

```
1 E:\anaconda3\python.exe "C:\Program Files\  
JetBrains\PyCharm Community Edition 2019.1.3\  
helpers\pydev\pydevconsole.py" --mode=client --  
port=63320  
2  
3 import sys; print('Python %s on %s' % (sys.  
version, sys.platform))  
4 sys.path.extend(['E:\\SocialRSonYelp', 'E:/  
SocialRSonYelp'])  
5  
6 Python 3.7.3 (default, Mar 27 2019, 17:13:21) [  
MSC v.1915 64 bit (AMD64)]  
7 Type 'copyright', 'credits' or 'license' for  
more information  
8 IPython 7.4.0 -- An enhanced Interactive Python  
. Type '?' for help.  
9 PyDev console: using IPython 7.4.0  
10  
11 Python 3.7.3 (default, Mar 27 2019, 17:13:21) [  
MSC v.1915 64 bit (AMD64)] on win32  
12 In[2]: runfile('E:/SocialRSonYelp/  
NeuralNetworks/train.py', wdir='E:/  
SocialRSonYelp/NeuralNetworks')  
13 E:\anaconda3\lib\site-packages\gensim\utils.py:  
1197: UserWarning: detected Windows; aliasing  
chunkize to chunkize_serial  
14     warnings.warn("detected Windows; aliasing  
     chunkize to chunkize_serial")  
15 C:\Program Files\JetBrains\PyCharm Community  
Edition 2019.1.3\helpers\pydev\_pydev_bundle\  
pydev_umd.py:197: DtypeWarning: Columns (10)  
have mixed types. Specify dtype option on  
import or set low_memory=False.  
16     pydev_imports.execfile(filename, global_vars  
     , local_vars) # execute the script  
17 671  
18 160563
```

```
19 Range of userId is [0, 670]
20 Range of itemId is [0, 5977]
21 weijings data loader
22 normoalizing ratings
23 get train test
24 initializing MLP
25 detect pretrain!
26 u: (671, 32)
27 i: (5978, 32)
28 MLP(
29     (embedding_user): Embedding(671, 32)
30     (embedding_item): Embedding(5978, 32)
31     (UnormLayer): Linear(in_features=32,
32         out_features=50, bias=True)
32     (fc_layers): ModuleList(
33         (0): Linear(in_features=64, out_features=
34             128, bias=True)
34         (1): Linear(in_features=128, out_features=
35             64, bias=True)
35         (2): Linear(in_features=64, out_features=32
36             , bias=True)
36         (3): Linear(in_features=32, out_features=16
37             , bias=True)
37         (4): Linear(in_features=16, out_features=8
38             , bias=True)
38     )
39     (affine_output): Linear(in_features=8,
40         out_features=1, bias=True)
40     (logistic): Sigmoid()
41 )
42 Epoch 0 starts !
43 -----
44 instance loader
45 total loss: 132.45287610590458
46 trining a epoch: -9.450683116912842
47 E:\SocialRSonYelp\NeuralNetworks\metrics.py:57
```

```
47 : SettingWithCopyWarning:  
48 A value is trying to be set on a copy of a  
slice from a DataFrame.  
49 Try using .loc[row_indexer,col_indexer] = value  
instead  
50  
51 See the caveats in the documentation: http://  
pandas.pydata.org/pandas-docs/stable/indexing.  
html#indexing-view-versus-copy  
52     test_in_top_k['ndcg'] = test_in_top_k['rank'  
''].apply(lambda x: math.log(2) / math.log(1 + x  
)) # the rank starts from 1  
53 [Evluating Epoch 0] HR = 0.5693, NDCG = 0.3506  
54 evaluting time: -1.0382227897644043  
55 record written!  
56 hit_rate 0.5692995529061102  
57 ndcg 0.3506221168699404  
58 Epoch 1 starts !  
59 -----  
-----  
60 instance loader  
61 total loss: 120.4762755036354  
62 trining a epoch: -10.084013938903809  
63 [Evluating Epoch 1] HR = 0.6066, NDCG = 0.3704  
64 evaluting time: -1.0910530090332031  
65 record written!  
66 hit_rate 0.6065573770491803  
67 ndcg 0.3704402987168752  
68 Epoch 2 starts !  
69 -----  
-----  
70 instance loader  
71 total loss: 116.29924722015858  
72 trining a epoch: -10.174748420715332  
73 [Evluating Epoch 2] HR = 0.6468, NDCG = 0.3987  
74 evaluting time: -1.0043509006500244  
75 record written!
```

```
76 hit_rate 0.646795827123696
77 ndcg 0.3986988449026341
78 Epoch 3 starts !
79 -----
-----
80 instance loader
81 total loss: 112.80487145483494
82 trining a epoch: -10.20469856262207
83 [Evluating Epoch 3] HR = 0.6289, NDCG = 0.3888
84 evaluting time: -1.0182774066925049
85 record written!
86 hit_rate 0.6289120715350224
87 ndcg 0.38876719494486595
88 Epoch 4 starts !
89 -----
-----
90 instance loader
91 total loss: 110.56064952909946
92 trining a epoch: -9.947360038757324
93 [Evluating Epoch 4] HR = 0.6200, NDCG = 0.3869
94 evaluting time: -1.1559367179870605
95 record written!
96 hit_rate 0.6199701937406855
97 ndcg 0.38691992762804706
98 Epoch 5 starts !
99 -----
-----
100 instance loader
101 total loss: 108.60069109499454
102 trining a epoch: -11.309744119644165
103 [Evluating Epoch 5] HR = 0.6453, NDCG = 0.4030
104 evaluting time: -1.4401469230651855
105 record written!
106 hit_rate 0.6453055141579732
107 ndcg 0.40297264366102487
108 Epoch 6 starts !
109 -----
```

```
109 -----
110 instance loader
111 total loss: 107.29724705219269
112 trining a epoch: -11.558045387268066
113 [Evluating Epoch 6] HR = 0.6274, NDCG = 0.3954
114 evaluting time: -1.4162383079528809
115 record written!
116 hit_rate 0.6274217585692996
117 ndcg 0.3953601412217183
118 Epoch 7 starts !
119 -----  
-----
120 instance loader
121 total loss: 105.92629392445087
122 trining a epoch: -11.8861665725708
123 [Evluating Epoch 7] HR = 0.6572, NDCG = 0.4018
124 evaluting time: -1.342435359954834
125 record written!
126 hit_rate 0.6572280178837556
127 ndcg 0.4017636324299852
128 Epoch 8 starts !
129 -----  
-----
130 instance loader
131 total loss: 105.25487776100636
132 trining a epoch: -11.483250379562378
133 [Evluating Epoch 8] HR = 0.6423, NDCG = 0.3888
134 evaluting time: -1.3573663234710693
135 record written!
136 hit_rate 0.6423248882265276
137 ndcg 0.38884070005742605
138 Epoch 9 starts !
139 -----  
-----
140 instance loader
141 total loss: 104.332540422678
142 trining a epoch: -11.374538898468018
```

```
143 [Evluating Epoch 9] HR = 0.6200, NDCG = 0.3942
144 evaluting time: -1.4481258392333984
145 record written!
146 hit_rate 0.6199701937406855
147 ndcg 0.3941581301370313
148 Epoch 10 starts !
149 -----
150 instance loader
151 total loss: 103.63808044791222
152 trining a epoch: -11.037499904632568
153 [Evluating Epoch 10] HR = 0.6468, NDCG = 0.
    4043
154 evaluting time: -1.443110466003418
155 record written!
156 hit_rate 0.646795827123696
157 ndcg 0.4042625234463367
158 Epoch 11 starts !
159 -----
160 instance loader
161 total loss: 102.97004845738411
162 trining a epoch: -10.725306272506714
163 [Evluating Epoch 11] HR = 0.6408, NDCG = 0.
    3996
164 evaluting time: -1.367370367050171
165 record written!
166 hit_rate 0.6408345752608048
167 ndcg 0.39964490019121535
168 Epoch 12 starts !
169 -----
170 instance loader
171 total loss: 102.39128142595291
172 trining a epoch: -11.073400974273682
173 [Evluating Epoch 12] HR = 0.6542, NDCG = 0.
    3999
```

```
174 evaluting time: -1.3354368209838867
175 record written!
176 hit_rate 0.65424739195231
177 ndcg 0.39989601387631424
178 Epoch 13 starts !
179 -----
-----
180 instance loader
181 total loss: 101.57305903732777
182 trining a epoch: -11.345645427703857
183 [Evluating Epoch 13] HR = 0.6349, NDCG = 0.
3972
184 evaluting time: -1.9308350086212158
185 record written!
186 hit_rate 0.6348733233979136
187 ndcg 0.39723931818311614
188 Epoch 14 starts !
189 -----
-----
190 instance loader
191 total loss: 101.28700599074364
192 trining a epoch: -11.26987624168396
193 [Evluating Epoch 14] HR = 0.6647, NDCG = 0.
4081
194 evaluting time: -1.731368064880371
195 record written!
196 hit_rate 0.6646795827123696
197 ndcg 0.40808427320525564
198 Epoch 15 starts !
199 -----
-----
200 instance loader
201 total loss: 101.03253339231014
202 trining a epoch: -11.545139789581299
203 [Evluating Epoch 15] HR = 0.6572, NDCG = 0.
4064
204 evaluting time: -1.6465954780578613
```

```
205 record written!
206 hit_rate 0.6572280178837556
207 ndcg 0.4064191258690973
208 Epoch 16 starts !
209 -----
-----
210 instance loader
211 total loss: 100.7652229219675
212 trining a epoch: -11.204067468643188
213 [Evluating Epoch 16] HR = 0.6542, NDCG = 0.
4011
214 evaluting time: -1.2266762256622314
215 record written!
216 hit_rate 0.65424739195231
217 ndcg 0.4011010462378216
218 Epoch 17 starts !
219 -----
-----
220 instance loader
221 total loss: 100.47915577888489
222 trining a epoch: -11.25089430809021
223 [Evluating Epoch 17] HR = 0.6364, NDCG = 0.
3870
224 evaluting time: -1.263617753982544
225 record written!
226 hit_rate 0.6363636363636364
227 ndcg 0.3869926820858614
228 Epoch 18 starts !
229 -----
-----
230 instance loader
231 total loss: 99.87740285694599
232 trining a epoch: -11.31176471710205
233 [Evluating Epoch 18] HR = 0.6557, NDCG = 0.
3993
234 evaluting time: -1.4770212173461914
235 record written!
```

```
236 hit_rate 0.6557377049180327
237 ndcg 0.39930844574972807
238 Epoch 19 starts !
239 -----
-----
240 instance loader
241 total loss: 99.65664198994637
242 trining a epoch: -11.017523288726807
243 [Evluating Epoch 19] HR = 0.6572, NDCG = 0.
3965
244 evaluting time: -1.3613581657409668
245 record written!
246 hit_rate 0.6572280178837556
247 ndcg 0.39645927904849104
248 Epoch 20 starts !
249 -----
-----
250 instance loader
251 total loss: 99.4620680063963
252 trining a epoch: -11.447373867034912
253 [Evluating Epoch 20] HR = 0.6513, NDCG = 0.
3984
254 evaluting time: -1.8839588165283203
255 record written!
256 hit_rate 0.6512667660208644
257 ndcg 0.3983621836879995
258 Epoch 21 starts !
259 -----
-----
260 instance loader
261 total loss: 99.3930765837431
262 trining a epoch: -10.987605571746826
263 [Evluating Epoch 21] HR = 0.6528, NDCG = 0.
4071
264 evaluting time: -1.3683662414550781
265 record written!
266 hit_rate 0.6527570789865872
```

```
267 ndcg 0.4071112892624085
268 Epoch 22 starts !
269 -----
270 instance loader
271 total loss: 99.27545200288296
272 trining a epoch: -11.679770231246948
273 [Evluating Epoch 22] HR = 0.6721, NDCG = 0.
274 evaluting time: -1.3792929649353027
275 record written!
276 hit_rate 0.6721311475409836
277 ndcg 0.41278279312381694
278 Epoch 23 starts !
279 -----
280 instance loader
281 total loss: 98.80083337426186
282 trining a epoch: -11.351657152175903
283 [Evluating Epoch 23] HR = 0.6662, NDCG = 0.
284 evaluting time: -1.383272409439087
285 record written!
286 hit_rate 0.6661698956780924
287 ndcg 0.41140806203895525
288 Epoch 24 starts !
289 -----
290 instance loader
291 total loss: 98.76426361501217
292 trining a epoch: -10.922806978225708
293 [Evluating Epoch 24] HR = 0.6319, NDCG = 0.
294 evaluting time: -1.3015151023864746
295 record written!
296 hit_rate 0.6318926974664679
297 ndcg 0.39251792418361986
```

```
298 Epoch 25 starts !
299 -----
300 instance loader
301 total loss: 98.56908927857876
302 trining a epoch: -10.889839172363281
303 [Evluating Epoch 25] HR = 0.6483, NDCG = 0.
4004
304 evaluting time: -1.3932733535766602
305 record written!
306 hit_rate 0.6482861400894188
307 ndcg 0.40037339604343347
308 Epoch 26 starts !
309 -----
310 instance loader
311 total loss: 98.3395906984806
312 trining a epoch: -11.239903450012207
313 [Evluating Epoch 26] HR = 0.6513, NDCG = 0.
4167
314 evaluting time: -1.5827932357788086
315 record written!
316 hit_rate 0.6512667660208644
317 ndcg 0.4166581934366625
318 Epoch 27 starts !
319 -----
320 instance loader
321 total loss: 98.34026849269867
322 trining a epoch: -11.288799524307251
323 [Evluating Epoch 27] HR = 0.6721, NDCG = 0.
4093
324 evaluting time: -1.3713586330413818
325 record written!
326 hit_rate 0.6721311475409836
327 ndcg 0.4092814864689906
328 Epoch 28 starts !
```

```
329 -----
-----
330 instance loader
331 total loss: 98.59423798322678
332 trining a epoch: -11.544114828109741
333 [Evluating Epoch 28] HR = 0.6602, NDCG = 0.
4009
334 evaluting time: -1.3214952945709229
335 record written!
336 hit_rate 0.6602086438152012
337 ndcg 0.40092891981621964
338 Epoch 29 starts !
339 -----
-----
340 instance loader
341 total loss: 98.05106723308563
342 trining a epoch: -11.41543197631836
343 [Evluating Epoch 29] HR = 0.6498, NDCG = 0.
4044
344 evaluting time: -1.3394176959991455
345 record written!
346 hit_rate 0.6497764530551415
347 ndcg 0.4043932672799259
348 Epoch 30 starts !
349 -----
-----
350 instance loader
351 total loss: 98.03624433279037
352 trining a epoch: -11.304750442504883
353 [Evluating Epoch 30] HR = 0.6677, NDCG = 0.
4049
354 evaluting time: -1.3174800872802734
355 record written!
356 hit_rate 0.6676602086438153
357 ndcg 0.40486608126715184
358 Epoch 31 starts !
359 -----
```

```
359 -----
360 instance loader
361 total loss: 97.6038068830967
362 trining a epoch: -11.401471138000488
363 [Evluating Epoch 31] HR = 0.6632, NDCG = 0.
364 evaluting time: -1.2347288131713867
365 record written!
366 hit_rate 0.6631892697466468
367 ndcg 0.4042696844101845
368 Epoch 32 starts !
369 -----
370 -----
371 instance loader
372 total loss: 97.94393706321716
373 trining a epoch: -11.425433158874512
374 [Evluating Epoch 32] HR = 0.6542, NDCG = 0.
375 evaluting time: -1.5429050922393799
376 record written!
377 hit_rate 0.65424739195231
378 ndcg 0.4055929900459064
379 Epoch 33 starts !
380 -----
381 instance loader
382 total loss: 98.15132611989975
383 trining a epoch: -11.298796653747559
384 [Evluating Epoch 33] HR = 0.6677, NDCG = 0.
385 evaluting time: -1.1858031749725342
386 record written!
387 hit_rate 0.6676602086438153
388 ndcg 0.39742881481739406
389 Epoch 34 starts !
390 -----
```

```
390 instance loader
391 total loss: 97.83898471295834
392 trining a epoch: -11.451364040374756
393 [Evluating Epoch 34] HR = 0.6736, NDCG = 0.
394           4107
395 evaluting time: -1.411224126815796
396 record written!
397 hit_rate 0.6736214605067065
398 ndcg 0.41071231600534075
399 Epoch 35 starts !
400 -----
401 -----
400 instance loader
401 total loss: 97.81401799619198
402 trining a epoch: -11.09731125831604
403 [Evluating Epoch 35] HR = 0.6542, NDCG = 0.
404           4059
405 evaluting time: -1.0910816192626953
406 record written!
407 hit_rate 0.65424739195231
408 ndcg 0.40586212974078156
409 Epoch 36 starts !
410 -----
411 -----
410 instance loader
411 total loss: 97.60029789805412
412 trining a epoch: -11.404488801956177
413 [Evluating Epoch 36] HR = 0.6662, NDCG = 0.
414           4113
415 evaluting time: -1.218740463256836
416 record written!
417 hit_rate 0.6661698956780924
418 ndcg 0.41128953546009706
419 Epoch 37 starts !
420 -----
421 -----
420 instance loader
```

```
421 total loss: 97.80935226380825
422 trining a epoch: -11.298771619796753
423 [Evluating Epoch 37] HR = 0.6498, NDCG = 0.
4009
424 evaluting time: -1.6206650733947754
425 record written!
426 hit_rate 0.6497764530551415
427 ndcg 0.4008764558146595
428 Epoch 38 starts !
429 -----
430 instance loader
431 total loss: 97.43056087195873
432 trining a epoch: -10.804095983505249
433 [Evluating Epoch 38] HR = 0.6692, NDCG = 0.
4111
434 evaluting time: -1.6475913524627686
435 record written!
436 hit_rate 0.669150521609538
437 ndcg 0.41108990482908014
438 Epoch 39 starts !
439 -----
440 instance loader
441 total loss: 97.547054246068
442 trining a epoch: -11.334710836410522
443 [Evluating Epoch 39] HR = 0.6647, NDCG = 0.
4072
444 evaluting time: -1.9138801097869873
445 record written!
446 hit_rate 0.6646795827123696
447 ndcg 0.4072226717517352
448 Epoch 40 starts !
449 -----
450 instance loader
451 total loss: 97.557482406497
```

```
452 trining a epoch: -11.444411039352417
453 [Evluating Epoch 40] HR = 0.6692, NDCG = 0.
4097
454 evaluting time: -1.321462869644165
455 record written!
456 hit_rate 0.669150521609538
457 ndcg 0.4096871822039476
458 Epoch 41 starts !
459 -----
460 instance loader
461 total loss: 97.60301673412323
462 trining a epoch: -11.651819705963135
463 [Evluating Epoch 41] HR = 0.6453, NDCG = 0.
4016
464 evaluting time: -1.594740867614746
465 record written!
466 hit_rate 0.6453055141579732
467 ndcg 0.4015922362372595
468 Epoch 42 starts !
469 -----
470 instance loader
471 total loss: 97.14690579473972
472 trining a epoch: -11.293792486190796
473 [Evluating Epoch 42] HR = 0.6736, NDCG = 0.
4087
474 evaluting time: -1.6485564708709717
475 record written!
476 hit_rate 0.6736214605067065
477 ndcg 0.4086551778251766
478 Epoch 43 starts !
479 -----
480 instance loader
481 total loss: 97.30367085337639
482 trining a epoch: -11.08933138847351
```

```
483 [Evluating Epoch 43] HR = 0.6572, NDCG = 0.  
4132  
484 evaluting time: -1.3544068336486816  
485 record written!  
486 hit_rate 0.6572280178837556  
487 ndcg 0.4132386316462493  
488 Epoch 44 starts !  
489 -----  
-----  
490 instance loader  
491 total loss: 97.29999037086964  
492 trining a epoch: -11.03345274925232  
493 [Evluating Epoch 44] HR = 0.6602, NDCG = 0.  
4022  
494 evaluting time: -1.6276745796203613  
495 record written!  
496 hit_rate 0.6602086438152012  
497 ndcg 0.40216063507143557  
498 Epoch 45 starts !  
499 -----  
-----  
500 instance loader  
501 total loss: 97.28276172280312  
502 trining a epoch: -11.415459871292114  
503 [Evluating Epoch 45] HR = 0.6766, NDCG = 0.  
4159  
504 evaluting time: -1.355400800704956  
505 record written!  
506 hit_rate 0.676602086438152  
507 ndcg 0.4158781911177499  
508 Epoch 46 starts !  
509 -----  
-----  
510 instance loader  
511 total loss: 97.30060651898384  
512 trining a epoch: -11.045422315597534  
513 [Evluating Epoch 46] HR = 0.6513, NDCG = 0.
```

```
513 3979
514 evaluting time: -1.4152143001556396
515 record written!
516 hit_rate 0.6512667660208644
517 ndcg 0.3979063362875825
518 Epoch 47 starts !
519 -----
-----
520 instance loader
521 total loss: 97.30285044014454
522 trining a epoch: -11.253892183303833
523 [Evluating Epoch 47] HR = 0.6557, NDCG = 0.
4137
524 evaluting time: -1.3114910125732422
525 record written!
526 hit_rate 0.6557377049180327
527 ndcg 0.413685996329014
528 Epoch 48 starts !
529 -----
-----
530 instance loader
531 total loss: 97.04686011373997
532 trining a epoch: -11.554115056991577
533 [Evluating Epoch 48] HR = 0.6692, NDCG = 0.
4123
534 evaluting time: -1.4451072216033936
535 record written!
536 hit_rate 0.669150521609538
537 ndcg 0.41227776657647447
538 Epoch 49 starts !
539 -----
-----
540 instance loader
541 total loss: 96.98003855347633
542 trining a epoch: -10.974665403366089
543 [Evluating Epoch 49] HR = 0.6513, NDCG = 0.
3987
```

```
544 evaluting time: -1.5508239269256592
545 record written!
546 hit_rate 0.6512667660208644
547 ndcg 0.3987010940682363
548 Epoch 50 starts !
549 -----
-----
550 instance loader
551 total loss: 96.79322981834412
552 trining a epoch: -11.397501707077026
553 [Evluating Epoch 50] HR = 0.6706, NDCG = 0.
4201
554 evaluting time: -1.4989666938781738
555 record written!
556 hit_rate 0.6706408345752608
557 ndcg 0.4201440435801539
558 Epoch 51 starts !
559 -----
-----
560 instance loader
561 total loss: 96.81571500003338
562 trining a epoch: -11.216975212097168
563 [Evluating Epoch 51] HR = 0.6572, NDCG = 0.
4057
564 evaluting time: -1.4201738834381104
565 record written!
566 hit_rate 0.6572280178837556
567 ndcg 0.4056942897244489
568 Epoch 52 starts !
569 -----
-----
570 instance loader
571 total loss: 97.03981058299541
572 trining a epoch: -11.169147491455078
573 [Evluating Epoch 52] HR = 0.6319, NDCG = 0.
3934
574 evaluting time: -1.3603594303131104
```

```
575 record written!
576 hit_rate 0.6318926974664679
577 ndcg 0.3934183014816992
578 Epoch 53 starts !
579 -----
-----
580 instance loader
581 total loss: 97.04611878097057
582 trining a epoch: -11.083383798599243
583 [Evluating Epoch 53] HR = 0.6542, NDCG = 0.
4078
584 evaluting time: -1.700441598892212
585 record written!
586 hit_rate 0.65424739195231
587 ndcg 0.40775204677718097
588 Epoch 54 starts !
589 -----
-----
590 instance loader
591 total loss: 96.91638059914112
592 trining a epoch: -11.586974382400513
593 [Evluating Epoch 54] HR = 0.6453, NDCG = 0.
3934
594 evaluting time: -1.6436376571655273
595 record written!
596 hit_rate 0.6453055141579732
597 ndcg 0.39337643559261
598 Epoch 55 starts !
599 -----
-----
600 instance loader
601 total loss: 96.82954880595207
602 trining a epoch: -11.27383828163147
603 [Evluating Epoch 55] HR = 0.6557, NDCG = 0.
4034
604 evaluting time: -1.3853023052215576
605 record written!
```

```
606 hit_rate 0.6557377049180327
607 ndcg 0.40337436208824007
608 Epoch 56 starts !
609 -----
-----
610 instance loader
611 total loss: 96.89449793100357
612 trining a epoch: -11.128255128860474
613 [Evluating Epoch 56] HR = 0.6706, NDCG = 0.
4094
614 evaluting time: -1.3154828548431396
615 record written!
616 hit_rate 0.6706408345752608
617 ndcg 0.4093834884487563
618 Epoch 57 starts !
619 -----
-----
620 instance loader
621 total loss: 97.08213765919209
622 trining a epoch: -11.347669124603271
623 [Evluating Epoch 57] HR = 0.6587, NDCG = 0.
4089
624 evaluting time: -1.4101994037628174
625 record written!
626 hit_rate 0.6587183308494784
627 ndcg 0.4089039174996308
628 Epoch 58 starts !
629 -----
-----
630 instance loader
631 total loss: 96.49589969217777
632 trining a epoch: -10.925770282745361
633 [Evluating Epoch 58] HR = 0.6513, NDCG = 0.
4030
634 evaluting time: -1.333432674407959
635 record written!
636 hit_rate 0.6512667660208644
```

```
637 ndcg 0.4029666377926337
638 Epoch 59 starts !
639 -----
640 instance loader
641 total loss: 96.56610858440399
642 trining a epoch: -11.182085990905762
643 [Evluating Epoch 59] HR = 0.6647, NDCG = 0.
644 evaluting time: -1.3903062343597412
645 record written!
646 hit_rate 0.6646795827123696
647 ndcg 0.4081118501011687
648 Epoch 60 starts !
649 -----
650 instance loader
651 total loss: 96.82389806210995
652 trining a epoch: -11.387534618377686
653 [Evluating Epoch 60] HR = 0.6647, NDCG = 0.
654 evaluting time: -1.3863189220428467
655 record written!
656 hit_rate 0.6646795827123696
657 ndcg 0.40870025666400595
658 Epoch 61 starts !
659 -----
660 instance loader
661 total loss: 96.39456777274609
662 trining a epoch: -10.801077127456665
663 [Evluating Epoch 61] HR = 0.6438, NDCG = 0.
664 evaluting time: -1.3454008102416992
665 record written!
666 hit_rate 0.6438152011922503
667 ndcg 0.4118431223445231
```

```
668 Epoch 62 starts !
669 -----
670 instance loader
671 total loss: 96.73219180107117
672 trining a epoch: -11.454354763031006
673 [Evluating Epoch 62] HR = 0.6304, NDCG = 0.
3985
674 evaluting time: -1.3264522552490234
675 record written!
676 hit_rate 0.6304023845007451
677 ndcg 0.3984737231878717
678 Epoch 63 starts !
679 -----
680 instance loader
681 total loss: 96.33439360558987
682 trining a epoch: -10.994612455368042
683 [Evluating Epoch 63] HR = 0.6379, NDCG = 0.
4006
684 evaluting time: -1.3633270263671875
685 record written!
686 hit_rate 0.6378539493293591
687 ndcg 0.40060790700751053
688 Epoch 64 starts !
689 -----
690 instance loader
691 total loss: 96.60633839666843
692 trining a epoch: -11.249903917312622
693 [Evluating Epoch 64] HR = 0.6721, NDCG = 0.
4146
694 evaluting time: -1.3434338569641113
695 record written!
696 hit_rate 0.6721311475409836
697 ndcg 0.41457901104155015
698 Epoch 65 starts !
```

```
699 -----
-----
700 instance loader
701 total loss: 96.66270811855793
702 trining a epoch: -11.582013845443726
703 [Evluating Epoch 65] HR = 0.6811, NDCG = 0.
    4135
704 evaluting time: -1.372328281402588
705 record written!
706 hit_rate 0.6810730253353204
707 ndcg 0.41354370374074806
708 Epoch 66 starts !
709 -----
-----
710 instance loader
711 total loss: 96.41102738678455
712 trining a epoch: -11.778517007827759
713 [Evluating Epoch 66] HR = 0.6438, NDCG = 0.
    4021
714 evaluting time: -2.0584912300109863
715 record written!
716 hit_rate 0.6438152011922503
717 ndcg 0.40207603945716
718 Epoch 67 starts !
719 -----
-----
720 instance loader
721 total loss: 96.54178804159164
722 trining a epoch: -11.202059268951416
723 [Evluating Epoch 67] HR = 0.6498, NDCG = 0.
    4057
724 evaluting time: -1.423191785812378
725 record written!
726 hit_rate 0.6497764530551415
727 ndcg 0.40572660620850576
728 Epoch 68 starts !
729 -----
```

```
729 -----
730 instance loader
731 total loss: 96.51375509798527
732 trining a epoch: -11.358611106872559
733 [Evluating Epoch 68] HR = 0.6513, NDCG = 0.
    4040
734 evaluting time: -1.4730865955352783
735 record written!
736 hit_rate 0.6512667660208644
737 ndcg 0.40395907984505935
738 Epoch 69 starts !
739 -----
    -----
740 instance loader
741 total loss: 96.74644802510738
742 trining a epoch: -11.246877431869507
743 [Evluating Epoch 69] HR = 0.6572, NDCG = 0.
    4139
744 evaluting time: -1.6086969375610352
745 record written!
746 hit_rate 0.6572280178837556
747 ndcg 0.41390281426204606
748 Epoch 70 starts !
749 -----
    -----
750 instance loader
751 total loss: 96.37134721875191
752 trining a epoch: -11.365566968917847
753 [Evluating Epoch 70] HR = 0.6423, NDCG = 0.
    4044
754 evaluting time: -1.0881175994873047
755 record written!
756 hit_rate 0.6423248882265276
757 ndcg 0.40442996406913473
758 Epoch 71 starts !
759 -----
```

```
760 instance loader
761 total loss: 96.19545705616474
762 trining a epoch: -11.277828454971313
763 [Evluating Epoch 71] HR = 0.6483, NDCG = 0.
    4076
764 evaluting time: -1.247696876525879
765 record written!
766 hit_rate 0.6482861400894188
767 ndcg 0.40755473354079497
768 Epoch 72 starts !
769 -----
-----
770 instance loader
771 total loss: 96.79614971578121
772 trining a epoch: -10.814057350158691
773 [Evluating Epoch 72] HR = 0.6438, NDCG = 0.
    4089
774 evaluting time: -1.3054924011230469
775 record written!
776 hit_rate 0.6438152011922503
777 ndcg 0.4088845701337445
778 Epoch 73 starts !
779 -----
-----
780 instance loader
781 total loss: 96.63822941482067
782 trining a epoch: -11.81040644645691
783 [Evluating Epoch 73] HR = 0.6513, NDCG = 0.
    4093
784 evaluting time: -1.4172024726867676
785 record written!
786 hit_rate 0.6512667660208644
787 ndcg 0.4093298710324881
788 Epoch 74 starts !
789 -----
-----
790 instance loader
```

```
791 total loss: 96.18806375563145
792 trining a epoch: -11.313759088516235
793 [Evluating Epoch 74] HR = 0.6528, NDCG = 0.
    4118
794 evaluting time: -1.3404152393341064
795 record written!
796 hit_rate 0.6527570789865872
797 ndcg 0.41182907235795563
798 Epoch 75 starts !
799 -----
800 instance loader
801 total loss: 96.20062565803528
802 trining a epoch: -11.297775030136108
803 [Evluating Epoch 75] HR = 0.6438, NDCG = 0.
    3983
804 evaluting time: -1.3763446807861328
805 record written!
806 hit_rate 0.6438152011922503
807 ndcg 0.39830180504765006
808 Epoch 76 starts !
809 -----
810 instance loader
811 total loss: 96.16069616377354
812 trining a epoch: -11.263900518417358
813 [Evluating Epoch 76] HR = 0.6587, NDCG = 0.
    4066
814 evaluting time: -1.345365285873413
815 record written!
816 hit_rate 0.6587183308494784
817 ndcg 0.4065614688926989
818 Epoch 77 starts !
819 -----
820 instance loader
821 total loss: 96.15602257847786
```

```
822 trining a epoch: -11.291818618774414
823 [Evluating Epoch 77] HR = 0.6453, NDCG = 0.
     4035
824 evaluting time: -1.3334054946899414
825 record written!
826 hit_rate 0.6453055141579732
827 ndcg 0.40354193184809745
828 Epoch 78 starts !
829 -----
-----
830 instance loader
831 total loss: 96.39072369039059
832 trining a epoch: -11.569048643112183
833 [Evluating Epoch 78] HR = 0.6572, NDCG = 0.
     4091
834 evaluting time: -1.306504726409912
835 record written!
836 hit_rate 0.6572280178837556
837 ndcg 0.40909662175710515
838 Epoch 79 starts !
839 -----
-----
840 instance loader
841 total loss: 96.72383819520473
842 trining a epoch: -11.315755605697632
843 [Evluating Epoch 79] HR = 0.6542, NDCG = 0.
     4139
844 evaluting time: -1.3374195098876953
845 record written!
846 hit_rate 0.65424739195231
847 ndcg 0.41393888058943906
848 Epoch 80 starts !
849 -----
-----
850 instance loader
851 total loss: 96.41144286096096
852 trining a epoch: -10.961674690246582
```

```
853 [Evluating Epoch 80] HR = 0.6617, NDCG = 0.  
4074  
854 evaluting time: -1.3813304901123047  
855 record written!  
856 hit_rate 0.6616989567809239  
857 ndcg 0.40741444577785374  
858 Epoch 81 starts !  
859 -----  
-----  
860 instance loader  
861 total loss: 96.27998286485672  
862 trining a epoch: -11.174106121063232  
863 [Evluating Epoch 81] HR = 0.6736, NDCG = 0.  
4177  
864 evaluting time: -1.310492992401123  
865 record written!  
866 hit_rate 0.6736214605067065  
867 ndcg 0.41765238338185695  
868 Epoch 82 starts !  
869 -----  
-----  
870 instance loader  
871 total loss: 95.87351259589195  
872 trining a epoch: -11.576030731201172  
873 [Evluating Epoch 82] HR = 0.6453, NDCG = 0.  
3985  
874 evaluting time: -1.3653194904327393  
875 record written!  
876 hit_rate 0.6453055141579732  
877 ndcg 0.3984869008649654  
878 Epoch 83 starts !  
879 -----  
-----  
880 instance loader  
881 total loss: 96.12379793822765  
882 trining a epoch: -11.123249769210815  
883 [Evluating Epoch 83] HR = 0.6617, NDCG = 0.
```

```
883 4013
884 evaluting time: -1.722357988357544
885 record written!
886 hit_rate 0.6616989567809239
887 ndcg 0.40127484847381517
888 Epoch 84 starts !
889 -----
-----
890 instance loader
891 total loss: 96.21687890589237
892 trining a epoch: -11.427436828613281
893 [Evluating Epoch 84] HR = 0.6587, NDCG = 0.
        4072
894 evaluting time: -1.6445932388305664
895 record written!
896 hit_rate 0.6587183308494784
897 ndcg 0.4072374518230504
898 Epoch 85 starts !
899 -----
-----
900 instance loader
901 total loss: 96.35817213356495
902 trining a epoch: -11.409476280212402
903 [Evluating Epoch 85] HR = 0.6617, NDCG = 0.
        4074
904 evaluting time: -1.5029795169830322
905 record written!
906 hit_rate 0.6616989567809239
907 ndcg 0.40735506571434743
908 Epoch 86 starts !
909 -----
-----
910 instance loader
911 total loss: 96.0541770607233
912 trining a epoch: -11.393518209457397
913 [Evluating Epoch 86] HR = 0.6557, NDCG = 0.
        3973
```

```
914 evaluting time: -1.446131706237793
915 record written!
916 hit_rate 0.6557377049180327
917 ndcg 0.3973027652497885
918 Epoch 87 starts !
919 -----
-----
920 instance loader
921 total loss: 95.86682511866093
922 trining a epoch: -11.45535683631897
923 [Evluating Epoch 87] HR = 0.6483, NDCG = 0.
3988
924 evaluting time: -1.8988900184631348
925 record written!
926 hit_rate 0.6482861400894188
927 ndcg 0.39877664199268803
928 Epoch 88 starts !
929 -----
-----
930 instance loader
931 total loss: 96.22884701192379
932 trining a epoch: -11.612959623336792
933 [Evluating Epoch 88] HR = 0.6542, NDCG = 0.
4024
934 evaluting time: -1.961756706237793
935 record written!
936 hit_rate 0.65424739195231
937 ndcg 0.40243211083618485
938 Epoch 89 starts !
939 -----
-----
940 instance loader
941 total loss: 96.08588898181915
942 trining a epoch: -11.420446872711182
943 [Evluating Epoch 89] HR = 0.6259, NDCG = 0.
3879
944 evaluting time: -1.7154393196105957
```

```
945 record written!
946 hit_rate 0.6259314456035767
947 ndcg 0.3878848719929163
948 Epoch 90 starts !
949 -----
-----
950 instance loader
951 total loss: 96.22722242772579
952 trining a epoch: -11.61692214012146
953 [Evluating Epoch 90] HR = 0.6736, NDCG = 0.
        4222
954 evaluting time: -1.6545724868774414
955 record written!
956 hit_rate 0.6736214605067065
957 ndcg 0.42221431579157004
958 Epoch 91 starts !
959 -----
-----
960 instance loader
961 total loss: 95.64803414046764
962 trining a epoch: -11.319742202758789
963 [Evluating Epoch 91] HR = 0.6319, NDCG = 0.
        3968
964 evaluting time: -1.1179828643798828
965 record written!
966 hit_rate 0.6318926974664679
967 ndcg 0.396778327211757
968 Epoch 92 starts !
969 -----
-----
970 instance loader
971 total loss: 96.20209200680256
972 trining a epoch: -11.777520418167114
973 [Evluating Epoch 92] HR = 0.6528, NDCG = 0.
        4031
974 evaluting time: -1.1997883319854736
975 record written!
```

```
976 hit_rate 0.6527570789865872
977 ndcg 0.4031467433070054
978 Epoch 93 starts !
979 -----
-----
980 instance loader
981 total loss: 96.41945233941078
982 trining a epoch: -11.471279859542847
983 [Evluating Epoch 93] HR = 0.6542, NDCG = 0.
        4109
984 evaluting time: -1.131971836090088
985 record written!
986 hit_rate 0.65424739195231
987 ndcg 0.41088361680600677
988 Epoch 94 starts !
989 -----
-----
990 instance loader
991 total loss: 95.96015107631683
992 trining a epoch: -11.426457405090332
993 [Evluating Epoch 94] HR = 0.6632, NDCG = 0.
        4082
994 evaluting time: -1.213726282119751
995 record written!
996 hit_rate 0.6631892697466468
997 ndcg 0.4081956481431765
998 Epoch 95 starts !
999 -----
-----
1000 instance loader
1001 total loss: 95.66725146770477
1002 trining a epoch: -11.352653503417969
1003 [Evluating Epoch 95] HR = 0.6692, NDCG = 0.
        4125
1004 evaluting time: -1.1808147430419922
1005 record written!
1006 hit_rate 0.669150521609538
```

```
1007 ndcg 0.4125185287563478
1008 Epoch 96 starts !
1009 -----
1010 instance loader
1011 total loss: 95.70051361620426
1012 trining a epoch: -11.297801494598389
1013 [Evluating Epoch 96] HR = 0.6751, NDCG = 0.
        4136
1014 evaluting time: -1.366318702697754
1015 record written!
1016 hit_rate 0.6751117734724292
1017 ndcg 0.4135880017868388
1018 Epoch 97 starts !
1019 -----
1020 instance loader
1021 total loss: 95.89104333519936
1022 trining a epoch: -11.255914449691772
1023 [Evluating Epoch 97] HR = 0.6572, NDCG = 0.
        4061
1024 evaluting time: -1.7672441005706787
1025 record written!
1026 hit_rate 0.6572280178837556
1027 ndcg 0.4061231409192167
1028 Epoch 98 starts !
1029 -----
1030 instance loader
1031 total loss: 96.10264866054058
1032 trining a epoch: -11.299798488616943
1033 [Evluating Epoch 98] HR = 0.6632, NDCG = 0.
        4069
1034 evaluting time: -1.2935104370117188
1035 record written!
1036 hit_rate 0.6631892697466468
1037 ndcg 0.4068948773764022
```

```
1038 Epoch 99 starts !
1039 -----
1040 instance loader
1041 total loss: 95.86504703760147
1042 trining a epoch: -11.512236833572388
1043 [Evluating Epoch 99] HR = 0.6572, NDCG = 0.
1044 evaluting time: -1.2037715911865234
1045 record written!
1046 hit_rate 0.6572280178837556
1047 ndcg 0.41013809705404836
1048 Epoch 100 starts !
1049 -----
1050 instance loader
1051 total loss: 95.86127556860447
1052 trining a epoch: -11.64384937286377
1053 [Evluating Epoch 100] HR = 0.6528, NDCG = 0.
1054 evaluting time: -1.540877103805542
1055 record written!
1056 hit_rate 0.6527570789865872
1057 ndcg 0.3913777833429818
1058 Epoch 101 starts !
1059 -----
1060 instance loader
1061 total loss: 96.24363560974598
1062 trining a epoch: -11.277855634689331
1063 [Evluating Epoch 101] HR = 0.6468, NDCG = 0.
1064 evaluting time: -1.9617507457733154
1065 record written!
1066 hit_rate 0.646795827123696
1067 ndcg 0.4073063757050759
1068 Epoch 102 starts !
```

```
1069 -----
-----
1070 instance loader
1071 total loss: 96.1344970613718
1072 trining a epoch: -11.58998966217041
1073 [Evluating Epoch 102] HR = 0.6379, NDCG = 0.
1073 3972
1074 evaluting time: -1.6346309185028076
1075 record written!
1076 hit_rate 0.6378539493293591
1077 ndcg 0.3972380043315126
1078 Epoch 103 starts !
1079 -----
-----
1080 instance loader
1081 total loss: 96.23512154817581
1082 trining a epoch: -11.265833139419556
1083 [Evluating Epoch 103] HR = 0.6602, NDCG = 0.
1083 4019
1084 evaluting time: -1.4959986209869385
1085 record written!
1086 hit_rate 0.6602086438152012
1087 ndcg 0.40189907036599776
1088 Epoch 104 starts !
1089 -----
-----
1090 instance loader
1091 total loss: 96.14427077770233
1092 trining a epoch: -11.938061952590942
1093 [Evluating Epoch 104] HR = 0.6617, NDCG = 0.
1093 4080
1094 evaluting time: -1.6047420501708984
1095 record written!
1096 hit_rate 0.6616989567809239
1097 ndcg 0.40797022568388575
1098 Epoch 105 starts !
1099 -----
```

```
1099 -----
1100 instance loader
1101 total loss: 95.79600837826729
1102 trining a epoch: -11.58999752998352
1103 [Evluating Epoch 105] HR = 0.6647, NDCG = 0.
        4083
1104 evaluting time: -1.684462547302246
1105 record written!
1106 hit_rate 0.6646795827123696
1107 ndcg 0.4083177394457619
1108 Epoch 106 starts !
1109 -----
        -----
1110 instance loader
1111 total loss: 96.01333011686802
1112 trining a epoch: -11.447401523590088
1113 [Evluating Epoch 106] HR = 0.6528, NDCG = 0.
        4091
1114 evaluting time: -1.3992295265197754
1115 record written!
1116 hit_rate 0.6527570789865872
1117 ndcg 0.4090653616052936
1118 Epoch 107 starts !
1119 -----
        -----
1120 instance loader
1121 total loss: 95.96188595890999
1122 trining a epoch: -11.124234914779663
1123 [Evluating Epoch 107] HR = 0.6498, NDCG = 0.
        4062
1124 evaluting time: -1.6575653553009033
1125 record written!
1126 hit_rate 0.6497764530551415
1127 ndcg 0.4061702610327313
1128 Epoch 108 starts !
1129 -----
```

```
1130 instance loader
1131 total loss: 95.99256144464016
1132 trining a epoch: -11.506256580352783
1133 [Evluating Epoch 108] HR = 0.6468, NDCG = 0.
        4014
1134 evaluting time: -1.2625815868377686
1135 record written!
1136 hit_rate 0.646795827123696
1137 ndcg 0.4014265692579315
1138 Epoch 109 starts !
1139 -----
-----
1140 instance loader
1141 total loss: 95.61237806081772
1142 trining a epoch: -11.190064191818237
1143 [Evluating Epoch 109] HR = 0.6542, NDCG = 0.
        4113
1144 evaluting time: -1.236720323562622
1145 record written!
1146 hit_rate 0.65424739195231
1147 ndcg 0.41132391992348943
1148 Epoch 110 starts !
1149 -----
-----
1150 instance loader
1151 total loss: 95.85749840736389
1152 trining a epoch: -11.309768676757812
1153 [Evluating Epoch 110] HR = 0.6513, NDCG = 0.
        3991
1154 evaluting time: -1.117983341217041
1155 record written!
1156 hit_rate 0.6512667660208644
1157 ndcg 0.3991423899570603
1158 Epoch 111 starts !
1159 -----
-----
1160 instance loader
```

```
1161 total loss: 95.76987613737583
1162 trining a epoch: -11.414470911026001
1163 [Evluating Epoch 111] HR = 0.6602, NDCG = 0.
        4011
1164 evaluting time: -1.158890724182129
1165 record written!
1166 hit_rate 0.6602086438152012
1167 ndcg 0.40109380053745775
1168 Epoch 112 starts !
1169 -----
1170 instance loader
1171 total loss: 95.76609241962433
1172 trining a epoch: -11.276804447174072
1173 [Evluating Epoch 112] HR = 0.6677, NDCG = 0.
        4073
1174 evaluting time: -1.1967980861663818
1175 record written!
1176 hit_rate 0.6676602086438153
1177 ndcg 0.407272856440133
1178 Epoch 113 starts !
1179 -----
1180 instance loader
1181 total loss: 95.64480981230736
1182 trining a epoch: -11.315726280212402
1183 [Evluating Epoch 113] HR = 0.6692, NDCG = 0.
        4148
1184 evaluting time: -1.322488784790039
1185 record written!
1186 hit_rate 0.669150521609538
1187 ndcg 0.4148401367438482
1188 Epoch 114 starts !
1189 -----
1190 instance loader
1191 total loss: 95.67815086245537
```

```
1192 trining a epoch: -11.28177666641235
1193 [Evluating Epoch 114] HR = 0.6483, NDCG = 0.
        4086
1194 evaluting time: -1.3304860591888428
1195 record written!
1196 hit_rate 0.6482861400894188
1197 ndcg 0.40860228024998196
1198 Epoch 115 starts !
1199 -----
-----
1200 instance loader
1201 total loss: 96.0494475364685
1202 trining a epoch: -11.397507905960083
1203 [Evluating Epoch 115] HR = 0.6438, NDCG = 0.
        3967
1204 evaluting time: -1.3404126167297363
1205 record written!
1206 hit_rate 0.6438152011922503
1207 ndcg 0.396695053776915
1208 Epoch 116 starts !
1209 -----
-----
1210 instance loader
1211 total loss: 95.93734323978424
1212 trining a epoch: -11.128228664398193
1213 [Evluating Epoch 116] HR = 0.6572, NDCG = 0.
        4011
1214 evaluting time: -1.1808412075042725
1215 record written!
1216 hit_rate 0.6572280178837556
1217 ndcg 0.4011174932265014
1218 Epoch 117 starts !
1219 -----
-----
1220 instance loader
1221 total loss: 95.83511425554752
1222 trining a epoch: -11.270874977111816
```

```
1223 [Evluating Epoch 117] HR = 0.6393, NDCG = 0.  
4002  
1224 evaluting time: -1.0741353034973145  
1225 record written!  
1226 hit_rate 0.639344262295082  
1227 ndcg 0.4002464253334397  
1228 Epoch 118 starts !  
1229 -----  
-----  
1230 instance loader  
1231 total loss: 95.7557244002819  
1232 trining a epoch: -11.673762559890747  
1233 [Evluating Epoch 118] HR = 0.6826, NDCG = 0.  
4251  
1234 evaluting time: -1.1529204845428467  
1235 record written!  
1236 hit_rate 0.6825633383010432  
1237 ndcg 0.4251096431256859  
1238 Epoch 119 starts !  
1239 -----  
-----  
1240 instance loader  
1241 total loss: 95.68923769891262  
1242 trining a epoch: -11.451363801956177  
1243 [Evluating Epoch 119] HR = 0.6587, NDCG = 0.  
4050  
1244 evaluting time: -1.4232287406921387  
1245 record written!  
1246 hit_rate 0.6587183308494784  
1247 ndcg 0.4050454533110035  
1248 Epoch 120 starts !  
1249 -----  
-----  
1250 instance loader  
1251 total loss: 95.96750928461552  
1252 trining a epoch: -11.323734760284424  
1253 [Evluating Epoch 120] HR = 0.6319, NDCG = 0.
```

```
1253 3963
1254 evaluating time: -1.1020586490631104
1255 record written!
1256 hit_rate 0.6318926974664679
1257 ndcg 0.39628505416560744
1258 Epoch 121 starts !
1259 -----
1260 instance loader
1261 total loss: 95.79298897087574
1262 trining a epoch: -11.364623308181763
1263 [Evluating Epoch 121] HR = 0.6587, NDCG = 0.
1264 3982
1264 evaluating time: -1.1579017639160156
1265 record written!
1266 hit_rate 0.6587183308494784
1267 ndcg 0.39819539254957936
1268 Epoch 122 starts !
1269 -----
1270 instance loader
1271 total loss: 95.65338042378426
1272 trining a epoch: -11.33268141746521
1273 [Evluating Epoch 122] HR = 0.6304, NDCG = 0.
1274 3993
1274 evaluating time: -1.0721304416656494
1275 record written!
1276 hit_rate 0.6304023845007451
1277 ndcg 0.39929071754459644
1278 Epoch 123 starts !
1279 -----
1280 instance loader
1281 total loss: 95.65995888411999
1282 trining a epoch: -11.685704946517944
1283 [Evluating Epoch 123] HR = 0.6528, NDCG = 0.
1284 4173
```

```
1284 evaluting time: -1.1020517349243164
1285 record written!
1286 hit_rate 0.6527570789865872
1287 ndcg 0.4173019019763564
1288 Epoch 124 starts !
1289 -----
1290 instance loader
1291 total loss: 95.90405197441578
1292 trining a epoch: -11.475299835205078
1293 [Evluating Epoch 124] HR = 0.6572, NDCG = 0.
        4107
1294 evaluting time: -1.1030495166778564
1295 record written!
1296 hit_rate 0.6572280178837556
1297 ndcg 0.4106785307997214
1298 Epoch 125 starts !
1299 -----
1300 instance loader
1301 total loss: 95.56774021685123
1302 trining a epoch: -11.4573495388031
1303 [Evluating Epoch 125] HR = 0.6453, NDCG = 0.
        4079
1304 evaluting time: -1.1798148155212402
1305 record written!
1306 hit_rate 0.6453055141579732
1307 ndcg 0.40789386726666255
1308 Epoch 126 starts !
1309 -----
1310 instance loader
1311 total loss: 95.71416202187538
1312 trining a epoch: -11.512201070785522
1313 [Evluating Epoch 126] HR = 0.6632, NDCG = 0.
        4026
1314 evaluting time: -1.128978967666626
```

```
1315 record written!
1316 hit_rate 0.6631892697466468
1317 ndcg 0.4025524794692511
1318 Epoch 127 starts !
1319 -----
1320 instance loader
1321 total loss: 95.7673599421978
1322 trining a epoch: -11.306751728057861
1323 [Evluating Epoch 127] HR = 0.6468, NDCG = 0.
        4075
1324 evaluting time: -1.2067787647247314
1325 record written!
1326 hit_rate 0.646795827123696
1327 ndcg 0.40747556809836577
1328 Epoch 128 starts !
1329 -----
1330 instance loader
1331 total loss: 95.74922998249531
1332 trining a epoch: -11.225969791412354
1333 [Evluating Epoch 128] HR = 0.6513, NDCG = 0.
        4035
1334 evaluting time: -1.680499792098999
1335 record written!
1336 hit_rate 0.6512667660208644
1337 ndcg 0.4034983162835116
1338 Epoch 129 starts !
1339 -----
1340 instance loader
1341 total loss: 95.72307299077511
1342 trining a epoch: -11.191087007522583
1343 [Evluating Epoch 129] HR = 0.6513, NDCG = 0.
        4040
1344 evaluting time: -1.854043960571289
1345 record written!
```

```
1346 hit_rate 0.6512667660208644
1347 ndcg 0.40400866159411963
1348 Epoch 130 starts !
1349 -----
-----
1350 instance loader
1351 total loss: 95.68814234435558
1352 trining a epoch: -11.604945659637451
1353 [Evluating Epoch 130] HR = 0.6602, NDCG = 0.
4029
1354 evaluting time: -1.7971954345703125
1355 record written!
1356 hit_rate 0.6602086438152012
1357 ndcg 0.40285597801467216
1358 Epoch 131 starts !
1359 -----
-----
1360 instance loader
1361 total loss: 95.62741966545582
1362 trining a epoch: -11.058388710021973
1363 [Evluating Epoch 131] HR = 0.6557, NDCG = 0.
3991
1364 evaluting time: -1.7503440380096436
1365 record written!
1366 hit_rate 0.6557377049180327
1367 ndcg 0.39914330907896733
1368 Epoch 132 starts !
1369 -----
-----
1370 instance loader
1371 total loss: 95.52531807124615
1372 trining a epoch: -11.572013139724731
1373 [Evluating Epoch 132] HR = 0.6587, NDCG = 0.
4018
1374 evaluting time: -1.8281450271606445
1375 record written!
1376 hit_rate 0.6587183308494784
```

```
1377 ndcg 0.40178378389097463
1378 Epoch 133 starts !
1379 -----
1380 instance loader
1381 total loss: 95.5560170263052
1382 trining a epoch: -11.11229681968689
1383 [Evluating Epoch 133] HR = 0.6662, NDCG = 0.
1384 evaluting time: -1.7363271713256836
1385 record written!
1386 hit_rate 0.6661698956780924
1387 ndcg 0.4165835689684176
1388 Epoch 134 starts !
1389 -----
1390 instance loader
1391 total loss: 95.57876542210579
1392 trining a epoch: -11.303792715072632
1393 [Evluating Epoch 134] HR = 0.6408, NDCG = 0.
1394 evaluting time: -1.7931687831878662
1395 record written!
1396 hit_rate 0.6408345752608048
1397 ndcg 0.39987974171545815
1398 Epoch 135 starts !
1399 -----
1400 instance loader
1401 total loss: 95.45001110434532
1402 trining a epoch: -11.12423849105835
1403 [Evluating Epoch 135] HR = 0.6557, NDCG = 0.
1404 evaluting time: -1.7513151168823242
1405 record written!
1406 hit_rate 0.6557377049180327
1407 ndcg 0.4080426005975878
```

```
1408 Epoch 136 starts !
1409 -----
1410 instance loader
1411 total loss: 95.81291007995605
1412 trining a epoch: -11.51319932937622
1413 [Evluating Epoch 136] HR = 0.6438, NDCG = 0.
1414 evaluting time: -1.5458979606628418
1415 record written!
1416 hit_rate 0.6438152011922503
1417 ndcg 0.3979278228147271
1418 Epoch 137 starts !
1419 -----
1420 instance loader
1421 total loss: 95.65552511811256
1422 trining a epoch: -11.14421272277832
1423 [Evluating Epoch 137] HR = 0.6662, NDCG = 0.
1424 evaluting time: -1.3613314628601074
1425 record written!
1426 hit_rate 0.6661698956780924
1427 ndcg 0.41146013209916027
1428 Epoch 138 starts !
1429 -----
1430 instance loader
1431 total loss: 95.71866773068905
1432 trining a epoch: -11.139200210571289
1433 [Evluating Epoch 138] HR = 0.6692, NDCG = 0.
1434 evaluting time: -1.3344554901123047
1435 record written!
1436 hit_rate 0.669150521609538
1437 ndcg 0.41253469003183973
1438 Epoch 139 starts !
```

```
1439 -----
-----
1440 instance loader
1441 total loss: 95.87870818376541
1442 trining a epoch: -11.133214473724365
1443 [Evluating Epoch 139] HR = 0.6438, NDCG = 0.
3988
1444 evaluting time: -1.3414416313171387
1445 record written!
1446 hit_rate 0.6438152011922503
1447 ndcg 0.39878523040220915
1448 Epoch 140 starts !
1449 -----
-----
1450 instance loader
1451 total loss: 95.52772617340088
1452 trining a epoch: -11.371611833572388
1453 [Evluating Epoch 140] HR = 0.6632, NDCG = 0.
4131
1454 evaluting time: -1.385286808013916
1455 record written!
1456 hit_rate 0.6631892697466468
1457 ndcg 0.4130529402217247
1458 Epoch 141 starts !
1459 -----
-----
1460 instance loader
1461 total loss: 95.8554937839508
1462 trining a epoch: -10.9666588306427
1463 [Evluating Epoch 141] HR = 0.6692, NDCG = 0.
4025
1464 evaluting time: -1.3394174575805664
1465 record written!
1466 hit_rate 0.669150521609538
1467 ndcg 0.40245616197991474
1468 Epoch 142 starts !
1469 -----
```

```
1469 -----
1470 instance loader
1471 total loss: 95.75183780491352
1472 trining a epoch: -11.582019090652466
1473 [Evluating Epoch 142] HR = 0.6602, NDCG = 0.
        4146
1474 evaluting time: -1.3324038982391357
1475 record written!
1476 hit_rate 0.6602086438152012
1477 ndcg 0.4145796639945518
1478 Epoch 143 starts !
1479 -----
        -----
1480 instance loader
1481 total loss: 95.47920444607735
1482 trining a epoch: -11.228959083557129
1483 [Evluating Epoch 143] HR = 0.6498, NDCG = 0.
        4101
1484 evaluting time: -1.3693633079528809
1485 record written!
1486 hit_rate 0.6497764530551415
1487 ndcg 0.4101173047440881
1488 Epoch 144 starts !
1489 -----
        -----
1490 instance loader
1491 total loss: 95.48521611094475
1492 trining a epoch: -11.522183895111084
1493 [Evluating Epoch 144] HR = 0.6513, NDCG = 0.
        3968
1494 evaluting time: -1.3354153633117676
1495 record written!
1496 hit_rate 0.6512667660208644
1497 ndcg 0.3967529119711086
1498 Epoch 145 starts !
1499 -----
```

```
1500 instance loader
1501 total loss: 95.56822773814201
1502 trining a epoch: -11.55209469795227
1503 [Evluating Epoch 145] HR = 0.6498, NDCG = 0.
        4051
1504 evaluting time: -1.3822746276855469
1505 record written!
1506 hit_rate 0.6497764530551415
1507 ndcg 0.4051236393395948
1508 Epoch 146 starts !
1509 -----
-----
1510 instance loader
1511 total loss: 95.34823632240295
1512 trining a epoch: -11.420446157455444
1513 [Evluating Epoch 146] HR = 0.6602, NDCG = 0.
        3990
1514 evaluting time: -1.3483917713165283
1515 record written!
1516 hit_rate 0.6602086438152012
1517 ndcg 0.3989775368444343
1518 Epoch 147 starts !
1519 -----
-----
1520 instance loader
1521 total loss: 95.7712095528841
1522 trining a epoch: -11.407508611679077
1523 [Evluating Epoch 147] HR = 0.6498, NDCG = 0.
        3979
1524 evaluting time: -1.3404138088226318
1525 record written!
1526 hit_rate 0.6497764530551415
1527 ndcg 0.3979011934715106
1528 Epoch 148 starts !
1529 -----
-----
1530 instance loader
```

```
1531 total loss: 95.50170573592186
1532 trining a epoch: -11.33265209197998
1533 [Evluating Epoch 148] HR = 0.6706, NDCG = 0.
        4129
1534 evaluting time: -1.4022483825683594
1535 record written!
1536 hit_rate 0.6706408345752608
1537 ndcg 0.41290771434501533
1538 Epoch 149 starts !
1539 -----
        -----
1540 instance loader
1541 total loss: 95.53003241121769
1542 trining a epoch: -11.557081699371338
1543 [Evluating Epoch 149] HR = 0.6468, NDCG = 0.
        3975
1544 evaluting time: -1.37434983253479
1545 record written!
1546 hit_rate 0.646795827123696
1547 ndcg 0.3975018341315075
1548 Epoch 150 starts !
1549 -----
        -----
1550 instance loader
1551 total loss: 95.61296519637108
1552 trining a epoch: -11.205023050308228
1553 [Evluating Epoch 150] HR = 0.6423, NDCG = 0.
        3978
1554 evaluting time: -1.5069952011108398
1555 record written!
1556 hit_rate 0.6423248882265276
1557 ndcg 0.39784659217348217
1558 Epoch 151 starts !
1559 -----
        -----
1560 instance loader
1561 total loss: 95.46818797290325
```

```
1562 trining a epoch: -11.524163722991943
1563 [Evluating Epoch 151] HR = 0.6438, NDCG = 0.
      3986
1564 evaluting time: -1.998626708984375
1565 record written!
1566 hit_rate 0.6438152011922503
1567 ndcg 0.39858146788321946
1568 Epoch 152 starts !
1569 -----
      -----
1570 instance loader
1571 total loss: 95.1872613132
1572 trining a epoch: -10.924809217453003
1573 [Evluating Epoch 152] HR = 0.6304, NDCG = 0.
      3948
1574 evaluting time: -1.8849210739135742
1575 record written!
1576 hit_rate 0.6304023845007451
1577 ndcg 0.39477628457644376
1578 Epoch 153 starts !
1579 -----
      -----
1580 instance loader
1581 total loss: 95.38205981254578
1582 trining a epoch: -11.139198064804077
1583 [Evluating Epoch 153] HR = 0.6721, NDCG = 0.
      4055
1584 evaluting time: -1.8220984935760498
1585 record written!
1586 hit_rate 0.6721311475409836
1587 ndcg 0.4055323482317479
1588 Epoch 154 starts !
1589 -----
      -----
1590 instance loader
1591 total loss: 95.4853246808052
1592 trining a epoch: -11.254915714263916
```

```
1593 [Evluating Epoch 154] HR = 0.6557, NDCG = 0.  
4151  
1594 evaluting time: -1.858001470565796  
1595 record written!  
1596 hit_rate 0.6557377049180327  
1597 ndcg 0.4150930578055796  
1598 Epoch 155 starts !  
1599 -----  
-----  
1600 instance loader  
1601 total loss: 95.2481704056263  
1602 trining a epoch: -11.11822247505188  
1603 [Evluating Epoch 155] HR = 0.6408, NDCG = 0.  
3989  
1604 evaluting time: -1.956791877746582  
1605 record written!  
1606 hit_rate 0.6408345752608048  
1607 ndcg 0.39886649684119496  
1608 Epoch 156 starts !  
1609 -----  
-----  
1610 instance loader  
1611 total loss: 95.498255610466  
1612 trining a epoch: -11.010570049285889  
1613 [Evluating Epoch 156] HR = 0.6557, NDCG = 0.  
4083  
1614 evaluting time: -1.7563331127166748  
1615 record written!  
1616 hit_rate 0.6557377049180327  
1617 ndcg 0.4082748762491238  
1618 Epoch 157 starts !  
1619 -----  
-----  
1620 instance loader  
1621 total loss: 95.27422799170017  
1622 trining a epoch: -11.347614526748657  
1623 [Evluating Epoch 157] HR = 0.6364, NDCG = 0.
```

```
1623 4016
1624 evaluting time: -1.5987231731414795
1625 record written!
1626 hit_rate 0.6363636363636364
1627 ndcg 0.4016088474739191
1628 Epoch 158 starts !
1629 -----
1630 instance loader
1631 total loss: 95.4295579791069
1632 trining a epoch: -10.996580600738525
1633 [Evluating Epoch 158] HR = 0.6408, NDCG = 0.
        4031
1634 evaluting time: -2.0126423835754395
1635 record written!
1636 hit_rate 0.6408345752608048
1637 ndcg 0.4030788831494862
1638 Epoch 159 starts !
1639 -----
1640 instance loader
1641 total loss: 95.35331529378891
1642 trining a epoch: -11.00951862335205
1643 [Evluating Epoch 159] HR = 0.6498, NDCG = 0.
        4064
1644 evaluting time: -1.8640468120574951
1645 record written!
1646 hit_rate 0.6497764530551415
1647 ndcg 0.40640290540972834
1648 Epoch 160 starts !
1649 -----
1650 instance loader
1651 total loss: 95.6184603869915
1652 trining a epoch: -11.495278358459473
1653 [Evluating Epoch 160] HR = 0.6557, NDCG = 0.
        4062
```

```
1654 evaluting time: -1.795166015625
1655 record written!
1656 hit_rate 0.6557377049180327
1657 ndcg 0.40624916330132776
1658 Epoch 161 starts !
1659 -----
-----
1660 instance loader
1661 total loss: 95.63426721096039
1662 trining a epoch: -11.121276140213013
1663 [Evluating Epoch 161] HR = 0.6677, NDCG = 0.
4113
1664 evaluting time: -1.6146788597106934
1665 record written!
1666 hit_rate 0.6676602086438153
1667 ndcg 0.41131576918456203
1668 Epoch 162 starts !
1669 -----
-----
1670 instance loader
1671 total loss: 95.38772395253181
1672 trining a epoch: -11.28979754447937
1673 [Evluating Epoch 162] HR = 0.6468, NDCG = 0.
4034
1674 evaluting time: -1.6934688091278076
1675 record written!
1676 hit_rate 0.646795827123696
1677 ndcg 0.4034174068914204
1678 Epoch 163 starts !
1679 -----
-----
1680 instance loader
1681 total loss: 95.59762363135815
1682 trining a epoch: -11.534108877182007
1683 [Evluating Epoch 163] HR = 0.6602, NDCG = 0.
4135
1684 evaluting time: -1.6925160884857178
```

```
1685 record written!
1686 hit_rate 0.6602086438152012
1687 ndcg 0.4135339627340517
1688 Epoch 164 starts !
1689 -----
1690 instance loader
1691 total loss: 95.61171394586563
1692 trining a epoch: -11.52616810798645
1693 [Evluating Epoch 164] HR = 0.6602, NDCG = 0.
        4103
1694 evaluting time: -1.7313644886016846
1695 record written!
1696 hit_rate 0.6602086438152012
1697 ndcg 0.4102986991977911
1698 Epoch 165 starts !
1699 -----
1700 instance loader
1701 total loss: 95.3303283303976
1702 trining a epoch: -11.26389217376709
1703 [Evluating Epoch 165] HR = 0.6602, NDCG = 0.
        4115
1704 evaluting time: -1.7852332592010498
1705 record written!
1706 hit_rate 0.6602086438152012
1707 ndcg 0.4115375348288269
1708 Epoch 166 starts !
1709 -----
1710 instance loader
1711 total loss: 95.69208933413029
1712 trining a epoch: -11.2608323097229
1713 [Evluating Epoch 166] HR = 0.6513, NDCG = 0.
        3994
1714 evaluting time: -1.6386456489562988
1715 record written!
```

```
1716 hit_rate 0.6512667660208644
1717 ndcg 0.39939785402299244
1718 Epoch 167 starts !
1719 -----
-----
1720 instance loader
1721 total loss: 95.1585837751627
1722 trining a epoch: -11.352619647979736
1723 [Evluating Epoch 167] HR = 0.6677, NDCG = 0.
4127
1724 evaluting time: -1.856008768081665
1725 record written!
1726 hit_rate 0.6676602086438153
1727 ndcg 0.41274891544653264
1728 Epoch 168 starts !
1729 -----
-----
1730 instance loader
1731 total loss: 95.5052080154419
1732 trining a epoch: -11.15312910079956
1733 [Evluating Epoch 168] HR = 0.6423, NDCG = 0.
4025
1734 evaluting time: -1.6465952396392822
1735 record written!
1736 hit_rate 0.6423248882265276
1737 ndcg 0.4024910857113959
1738 Epoch 169 starts !
1739 -----
-----
1740 instance loader
1741 total loss: 95.44976457953453
1742 trining a epoch: -11.725601434707642
1743 [Evluating Epoch 169] HR = 0.6662, NDCG = 0.
4040
1744 evaluting time: -1.6356549263000488
1745 record written!
1746 hit_rate 0.6661698956780924
```

```
1747 ndcg 0.40400173134887085
1748 Epoch 170 starts !
1749 -----
1750 instance loader
1751 total loss: 95.4878142029047
1752 trining a epoch: -11.409483194351196
1753 [Evluating Epoch 170] HR = 0.6513, NDCG = 0.
1754 evaluting time: -1.9867045879364014
1755 record written!
1756 hit_rate 0.6512667660208644
1757 ndcg 0.39871623804241774
1758 Epoch 171 starts !
1759 -----
1760 instance loader
1761 total loss: 95.42441974580288
1762 trining a epoch: -11.686705112457275
1763 [Evluating Epoch 171] HR = 0.6572, NDCG = 0.
1764 evaluting time: -1.3394451141357422
1765 record written!
1766 hit_rate 0.6572280178837556
1767 ndcg 0.3992679598469515
1768 Epoch 172 starts !
1769 -----
1770 instance loader
1771 total loss: 95.23512990772724
1772 trining a epoch: -11.106320858001709
1773 [Evluating Epoch 172] HR = 0.6632, NDCG = 0.
1774 evaluting time: -1.3772814273834229
1775 record written!
1776 hit_rate 0.6631892697466468
1777 ndcg 0.40464725533408064
```

```
1778 Epoch 173 starts !
1779 -----
-----
1780 instance loader
1781 total loss: 95.34818208217621
1782 trining a epoch: -11.79943299293518
1783 [Evluating Epoch 173] HR = 0.6557, NDCG = 0.
        4026
1784 evaluting time: -1.6825344562530518
1785 record written!
1786 hit_rate 0.6557377049180327
1787 ndcg 0.40263769585652137
1788 Epoch 174 starts !
1789 -----
-----
1790 instance loader
1791 total loss: 95.21693603694439
1792 trining a epoch: -11.524168968200684
1793 [Evluating Epoch 174] HR = 0.6662, NDCG = 0.
        4066
1794 evaluting time: -1.373326063156128
1795 record written!
1796 hit_rate 0.6661698956780924
1797 ndcg 0.4065632650932142
1798 Epoch 175 starts !
1799 -----
-----
1800 instance loader
1801 total loss: 95.19385878741741
1802 trining a epoch: -11.588967323303223
1803 [Evluating Epoch 175] HR = 0.6438, NDCG = 0.
        4041
1804 evaluting time: -1.361384630203247
1805 record written!
1806 hit_rate 0.6438152011922503
1807 ndcg 0.40406952333176405
1808 Epoch 176 starts !
```

```
1809 -----
-----
1810 instance loader
1811 total loss: 95.30450960993767
1812 trining a epoch: -11.227989673614502
1813 [Evluating Epoch 176] HR = 0.6438, NDCG = 0.
1814 evaluting time: -1.3314366340637207
1815 record written!
1816 hit_rate 0.6438152011922503
1817 ndcg 0.3976989623852091
1818 Epoch 177 starts !
1819 -----
-----
1820 instance loader
1821 total loss: 95.50098906457424
1822 trining a epoch: -11.17911982536316
1823 [Evluating Epoch 177] HR = 0.6393, NDCG = 0.
1824 evaluting time: -1.2845642566680908
1825 record written!
1826 hit_rate 0.639344262295082
1827 ndcg 0.40062097219026993
1828 Epoch 178 starts !
1829 -----
-----
1830 instance loader
1831 total loss: 95.50965452194214
1832 trining a epoch: -11.117225408554077
1833 [Evluating Epoch 178] HR = 0.6572, NDCG = 0.
1834 evaluting time: -1.3194708824157715
1835 record written!
1836 hit_rate 0.6572280178837556
1837 ndcg 0.4084818964682541
1838 Epoch 179 starts !
1839 -----
```

```
1839 -----
1840 instance loader
1841 total loss: 95.31024891138077
1842 trining a epoch: -11.422467947006226
1843 [Evluating Epoch 179] HR = 0.6528, NDCG = 0.
        4199
1844 evaluting time: -1.3354008197784424
1845 record written!
1846 hit_rate 0.6527570789865872
1847 ndcg 0.4198918068169869
1848 Epoch 180 starts !
1849 -----
        -----
1850 instance loader
1851 total loss: 95.63727952539921
1852 trining a epoch: -11.32173752784729
1853 [Evluating Epoch 180] HR = 0.6528, NDCG = 0.
        4031
1854 evaluting time: -1.4072349071502686
1855 record written!
1856 hit_rate 0.6527570789865872
1857 ndcg 0.4031446883372522
1858 Epoch 181 starts !
1859 -----
        -----
1860 instance loader
1861 total loss: 95.5138911306858
1862 trining a epoch: -11.223007678985596
1863 [Evluating Epoch 181] HR = 0.6632, NDCG = 0.
        4163
1864 evaluting time: -1.2955281734466553
1865 record written!
1866 hit_rate 0.6631892697466468
1867 ndcg 0.4162773199682844
1868 Epoch 182 starts !
1869 -----
```

```
1870 instance loader
1871 total loss: 95.3301521986723
1872 trining a epoch: -11.795443296432495
1873 [Evluating Epoch 182] HR = 0.6587, NDCG = 0.
        4048
1874 evaluting time: -1.1609032154083252
1875 record written!
1876 hit_rate 0.6587183308494784
1877 ndcg 0.40477607153141865
1878 Epoch 183 starts !
1879 -----
-----
1880 instance loader
1881 total loss: 95.48982313275337
1882 trining a epoch: -11.594979763031006
1883 [Evluating Epoch 183] HR = 0.6453, NDCG = 0.
        4002
1884 evaluting time: -1.221703290939331
1885 record written!
1886 hit_rate 0.6453055141579732
1887 ndcg 0.400204632023076
1888 Epoch 184 starts !
1889 -----
-----
1890 instance loader
1891 total loss: 95.17383120954037
1892 trining a epoch: -11.595949172973633
1893 [Evluating Epoch 184] HR = 0.6557, NDCG = 0.
        4150
1894 evaluting time: -1.353379249572754
1895 record written!
1896 hit_rate 0.6557377049180327
1897 ndcg 0.4150081282049195
1898 Epoch 185 starts !
1899 -----
-----
1900 instance loader
```

```
1901 total loss: 95.24752886593342
1902 trining a epoch: -11.59594988822937
1903 [Evluating Epoch 185] HR = 0.6468, NDCG = 0.
    3963
1904 evaluting time: -1.6186702251434326
1905 record written!
1906 hit_rate 0.646795827123696
1907 ndcg 0.39634531966613146
1908 Epoch 186 starts !
1909 -----
1910 instance loader
1911 total loss: 95.31465190649033
1912 trining a epoch: -11.414463996887207
1913 [Evluating Epoch 186] HR = 0.6721, NDCG = 0.
    4087
1914 evaluting time: -1.4241902828216553
1915 record written!
1916 hit_rate 0.6721311475409836
1917 ndcg 0.4087484303152009
1918 Epoch 187 starts !
1919 -----
1920 instance loader
1921 total loss: 95.38316760957241
1922 trining a epoch: -11.337667465209961
1923 [Evluating Epoch 187] HR = 0.6692, NDCG = 0.
    4176
1924 evaluting time: -2.0674679279327393
1925 record written!
1926 hit_rate 0.669150521609538
1927 ndcg 0.41758046222643186
1928 Epoch 188 starts !
1929 -----
1930 instance loader
1931 total loss: 95.37269186973572
```

```
1932 trining a epoch: -11.398505926132202
1933 [Evluating Epoch 188] HR = 0.6557, NDCG = 0.
        4125
1934 evaluting time: -1.646629810333252
1935 record written!
1936 hit_rate 0.6557377049180327
1937 ndcg 0.4124679053955637
1938 Epoch 189 starts !
1939 -----
        -----
1940 instance loader
1941 total loss: 95.31665450334549
1942 trining a epoch: -11.723635911941528
1943 [Evluating Epoch 189] HR = 0.6885, NDCG = 0.
        4281
1944 evaluting time: -1.1399767398834229
1945 record written!
1946 hit_rate 0.6885245901639344
1947 ndcg 0.4280666442113254
1948 Epoch 190 starts !
1949 -----
        -----
1950 instance loader
1951 total loss: 95.09656749665737
1952 trining a epoch: -11.829353094100952
1953 [Evluating Epoch 190] HR = 0.6706, NDCG = 0.
        4178
1954 evaluting time: -1.358367681503296
1955 record written!
1956 hit_rate 0.6706408345752608
1957 ndcg 0.4178257662017412
1958 Epoch 191 starts !
1959 -----
        -----
1960 instance loader
1961 total loss: 95.3663788586855
1962 trining a epoch: -11.82838249206543
```

```
1963 [Evluating Epoch 191] HR = 0.6498, NDCG = 0.  
        4031  
1964 evaluting time: -1.3693492412567139  
1965 record written!  
1966 hit_rate 0.6497764530551415  
1967 ndcg 0.4030860048927317  
1968 Epoch 192 starts !  
1969 -----  
-----  
1970 instance loader  
1971 total loss: 95.65916712582111  
1972 trining a epoch: -11.592955350875854  
1973 [Evluating Epoch 192] HR = 0.6602, NDCG = 0.  
        4117  
1974 evaluting time: -1.34041428565979  
1975 record written!  
1976 hit_rate 0.6602086438152012  
1977 ndcg 0.4116914270281536  
1978 Epoch 193 starts !  
1979 -----  
-----  
1980 instance loader  
1981 total loss: 95.1112182289362  
1982 trining a epoch: -11.192085981369019  
1983 [Evluating Epoch 193] HR = 0.6587, NDCG = 0.  
        4102  
1984 evaluting time: -1.357367753982544  
1985 record written!  
1986 hit_rate 0.6587183308494784  
1987 ndcg 0.410181397031814  
1988 Epoch 194 starts !  
1989 -----  
-----  
1990 instance loader  
1991 total loss: 95.13665100932121  
1992 trining a epoch: -11.290793657302856  
1993 [Evluating Epoch 194] HR = 0.6602, NDCG = 0.
```

```
1993 3942
1994 evaluting time: -1.3084993362426758
1995 record written!
1996 hit_rate 0.6602086438152012
1997 ndcg 0.3941676956404556
1998 Epoch 195 starts !
1999 -----
-----
2000 instance loader
2001 total loss: 95.4902725070715
2002 trining a epoch: -10.98660397529602
2003 [Evluating Epoch 195] HR = 0.6528, NDCG = 0.
        4027
2004 evaluting time: -1.3184459209442139
2005 record written!
2006 hit_rate 0.6527570789865872
2007 ndcg 0.40270501252369306
2008 Epoch 196 starts !
2009 -----
-----
2010 instance loader
2011 total loss: 95.3498549759388
2012 trining a epoch: -11.213972806930542
2013 [Evluating Epoch 196] HR = 0.6438, NDCG = 0.
        3998
2014 evaluting time: -1.0452303886413574
2015 record written!
2016 hit_rate 0.6438152011922503
2017 ndcg 0.3997590967783785
2018 Epoch 197 starts !
2019 -----
-----
2020 instance loader
2021 total loss: 95.19496515393257
2022 trining a epoch: -9.959386110305786
2023 [Evluating Epoch 197] HR = 0.6677, NDCG = 0.
        4138
```

```
2024 evaluating time: -1.0222344398498535
2025 record written!
2026 hit_rate 0.6676602086438153
2027 ndcg 0.4137774050066198
2028 Epoch 198 starts !
2029 -----
-----
2030 instance loader
2031 total loss: 95.22249062359333
2032 trining a epoch: -10.129892826080322
2033 [Evluating Epoch 198] HR = 0.6751, NDCG = 0.
        4193
2034 evaluating time: -0.9424867630004883
2035 record written!
2036 hit_rate 0.6751117734724292
2037 ndcg 0.4192685559509778
2038 Epoch 199 starts !
2039 -----
-----
2040 instance loader
2041 total loss: 95.07954768836498
2042 trining a epoch: -9.73598051071167
2043 [Evluating Epoch 199] HR = 0.6826, NDCG = 0.
        4169
2044 evaluating time: -1.072131633758545
2045 record written!
2046 hit_rate 0.6825633383010432
2047 ndcg 0.4168915533982752
2048 Traceback (most recent call last):
2049     File "E:\anaconda3\lib\site-packages\
          IPython\core\interactiveshell.py", line 3296
          , in run_code
2050         exec(code_obj, self.user_global_ns, self.
          user_ns)
2051     File "<ipython-input-2-ce05bbcb976>", line
          1, in <module>
2052         runfile('E:/SocialRSonYelp/NeuralNetworks
```

```
2052 /train.py', wdir='E:/SocialRSonYelp/  
    NeuralNetworks')  
2053     File "C:\Program Files\JetBrains\PyCharm  
        Community Edition 2019.1.3\helpers\pydev\  
            _pydev_bundle\pydev_umd.py", line 197, in  
                runfile  
2054         pydev_imports.execfile(filename,  
             global_vars, local_vars) # execute the  
             script  
2055     File "C:\Program Files\JetBrains\PyCharm  
        Community Edition 2019.1.3\helpers\pydev\  
            _pydev_imps\_pydev_execfile.py", line 18, in  
                execfile  
2056         exec(compile(contents+"\n", file, 'exec  
             '), glob, loc)  
2057     File "E:/SocialRSonYelp/NeuralNetworks/  
        train.py", line 294, in <module>  
2058         #     watchList.append(runTestBatch(i[0],  
             config, record=False, recordName='ncf-amazon-  
             kindle', uvec=embd['uEmbd'], ivec=embd['iEmbd  
                 '])))  
2059     File "E:/SocialRSonYelp/NeuralNetworks/  
        train.py", line 220, in runTestBatch  
2060         config['layers'][0] = uvec.shape[1] +  
             ivec.shape[1]  
2061 TypeError: 'tuple' object does not support  
             item assignment  
2062
```