

```

C:\ProgramData\Anaconda3\python.exe C:/Users/Joshmiao/Desktop/ABSA-Aspect-Based-Sentimental-Analysis/main.py
CUDA is available.
There are 1 CUDA device(s) on this computer.
Some weights of the model checkpoint at ./pretrained_model/BERT_model/ were not used when initializing BertModel
: ['cls.predictions.bias', 'cls.predictions.transform.LayerNorm.weight', 'cls.seq_relationship.bias', 'cls.
predictions.transform.LayerNorm.bias', 'cls.predictions.decoder.weight', 'cls.predictions.transform.dense.weight
', 'cls.seq_relationship.weight', 'cls.predictions.transform.dense.bias']
- This IS expected if you are initializing BertModel from the checkpoint of a model trained on another task or
with another architecture (e.g. initializing a BertForSequenceClassification model from a BertForPreTraining model
).
- This IS NOT expected if you are initializing BertModel from the checkpoint of a model that you expect to be
exactly identical (initializing a BertForSequenceClassification model from a BertForSequenceClassification model).
Some weights of the model checkpoint at ./pretrained_model/BERT_model/ were not used when initializing BertModel
: ['cls.predictions.bias', 'cls.predictions.transform.LayerNorm.weight', 'cls.seq_relationship.bias', 'cls.
predictions.transform.LayerNorm.bias', 'cls.predictions.decoder.weight', 'cls.predictions.transform.dense.weight
', 'cls.seq_relationship.weight', 'cls.predictions.transform.dense.bias']
- This IS expected if you are initializing BertModel from the checkpoint of a model trained on another task or
with another architecture (e.g. initializing a BertForSequenceClassification model from a BertForPreTraining model
).
- This IS NOT expected if you are initializing BertModel from the checkpoint of a model that you expect to be
exactly identical (initializing a BertForSequenceClassification model from a BertForSequenceClassification model).
Some weights of the model checkpoint at ./pretrained_model/Roberta_model/ were not used when initializing
RobertaModel: ['lm_head.layer_norm.bias', 'lm_head.layer_norm.weight', 'lm_head.decoder.weight', 'lm_head.dense.
bias', 'lm_head.bias', 'lm_head.dense.weight']
- This IS expected if you are initializing RobertaModel from the checkpoint of a model trained on another task or
with another architecture (e.g. initializing a BertForSequenceClassification model from a BertForPreTraining model
).
- This IS NOT expected if you are initializing RobertaModel from the checkpoint of a model that you expect to be
exactly identical (initializing a BertForSequenceClassification model from a BertForSequenceClassification model).
max length = 100
max length = 84
max length = 98
max length = 80
127
0 tensor([[ 101, 2017, 2323, ..., 0, 0, 0],
          [ 101, 2204, 2833, ..., 0, 0, 0],
          [ 101, 1996, 3021, ..., 0, 0, 0],
          ...,
          [ 101, 2027, 2071, ..., 0, 0, 0],
          [ 101, 2023, 2003, ..., 0, 0, 0],
          [ 101, 2011, 2521, ..., 0, 0, 0]], device='cuda:0') tensor([[0, 0, 0, ..., 0, 0, 0],
          [0, 0, 3, ..., 0, 0, 0],
          [0, 0, 1, ..., 0, 0, 0],
          ...,
          [0, 0, 0, ..., 0, 0, 0],
          [0, 0, 0, ..., 0, 0, 0],
          [0, 0, 0, ..., 0, 0, 0]], device='cuda:0')
epoch0 :
avg_training_loss = 0.13993158115176704
used time = 19.87839984893799
tot_cnt=67650 acc_cnt=66167 true_cnt=2220 pred_cnt=1762 true_pred_cnt=938
acc.=0.978078 pre.=0.532350 rec.=0.422523 f1=0.471120
-----
epoch1 :
avg_training_loss = 0.05733707007460707
used time = 19.033682107925415
tot_cnt=67650 acc_cnt=66299 true_cnt=2220 pred_cnt=2538 true_pred_cnt=1332
acc.=0.980030 pre.=0.524823 rec.=0.600000 f1=0.559899
-----
epoch2 :
avg_training_loss = 0.043461469214732255
used time = 19.294177055358887
tot_cnt=67650 acc_cnt=66488 true_cnt=2220 pred_cnt=2532 true_pred_cnt=1490
acc.=0.982823 pre.=0.588468 rec.=0.671171 f1=0.627104
-----
epoch3 :
avg_training_loss = 0.03397338596854623
used time = 19.42486047744751
tot_cnt=67650 acc_cnt=66624 true_cnt=2220 pred_cnt=2330 true_pred_cnt=1507
acc.=0.984834 pre.=0.646781 rec.=0.678829 f1=0.662418
-----
epoch4 :

```

```
avg_training_loss = 0.02600994448023518
used time = 19.16234803199768
tot_cnt=67650 acc_cnt=66705 true_cnt=2220 pred_cnt=2348 true_pred_cnt=1583
acc.=0.986031 pre.=0.674191 rec.=0.713063 f1=0.693082
-----

epoch5 :
avg_training_loss = 0.019400183610090122
used time = 19.629244089126587
tot_cnt=67650 acc_cnt=66725 true_cnt=2220 pred_cnt=2410 true_pred_cnt=1642
acc.=0.986327 pre.=0.681328 rec.=0.739640 f1=0.709287
-----

epoch6 :
avg_training_loss = 0.016085525197306955
used time = 19.174802541732788
tot_cnt=67650 acc_cnt=66740 true_cnt=2220 pred_cnt=2289 true_pred_cnt=1591
acc.=0.986548 pre.=0.695063 rec.=0.716667 f1=0.705700
-----

epoch7 :
avg_training_loss = 0.011852085121034637
used time = 19.293939113616943
tot_cnt=67650 acc_cnt=66706 true_cnt=2220 pred_cnt=2367 true_pred_cnt=1603
acc.=0.986046 pre.=0.677229 rec.=0.722072 f1=0.698932
-----

epoch8 :
avg_training_loss = 0.009284285109812818
used time = 19.376461505889893
tot_cnt=67650 acc_cnt=66742 true_cnt=2220 pred_cnt=2347 true_pred_cnt=1628
acc.=0.986578 pre.=0.693651 rec.=0.733333 f1=0.712941
-----

epoch9 :
avg_training_loss = 0.007629403917808232
used time = 19.16451072692871
tot_cnt=67650 acc_cnt=66675 true_cnt=2220 pred_cnt=2452 true_pred_cnt=1623
acc.=0.985588 pre.=0.661909 rec.=0.731081 f1=0.694777
-----

epoch10 :
avg_training_loss = 0.006583343809983861
used time = 19.168497562408447
tot_cnt=67650 acc_cnt=66731 true_cnt=2220 pred_cnt=2365 true_pred_cnt=1621
acc.=0.986415 pre.=0.685412 rec.=0.730180 f1=0.707088
-----

epoch11 :
avg_training_loss = 0.0054973833204254394
used time = 19.230873584747314
tot_cnt=67650 acc_cnt=66755 true_cnt=2220 pred_cnt=2366 true_pred_cnt=1649
acc.=0.986770 pre.=0.696957 rec.=0.742793 f1=0.719145
-----

epoch12 :
avg_training_loss = 0.004751947921092116
used time = 19.2462158203125
tot_cnt=67650 acc_cnt=66749 true_cnt=2220 pred_cnt=2350 true_pred_cnt=1632
acc.=0.986681 pre.=0.694468 rec.=0.735135 f1=0.714223
-----

epoch13 :
avg_training_loss = 0.003857481432711984
used time = 19.210495471954346
tot_cnt=67650 acc_cnt=66710 true_cnt=2220 pred_cnt=2455 true_pred_cnt=1656
acc.=0.986105 pre.=0.674542 rec.=0.745946 f1=0.708449
-----

epoch14 :
avg_training_loss = 0.003786153680696262
used time = 19.199769020080566
tot_cnt=67650 acc_cnt=66735 true_cnt=2220 pred_cnt=2345 true_pred_cnt=1615
acc.=0.986475 pre.=0.688699 rec.=0.727477 f1=0.707557
-----

epoch15 :
avg_training_loss = 0.0033571670843860297
used time = 19.21539306640625
tot_cnt=67650 acc_cnt=66746 true_cnt=2220 pred_cnt=2395 true_pred_cnt=1648
acc.=0.986637 pre.=0.688100 rec.=0.742342 f1=0.714193
-----

epoch16 :
avg_training_loss = 0.002795700951824038
used time = 19.216041088104248
tot_cnt=67650 acc_cnt=66757 true_cnt=2220 pred_cnt=2351 true_pred_cnt=1639
acc.=0.986800 pre.=0.697150 rec.=0.738288 f1=0.717130
-----

epoch17 :
avg_training_loss = 0.0028800898649561125
used time = 19.201488494873047
```

```
tot_cnt=67650 acc_cnt=66718 true_cnt=2220 pred_cnt=2431 true_pred_cnt=1650
acc.=0.986223 pre.=0.678733 rec.=0.743243 f1=0.709525
-----
```

```
epoch18 :
avg_training_loss = 0.0021581271971304584
used time = 19.22987985610962
tot_cnt=67650 acc_cnt=66748 true_cnt=2220 pred_cnt=2359 true_pred_cnt=1639
acc.=0.986667 pre.=0.694786 rec.=0.738288 f1=0.715877
-----
```

```
epoch19 :
avg_training_loss = 0.0020987421978177047
used time = 19.19921636581421
tot_cnt=67650 acc_cnt=66746 true_cnt=2220 pred_cnt=2358 true_pred_cnt=1629
acc.=0.986637 pre.=0.690840 rec.=0.733784 f1=0.711664
-----
```

```
epoch20 :
avg_training_loss = 0.001987025493711937
used time = 19.20016312599182
tot_cnt=67650 acc_cnt=66760 true_cnt=2220 pred_cnt=2271 true_pred_cnt=1609
acc.=0.986844 pre.=0.708498 rec.=0.724775 f1=0.716544
-----
```

```
epoch21 :
avg_training_loss = 0.0018413347287440864
used time = 19.248193740844727
tot_cnt=67650 acc_cnt=66756 true_cnt=2220 pred_cnt=2307 true_pred_cnt=1622
acc.=0.986785 pre.=0.703078 rec.=0.730631 f1=0.716589
-----
```

```
epoch22 :
avg_training_loss = 0.002212708390603854
used time = 19.213474988937378
tot_cnt=67650 acc_cnt=66754 true_cnt=2220 pred_cnt=2292 true_pred_cnt=1616
acc.=0.986755 pre.=0.705061 rec.=0.727928 f1=0.716312
-----
```

```
epoch23 :
avg_training_loss = 0.0020893378051247183
used time = 19.293054342269897
tot_cnt=67650 acc_cnt=66735 true_cnt=2220 pred_cnt=2327 true_pred_cnt=1618
acc.=0.986475 pre.=0.695316 rec.=0.728829 f1=0.711678
-----
```

```
epoch24 :
avg_training_loss = 0.0019508426583658054
used time = 19.295607328414917
tot_cnt=67650 acc_cnt=66754 true_cnt=2220 pred_cnt=2320 true_pred_cnt=1631
acc.=0.986755 pre.=0.703017 rec.=0.734685 f1=0.718502
-----
```

```
epoch25 :
avg_training_loss = 0.0016149200323059803
used time = 19.167288303375244
tot_cnt=67650 acc_cnt=66740 true_cnt=2220 pred_cnt=2398 true_pred_cnt=1657
acc.=0.986548 pre.=0.690992 rec.=0.746396 f1=0.717627
-----
```

```
epoch26 :
avg_training_loss = 0.0015773057468294158
used time = 19.255370378494263
tot_cnt=67650 acc_cnt=66742 true_cnt=2220 pred_cnt=2341 true_pred_cnt=1630
acc.=0.986578 pre.=0.696284 rec.=0.734234 f1=0.714756
-----
```

```
epoch27 :
avg_training_loss = 0.0018792701518441748
used time = 19.22779631614685
tot_cnt=67650 acc_cnt=66725 true_cnt=2220 pred_cnt=2373 true_pred_cnt=1623
acc.=0.986327 pre.=0.683944 rec.=0.731081 f1=0.706728
-----
```

```
epoch28 :
avg_training_loss = 0.001500375275536785
used time = 19.22114896774292
tot_cnt=67650 acc_cnt=66733 true_cnt=2220 pred_cnt=2308 true_pred_cnt=1603
acc.=0.986445 pre.=0.694541 rec.=0.722072 f1=0.708039
-----
```

```
epoch29 :
avg_training_loss = 0.0031136736625761497
used time = 19.21666383743286
tot_cnt=67650 acc_cnt=66755 true_cnt=2220 pred_cnt=2365 true_pred_cnt=1648
acc.=0.986770 pre.=0.696829 rec.=0.742342 f1=0.718866
-----
```

```
epoch30 :
avg_training_loss = 0.0031379489448126845
used time = 19.196419715881348
tot_cnt=67650 acc_cnt=66725 true_cnt=2220 pred_cnt=2425 true_pred_cnt=1657
acc.=0.986327 pre.=0.683299 rec.=0.746396 f1=0.713455
```

```
-----
epoch31 :
avg_training_loss = 0.002804562801451195
used time = 19.21675395965576
tot_cnt=67650 acc_cnt=66732 true_cnt=2220 pred_cnt=2328 true_pred_cnt=1608
acc.=0.986430 pre.=0.690722 rec.=0.724324 f1=0.707124
-----

epoch32 :
avg_training_loss = 0.0020465099905419538
used time = 19.199472188949585
tot_cnt=67650 acc_cnt=66735 true_cnt=2220 pred_cnt=2381 true_pred_cnt=1639
acc.=0.986475 pre.=0.688366 rec.=0.738288 f1=0.712454
-----

epoch33 :
avg_training_loss = 0.0015602012084225032
used time = 19.17059850692749
tot_cnt=67650 acc_cnt=66698 true_cnt=2220 pred_cnt=2471 true_pred_cnt=1649
acc.=0.985928 pre.=0.667341 rec.=0.742793 f1=0.703048
-----

epoch34 :
avg_training_loss = 0.0015727911643155915
used time = 19.186410665512085
tot_cnt=67650 acc_cnt=66706 true_cnt=2220 pred_cnt=2392 true_pred_cnt=1616
acc.=0.986046 pre.=0.675585 rec.=0.727928 f1=0.700781
-----

epoch35 :
avg_training_loss = 0.0017494177959096714
used time = 19.21645450592041
tot_cnt=67650 acc_cnt=66753 true_cnt=2220 pred_cnt=2342 true_pred_cnt=1627
acc.=0.986741 pre.=0.694705 rec.=0.732883 f1=0.713284
-----

epoch36 :
avg_training_loss = 0.0013938361969519789
used time = 19.17505383491516
tot_cnt=67650 acc_cnt=66737 true_cnt=2220 pred_cnt=2350 true_pred_cnt=1618
acc.=0.986504 pre.=0.688511 rec.=0.728829 f1=0.708096
-----

epoch37 :
avg_training_loss = 0.0014689922567427628
used time = 19.202842950820923
tot_cnt=67650 acc_cnt=66666 true_cnt=2220 pred_cnt=2437 true_pred_cnt=1602
acc.=0.985455 pre.=0.657366 rec.=0.721622 f1=0.687997
-----

epoch38 :
avg_training_loss = 0.0014462188238234031
used time = 19.200706720352173
tot_cnt=67650 acc_cnt=66727 true_cnt=2220 pred_cnt=2381 true_pred_cnt=1628
acc.=0.986356 pre.=0.683746 rec.=0.733333 f1=0.707672
-----

epoch39 :
avg_training_loss = 0.0011739842300339946
used time = 19.183032751083374
tot_cnt=67650 acc_cnt=66753 true_cnt=2220 pred_cnt=2332 true_pred_cnt=1620
acc.=0.986741 pre.=0.694683 rec.=0.729730 f1=0.711775
-----

epoch0 :
avg_training_loss = 0.1043653337974248
used time = 20.37493896484375
tot_cnt=67650 acc_cnt=66222 true_cnt=2220 pred_cnt=2400 true_pred_cnt=1200
acc.=0.978891 pre.=0.500000 rec.=0.540541 f1=0.519481
-----

epoch1 :
avg_training_loss = 0.05118651277436985
used time = 20.393715381622314
tot_cnt=67650 acc_cnt=66408 true_cnt=2220 pred_cnt=2358 true_pred_cnt=1332
acc.=0.981641 pre.=0.564885 rec.=0.600000 f1=0.581913
-----

epoch2 :
avg_training_loss = 0.03719336216843973
used time = 20.37444233894348
tot_cnt=67650 acc_cnt=66566 true_cnt=2220 pred_cnt=2295 true_pred_cnt=1453
acc.=0.983976 pre.=0.633115 rec.=0.654505 f1=0.643632
-----

epoch3 :
avg_training_loss = 0.02873146440100482
used time = 20.395812273025513
tot_cnt=67650 acc_cnt=66696 true_cnt=2220 pred_cnt=2313 true_pred_cnt=1568
acc.=0.985898 pre.=0.677907 rec.=0.706306 f1=0.691816
-----

epoch4 :
```

```
avg_training_loss = 0.021754621520755798
used time = 20.359121561050415
tot_cnt=67650 acc_cnt=66690 true_cnt=2220 pred_cnt=2291 true_pred_cnt=1552
acc.=0.985809 pre.=0.677433 rec.=0.699099 f1=0.688096
-----
```

```
epoch5 :
avg_training_loss = 0.016727267287847562
used time = 20.47180485725403
tot_cnt=67650 acc_cnt=66702 true_cnt=2220 pred_cnt=2380 true_pred_cnt=1600
acc.=0.985987 pre.=0.672269 rec.=0.720721 f1=0.695652
-----
```

```
epoch6 :
avg_training_loss = 0.012307524681091309
used time = 20.453234434127808
tot_cnt=67650 acc_cnt=66734 true_cnt=2220 pred_cnt=2148 true_pred_cnt=1539
acc.=0.986460 pre.=0.716480 rec.=0.693243 f1=0.704670
-----
```

```
epoch7 :
avg_training_loss = 0.010402435392845334
used time = 20.436795234680176
tot_cnt=67650 acc_cnt=66711 true_cnt=2220 pred_cnt=2309 true_pred_cnt=1581
acc.=0.986120 pre.=0.684712 rec.=0.712162 f1=0.698167
-----
```

```
epoch8 :
avg_training_loss = 0.008429808879461815
used time = 20.401962280273438
tot_cnt=67650 acc_cnt=66723 true_cnt=2220 pred_cnt=2399 true_pred_cnt=1626
acc.=0.986297 pre.=0.677782 rec.=0.732432 f1=0.704048
-----
```

```
epoch9 :
avg_training_loss = 0.00760577231880248
used time = 20.370561599731445
tot_cnt=67650 acc_cnt=66742 true_cnt=2220 pred_cnt=2353 true_pred_cnt=1636
acc.=0.986578 pre.=0.695283 rec.=0.736937 f1=0.715504
-----
```

```
epoch10 :
avg_training_loss = 0.0052400766395208406
used time = 20.35174798965454
tot_cnt=67650 acc_cnt=66751 true_cnt=2220 pred_cnt=2359 true_pred_cnt=1643
acc.=0.986711 pre.=0.696482 rec.=0.740090 f1=0.717624
-----
```

```
epoch11 :
avg_training_loss = 0.004581141659593958
used time = 20.37152647972107
tot_cnt=67650 acc_cnt=66804 true_cnt=2220 pred_cnt=2297 true_pred_cnt=1664
acc.=0.987494 pre.=0.724423 rec.=0.749550 f1=0.736772
-----
```

```
epoch12 :
avg_training_loss = 0.004299474513436865
used time = 20.403679370880127
tot_cnt=67650 acc_cnt=66754 true_cnt=2220 pred_cnt=2339 true_pred_cnt=1636
acc.=0.986755 pre.=0.699444 rec.=0.736937 f1=0.717701
-----
```

```
epoch13 :
avg_training_loss = 0.003575855118083203
used time = 20.371394872665405
tot_cnt=67650 acc_cnt=66806 true_cnt=2220 pred_cnt=2300 true_pred_cnt=1666
acc.=0.987524 pre.=0.724348 rec.=0.750450 f1=0.737168
-----
```

```
epoch14 :
avg_training_loss = 0.003666379085675938
used time = 20.370349168777466
tot_cnt=67650 acc_cnt=66739 true_cnt=2220 pred_cnt=2346 true_pred_cnt=1623
acc.=0.986534 pre.=0.691816 rec.=0.731081 f1=0.710907
-----
```

```
epoch15 :
avg_training_loss = 0.0029366638247422345
used time = 20.38877272605896
tot_cnt=67650 acc_cnt=66761 true_cnt=2220 pred_cnt=2318 true_pred_cnt=1628
acc.=0.986859 pre.=0.702330 rec.=0.733333 f1=0.717497
-----
```

```
epoch16 :
avg_training_loss = 0.002843170654116653
used time = 20.387348651885986
tot_cnt=67650 acc_cnt=66785 true_cnt=2220 pred_cnt=2321 true_pred_cnt=1657
acc.=0.987214 pre.=0.713916 rec.=0.746396 f1=0.729795
-----
```

```
epoch17 :
avg_training_loss = 0.002368149794931487
used time = 20.347572326660156
```

```
tot_cnt=67650 acc_cnt=66769 true_cnt=2220 pred_cnt=2305 true_pred_cnt=1630
acc.=0.986977 pre.=0.707158 rec.=0.734234 f1=0.720442
-----
```

```
epoch18 :
avg_training_loss = 0.002581522690029595
used time = 20.356269359588623
tot_cnt=67650 acc_cnt=66720 true_cnt=2220 pred_cnt=2408 true_pred_cnt=1638
acc.=0.986253 pre.=0.680233 rec.=0.737838 f1=0.707865
-----
```

```
epoch19 :
avg_training_loss = 0.0021697916383818378
used time = 20.374387502670288
tot_cnt=67650 acc_cnt=66733 true_cnt=2220 pred_cnt=2421 true_pred_cnt=1653
acc.=0.986445 pre.=0.682776 rec.=0.744595 f1=0.712346
-----
```

```
epoch20 :
avg_training_loss = 0.0021942030257127414
used time = 20.451297998428345
tot_cnt=67650 acc_cnt=66751 true_cnt=2220 pred_cnt=2239 true_pred_cnt=1582
acc.=0.986711 pre.=0.706565 rec.=0.712613 f1=0.709576
-----
```

```
epoch21 :
avg_training_loss = 0.002218558328358207
used time = 20.435463428497314
tot_cnt=67650 acc_cnt=66766 true_cnt=2220 pred_cnt=2320 true_pred_cnt=1637
acc.=0.986933 pre.=0.705603 rec.=0.737387 f1=0.721145
-----
```

```
epoch22 :
avg_training_loss = 0.0019810462561179335
used time = 20.37376356124878
tot_cnt=67650 acc_cnt=66735 true_cnt=2220 pred_cnt=2443 true_pred_cnt=1667
acc.=0.986475 pre.=0.682358 rec.=0.750901 f1=0.714990
-----
```

```
epoch23 :
avg_training_loss = 0.0020939123442792517
used time = 20.344828605651855
tot_cnt=67650 acc_cnt=66766 true_cnt=2220 pred_cnt=2271 true_pred_cnt=1613
acc.=0.986933 pre.=0.710260 rec.=0.726577 f1=0.718326
-----
```

```
epoch24 :
avg_training_loss = 0.0017361515384959423
used time = 20.38280725479126
tot_cnt=67650 acc_cnt=66758 true_cnt=2220 pred_cnt=2397 true_pred_cnt=1671
acc.=0.986814 pre.=0.697121 rec.=0.752703 f1=0.723847
-----
```

```
epoch25 :
avg_training_loss = 0.0017179520580712267
used time = 20.388826608657837
tot_cnt=67650 acc_cnt=66752 true_cnt=2220 pred_cnt=2329 true_pred_cnt=1627
acc.=0.986726 pre.=0.698583 rec.=0.732883 f1=0.715322
-----
```

```
epoch26 :
avg_training_loss = 0.001644355457598769
used time = 20.357457876205444
tot_cnt=67650 acc_cnt=66745 true_cnt=2220 pred_cnt=2335 true_pred_cnt=1622
acc.=0.986622 pre.=0.694647 rec.=0.730631 f1=0.712184
-----
```

```
epoch27 :
avg_training_loss = 0.0018821206149153822
used time = 20.35563015937805
tot_cnt=67650 acc_cnt=66788 true_cnt=2220 pred_cnt=2265 true_pred_cnt=1628
acc.=0.987258 pre.=0.718764 rec.=0.733333 f1=0.725975
-----
```

```
epoch28 :
avg_training_loss = 0.0013764046543226468
used time = 20.3586745262146
tot_cnt=67650 acc_cnt=66790 true_cnt=2220 pred_cnt=2365 true_pred_cnt=1671
acc.=0.987288 pre.=0.706554 rec.=0.752703 f1=0.728899
-----
```

```
epoch29 :
avg_training_loss = 0.003203040971530704
used time = 20.341148853302002
tot_cnt=67650 acc_cnt=66765 true_cnt=2220 pred_cnt=2293 true_pred_cnt=1616
acc.=0.986918 pre.=0.704754 rec.=0.727928 f1=0.716153
-----
```

```
epoch30 :
avg_training_loss = 0.004469862134437862
used time = 20.371259212493896
tot_cnt=67650 acc_cnt=66796 true_cnt=2220 pred_cnt=2168 true_pred_cnt=1597
acc.=0.987376 pre.=0.736624 rec.=0.719369 f1=0.727894
```

```
-----
epoch31 :
avg_training_loss = 0.0029456455876508097
used time = 20.425647735595703
tot_cnt=67650 acc_cnt=66765 true_cnt=2220 pred_cnt=2282 true_pred_cnt=1603
acc.=0.986918 pre.=0.702454 rec.=0.722072 f1=0.712128
-----

epoch32 :
avg_training_loss = 0.001987305447811217
used time = 20.42160964012146
tot_cnt=67650 acc_cnt=66769 true_cnt=2220 pred_cnt=2244 true_pred_cnt=1595
acc.=0.986977 pre.=0.710784 rec.=0.718468 f1=0.714606
-----

epoch33 :
avg_training_loss = 0.0015174975310723612
used time = 20.438158988952637
tot_cnt=67650 acc_cnt=66757 true_cnt=2220 pred_cnt=2331 true_pred_cnt=1627
acc.=0.986800 pre.=0.697984 rec.=0.732883 f1=0.715008
-----

epoch34 :
avg_training_loss = 0.0014715957360004815
used time = 20.38874864578247
tot_cnt=67650 acc_cnt=66759 true_cnt=2220 pred_cnt=2267 true_pred_cnt=1597
acc.=0.986829 pre.=0.704455 rec.=0.719369 f1=0.711834
-----

epoch35 :
avg_training_loss = 0.0014872166115467943
used time = 20.390161991119385
tot_cnt=67650 acc_cnt=66759 true_cnt=2220 pred_cnt=2298 true_pred_cnt=1611
acc.=0.986829 pre.=0.701044 rec.=0.725676 f1=0.713147
-----

epoch36 :
avg_training_loss = 0.0014002089659998736
used time = 20.358914613723755
tot_cnt=67650 acc_cnt=66775 true_cnt=2220 pred_cnt=2311 true_pred_cnt=1630
acc.=0.987066 pre.=0.705322 rec.=0.734234 f1=0.719488
-----

epoch37 :
avg_training_loss = 0.0015449366700930858
used time = 20.375202417373657
tot_cnt=67650 acc_cnt=66771 true_cnt=2220 pred_cnt=2325 true_pred_cnt=1629
acc.=0.987007 pre.=0.700645 rec.=0.733784 f1=0.716832
-----

epoch38 :
avg_training_loss = 0.0013262968598388312
used time = 20.368508100509644
tot_cnt=67650 acc_cnt=66744 true_cnt=2220 pred_cnt=2413 true_pred_cnt=1659
acc.=0.986608 pre.=0.687526 rec.=0.747297 f1=0.716167
-----

epoch39 :
avg_training_loss = 0.0015086237135834581
used time = 20.38516068458557
tot_cnt=67650 acc_cnt=66782 true_cnt=2220 pred_cnt=2328 true_pred_cnt=1640
acc.=0.987169 pre.=0.704467 rec.=0.738739 f1=0.721196
-----

epoch0 :
avg_training_loss = 0.14550105417807271
used time = 19.765114068984985
tot_cnt=67650 acc_cnt=66004 true_cnt=2268 pred_cnt=1793 true_pred_cnt=838
acc.=0.975669 pre.=0.467373 rec.=0.369489 f1=0.412706
-----

epoch1 :
avg_training_loss = 0.06530383252722072
used time = 19.84484338760376
tot_cnt=67650 acc_cnt=66355 true_cnt=2268 pred_cnt=2226 true_pred_cnt=1271
acc.=0.980857 pre.=0.570979 rec.=0.560406 f1=0.565643
-----

epoch2 :
avg_training_loss = 0.04852700421190637
used time = 19.82585620880127
tot_cnt=67650 acc_cnt=66504 true_cnt=2268 pred_cnt=2459 true_pred_cnt=1520
acc.=0.983060 pre.=0.618137 rec.=0.670194 f1=0.643114
-----

epoch3 :
avg_training_loss = 0.039297588228240726
used time = 19.810733795166016
tot_cnt=67650 acc_cnt=66650 true_cnt=2268 pred_cnt=2382 true_pred_cnt=1605
acc.=0.985218 pre.=0.673804 rec.=0.707672 f1=0.690323
-----

epoch4 :
```

```
avg_training_loss = 0.03171995868833046
used time = 19.795950889587402
tot_cnt=67650 acc_cnt=66711 true_cnt=2268 pred_cnt=2375 true_pred_cnt=1652
acc.=0.986120 pre.=0.695579 rec.=0.728395 f1=0.711609
-----

epoch5 :
avg_training_loss = 0.025578853652233214
used time = 19.775211334228516
tot_cnt=67650 acc_cnt=66716 true_cnt=2268 pred_cnt=2291 true_pred_cnt=1614
acc.=0.986194 pre.=0.704496 rec.=0.711640 f1=0.708050
-----

epoch6 :
avg_training_loss = 0.021633677595243678
used time = 19.808464765548706
tot_cnt=67650 acc_cnt=66730 true_cnt=2268 pred_cnt=2449 true_pred_cnt=1708
acc.=0.986401 pre.=0.697428 rec.=0.753086 f1=0.724189
-----

epoch7 :
avg_training_loss = 0.018864002753430465
used time = 19.795234441757202
tot_cnt=67650 acc_cnt=66748 true_cnt=2268 pred_cnt=2355 true_pred_cnt=1663
acc.=0.986667 pre.=0.706157 rec.=0.733245 f1=0.719446
-----

epoch8 :
avg_training_loss = 0.015054426793977031
used time = 20.058679342269897
tot_cnt=67650 acc_cnt=66778 true_cnt=2268 pred_cnt=2479 true_pred_cnt=1755
acc.=0.987110 pre.=0.707947 rec.=0.773810 f1=0.739414
-----

epoch9 :
avg_training_loss = 0.012150094265074242
used time = 19.969778060913086
tot_cnt=67650 acc_cnt=66835 true_cnt=2268 pred_cnt=2439 true_pred_cnt=1784
acc.=0.987953 pre.=0.731447 rec.=0.786596 f1=0.758020
-----

epoch10 :
avg_training_loss = 0.010441763194527214
used time = 20.001280069351196
tot_cnt=67650 acc_cnt=66821 true_cnt=2268 pred_cnt=2396 true_pred_cnt=1746
acc.=0.987746 pre.=0.728715 rec.=0.769841 f1=0.748714
-----

epoch11 :
avg_training_loss = 0.008089746077229657
used time = 19.938396215438843
tot_cnt=67650 acc_cnt=66806 true_cnt=2268 pred_cnt=2389 true_pred_cnt=1729
acc.=0.987524 pre.=0.723734 rec.=0.762346 f1=0.742538
-----

epoch12 :
avg_training_loss = 0.007663880746195635
used time = 19.763688325881958
tot_cnt=67650 acc_cnt=66760 true_cnt=2268 pred_cnt=2470 true_pred_cnt=1734
acc.=0.986844 pre.=0.702024 rec.=0.764550 f1=0.731954
-----

epoch13 :
avg_training_loss = 0.007972288319445032
used time = 19.809643745422363
tot_cnt=67650 acc_cnt=66829 true_cnt=2268 pred_cnt=2223 true_pred_cnt=1701
acc.=0.987864 pre.=0.765182 rec.=0.750000 f1=0.757515
-----

epoch14 :
avg_training_loss = 0.007138044815363846
used time = 19.72985529899597
tot_cnt=67650 acc_cnt=66798 true_cnt=2268 pred_cnt=2473 true_pred_cnt=1763
acc.=0.987406 pre.=0.712899 rec.=0.777337 f1=0.743725
-----

epoch15 :
avg_training_loss = 0.005097998878148597
used time = 19.730101108551025
tot_cnt=67650 acc_cnt=66776 true_cnt=2268 pred_cnt=2450 true_pred_cnt=1735
acc.=0.987081 pre.=0.708163 rec.=0.764991 f1=0.735481
-----

epoch16 :
avg_training_loss = 0.004583175726762907
used time = 19.778844833374023
tot_cnt=67650 acc_cnt=66826 true_cnt=2268 pred_cnt=2339 true_pred_cnt=1724
acc.=0.987820 pre.=0.737067 rec.=0.760141 f1=0.748426
-----

epoch17 :
avg_training_loss = 0.0055410514666339545
used time = 19.779282331466675
```



```
tot_cnt=67650 acc_cnt=66809 true_cnt=2268 pred_cnt=2368 true_pred_cnt=1715
acc.=0.987568 pre.=0.724240 rec.=0.756173 f1=0.739862
-----
```

```
epoch18 :
avg_training_loss = 0.004242525325985406
used time = 19.803138256072998
tot_cnt=67650 acc_cnt=66821 true_cnt=2268 pred_cnt=2380 true_pred_cnt=1751
acc.=0.987746 pre.=0.735714 rec.=0.772046 f1=0.753442
-----
```

```
epoch19 :
avg_training_loss = 0.003769867532835232
used time = 19.779886960983276
tot_cnt=67650 acc_cnt=66856 true_cnt=2268 pred_cnt=2356 true_pred_cnt=1759
acc.=0.988263 pre.=0.746604 rec.=0.775573 f1=0.760813
-----
```

```
epoch20 :
avg_training_loss = 0.003868800683284369
used time = 19.754019737243652
tot_cnt=67650 acc_cnt=66800 true_cnt=2268 pred_cnt=2426 true_pred_cnt=1734
acc.=0.987435 pre.=0.714757 rec.=0.764550 f1=0.738816
-----
```

```
epoch21 :
avg_training_loss = 0.003934910916906642
used time = 19.77634620666504
tot_cnt=67650 acc_cnt=66800 true_cnt=2268 pred_cnt=2413 true_pred_cnt=1734
acc.=0.987435 pre.=0.718608 rec.=0.764550 f1=0.740867
-----
```

```
epoch22 :
avg_training_loss = 0.003549174060971718
used time = 19.758522272109985
tot_cnt=67650 acc_cnt=66800 true_cnt=2268 pred_cnt=2465 true_pred_cnt=1756
acc.=0.987435 pre.=0.712373 rec.=0.774250 f1=0.742024
-----
```

```
epoch23 :
avg_training_loss = 0.003110229969024658
used time = 19.776264429092407
tot_cnt=67650 acc_cnt=66813 true_cnt=2268 pred_cnt=2420 true_pred_cnt=1746
acc.=0.987627 pre.=0.721488 rec.=0.769841 f1=0.744881
-----
```

```
epoch24 :
avg_training_loss = 0.003935383295449685
used time = 19.810742616653442
tot_cnt=67650 acc_cnt=66831 true_cnt=2268 pred_cnt=2398 true_pred_cnt=1747
acc.=0.987894 pre.=0.728524 rec.=0.770282 f1=0.748821
-----
```

```
epoch25 :
avg_training_loss = 0.0028717048524871587
used time = 19.761914253234863
tot_cnt=67650 acc_cnt=66743 true_cnt=2268 pred_cnt=2422 true_pred_cnt=1680
acc.=0.986593 pre.=0.693642 rec.=0.740741 f1=0.716418
-----
```

```
epoch26 :
avg_training_loss = 0.0026315004806818925
used time = 19.79361581802368
tot_cnt=67650 acc_cnt=66829 true_cnt=2268 pred_cnt=2379 true_pred_cnt=1738
acc.=0.987864 pre.=0.730559 rec.=0.766314 f1=0.748009
-----
```

```
epoch27 :
avg_training_loss = 0.0028147835900464396
used time = 19.747517108917236
tot_cnt=67650 acc_cnt=66727 true_cnt=2268 pred_cnt=2540 true_pred_cnt=1739
acc.=0.986356 pre.=0.684646 rec.=0.766755 f1=0.723378
-----
```

```
epoch28 :
avg_training_loss = 0.002810784681575505
used time = 19.74608612060547
tot_cnt=67650 acc_cnt=66852 true_cnt=2268 pred_cnt=2398 true_pred_cnt=1772
acc.=0.988204 pre.=0.738949 rec.=0.781305 f1=0.759537
-----
```

```
epoch29 :
avg_training_loss = 0.002437223599651667
used time = 19.78214383125305
tot_cnt=67650 acc_cnt=66784 true_cnt=2268 pred_cnt=2362 true_pred_cnt=1703
acc.=0.987199 pre.=0.720999 rec.=0.750882 f1=0.735637
-----
```

```
epoch30 :
avg_training_loss = 0.0025512113815217507
used time = 19.894582986831665
tot_cnt=67650 acc_cnt=66763 true_cnt=2268 pred_cnt=2356 true_pred_cnt=1676
acc.=0.986888 pre.=0.711375 rec.=0.738977 f1=0.724913
```

```
-----
epoch31 :
avg_training_loss = 0.0020314243834788407
used time = 19.870235204696655
tot_cnt=67650 acc_cnt=66741 true_cnt=2268 pred_cnt=2485 true_pred_cnt=1718
acc.=0.986563 pre.=0.691348 rec.=0.757496 f1=0.722912
-----

epoch32 :
avg_training_loss = 0.0035140955542016217
used time = 19.76447606086731
tot_cnt=67650 acc_cnt=66761 true_cnt=2268 pred_cnt=2398 true_pred_cnt=1702
acc.=0.986859 pre.=0.709758 rec.=0.750441 f1=0.729533
-----

epoch33 :
avg_training_loss = 0.005230152231501782
used time = 19.78026580810547
tot_cnt=67650 acc_cnt=66793 true_cnt=2268 pred_cnt=2391 true_pred_cnt=1722
acc.=0.987332 pre.=0.720201 rec.=0.759259 f1=0.739214
-----

epoch34 :
avg_training_loss = 0.00378261987618574
used time = 19.809852361679077
tot_cnt=67650 acc_cnt=66783 true_cnt=2268 pred_cnt=2408 true_pred_cnt=1726
acc.=0.987184 pre.=0.716777 rec.=0.761023 f1=0.738238
-----

epoch35 :
avg_training_loss = 0.003353194692942101
used time = 19.74694514274597
tot_cnt=67650 acc_cnt=66802 true_cnt=2268 pred_cnt=2463 true_pred_cnt=1760
acc.=0.987465 pre.=0.714576 rec.=0.776014 f1=0.744029
-----

epoch36 :
avg_training_loss = 0.002763774685972319
used time = 19.766568183898926
tot_cnt=67650 acc_cnt=66785 true_cnt=2268 pred_cnt=2486 true_pred_cnt=1761
acc.=0.987214 pre.=0.708367 rec.=0.776455 f1=0.740850
-----

epoch37 :
avg_training_loss = 0.0032175044844469686
used time = 19.8094584941864
tot_cnt=67650 acc_cnt=66764 true_cnt=2268 pred_cnt=2547 true_pred_cnt=1780
acc.=0.986903 pre.=0.698861 rec.=0.784832 f1=0.739356
-----

epoch38 :
avg_training_loss = 0.002681153261755395
used time = 19.794801712036133
tot_cnt=67650 acc_cnt=66790 true_cnt=2268 pred_cnt=2301 true_pred_cnt=1679
acc.=0.987288 pre.=0.729683 rec.=0.740300 f1=0.734953
-----

epoch39 :
avg_training_loss = 0.0020808915453632984
used time = 19.843766689300537
tot_cnt=67650 acc_cnt=66844 true_cnt=2268 pred_cnt=2443 true_pred_cnt=1778
acc.=0.988086 pre.=0.727794 rec.=0.783951 f1=0.754829
-----

epoch0 :
avg_training_loss = 0.11778073798953079
used time = 21.140437841415405
tot_cnt=67650 acc_cnt=66229 true_cnt=2268 pred_cnt=2011 true_pred_cnt=1081
acc.=0.978995 pre.=0.537544 rec.=0.476631 f1=0.505258
-----

epoch1 :
avg_training_loss = 0.05612739803284172
used time = 21.093677043914795
tot_cnt=67650 acc_cnt=66560 true_cnt=2268 pred_cnt=2206 true_pred_cnt=1456
acc.=0.983888 pre.=0.660018 rec.=0.641975 f1=0.650872
-----

epoch2 :
avg_training_loss = 0.041149717616283985
used time = 21.154046297073364
tot_cnt=67650 acc_cnt=66673 true_cnt=2268 pred_cnt=2369 true_pred_cnt=1630
acc.=0.985558 pre.=0.688054 rec.=0.718695 f1=0.703041
-----

epoch3 :
avg_training_loss = 0.03444416691937784
used time = 21.154865503311157
tot_cnt=67650 acc_cnt=66671 true_cnt=2268 pred_cnt=2212 true_pred_cnt=1561
acc.=0.985528 pre.=0.705696 rec.=0.688272 f1=0.696875
-----

epoch4 :
```

```
avg_training_loss = 0.028407789590790516
used time = 21.157642126083374
tot_cnt=67650 acc_cnt=66742 true_cnt=2268 pred_cnt=2351 true_pred_cnt=1672
acc.=0.986578 pre.=0.711187 rec.=0.737213 f1=0.723966
-----
```

```
epoch5 :
avg_training_loss = 0.02193749795748493
used time = 21.157306432724
tot_cnt=67650 acc_cnt=66779 true_cnt=2268 pred_cnt=2554 true_pred_cnt=1798
acc.=0.987125 pre.=0.703994 rec.=0.792769 f1=0.745749
-----
```

```
epoch6 :
avg_training_loss = 0.017343367178609053
used time = 21.11602020263672
tot_cnt=67650 acc_cnt=66708 true_cnt=2268 pred_cnt=2283 true_pred_cnt=1600
acc.=0.986075 pre.=0.700832 rec.=0.705467 f1=0.703142
-----
```

```
epoch7 :
avg_training_loss = 0.015251657155555064
used time = 20.95503830909729
tot_cnt=67650 acc_cnt=66768 true_cnt=2268 pred_cnt=2383 true_pred_cnt=1688
acc.=0.986962 pre.=0.708351 rec.=0.744268 f1=0.725865
-----
```

```
epoch8 :
avg_training_loss = 0.01150876048981674
used time = 20.969578742980957
tot_cnt=67650 acc_cnt=66786 true_cnt=2268 pred_cnt=2365 true_pred_cnt=1700
acc.=0.987228 pre.=0.718816 rec.=0.749559 f1=0.733866
-----
```

```
epoch9 :
avg_training_loss = 0.00995876282218873
used time = 20.966522932052612
tot_cnt=67650 acc_cnt=66775 true_cnt=2268 pred_cnt=2424 true_pred_cnt=1717
acc.=0.987066 pre.=0.708333 rec.=0.757055 f1=0.731884
-----
```

```
epoch10 :
avg_training_loss = 0.009106669838972918
used time = 20.951494932174683
tot_cnt=67650 acc_cnt=66755 true_cnt=2268 pred_cnt=2501 true_pred_cnt=1727
acc.=0.986770 pre.=0.690524 rec.=0.761464 f1=0.724261
-----
```

```
epoch11 :
avg_training_loss = 0.007142328371213177
used time = 20.95167827606201
tot_cnt=67650 acc_cnt=66797 true_cnt=2268 pred_cnt=2434 true_pred_cnt=1738
acc.=0.987391 pre.=0.714051 rec.=0.766314 f1=0.739260
-----
```

```
epoch12 :
avg_training_loss = 0.006608258082172063
used time = 20.936129570007324
tot_cnt=67650 acc_cnt=66769 true_cnt=2268 pred_cnt=2498 true_pred_cnt=1744
acc.=0.986977 pre.=0.698159 rec.=0.768959 f1=0.731851
-----
```

```
epoch13 :
avg_training_loss = 0.006182284336390458
used time = 20.955567359924316
tot_cnt=67650 acc_cnt=66810 true_cnt=2268 pred_cnt=2452 true_pred_cnt=1754
acc.=0.987583 pre.=0.715334 rec.=0.773369 f1=0.743220
-----
```

```
epoch14 :
avg_training_loss = 0.004808617389108252
used time = 21.08200454711914
tot_cnt=67650 acc_cnt=66793 true_cnt=2268 pred_cnt=2444 true_pred_cnt=1733
acc.=0.987332 pre.=0.709083 rec.=0.764109 f1=0.735569
-----
```

```
epoch15 :
avg_training_loss = 0.00437515457784097
used time = 21.149345636367798
tot_cnt=67650 acc_cnt=66764 true_cnt=2268 pred_cnt=2396 true_pred_cnt=1683
acc.=0.986903 pre.=0.702421 rec.=0.742063 f1=0.721698
-----
```

```
epoch16 :
avg_training_loss = 0.004752344503177432
used time = 21.092479944229126
tot_cnt=67650 acc_cnt=66742 true_cnt=2268 pred_cnt=2502 true_pred_cnt=1723
acc.=0.986578 pre.=0.688649 rec.=0.759700 f1=0.722432
-----
```

```
epoch17 :
avg_training_loss = 0.005371979371769222
used time = 20.951241731643677
```

```
tot_cnt=67650 acc_cnt=66721 true_cnt=2268 pred_cnt=2433 true_pred_cnt=1668
acc.=0.986268 pre.=0.685573 rec.=0.735450 f1=0.709636
-----
```

```
epoch18 :
avg_training_loss = 0.0037634820919337235
used time = 20.90287947654724
tot_cnt=67650 acc_cnt=66797 true_cnt=2268 pred_cnt=2328 true_pred_cnt=1690
acc.=0.987391 pre.=0.725945 rec.=0.745150 f1=0.735422
-----
```

```
epoch19 :
avg_training_loss = 0.0031493648769348624
used time = 20.954043865203857
tot_cnt=67650 acc_cnt=66782 true_cnt=2268 pred_cnt=2437 true_pred_cnt=1713
acc.=0.987169 pre.=0.702913 rec.=0.755291 f1=0.728162
-----
```

```
epoch20 :
avg_training_loss = 0.002551824089110367
used time = 20.90381908416748
tot_cnt=67650 acc_cnt=66809 true_cnt=2268 pred_cnt=2441 true_pred_cnt=1746
acc.=0.987568 pre.=0.715281 rec.=0.769841 f1=0.741559
-----
```

```
epoch21 :
avg_training_loss = 0.0031996768290602317
used time = 20.936702251434326
tot_cnt=67650 acc_cnt=66777 true_cnt=2268 pred_cnt=2360 true_pred_cnt=1681
acc.=0.987095 pre.=0.712288 rec.=0.741182 f1=0.726448
-----
```

```
epoch22 :
avg_training_loss = 0.004008025634945847
used time = 20.93404984474182
tot_cnt=67650 acc_cnt=66822 true_cnt=2268 pred_cnt=2428 true_pred_cnt=1749
acc.=0.987761 pre.=0.720346 rec.=0.771164 f1=0.744889
-----
```

```
epoch23 :
avg_training_loss = 0.0028292234019031675
used time = 21.047999620437622
tot_cnt=67650 acc_cnt=66742 true_cnt=2268 pred_cnt=2190 true_pred_cnt=1597
acc.=0.986578 pre.=0.729224 rec.=0.704145 f1=0.716465
-----
```

```
epoch24 :
avg_training_loss = 0.0021210143885274572
used time = 21.123997688293457
tot_cnt=67650 acc_cnt=66801 true_cnt=2268 pred_cnt=2377 true_pred_cnt=1713
acc.=0.987450 pre.=0.720656 rec.=0.755291 f1=0.737567
-----
```

```
epoch25 :
avg_training_loss = 0.001797610145854199
used time = 21.07795763015747
tot_cnt=67650 acc_cnt=66792 true_cnt=2268 pred_cnt=2512 true_pred_cnt=1773
acc.=0.987317 pre.=0.705812 rec.=0.781746 f1=0.741841
-----
```

```
epoch26 :
avg_training_loss = 0.0020989864829957018
used time = 21.090068817138672
tot_cnt=67650 acc_cnt=66801 true_cnt=2268 pred_cnt=2410 true_pred_cnt=1726
acc.=0.987450 pre.=0.716183 rec.=0.761023 f1=0.737922
-----
```

```
epoch27 :
avg_training_loss = 0.0024193614486634264
used time = 21.044792652130127
tot_cnt=67650 acc_cnt=66795 true_cnt=2268 pred_cnt=2472 true_pred_cnt=1748
acc.=0.987361 pre.=0.707120 rec.=0.770723 f1=0.737553
-----
```

```
epoch28 :
avg_training_loss = 0.0018020759182652152
used time = 21.078176498413086
tot_cnt=67650 acc_cnt=66832 true_cnt=2268 pred_cnt=2363 true_pred_cnt=1739
acc.=0.987908 pre.=0.735929 rec.=0.766755 f1=0.751026
-----
```

```
epoch29 :
avg_training_loss = 0.0014485253358450462
used time = 21.016506671905518
tot_cnt=67650 acc_cnt=66818 true_cnt=2268 pred_cnt=2379 true_pred_cnt=1723
acc.=0.987701 pre.=0.724254 rec.=0.759700 f1=0.741554
-----
```

```
epoch30 :
avg_training_loss = 0.0016333889069519644
used time = 21.092971324920654
tot_cnt=67650 acc_cnt=66868 true_cnt=2268 pred_cnt=2351 true_pred_cnt=1750
acc.=0.988441 pre.=0.744364 rec.=0.771605 f1=0.757740
```

```
-----
epoch31 :
avg_training_loss =  0.0023297460999075824
used time = 21.140608072280884
tot_cnt=67650 acc_cnt=66818 true_cnt=2268 pred_cnt=2446 true_pred_cnt=1764
acc.=0.987701 pre.=0.721177 rec.=0.777778 f1=0.748409
-----

epoch32 :
avg_training_loss =  0.0017218529943406112
used time = 21.061206340789795
tot_cnt=67650 acc_cnt=66774 true_cnt=2268 pred_cnt=2454 true_pred_cnt=1729
acc.=0.987051 pre.=0.704564 rec.=0.762346 f1=0.732317
-----

epoch33 :
avg_training_loss =  0.0035900724685098244
used time = 21.076138257980347
tot_cnt=67650 acc_cnt=66828 true_cnt=2268 pred_cnt=2443 true_pred_cnt=1760
acc.=0.987849 pre.=0.720426 rec.=0.776014 f1=0.747187
-----

epoch34 :
avg_training_loss =  0.002126926042902188
used time = 21.060781240463257
tot_cnt=67650 acc_cnt=66815 true_cnt=2268 pred_cnt=2470 true_pred_cnt=1769
acc.=0.987657 pre.=0.716194 rec.=0.779982 f1=0.746729
-----

epoch35 :
avg_training_loss =  0.0015392575676985614
used time = 21.061888217926025
tot_cnt=67650 acc_cnt=66805 true_cnt=2268 pred_cnt=2451 true_pred_cnt=1747
acc.=0.987509 pre.=0.712770 rec.=0.770282 f1=0.740411
-----

epoch36 :
avg_training_loss =  0.0026214054719669614
used time = 21.07687759399414
tot_cnt=67650 acc_cnt=66800 true_cnt=2268 pred_cnt=2291 true_pred_cnt=1689
acc.=0.987435 pre.=0.737233 rec.=0.744709 f1=0.740952
-----

epoch37 :
avg_training_loss =  0.002056202785236629
used time = 21.048493146896362
tot_cnt=67650 acc_cnt=66787 true_cnt=2268 pred_cnt=2380 true_pred_cnt=1696
acc.=0.987243 pre.=0.712605 rec.=0.747795 f1=0.729776
-----

epoch38 :
avg_training_loss =  0.0017450225400173758
used time = 21.060410737991333
tot_cnt=67650 acc_cnt=66711 true_cnt=2268 pred_cnt=2370 true_pred_cnt=1629
acc.=0.986120 pre.=0.687342 rec.=0.718254 f1=0.702458
-----

epoch39 :
avg_training_loss =  0.002755020781764834
used time = 21.048518896102905
tot_cnt=67650 acc_cnt=66848 true_cnt=2268 pred_cnt=2342 true_pred_cnt=1738
acc.=0.988145 pre.=0.742101 rec.=0.766314 f1=0.754013
-----

max F1_measure for BertAndLinear = 0.7191
max F1_measure for BertAndTransformer = 0.7372
max F1_measure for RoBERTaAndLinear = 0.7608
max F1_measure for RoBERTaAndTransformer = 0.7577
```

进程结束,退出0