

```
C:\Users\Wade\Anaconda3\envs\rosetta_GNN\python.exe F:/
volume/paper_code/GCE-GNN/pytorch_code/main.py
Namespace(batchSize=100, dataset='sample', epoch=30,
hiddenSize=128, l2=0.0001, lr=0.001, lr_dc=0.1,
lr_dc_step=3, nonhybrid=False, patience=10, step=1,
valid_portion=0.1, validation=False)
```

epoch: 0

start training: 2020-09-01 15:47:44.880606

```
C:\Users\Wade\Anaconda3\envs\rosetta_GNN\lib\site-
packages\torch\optim\lr_scheduler.py:123: UserWarning:
Detected call of `lr_scheduler.step()` before `optimizer
.step()`. In PyTorch 1.1.0 and later, you should call
them in the opposite order: `optimizer.step()` before `
lr_scheduler.step()`. Failure to do this will result in
PyTorch skipping the first value of the learning rate
schedule. See more details at https://pytorch.org/docs/stable/optim.html#how-to-adjust-learning-rate
```

```
"https://pytorch.org/docs/stable/optim.html#how-to-
adjust-learning-rate", UserWarning)
```

[0/13] Loss: 5.7321

[3/13] Loss: 5.7265

[6/13] Loss: 5.7355

[9/13] Loss: 5.6905

[12/13] Loss: 5.6848

Loss: 74.280

start predicting: 2020-09-01 15:47:56.022816

Best Result:

Recall@20: 5.0505 MMR@20: 0.6067 Epoch: 0, 0

epoch: 1

start training: 2020-09-01 15:47:56.544422

[0/13] Loss: 5.6355

[3/13] Loss: 5.6264

[6/13] Loss: 5.6310

[9/13] Loss: 5.5342

[12/13] Loss: 4.4271

Loss: 71.105
start predicting: 2020-09-01 15:48:07.395410
Best Result:
Recall@20: 6.0606 MMR@20: 2.1077 Epoch: 1, 1

epoch: 2
start training: 2020-09-01 15:48:07.916019
[0/13] Loss: 5.3179
[3/13] Loss: 5.3072
[6/13] Loss: 5.3242
[9/13] Loss: 5.4086
[12/13] Loss: 5.5664
Loss: 69.853
start predicting: 2020-09-01 15:48:18.590479
Best Result:
Recall@20: 7.0707 MMR@20: 3.0182 Epoch: 2, 2

epoch: 3
start training: 2020-09-01 15:48:19.091141
[0/13] Loss: 5.4507
[3/13] Loss: 5.5093
[6/13] Loss: 5.2239
[9/13] Loss: 5.0954
[12/13] Loss: 5.1618
Loss: 68.841
start predicting: 2020-09-01 15:48:29.833420
Best Result:
Recall@20: 10.1010 MMR@20: 3.1595 Epoch: 3, 3

epoch: 4
start training: 2020-09-01 15:48:30.310146
[0/13] Loss: 5.2506
[3/13] Loss: 5.3657
[6/13] Loss: 5.3028
[9/13] Loss: 5.1033
[12/13] Loss: 5.2983
Loss: 68.349

start predicting: 2020-09-01 15:48:41.060403

Best Result:

Recall@20: 12.1212 MMR@20: 3.1595 Epoch: 4, 3

epoch: 5

start training: 2020-09-01 15:48:41.615919

[0/13] Loss: 5.1637

[3/13] Loss: 5.0895

[6/13] Loss: 5.0852

[9/13] Loss: 5.2090

[12/13] Loss: 5.3822

Loss: 68.032

start predicting: 2020-09-01 15:48:52.330273

Best Result:

Recall@20: 13.1313 MMR@20: 3.2150 Epoch: 5, 5

epoch: 6

start training: 2020-09-01 15:48:52.806999

[0/13] Loss: 5.1499

[3/13] Loss: 5.2966

[6/13] Loss: 5.3267

[9/13] Loss: 5.0879

[12/13] Loss: 5.2363

Loss: 67.818

start predicting: 2020-09-01 15:49:03.647016

Best Result:

Recall@20: 13.1313 MMR@20: 3.2347 Epoch: 6, 6

epoch: 7

start training: 2020-09-01 15:49:04.136707

[0/13] Loss: 5.3402

[3/13] Loss: 5.3636

[6/13] Loss: 5.1690

[9/13] Loss: 5.1451

[12/13] Loss: 5.5381

Loss: 68.077

start predicting: 2020-09-01 15:49:14.944319

Best Result:

Recall@20: 13.1313 MMR@20: 3.4564 Epoch: 7, 7

epoch: 8

start training: 2020-09-01 15:49:15.490859

[0/13] Loss: 5.3474

[3/13] Loss: 5.3379

[6/13] Loss: 5.1974

[9/13] Loss: 5.1174

[12/13] Loss: 5.2729

Loss: 67.594

start predicting: 2020-09-01 15:49:26.234135

Best Result:

Recall@20: 13.1313 MMR@20: 3.4745 Epoch: 8, 8

epoch: 9

start training: 2020-09-01 15:49:26.760727

[0/13] Loss: 5.2773

[3/13] Loss: 5.3495

[6/13] Loss: 5.2097

[9/13] Loss: 5.1960

[12/13] Loss: 5.7569

Loss: 68.045

start predicting: 2020-09-01 15:49:37.445100

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 9, 9

epoch: 10

start training: 2020-09-01 15:49:37.938780

[0/13] Loss: 5.0314

[3/13] Loss: 5.1042

[6/13] Loss: 5.2441

[9/13] Loss: 5.1417

[12/13] Loss: 5.2229

Loss: 67.568

start predicting: 2020-09-01 15:49:48.766830

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 10, 10

epoch: 11

start training: 2020-09-01 15:49:49.248542

[0/13] Loss: 5.1427

[3/13] Loss: 5.1895

[6/13] Loss: 4.9147

[9/13] Loss: 5.3363

[12/13] Loss: 4.9201

Loss: 67.343

start predicting: 2020-09-01 15:50:00.021739

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 11, 11

epoch: 12

start training: 2020-09-01 15:50:00.552320

[0/13] Loss: 5.3168

[3/13] Loss: 5.0664

[6/13] Loss: 5.1340

[9/13] Loss: 5.3611

[12/13] Loss: 4.7238

Loss: 67.158

start predicting: 2020-09-01 15:50:11.525459

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 12, 12

epoch: 13

start training: 2020-09-01 15:50:12.067011

[0/13] Loss: 5.3766

[3/13] Loss: 5.1641

[6/13] Loss: 5.1283

[9/13] Loss: 5.1118

[12/13] Loss: 5.7252

Loss: 68.036

start predicting: 2020-09-01 15:50:23.065932

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 13, 13

```
-----  
epoch: 14  
start training: 2020-09-01 15:50:23.628428  
[0/13] Loss: 5.0099  
[3/13] Loss: 5.1044  
[6/13] Loss: 5.0652  
[9/13] Loss: 5.2934  
[12/13] Loss: 5.3734  
      Loss: 67.800  
start predicting: 2020-09-01 15:50:34.902744  
Best Result:  
      Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 14, 14  
-----
```

```
epoch: 15  
start training: 2020-09-01 15:50:35.419363  
[0/13] Loss: 5.2661  
[3/13] Loss: 5.1666  
[6/13] Loss: 5.3733  
[9/13] Loss: 5.2299  
[12/13] Loss: 5.5622  
      Loss: 67.942  
start predicting: 2020-09-01 15:50:46.412415  
Best Result:  
      Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 15, 15  
-----
```

```
epoch: 16  
start training: 2020-09-01 15:50:46.974911  
[0/13] Loss: 5.2110  
[3/13] Loss: 5.1609  
[6/13] Loss: 5.2496  
[9/13] Loss: 5.2500  
[12/13] Loss: 5.1491  
      Loss: 67.534  
start predicting: 2020-09-01 15:50:57.591847  
Best Result:  
      Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 16, 16  
-----
```

epoch: 17

start training: 2020-09-01 15:50:58.087522

[0/13] Loss: 5.2829

[3/13] Loss: 5.3243

[6/13] Loss: 5.1178

[9/13] Loss: 5.2552

[12/13] Loss: 5.2570

Loss: 67.544

start predicting: 2020-09-01 15:51:08.906845

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 17, 17

epoch: 18

start training: 2020-09-01 15:51:09.421469

[0/13] Loss: 5.3310

[3/13] Loss: 5.1385

[6/13] Loss: 5.1948

[9/13] Loss: 5.1360

[12/13] Loss: 5.4633

Loss: 67.820

start predicting: 2020-09-01 15:51:20.070865

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 18, 18

epoch: 19

start training: 2020-09-01 15:51:20.551579

[0/13] Loss: 5.1958

[3/13] Loss: 5.0786

[6/13] Loss: 5.3746

[9/13] Loss: 5.1740

[12/13] Loss: 4.7202

Loss: 67.068

start predicting: 2020-09-01 15:51:31.457804

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 19, 19

epoch: 20

start training: 2020-09-01 15:51:32.001351

[0/13] Loss: 5.3889

[3/13] Loss: 5.0622

[6/13] Loss: 5.2933

[9/13] Loss: 5.1471

[12/13] Loss: 4.9795

Loss: 67.287

start predicting: 2020-09-01 15:51:42.646068

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 20, 20

epoch: 21

start training: 2020-09-01 15:51:43.138751

[0/13] Loss: 5.2689

[3/13] Loss: 5.2099

[6/13] Loss: 5.1394

[9/13] Loss: 5.3203

[12/13] Loss: 5.4699

Loss: 67.826

start predicting: 2020-09-01 15:51:53.861515

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 21, 21

epoch: 22

start training: 2020-09-01 15:51:54.373148

[0/13] Loss: 5.2152

[3/13] Loss: 5.1182

[6/13] Loss: 5.2326

[9/13] Loss: 5.1179

[12/13] Loss: 5.5298

Loss: 67.855

start predicting: 2020-09-01 15:52:04.921389

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 22, 22

epoch: 23

start training: 2020-09-01 15:52:05.408088

[0/13] Loss: 5.2960
[3/13] Loss: 5.2155
[6/13] Loss: 5.2441
[9/13] Loss: 5.3251
[12/13] Loss: 5.1315

Loss: 67.608

start predicting: 2020-09-01 15:52:16.077520

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 23, 23

epoch: 24

start training: 2020-09-01 15:52:16.570203

[0/13] Loss: 5.2362
[3/13] Loss: 4.9103
[6/13] Loss: 5.2308
[9/13] Loss: 5.1764
[12/13] Loss: 5.6878

Loss: 68.069

start predicting: 2020-09-01 15:52:27.328260

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 24, 24

epoch: 25

start training: 2020-09-01 15:52:27.797007

[0/13] Loss: 5.1848
[3/13] Loss: 5.1446
[6/13] Loss: 5.1467
[9/13] Loss: 5.2272
[12/13] Loss: 4.4369

Loss: 66.797

start predicting: 2020-09-01 15:52:38.318094

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 25, 25

epoch: 26

start training: 2020-09-01 15:52:38.816761

[0/13] Loss: 5.2866

[3/13] Loss: 5.0326
[6/13] Loss: 5.1783
[9/13] Loss: 5.2931
[12/13] Loss: 5.6406

Loss: 68.026

start predicting: 2020-09-01 15:52:49.473407

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 26, 26

epoch: 27

start training: 2020-09-01 15:52:49.964095

[0/13] Loss: 5.2293
[3/13] Loss: 5.2274
[6/13] Loss: 5.3067
[9/13] Loss: 5.2414
[12/13] Loss: 4.9608

Loss: 67.368

start predicting: 2020-09-01 15:53:00.635078

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 27, 27

epoch: 28

start training: 2020-09-01 15:53:01.130753

[0/13] Loss: 5.0359
[3/13] Loss: 5.2742
[6/13] Loss: 5.1988
[9/13] Loss: 5.2402
[12/13] Loss: 5.4857

Loss: 67.869

start predicting: 2020-09-01 15:53:11.945432

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 28, 28

epoch: 29

start training: 2020-09-01 15:53:12.443102

[0/13] Loss: 5.1844
[3/13] Loss: 5.2024

File - main

[6/13] Loss: 5.2314

[9/13] Loss: 5.3992

[12/13] Loss: 5.6297

Loss: 68.006

start predicting: 2020-09-01 15:53:23.066757

Best Result:

Recall@20: 13.1313 MMR@20: 3.5250 Epoch: 29, 29

Run time: 338.673847 s

Process finished with exit code 0