, 24564), ram=5068
[TrajCL.py:195 train()] -> [Training] ep-batch=9-100, loss=1.012, @=58.317, gpu=(22853, 24564), ram=5041
Epoch time: 59.351938009262085
[TrajCL.py:203 train()] -> [Training] ep=9: avg_loss=1.188, @=59.353/669.124, gpu=(22853, 24564), ram=5041
[TrajCL.py:195 train()] -> [Training] ep-batch=10-100, loss=1.061, @=33.564, gpu=(16302, 24564), ram=5067
Epoch time: 34.87943172232855
[TrajCL.py:203 train()] -> [Training] ep=10: avg_loss=1.055, @=34.580/703.761, gpu=(16302, 24564), ram=5067
[TrajCL.py:195 train()] -> [Training] ep-batch=11-100, loss=0.978, @=45.166, gpu=(22853, 24564), ram=5068
Epoch time: 47.201172828674316
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czh@gpu2: ~/clustering/traject x czh@gpu2: ~/clustering/traject x czh@gpu2: ~/clustering/traject x + v
[traject.py:195 train()] -> [Training] ep-batch=11-100, loss=0.978, @=45.166, gpu=(22853, 24564), ram=5068
Epoch time: 407.2011728290316
[traject.py:203 train()] -> [Training] ep=11: avg_loss=0.963, @=47.282/751.020, gpu=(22853, 24564), ram=5068
[traject.py:195 train()] -> [Training] ep-batch=12-100, loss=0.876, @=64.561, gpu=(22853, 24564), ram=5069
Epoch time: 66.62738013267517
[traject.py:203 train()] -> [Training] ep=12: avg_loss=0.893, @=66.628/817.708, gpu=(22853, 24564), ram=5069
[traject.py:195 train()] -> [Training] ep-batch=13-100, loss=0.895, @=62.518, gpu=(22853, 24564), ram=5069
Epoch time: 64.52781510353088
[traject.py:203 train()] -> [Training] ep=13: avg_loss=0.855, @=64.529/882.297, gpu=(22853, 24564), ram=5069
[traject.py:195 train()] -> [Training] ep-batch=14-100, loss=0.740, @=64.736, gpu=(22853, 24564), ram=5068
Epoch time: 66.5998840320312
[traject.py:203 train()] -> [Training] ep=14: avg_loss=0.801, @=66.601/948.952, gpu=(22853, 24564), ram=5068
[traject.py:195 train()] -> [Training] ep-batch=15-100, loss=0.788, @=66.605, gpu=(22853, 24564), ram=5070
Epoch time: 68.63757228851318
[traject.py:203 train()] -> [Training] ep=15: avg_loss=0.728, @=68.639/1017.645, gpu=(22853, 24564), ram=5071
[traject.py:195 train()] -> [Training] ep-batch=16-100, loss=0.764, @=66.349, gpu=(22853, 24564), ram=5081
Epoch time: 68.35329908978143
[traject.py:203 train()] -> [Training] ep=16: avg_loss=0.691, @=68.354/1086.056, gpu=(22853, 24564), ram=5081
[traject.py:195 train()] -> [Training] ep-batch=17-100, loss=0.655, @=67.567, gpu=(22853, 24564), ram=5068
Epoch time: 69.2629930973053
[traject.py:203 train()] -> [Training] ep=17: avg_loss=0.663, @=69.264/1155.374, gpu=(22853, 24564), ram=5068
[traject.py:195 train()] -> [Training] ep-batch=18-100, loss=0.698, @=64.857, gpu=(22853, 24564), ram=5096
Epoch time: 66.1298713684082
[traject.py:203 train()] -> [Training] ep=18: avg_loss=0.634, @=66.131/1221.562, gpu=(22853, 24564), ram=5097
[traject.py:195 train()] -> [Training] ep-batch=19-100, loss=0.567, @=64.857, gpu=(22853, 24564), ram=5071
Epoch time: 65.8489601612091
[traject.py:203 train()] -> [Training] ep=19: avg_loss=0.610, @=65.850/1287.466, gpu=(22853, 24564), ram=5071
[traject.py:195 train()] -> [Training] ep-batch=20-100, loss=0.555, @=65.146, gpu=(22853, 24564), ram=5070
Epoch time: 67.17860221862793
[traject.py:203 train()] -> [Training] ep=20: avg_loss=0.592, @=67.179/1354.699, gpu=(22853, 24564), ram=5071
[traject.py:195 train()] -> [Training] ep-batch=21-100, loss=0.655, @=61.517, gpu=(22853, 24564), ram=5069
Epoch time: 63.56134726170808
[traject.py:203 train()] -> [Training] ep=21: avg_loss=0.560, @=63.562/1418.315, gpu=(22853, 24564), ram=5070
[traject.py:195 train()] -> [Training] ep-batch=22-100, loss=0.626, @=35.024, gpu=(24453, 24564), ram=5040
Epoch time: 36.62840280532837
[traject.py:203 train()] -> [Training] ep=22: avg_loss=0.540, @=36.629/1454.398, gpu=(24453, 24564), ram=5040
[traject.py:195 train()] -> [Training] ep-batch=23-100, loss=0.609, @=32.974, gpu=(21062, 24564), ram=5069
Epoch time: 34.958064794504005
[traject.py:203 train()] -> [Training] ep=23: avg_loss=0.538, @=34.959/1489.412, gpu=(21062, 24564), ram=5069
[traject.py:195 train()] -> [Training] ep-batch=24-100, loss=0.608, @=33.497, gpu=(14196, 24564), ram=5068
Epoch time: 34.5070925479126
[traject.py:203 train()] -> [Training] ep=24: avg_loss=0.524, @=34.510/1523.982, gpu=(14196, 24564), ram=5067
[traject.py:195 train()] -> [Training] ep-batch=25-100, loss=0.549, @=37.953, gpu=(21043, 24564), ram=5071
Epoch time: 40.04390788078308
[traject.py:203 train()] -> [Training] ep=25: avg_loss=0.510, @=40.045/1564.085, gpu=(21043, 24564), ram=5071
[traject.py:195 train()] -> [Training] ep-batch=26-100, loss=0.548, @=63.872, gpu=(22539, 24564), ram=5067
Epoch time: 65.76817893981934
[traject.py:203 train()] -> [Training] ep=26: avg_loss=0.512, @=65.769/1629.905, gpu=(22539, 24564), ram=5064
[traject.py:195 train()] -> [Training] ep-batch=27-100, loss=0.485, @=62.102, gpu=(20069, 24564), ram=5068
Epoch time: 63.92058539390564
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czh@gpu2: ~/clustering/traject x czh@gpu2: ~/clustering/traject x czh@gpu2: ~/clustering/traject x + v
[traject.py:195 train()] -> [Training] ep-batch=27-100, loss=0.485, @=62.102, gpu=(20069, 24564), ram=5068
Epoch time: 63.92058539390564
[traject.py:203 train()] -> [Training] ep=27: avg_loss=0.504, @=63.921/1693.826, gpu=(20069, 24564), ram=5068
[traject.py:195 train()] -> [Training] ep-batch=28-100, loss=0.487, @=63.257, gpu=(22345, 24564), ram=5067
Epoch time: 65.2939076423645
[traject.py:203 train()] -> [Training] ep=28: avg_loss=0.485, @=65.295/1759.174, gpu=(22345, 24564), ram=5067
[traject.py:195 train()] -> [Training] ep-batch=29-100, loss=0.625, @=64.534, gpu=(22345, 24564), ram=5066
Epoch time: 66.4094829593262
[traject.py:203 train()] -> [Training] ep=29: avg_loss=0.497, @=66.410/1825.639, gpu=(22345, 24564), ram=5066
[traject.py:195 train()] -> [Training] ep-batch=30-100, loss=0.480, @=67.510, gpu=(22347, 24564), ram=5065
Epoch time: 69.33820808757141
[traject.py:203 train()] -> [Training] ep=30: avg_loss=0.485, @=69.339/1894.978, gpu=(22347, 24564), ram=5065
[traject.py:195 train()] -> [Training] ep-batch=31-100, loss=0.540, @=64.830, gpu=(22347, 24564), ram=5067
Epoch time: 66.84447479248047
[traject.py:203 train()] -> [Training] ep=31: avg_loss=0.482, @=66.845/1961.824, gpu=(22347, 24564), ram=5067
[traject.py:195 train()] -> [Training] ep-batch=32-100, loss=0.491, @=63.192, gpu=(22347, 24564), ram=5066
Epoch time: 68.80960122830505
[traject.py:203 train()] -> [Training] ep=32: avg_loss=0.476, @=65.090/2026.968, gpu=(22347, 24564), ram=5066
[traject.py:195 train()] -> [Training] ep-batch=33-100, loss=0.494, @=64.369, gpu=(22347, 24564), ram=5065
Epoch time: 66.42205595970154
[traject.py:203 train()] -> [Training] ep=33: avg_loss=0.474, @=66.423/2093.446, gpu=(22347, 24564), ram=5066
[traject.py:195 train()] -> [Training] ep-batch=34-100, loss=0.533, @=63.165, gpu=(22347, 24564), ram=5066
Epoch time: 65.24126434326172
[traject.py:203 train()] -> [Training] ep=34: avg_loss=0.481, @=65.242/2158.742, gpu=(22347, 24564), ram=5067
[traject.py:195 train()] -> [Training] ep-batch=35-100, loss=0.627, @=62.898, gpu=(22347, 24564), ram=5065
Epoch time: 64.91512401635132
[traject.py:203 train()] -> [Training] ep=35: avg_loss=0.486, @=64.916/2223.658, gpu=(22347, 24564), ram=5066
[traject.py:195 train()] -> [Training] ep-batch=36-100, loss=0.432, @=54.160, gpu=(22347, 24564), ram=5066
Epoch time: 55.144330978393555
[traject.py:203 train()] -> [Training] ep=36: avg_loss=0.484, @=55.145/2278.803, gpu=(22347, 24564), ram=5066
[traject.py:195 train()] -> [Training] ep-batch=37-100, loss=0.499, @=33.372, gpu=(15500, 24564), ram=5069
Epoch time: 34.36921167373697
[traject.py:203 train()] -> [Training] ep=37: avg_loss=0.475, @=34.370/2313.173, gpu=(15500, 24564), ram=5069
[traject.py:195 train()] -> [Training] ep-batch=38-100, loss=0.470, @=48.598, gpu=(23843, 24564), ram=5039
Epoch time: 50.55513405799066
[traject.py:203 train()] -> [Training] ep=38: avg_loss=0.483, @=50.556/2363.729, gpu=(23843, 24564), ram=5039
[traject.py:219 train()] -> [Training] END! @=2363.729/777586365, best_epoch=33, best_loss_train=0.473625
(neuprotein) czh@gpu2:~/clustering/trajectory/code/python/TrajCL-master$ dataset=geolife
(neuprotein) czh@gpu2:~/clustering/trajectory/code/python/TrajCL-master$ dist_type=frechet
(neuprotein) czh@gpu2:~/clustering/trajectory/code/python/TrajCL-master$ seed=666
(neuprotein) czh@gpu2:~/clustering/trajectory/code/python/TrajCL-master$ python train_trajnsini.py --dataset ${dataset} --trajsini_measure_fn_name ${dist_type} --seed ${seed}
[train_trajnsini.py:58 <module>()] -> python train_trajnsini.py --dataset geolife --trajsini_measure_fn_name frechet --seed 666
[train_trajnsini.py:59 <module>()] -> =====
[train_trajnsini.py:60 <module>()] -> debug = True
dumpfile.uniqueid =
seed = 666
device = cuda:0
root_dir = /home/czh/clustering/trajectory/code/python/TrajCL-master
checkpoint_dir = /home/czh/clustering/trajectory/code/python/TrajCL-master/exp/snapshots
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czh@zju2: ~/clustering/trajec x  czh@zju2: ~/clustering/trajec x  czh@zju2: /mnt/data_hdd1/cz/ x  + v
(neuprotein) czh@zju2:~/clustering/trajectory/code/python/TrajCL-master$ dataset=geolife
(neuprotein) czh@zju2:~/clustering/trajectory/code/python/TrajCL-master$ dist_type=haus
(neuprotein) czh@zju2:~/clustering/trajectory/code/python/TrajCL-master$ seed
Command 'seed' not found, did you mean:
  command 'swed' from snap swed (0+git.5773de7)
  command 'seer' from deb seer (1.1.4-6)
  command 'ssed' from deb ssed (3.62-8)
  command 'see' from deb mailcap (3.70+nmulubuntu1)
  command 'sed' from deb sed (4.8-1ubuntu2)
  command 'send' from deb mailutils-mh (1:3.14-1)
  command 'send' from deb mmh (0.4-4)
  command 'send' from deb nmh (1.7.1-11)
  command 'shed' from deb shed (1.15-5)
  command 'seedd' from deb bit-babbler (0.9)
See 'snap info <snapname>' for additional versions.
(neuprotein) czh@zju2:~/clustering/trajectory/code/python/TrajCL-master$ seed=666
(neuprotein) czh@zju2:~/clustering/trajectory/code/python/TrajCL-master$ python train_trajsimi.py --dataset ${dataset} -
--trajsimi_measure_fn_name ${dist_type} --seed ${seed}
[train_trajsimi.py:58 <module>()] -> python train_trajsimi.py --dataset geolife --trajsimi_measure_fn_name haus --seed 6
66
[train_trajsimi.py:59 <module>()] -> =====
[train_trajsimi.py:60 <module>()] -> debug = True
dumpfile_uniqueid =
seed = 666
device = cuda:0
root_dir = /home/czh/clustering/trajectory/code/python/TrajCL-master
checkpoint_dir = /home/czh/clustering/trajectory/code/python/TrajCL-master/exp/snapshots
dataset = geolife
dataset_prefix = 0_geolife
dataset_file = /home/czh/clustering/trajectory/code/python/TrajCL-master/data/0_geolife
dataset_cell_file = /home/czh/clustering/trajectory/code/python/TrajCL-master/data/0_geolife_cell100_cellspace.pkl
dataset_embs_file = /home/czh/clustering/trajectory/code/python/TrajCL-master/data/0_geolife_cell100_embdim256_embs.pkl
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czh@zju2: ~/clustering/trajec x  czh@zju2: ~/clustering/trajec x  czh@zju2: /mnt/data_hdd1/cz/ x  + v
dataset_cell_file = /home/czh/clustering/trajectory/code/python/TrajCL-master/data/0_geolife_cell100_cellspace.pkl
dataset_embs_file = /home/czh/clustering/trajectory/code/python/TrajCL-master/data/0_geolife_cell100_embdim256_embs.pkl
min_lon = 116.200047
min_lat = 39.851057
max_lon = 116.499288
max_lat = 40.0699999
max_traj_len = 200
min_traj_len = 20
cell_size = 100.0
cellspace_buffer = 500.0
trajcl_batch_size = 128
cell_embedding_dim = 256
seq_embedding_dim = 256
moco_proj_dim = 128
moco_nqueue = 2048
moco_temperature = 0.05
trajcl_training_epochs = 100
trajcl_training_bad_patience = 5
trajcl_training_lr = 0.001
trajcl_training_lr_degrade_gamma = 0.5
trajcl_training_lr_degrade_step = 5
trajcl_aug1 = mask
trajcl_aug2 = subset
trajcl_local_mask_sidelen = 1100.0
trans_attention_head = 4
trans_attention_dropout = 0.1
trans_attention_layer = 2
trans_pos_encoder_dropout = 0.1
trans_hidden_dim = 2048
traj_simp_dist = 100
traj_shift_dist = 200
traj_mask_ratio = 0.3
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traj_shift_dist = 200
traj_mask_ratio = 0.3
traj_add_ratio = 0.3
traj_subset_ratio = 0.7
test_exp1_lcsc_edr_epsilon = 0.25
trajsimsi_encoder_name = TrajCL
trajsimsi_encoder_mode = finetune_all
trajsimsi_measure_fn_name = haus
trajsimsi_batch_size = 128
trajsimsi_epoch = 30
trajsimsi_training_bad_patience = 10
trajsimsi_learning_rate = 0.0001
trajsimsi_learning_weight_decay = 0.0001
trajsimsi_finetune_lr_rescale = 0.5
final_embedding_path = /mnt/data_hdd1/czh/TrajCL/data/0_geolife_666_haus
[train_trajsimsi.py:61 <module>()] -> =====
final_embedding_path: /mnt/data_hdd1/czh/TrajCL/data/0_geolife_666_haus
[data_loader.py:44 read_trajsimsi_traj_dataset()] -> [Load trajsimsi traj dataset] START.
[data_loader.py:68 read_trajsimsi_traj_dataset()] -> trajsimsi traj dataset sizes. traj: #total=10000 (trains/evals/tests=
3000/1000/13386)
[data_loader.py:74 read_trajsimsi_simi_dataset()] -> [Load trajsimsi simi dataset] START.
[data_loader.py:88 read_trajsimsi_simi_dataset()] -> [trajsimsi simi dataset loaded] @=0.09511470794677734, trains/evals/t
ests=3000/1/1
[trajsimsi.py:53 train()] -> train_trajsimsi start.@=1712802431.283
Total Trainable Parameter Num 1: 131584
Total Trainable Parameter Num 2: 2631309
[trajsimsi.py:114 train()] -> training. ep-batch=0-200, train_loss=0.1121, @=0.261, gpu=(21068, 24564), ram=3833
[trajsimsi.py:114 train()] -> training. ep-batch=0-400, train_loss=0.0794, @=0.128, gpu=(21068, 24564), ram=3833
Epoch time: 137.77495121955872
[trajsimsi.py:122 train()] -> training. i_ep=0, loss=1.5800, @=137.775
[trajsimsi.py:114 train()] -> training. ep-batch=1-200, train_loss=0.0298, @=0.154, gpu=(21068, 24564), ram=3835
[trajsimsi.py:114 train()] -> training. ep-batch=1-400, train_loss=0.0359, @=0.153, gpu=(21068, 24564), ram=3835
```

```
[trajsimsi.py:114 train()] -> training. ep-batch=1-200, train_loss=0.0298, @=0.154, gpu=(21068, 24564), ram=3835
[trajsimsi.py:114 train()] -> training. ep-batch=1-400, train_loss=0.0359, @=0.153, gpu=(21068, 24564), ram=3835
Epoch time: 138.3552777671814
[trajsimsi.py:122 train()] -> training. i_ep=1, loss=0.0393, @=138.356
[trajsimsi.py:114 train()] -> training. ep-batch=2-200, train_loss=0.0265, @=0.265, gpu=(21068, 24564), ram=3835
[trajsimsi.py:114 train()] -> training. ep-batch=2-400, train_loss=0.0174, @=0.174, gpu=(21068, 24564), ram=3835
Epoch time: 139.4220039844513
[trajsimsi.py:122 train()] -> training. i_ep=2, loss=0.0250, @=139.423
[trajsimsi.py:114 train()] -> training. ep-batch=3-200, train_loss=0.0199, @=0.264, gpu=(21068, 24564), ram=3835
[trajsimsi.py:114 train()] -> training. ep-batch=3-400, train_loss=0.0210, @=0.191, gpu=(21068, 24564), ram=3835
Epoch time: 140.22703385353088
[trajsimsi.py:122 train()] -> training. i_ep=3, loss=0.0197, @=140.228
[trajsimsi.py:114 train()] -> training. ep-batch=4-200, train_loss=0.0149, @=0.213, gpu=(21068, 24564), ram=3836
[trajsimsi.py:114 train()] -> training. ep-batch=4-400, train_loss=0.0132, @=0.249, gpu=(21068, 24564), ram=3836
Epoch time: 138.90429735183716
[trajsimsi.py:122 train()] -> training. i_ep=4, loss=0.0161, @=138.905
[trajsimsi.py:114 train()] -> training. ep-batch=5-200, train_loss=0.0156, @=0.189, gpu=(21068, 24564), ram=3836
[trajsimsi.py:114 train()] -> training. ep-batch=5-400, train_loss=0.0132, @=0.176, gpu=(21068, 24564), ram=3836
Epoch time: 137.69574856758118
[trajsimsi.py:122 train()] -> training. i_ep=5, loss=0.0136, @=137.697
[trajsimsi.py:114 train()] -> training. ep-batch=6-200, train_loss=0.0132, @=0.201, gpu=(21068, 24564), ram=3835
[trajsimsi.py:114 train()] -> training. ep-batch=6-400, train_loss=0.0125, @=0.216, gpu=(21068, 24564), ram=3835
Epoch time: 138.1426637172699
[trajsimsi.py:122 train()] -> training. i_ep=6, loss=0.0116, @=138.143
[trajsimsi.py:114 train()] -> training. ep-batch=7-200, train_loss=0.0091, @=0.211, gpu=(21068, 24564), ram=3835
[trajsimsi.py:114 train()] -> training. ep-batch=7-400, train_loss=0.0089, @=0.176, gpu=(21068, 24564), ram=3835
Epoch time: 138.407479763031
[trajsimsi.py:122 train()] -> training. i_ep=7, loss=0.0099, @=138.408
[trajsimsi.py:114 train()] -> training. ep-batch=8-200, train_loss=0.0073, @=0.154, gpu=(21068, 24564), ram=3835
[trajsimsi.py:114 train()] -> training. ep-batch=8-400, train_loss=0.0089, @=0.264, gpu=(21068, 24564), ram=3835
Epoch time: 139.69836354255676
[trajsimsi.py:122 train()] -> training. i_ep=8, loss=0.0086, @=139.699
```

```
Epoch time: 139.69836354255676
[trajsimi.py:122 train()] -> training. i_ep=8, loss=0.0086, @=139.699
[trajsimi.py:114 train()] -> training. ep-batch=9-200, train_loss=0.0076, @=0.151, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=9-400, train_loss=0.0088, @=0.181, gpu=(21068, 24564), ram=3836
Epoch time: 140.79915380477905
[trajsimi.py:122 train()] -> training. i_ep=9, loss=0.0074, @=140.800
[trajsimi.py:114 train()] -> training. ep-batch=10-200, train_loss=0.0076, @=0.186, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=10-400, train_loss=0.0060, @=0.141, gpu=(21068, 24564), ram=3836
Epoch time: 139.40295886993408
[trajsimi.py:122 train()] -> training. i_ep=10, loss=0.0065, @=139.404
[trajsimi.py:114 train()] -> training. ep-batch=11-200, train_loss=0.0048, @=0.164, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=11-400, train_loss=0.0057, @=0.266, gpu=(21068, 24564), ram=3836
Epoch time: 142.5519824028015
[trajsimi.py:122 train()] -> training. i_ep=11, loss=0.0061, @=142.553
[trajsimi.py:114 train()] -> training. ep-batch=12-200, train_loss=0.0051, @=0.147, gpu=(21068, 24564), ram=3835
[trajsimi.py:114 train()] -> training. ep-batch=12-400, train_loss=0.0062, @=0.187, gpu=(21068, 24564), ram=3835
Epoch time: 140.5685305595398
[trajsimi.py:122 train()] -> training. i_ep=12, loss=0.0055, @=140.570
[trajsimi.py:114 train()] -> training. ep-batch=13-200, train_loss=0.0056, @=0.152, gpu=(21068, 24564), ram=3835
[trajsimi.py:114 train()] -> training. ep-batch=13-400, train_loss=0.0059, @=0.146, gpu=(21068, 24564), ram=3835
Epoch time: 142.996723651886
[trajsimi.py:122 train()] -> training. i_ep=13, loss=0.0051, @=142.997
[trajsimi.py:114 train()] -> training. ep-batch=14-200, train_loss=0.0041, @=0.152, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=14-400, train_loss=0.0040, @=0.159, gpu=(21068, 24564), ram=3836
Epoch time: 144.45121455192566
[trajsimi.py:122 train()] -> training. i_ep=14, loss=0.0046, @=144.452
[trajsimi.py:114 train()] -> training. ep-batch=15-200, train_loss=0.0043, @=0.166, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=15-400, train_loss=0.0041, @=0.183, gpu=(21068, 24564), ram=3836
Epoch time: 144.02759051322937
[trajsimi.py:122 train()] -> training. i_ep=15, loss=0.0043, @=144.028
[trajsimi.py:114 train()] -> training. ep-batch=16-200, train_loss=0.0032, @=0.175, gpu=(21068, 24564), ram=3835
[trajsimi.py:114 train()] -> training. ep-batch=16-400, train_loss=0.0036, @=0.175, gpu=(21068, 24564), ram=3835
```

```
Epoch time: 142.4342451095581
[trajsimi.py:122 train()] -> training. i_ep=16, loss=0.0038, @=143.470
[trajsimi.py:114 train()] -> training. ep-batch=17-200, train_loss=0.0029, @=0.204, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=17-400, train_loss=0.0027, @=0.166, gpu=(21068, 24564), ram=3836
Epoch time: 140.7541902065277
[trajsimi.py:122 train()] -> training. i_ep=17, loss=0.0035, @=142.435
[trajsimi.py:114 train()] -> training. ep-batch=18-200, train_loss=0.0028, @=0.152, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=18-400, train_loss=0.0032, @=0.215, gpu=(21068, 24564), ram=3836
Epoch time: 140.40097641944885
[trajsimi.py:122 train()] -> training. i_ep=18, loss=0.0032, @=140.755
[trajsimi.py:114 train()] -> training. ep-batch=19-200, train_loss=0.0024, @=0.135, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=19-400, train_loss=0.0022, @=0.165, gpu=(21068, 24564), ram=3836
Epoch time: 143.18580746650696
[trajsimi.py:122 train()] -> training. i_ep=19, loss=0.0029, @=140.402
[trajsimi.py:114 train()] -> training. ep-batch=20-200, train_loss=0.0033, @=0.266, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=20-400, train_loss=0.0025, @=0.175, gpu=(21068, 24564), ram=3836
Epoch time: 143.18580746650696
[trajsimi.py:122 train()] -> training. i_ep=20, loss=0.0026, @=143.186
[trajsimi.py:114 train()] -> training. ep-batch=21-200, train_loss=0.0023, @=0.143, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=21-400, train_loss=0.0023, @=0.174, gpu=(21068, 24564), ram=3836
Epoch time: 142.18125987052917
[trajsimi.py:122 train()] -> training. i_ep=21, loss=0.0025, @=142.182
[trajsimi.py:114 train()] -> training. ep-batch=22-200, train_loss=0.0021, @=0.251, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=22-400, train_loss=0.0023, @=0.213, gpu=(21068, 24564), ram=3836
Epoch time: 142.49739050865173
[trajsimi.py:122 train()] -> training. i_ep=22, loss=0.0023, @=142.498
[trajsimi.py:114 train()] -> training. ep-batch=23-200, train_loss=0.0021, @=0.150, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=23-400, train_loss=0.0020, @=0.251, gpu=(21068, 24564), ram=3836
Epoch time: 142.8650758266449
[trajsimi.py:122 train()] -> training. i_ep=23, loss=0.0022, @=142.866
[trajsimi.py:114 train()] -> training. ep-batch=24-200, train_loss=0.0020, @=0.215, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=24-400, train_loss=0.0018, @=0.154, gpu=(21068, 24564), ram=3836
Epoch time: 141.18536972999573
```



```
czh@zju2: ~/clustering/trajec x czh@zju2: ~/clustering/traject x czh@zju2: /mnt/data_hdd1/cz/ + v
[trajsimi.py:114 train()] -> training. ep-batch=24-400, train_loss=0.0018, @=0.154, gpu=(21068, 24564), ram=3836
Epoch time: 141.18536972999573
[trajsimi.py:122 train()] -> training. i_ep=24, loss=0.0021, @=141.186
[trajsimi.py:114 train()] -> training. ep-batch=25-200, train_loss=0.0022, @=0.267, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=25-400, train_loss=0.0015, @=0.155, gpu=(21068, 24564), ram=3836
Epoch time: 143.1456105709076
[trajsimi.py:122 train()] -> training. i_ep=25, loss=0.0020, @=143.146
[trajsimi.py:114 train()] -> training. ep-batch=26-200, train_loss=0.0016, @=0.173, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=26-400, train_loss=0.0019, @=0.175, gpu=(21068, 24564), ram=3836
Epoch time: 142.66733646392822
[trajsimi.py:122 train()] -> training. i_ep=26, loss=0.0019, @=142.668
[trajsimi.py:114 train()] -> training. ep-batch=27-200, train_loss=0.0021, @=0.211, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=27-400, train_loss=0.0018, @=0.180, gpu=(21068, 24564), ram=3836
Epoch time: 141.50857639312744
[trajsimi.py:122 train()] -> training. i_ep=27, loss=0.0018, @=141.509
[trajsimi.py:114 train()] -> training. ep-batch=28-200, train_loss=0.0016, @=0.159, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=28-400, train_loss=0.0016, @=0.177, gpu=(21068, 24564), ram=3836
Epoch time: 141.6636414527893
[trajsimi.py:122 train()] -> training. i_ep=28, loss=0.0017, @=141.664
[trajsimi.py:114 train()] -> training. ep-batch=29-200, train_loss=0.0014, @=0.134, gpu=(21068, 24564), ram=3836
[trajsimi.py:114 train()] -> training. ep-batch=29-400, train_loss=0.0014, @=0.149, gpu=(21068, 24564), ram=3836
Epoch time: 141.7892565727234
[trajsimi.py:122 train()] -> training. i_ep=29, loss=0.0016, @=141.790
/home/czh/clustering/trajectory/code/python/TrajCL-master/task/trajsimi.py:189: UserWarning: The use of 'x.T' on tensors
of dimension other than 2 to reverse their shape is deprecated and it will throw an error in a future release. Consider
'x.mT' to transpose batches of matrices or 'x.permute(*torch.arange(x.ndim - 1, -1, -1))' to reverse the dimensions of
a tensor. (Triggered internally at ../aten/src/ATen/native/TensorShape.cpp:3277.)
    datasets_simi = (datasets_simi + datasets_simi.T) / max_distance
0 (128, 256)
1 (128, 256)
2 (128, 256)
3 (128, 256)
```

```
czh@zju2: ~/clustering/trajec x czh@zju2: ~/clustering/traject x czh@zju2: /mnt/data_hdd1/cz/ + v
2 (128, 256)
3 (128, 256)
4 (128, 256)
5 (128, 256)
6 (128, 256)
7 (128, 256)
8 (128, 256)
9 (128, 256)
10 (128, 256)
11 (128, 256)
12 (128, 256)
13 (128, 256)
14 (128, 256)
15 (128, 256)
16 (128, 256)
17 (128, 256)
18 (128, 256)
19 (128, 256)
20 (128, 256)
21 (128, 256)
22 (128, 256)
23 (128, 256)
24 (128, 256)
25 (128, 256)
26 (128, 256)
27 (128, 256)
28 (128, 256)
29 (128, 256)
30 (128, 256)
31 (128, 256)
32 (128, 256)
33 (128, 256)
```

```
czh@zju2: ~/clustering/trajec x  czh@zju2: ~/clustering/trajec x  czh@zju2: /mnt/data_hdd1/cz/ + v
74 (128, 256)
75 (128, 256)
76 (128, 256)
77 (128, 256)
78 (128, 256)
79 (128, 256)
80 (128, 256)
81 (128, 256)
82 (128, 256)
83 (128, 256)
84 (128, 256)
85 (128, 256)
86 (128, 256)
87 (128, 256)
88 (128, 256)
89 (128, 256)
90 (128, 256)
91 (128, 256)
92 (128, 256)
93 (128, 256)
94 (128, 256)
95 (128, 256)
96 (128, 256)
97 (128, 256)
98 (128, 256)
99 (128, 256)
100 (128, 256)
101 (128, 256)
102 (128, 256)
103 (128, 256)
104 (74, 256)
(13386, 256) Total_time: 11.021226167678833
```

```
evaluate_metric
(neuprotein) czh@zju2:~/clustering/trajectory/code/python/evaluate_metric$ python test_baseline.py
/mnt/data_hdd1/czh/TrajCL/data/0_geolife_666_haus
-----
Baseline Method: trajcl
Test distance matrix shape: (1000, 9386)
Distance matrix shape: (1000, 9386)
-----
*****
-----This is RESULT test_all-----
Test on 1000 trajectory sequences
Test Range: 0-999. Base Range: 0-9385.
Test      1      5     10     50     100
1      0.2260  0.0918  0.0580  0.0165  0.0091
5      0.4570  0.3138  0.2307  0.0759  0.0436
10     0.5870  0.4562  0.3729  0.1442  0.0848
50     0.8360  0.7690  0.7302  0.5261  0.3640
100    0.9080  0.8734  0.8510  0.7317  0.6080
*****
Baseline-Method: trajcl ; Dataset: 0_geolife ; Distance: haus
Metric: 1-1 , Mean: 22.6000, Variance: 0.0000
Metric: 5-5 , Mean: 31.3800, Variance: 0.0000
Metric: 10-10 , Mean: 37.2900, Variance: 0.0000
Metric: 50-50 , Mean: 52.6060, Variance: 0.0000
Metric: 100-100 , Mean: 60.7990, Variance: 0.0000
Metric: 50-10 , Mean: 73.0200, Variance: 0.0000
(neuprotein) czh@zju2:~/clustering/trajectory/code/python/evaluate_metric$ |
```