```
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.decoder.weight', 'cls.predictions.transform.dense.bias', 'cls.seq_relationship.bias', 'cls.
predictions.transform.LayerNorm.bias', 'cls.predictions.bias', 'cls.seq_relationship.weight', 'cls.predictions.
transform.dense.weight', 'cls.predictions.transform.LayerNorm.weight']
- 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.decoder.weight', 'cls.predictions.transform.dense.bias', 'cls.seq_relationship.bias', 'cls.
predictions.transform.LayerNorm.bias', 'cls.predictions.bias', 'cls.seq_relationship.weight', 'cls.predictions.
transform.dense.weight', 'cls.predictions.transform.LayerNorm.weight']
- 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.decoder.weight', 'lm_head.dense.weight', 'lm_head.layer_norm.bias', 'lm_head.dense.bias
', 'lm_head.layer_norm.weight', 'lm_head.bias']
- 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).
Some weights of the model checkpoint at ./pretrained_model/Roberta_model/ were not used when initializing
RobertaModel: ['lm_head.decoder.weight', 'lm_head.dense.weight', 'lm_head.layer_norm.bias', 'lm_head.dense.bias
', 'lm_head.layer_norm.weight', 'lm_head.bias']
- 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 =  92
max length =  102
max length =  91
max length =  99
94
0 tensor([[ 101, 2027, 2741,  ...,    0,    0,    0],
        [ 101, 2009, 2003,  ...,    0,    0,    0],
        [ 101, 2009, 8769,  ...,    0,    0,    0],
        ...,
        [ 101, 1996, 2069,  ...,    0,    0,    0],
        [ 101, 1999, 1019,  ...,    0,    0,    0],
        [ 101, 1045, 2572,  ...,    0,    0,    0]], device='cuda:0') tensor([[0, 0, 0,  ..., 0, 0, 0],
        [0, 0, 0,  ..., 0, 0, 0],
        [0, 0, 3,  ..., 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 =  0.1482404850898905
used time = 15.069271326065063
tot_cnt=45980 acc_cnt=44714 true_cnt=1270 pred_cnt=7 true_pred_cnt=4
acc.=0.972466 pre.=0.571429 rec.=0.003150 f1=0.006265
--------------------------------------------------------------------------------
epoch1 :
avg_training_loss =  0.06766533851623535
used time = 14.134242057800293
tot_cnt=45980 acc_cnt=45033 true_cnt=1270 pred_cnt=986 true_pred_cnt=410
acc.=0.979404 pre.=0.415822 rec.=0.322835 f1=0.363475
--------------------------------------------------------------------------------
epoch2 :
avg_training_loss =  0.049052355137277154
used time = 14.197967290878296
tot_cnt=45980 acc_cnt=45126 true_cnt=1270 pred_cnt=1058 true_pred_cnt=505
acc.=0.981427 pre.=0.477316 rec.=0.397638 f1=0.433849
--------------------------------------------------------------------------------
epoch3 :
avg_training_loss =  0.03762050385170795
used time = 14.169120073318481
tot_cnt=45980 acc_cnt=45272 true_cnt=1270 pred_cnt=1159 true_pred_cnt=667
acc.=0.984602 pre.=0.575496 rec.=0.525197 f1=0.549197
--------------------------------------------------------------------------------
epoch4 :
```

```
avg_training_loss =  0.028513302194311262
used time = 14.152836084365845
tot_cnt=45980 acc_cnt=45282 true_cnt=1270 pred_cnt=1177 true_pred_cnt=689
acc.=0.984819 pre.=0.585387 rec.=0.542520 f1=0.563139
--------------------------------------------------------------------------------
epoch5 :
avg_training_loss =  0.022024253581432587
used time = 14.182141065597534
tot_cnt=45980 acc_cnt=45358 true_cnt=1270 pred_cnt=1240 true_pred_cnt=776
acc.=0.986472 pre.=0.625806 rec.=0.611024 f1=0.618327
--------------------------------------------------------------------------------
epoch6 :
avg_training_loss =  0.017475530188134376
used time = 14.179507493972778
tot_cnt=45980 acc_cnt=45343 true_cnt=1270 pred_cnt=1225 true_pred_cnt=756
acc.=0.986146 pre.=0.617143 rec.=0.595276 f1=0.606012
--------------------------------------------------------------------------------
epoch7 :
avg_training_loss =  0.013689471052048053
used time = 14.164592504501343
tot_cnt=45980 acc_cnt=45348 true_cnt=1270 pred_cnt=1259 true_pred_cnt=771
acc.=0.986255 pre.=0.612391 rec.=0.607087 f1=0.609727
--------------------------------------------------------------------------------
epoch8 :
avg_training_loss =  0.010359288530146822
used time = 14.157849550247192
tot_cnt=45980 acc_cnt=45395 true_cnt=1270 pred_cnt=1269 true_pred_cnt=810
acc.=0.987277 pre.=0.638298 rec.=0.637795 f1=0.638046
--------------------------------------------------------------------------------
epoch9 :
avg_training_loss =  0.0084920081089222685
used time = 14.200655460357666
tot_cnt=45980 acc_cnt=45400 true_cnt=1270 pred_cnt=1221 true_pred_cnt=798
acc.=0.987386 pre.=0.653563 rec.=0.628346 f1=0.640707
--------------------------------------------------------------------------------
epoch10 :
avg_training_loss =  0.006938350961563435
used time = 14.20263147354126
tot_cnt=45980 acc_cnt=45368 true_cnt=1270 pred_cnt=1162 true_pred_cnt=751
acc.=0.986690 pre.=0.646299 rec.=0.591339 f1=0.617599
--------------------------------------------------------------------------------
epoch11 :
avg_training_loss =  0.005875430842663379
used time = 14.213308572769165
tot_cnt=45980 acc_cnt=45341 true_cnt=1270 pred_cnt=1103 true_pred_cnt=710
acc.=0.986103 pre.=0.643699 rec.=0.559055 f1=0.598399
--------------------------------------------------------------------------------
epoch12 :
avg_training_loss =  0.005264590712303811
used time = 14.181455373764038
tot_cnt=45980 acc_cnt=45362 true_cnt=1270 pred_cnt=1201 true_pred_cnt=744
acc.=0.986559 pre.=0.619484 rec.=0.585827 f1=0.602185
--------------------------------------------------------------------------------
epoch13 :
avg_training_loss =  0.005119524420575893
used time = 14.180455684661865
tot_cnt=45980 acc_cnt=45374 true_cnt=1270 pred_cnt=1135 true_pred_cnt=748
acc.=0.986820 pre.=0.659031 rec.=0.588976 f1=0.622037
--------------------------------------------------------------------------------
epoch14 :
avg_training_loss =  0.004298938398665571
used time = 14.182581424713135
tot_cnt=45980 acc_cnt=45393 true_cnt=1270 pred_cnt=1150 true_pred_cnt=765
acc.=0.987234 pre.=0.665217 rec.=0.602362 f1=0.632231
--------------------------------------------------------------------------------
epoch15 :
avg_training_loss =  0.003960353896972981
used time = 14.195642709732056
tot_cnt=45980 acc_cnt=45374 true_cnt=1270 pred_cnt=1173 true_pred_cnt=756
acc.=0.986820 pre.=0.644501 rec.=0.595276 f1=0.618911
--------------------------------------------------------------------------------
epoch16 :
avg_training_loss =  0.0037197270926008835
used time = 14.18044900894165
tot_cnt=45980 acc_cnt=45396 true_cnt=1270 pred_cnt=1145 true_pred_cnt=768
acc.=0.987299 pre.=0.670742 rec.=0.604724 f1=0.636025
--------------------------------------------------------------------------------
epoch17 :
avg_training_loss =  0.003353378887419031
used time = 14.181700229644775
```

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tot_cnt=45980 acc_cnt=45371 true_cnt=1270 pred_cnt=1197 true_pred_cnt=764
acc.=0.986755 pre.=0.638262 rec.=0.601575 f1=0.619376
-------------------------------------------------------------------------
epoch18 :
avg_training_loss =  0.002958615092521018
used time = 14.215396165847778
tot_cnt=45980 acc_cnt=45368 true_cnt=1270 pred_cnt=1219 true_pred_cnt=767
acc.=0.986690 pre.=0.629204 rec.=0.603937 f1=0.616312
-------------------------------------------------------------------------
epoch19 :
avg_training_loss =  0.002702422915621007
used time = 14.168983697891235
tot_cnt=45980 acc_cnt=45383 true_cnt=1270 pred_cnt=1208 true_pred_cnt=771
acc.=0.987016 pre.=0.638245 rec.=0.607087 f1=0.622276
-------------------------------------------------------------------------
epoch20 :
avg_training_loss =  0.0025617343948242514
used time = 14.180578708648682
tot_cnt=45980 acc_cnt=45360 true_cnt=1270 pred_cnt=1229 true_pred_cnt=758
acc.=0.986516 pre.=0.616762 rec.=0.596850 f1=0.606643
-------------------------------------------------------------------------
epoch21 :
avg_training_loss =  0.0029107966321579954
used time = 14.19536566734314
tot_cnt=45980 acc_cnt=45354 true_cnt=1270 pred_cnt=1099 true_pred_cnt=710
acc.=0.986385 pre.=0.646042 rec.=0.559055 f1=0.599409
-------------------------------------------------------------------------
epoch22 :
avg_training_loss =  0.00301074411006684
used time = 14.196852445602417
tot_cnt=45980 acc_cnt=45396 true_cnt=1270 pred_cnt=1182 true_pred_cnt=773
acc.=0.987299 pre.=0.653976 rec.=0.608661 f1=0.630506
-------------------------------------------------------------------------
epoch23 :
avg_training_loss =  0.0025894968433583035
used time = 14.180411100387573
tot_cnt=45980 acc_cnt=45388 true_cnt=1270 pred_cnt=1224 true_pred_cnt=784
acc.=0.987125 pre.=0.640523 rec.=0.617323 f1=0.628709
-------------------------------------------------------------------------
epoch24 :
avg_training_loss =  0.002408973714138599
used time = 14.217153787612915
tot_cnt=45980 acc_cnt=45368 true_cnt=1270 pred_cnt=1133 true_pred_cnt=736
acc.=0.986690 pre.=0.649603 rec.=0.579528 f1=0.612568
-------------------------------------------------------------------------
epoch25 :
avg_training_loss =  0.002304311603941816
used time = 14.196174383163452
tot_cnt=45980 acc_cnt=45356 true_cnt=1270 pred_cnt=1216 true_pred_cnt=752
acc.=0.986429 pre.=0.618421 rec.=0.592126 f1=0.604988
-------------------------------------------------------------------------
epoch26 :
avg_training_loss =  0.0029208171874918836
used time = 14.211977005004883
tot_cnt=45980 acc_cnt=45405 true_cnt=1270 pred_cnt=1214 true_pred_cnt=796
acc.=0.987495 pre.=0.655684 rec.=0.626772 f1=0.640902
-------------------------------------------------------------------------
epoch27 :
avg_training_loss =  0.002348354363695104
used time = 14.211743116378784
tot_cnt=45980 acc_cnt=45411 true_cnt=1270 pred_cnt=1163 true_pred_cnt=778
acc.=0.987625 pre.=0.668960 rec.=0.612598 f1=0.639540
-------------------------------------------------------------------------
epoch28 :
avg_training_loss =  0.0026814379590622923
used time = 14.181051015853882
tot_cnt=45980 acc_cnt=45380 true_cnt=1270 pred_cnt=1161 true_pred_cnt=755
acc.=0.986951 pre.=0.650301 rec.=0.594488 f1=0.621144
-------------------------------------------------------------------------
epoch29 :
avg_training_loss =  0.0034982432076271545
used time = 14.230638265609741
tot_cnt=45980 acc_cnt=45396 true_cnt=1270 pred_cnt=1226 true_pred_cnt=796
acc.=0.987299 pre.=0.649266 rec.=0.626772 f1=0.637821
-------------------------------------------------------------------------
epoch30 :
avg_training_loss =  0.003063062721110405
used time = 14.207409143447876
tot_cnt=45980 acc_cnt=45350 true_cnt=1270 pred_cnt=1227 true_pred_cnt=748
acc.=0.986298 pre.=0.609617 rec.=0.588976 f1=0.599119
```

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------------------------------------------------------------------------
epoch31 :
avg_training_loss =  0.0024205828283695463
used time = 14.183456420898438
tot_cnt=45980 acc_cnt=45385 true_cnt=1270 pred_cnt=1156 true_pred_cnt=756
acc.=0.987060 pre.=0.653979 rec.=0.595276 f1=0.623248
------------------------------------------------------------------------
epoch32 :
avg_training_loss =  0.0020695046541538645
used time = 14.18019962310791
tot_cnt=45980 acc_cnt=45379 true_cnt=1270 pred_cnt=1192 true_pred_cnt=765
acc.=0.986929 pre.=0.641779 rec.=0.602362 f1=0.621446
------------------------------------------------------------------------
epoch33 :
avg_training_loss =  0.0020199284908619334
used time = 14.16805911064148
tot_cnt=45980 acc_cnt=45391 true_cnt=1270 pred_cnt=1248 true_pred_cnt=795
acc.=0.987190 pre.=0.637019 rec.=0.625984 f1=0.631454
------------------------------------------------------------------------
epoch34 :
avg_training_loss =  0.0021313078542973133
used time = 14.211795091629028
tot_cnt=45980 acc_cnt=45387 true_cnt=1270 pred_cnt=1217 true_pred_cnt=782
acc.=0.987103 pre.=0.642564 rec.=0.615748 f1=0.628870
------------------------------------------------------------------------
epoch35 :
avg_training_loss =  0.0019943184675054347
used time = 14.18071174621582
tot_cnt=45980 acc_cnt=45393 true_cnt=1270 pred_cnt=1207 true_pred_cnt=783
acc.=0.987234 pre.=0.648716 rec.=0.616535 f1=0.632216
------------------------------------------------------------------------
epoch36 :
avg_training_loss =  0.0021645756478005265
used time = 14.212465763092041
tot_cnt=45980 acc_cnt=45361 true_cnt=1270 pred_cnt=1213 true_pred_cnt=752
acc.=0.986538 pre.=0.619951 rec.=0.592126 f1=0.605719
------------------------------------------------------------------------
epoch37 :
avg_training_loss =  0.002080214150408481
used time = 14.210692882537842
tot_cnt=45980 acc_cnt=45377 true_cnt=1270 pred_cnt=1123 true_pred_cnt=743
acc.=0.986886 pre.=0.661621 rec.=0.585039 f1=0.620978
------------------------------------------------------------------------
epoch38 :
avg_training_loss =  0.002239782125391859
used time = 14.213522672653198
tot_cnt=45980 acc_cnt=45414 true_cnt=1270 pred_cnt=1198 true_pred_cnt=790
acc.=0.987690 pre.=0.659432 rec.=0.622047 f1=0.640194
------------------------------------------------------------------------
epoch39 :
avg_training_loss =  0.0022591965946745364
used time = 14.197942733764648
tot_cnt=45980 acc_cnt=45395 true_cnt=1270 pred_cnt=1250 true_pred_cnt=807
acc.=0.987277 pre.=0.645600 rec.=0.635433 f1=0.640476
------------------------------------------------------------------------
epoch0 :
avg_training_loss =  0.12848881457714326
used time = 15.073002576828003
tot_cnt=45980 acc_cnt=44841 true_cnt=1270 pred_cnt=640 true_pred_cnt=199
acc.=0.975228 pre.=0.310937 rec.=0.156693 f1=0.208377
------------------------------------------------------------------------
epoch1 :
avg_training_loss =  0.05748484489765573
used time = 15.118703603744507
tot_cnt=45980 acc_cnt=45116 true_cnt=1270 pred_cnt=1192 true_pred_cnt=568
acc.=0.981209 pre.=0.476510 rec.=0.447244 f1=0.461413
------------------------------------------------------------------------
epoch2 :
avg_training_loss =  0.04162138827303623
used time = 15.087456941604614
tot_cnt=45980 acc_cnt=45290 true_cnt=1270 pred_cnt=1187 true_pred_cnt=715
acc.=0.984993 pre.=0.602359 rec.=0.562992 f1=0.582011
------------------------------------------------------------------------
epoch3 :
avg_training_loss =  0.03195606901290569
used time = 15.117751359939575
tot_cnt=45980 acc_cnt=45315 true_cnt=1270 pred_cnt=1096 true_pred_cnt=699
acc.=0.985537 pre.=0.637774 rec.=0.550394 f1=0.590871
------------------------------------------------------------------------
epoch4 :
```

```
avg_training_loss =  0.023797070726435235
used time = 15.083944082260132
tot_cnt=45980 acc_cnt=45367 true_cnt=1270 pred_cnt=1199 true_pred_cnt=780
acc.=0.986668 pre.=0.650542 rec.=0.614173 f1=0.631835
------------------------------------------------------------------------------------
epoch5 :
avg_training_loss =  0.017739531841683896
used time = 15.090502977371216
tot_cnt=45980 acc_cnt=45400 true_cnt=1270 pred_cnt=1259 true_pred_cnt=829
acc.=0.987386 pre.=0.658459 rec.=0.652756 f1=0.655595
------------------------------------------------------------------------------------
epoch6 :
avg_training_loss =  0.013837587326130968
used time = 15.035848379135132
tot_cnt=45980 acc_cnt=45383 true_cnt=1270 pred_cnt=1107 true_pred_cnt=759
acc.=0.987016 pre.=0.685637 rec.=0.597638 f1=0.638620
------------------------------------------------------------------------------------
epoch7 :
avg_training_loss =  0.011358798818385347
used time = 15.072179079055786
tot_cnt=45980 acc_cnt=45383 true_cnt=1270 pred_cnt=1136 true_pred_cnt=762
acc.=0.987016 pre.=0.670775 rec.=0.600000 f1=0.633416
------------------------------------------------------------------------------------
epoch8 :
avg_training_loss =  0.0088489886294001998
used time = 15.04004168510437
tot_cnt=45980 acc_cnt=45402 true_cnt=1270 pred_cnt=1159 true_pred_cnt=785
acc.=0.987429 pre.=0.677308 rec.=0.618110 f1=0.646357
------------------------------------------------------------------------------------
epoch9 :
avg_training_loss =  0.007858227542106142
used time = 14.993929862976074
tot_cnt=45980 acc_cnt=45392 true_cnt=1270 pred_cnt=1166 true_pred_cnt=783
acc.=0.987212 pre.=0.671527 rec.=0.616535 f1=0.642857
------------------------------------------------------------------------------------
epoch10 :
avg_training_loss =  0.006005098845096345
used time = 14.995349168777466
tot_cnt=45980 acc_cnt=45410 true_cnt=1270 pred_cnt=1150 true_pred_cnt=788
acc.=0.987603 pre.=0.685217 rec.=0.620472 f1=0.651240
------------------------------------------------------------------------------------
epoch11 :
avg_training_loss =  0.00516813042316031
used time = 14.99174189567566
tot_cnt=45980 acc_cnt=45386 true_cnt=1270 pred_cnt=1234 true_pred_cnt=800
acc.=0.987081 pre.=0.648298 rec.=0.629921 f1=0.638978
------------------------------------------------------------------------------------
epoch12 :
avg_training_loss =  0.00489258829583513
used time = 15.027268648147583
tot_cnt=45980 acc_cnt=45393 true_cnt=1270 pred_cnt=1121 true_pred_cnt=764
acc.=0.987234 pre.=0.681534 rec.=0.601575 f1=0.639063
------------------------------------------------------------------------------------
epoch13 :
avg_training_loss =  0.004545291687579865
used time = 15.043186664581299
tot_cnt=45980 acc_cnt=45393 true_cnt=1270 pred_cnt=1201 true_pred_cnt=789
acc.=0.987234 pre.=0.656953 rec.=0.621260 f1=0.638608
------------------------------------------------------------------------------------
epoch14 :
avg_training_loss =  0.003588098160764004
used time = 15.043279647827148
tot_cnt=45980 acc_cnt=45398 true_cnt=1270 pred_cnt=1167 true_pred_cnt=780
acc.=0.987342 pre.=0.668380 rec.=0.614173 f1=0.640131
------------------------------------------------------------------------------------
epoch15 :
avg_training_loss =  0.0034125688228201357
used time = 15.033951997756958
tot_cnt=45980 acc_cnt=45393 true_cnt=1270 pred_cnt=1173 true_pred_cnt=781
acc.=0.987234 pre.=0.665814 rec.=0.614961 f1=0.639378
------------------------------------------------------------------------------------
epoch16 :
avg_training_loss =  0.003096111594362462
used time = 15.072832107543945
tot_cnt=45980 acc_cnt=45386 true_cnt=1270 pred_cnt=1227 true_pred_cnt=791
acc.=0.987081 pre.=0.644662 rec.=0.622835 f1=0.633560
------------------------------------------------------------------------------------
epoch17 :
avg_training_loss =  0.0029427472581254675
used time = 15.0726957321167
```

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tot_cnt=45980 acc_cnt=45416 true_cnt=1270 pred_cnt=1179 true_pred_cnt=803
acc.=0.987734 pre.=0.681086 rec.=0.632283 f1=0.655778
-----------------------------------------------------------------------------
epoch18 :
avg_training_loss =  0.0028372435493672146
used time = 15.05256724357605
tot_cnt=45980 acc_cnt=45418 true_cnt=1270 pred_cnt=1221 true_pred_cnt=818
acc.=0.987777 pre.=0.669943 rec.=0.644094 f1=0.656764
-----------------------------------------------------------------------------
epoch19 :
avg_training_loss =  0.0023901479992460696
used time = 15.072473526000977
tot_cnt=45980 acc_cnt=45414 true_cnt=1270 pred_cnt=1189 true_pred_cnt=798
acc.=0.987690 pre.=0.671152 rec.=0.628346 f1=0.649044
-----------------------------------------------------------------------------
epoch20 :
avg_training_loss =  0.002581106221422236
used time = 15.06735897064209
tot_cnt=45980 acc_cnt=45419 true_cnt=1270 pred_cnt=1208 true_pred_cnt=813
acc.=0.987799 pre.=0.673013 rec.=0.640157 f1=0.656174
-----------------------------------------------------------------------------
epoch21 :
avg_training_loss =  0.0026564602839185838
used time = 15.039944648742676
tot_cnt=45980 acc_cnt=45415 true_cnt=1270 pred_cnt=1191 true_pred_cnt=800
acc.=0.987712 pre.=0.671704 rec.=0.629921 f1=0.650142
-----------------------------------------------------------------------------
epoch22 :
avg_training_loss =  0.0025165279177909203
used time = 15.074333190917969
tot_cnt=45980 acc_cnt=45412 true_cnt=1270 pred_cnt=1168 true_pred_cnt=792
acc.=0.987647 pre.=0.678082 rec.=0.623622 f1=0.649713
-----------------------------------------------------------------------------
epoch23 :
avg_training_loss =  0.0023749003067929696
used time = 15.08833622932434
tot_cnt=45980 acc_cnt=45427 true_cnt=1270 pred_cnt=1199 true_pred_cnt=812
acc.=0.987973 pre.=0.677231 rec.=0.639370 f1=0.657756
-----------------------------------------------------------------------------
epoch24 :
avg_training_loss =  0.002528026224450862
used time = 15.056969404220581
tot_cnt=45980 acc_cnt=45398 true_cnt=1270 pred_cnt=1184 true_pred_cnt=786
acc.=0.987342 pre.=0.663851 rec.=0.618898 f1=0.640587
-----------------------------------------------------------------------------
epoch25 :
avg_training_loss =  0.002454182727539793
used time = 15.087977886199951
tot_cnt=45980 acc_cnt=45436 true_cnt=1270 pred_cnt=1186 true_pred_cnt=817
acc.=0.988169 pre.=0.688870 rec.=0.643307 f1=0.665309
-----------------------------------------------------------------------------
epoch26 :
avg_training_loss =  0.0023730297354941673
used time = 15.057199478149414
tot_cnt=45980 acc_cnt=45428 true_cnt=1270 pred_cnt=1165 true_pred_cnt=803
acc.=0.987995 pre.=0.689270 rec.=0.632283 f1=0.659548
-----------------------------------------------------------------------------
epoch27 :
avg_training_loss =  0.0026464768229646886
used time = 15.073911190032959
tot_cnt=45980 acc_cnt=45389 true_cnt=1270 pred_cnt=1115 true_pred_cnt=757
acc.=0.987147 pre.=0.678924 rec.=0.596063 f1=0.634801
-----------------------------------------------------------------------------
epoch28 :
avg_training_loss =  0.0024090030408920127
used time = 15.059241533279419
tot_cnt=45980 acc_cnt=45411 true_cnt=1270 pred_cnt=1171 true_pred_cnt=788
acc.=0.987625 pre.=0.672929 rec.=0.620472 f1=0.645637
-----------------------------------------------------------------------------
epoch29 :
avg_training_loss =  0.0022144732957190658
used time = 15.09415078163147
tot_cnt=45980 acc_cnt=45398 true_cnt=1270 pred_cnt=1174 true_pred_cnt=772
acc.=0.987342 pre.=0.657581 rec.=0.607874 f1=0.631751
-----------------------------------------------------------------------------
epoch30 :
avg_training_loss =  0.002349432320036787
used time = 15.108379602432251
tot_cnt=45980 acc_cnt=45403 true_cnt=1270 pred_cnt=1220 true_pred_cnt=796
acc.=0.987451 pre.=0.652459 rec.=0.626772 f1=0.639357
```

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--------------------------------------------------------------------------------
epoch31 :
avg_training_loss =  0.0020645939289255346
used time = 15.088707685470581
tot_cnt=45980 acc_cnt=45402 true_cnt=1270 pred_cnt=1194 true_pred_cnt=783
acc.=0.987429 pre.=0.655779 rec.=0.616535 f1=0.635552
--------------------------------------------------------------------------------
epoch32 :
avg_training_loss =  0.002167199361831584
used time = 15.087691068649292
tot_cnt=45980 acc_cnt=45422 true_cnt=1270 pred_cnt=1182 true_pred_cnt=797
acc.=0.987864 pre.=0.674281 rec.=0.627559 f1=0.650082
--------------------------------------------------------------------------------
epoch33 :
avg_training_loss =  0.001864671548630329
used time = 15.056722640991211
tot_cnt=45980 acc_cnt=45415 true_cnt=1270 pred_cnt=1155 true_pred_cnt=783
acc.=0.987712 pre.=0.677922 rec.=0.616535 f1=0.645773
--------------------------------------------------------------------------------
epoch34 :
avg_training_loss =  0.0020405648553625064
used time = 15.041558265686035
tot_cnt=45980 acc_cnt=45415 true_cnt=1270 pred_cnt=1226 true_pred_cnt=814
acc.=0.987712 pre.=0.663948 rec.=0.640945 f1=0.652244
--------------------------------------------------------------------------------
epoch35 :
avg_training_loss =  0.0017958359515413325
used time = 15.068092584609985
tot_cnt=45980 acc_cnt=45427 true_cnt=1270 pred_cnt=1213 true_pred_cnt=814
acc.=0.987973 pre.=0.671063 rec.=0.640945 f1=0.655658
--------------------------------------------------------------------------------
epoch36 :
avg_training_loss =  0.0019332297304843335
used time = 15.072720050811768
tot_cnt=45980 acc_cnt=45414 true_cnt=1270 pred_cnt=1224 true_pred_cnt=805
acc.=0.987690 pre.=0.657680 rec.=0.633858 f1=0.645549
--------------------------------------------------------------------------------
epoch37 :
avg_training_loss =  0.0019688450909675437
used time = 15.056468725204468
tot_cnt=45980 acc_cnt=45425 true_cnt=1270 pred_cnt=1239 true_pred_cnt=819
acc.=0.987930 pre.=0.661017 rec.=0.644882 f1=0.652850
--------------------------------------------------------------------------------
epoch38 :
avg_training_loss =  0.0018693882417171559
used time = 15.054722309112549
tot_cnt=45980 acc_cnt=45410 true_cnt=1270 pred_cnt=1207 true_pred_cnt=794
acc.=0.987603 pre.=0.657829 rec.=0.625197 f1=0.641098
--------------------------------------------------------------------------------
epoch39 :
avg_training_loss =  0.001675152081124326
used time = 15.04424524307251
tot_cnt=45980 acc_cnt=45414 true_cnt=1270 pred_cnt=1242 true_pred_cnt=811
acc.=0.987690 pre.=0.652979 rec.=0.638583 f1=0.645701
--------------------------------------------------------------------------------
epoch0 :
avg_training_loss =  0.1748011162940492
used time = 14.601424217224121
tot_cnt=45980 acc_cnt=44682 true_cnt=1298 pred_cnt=0 true_pred_cnt=0
acc.=0.971770 pre.=0.000000 rec.=0.000000 f1=0.000000
--------------------------------------------------------------------------------
epoch1 :
avg_training_loss =  0.08256596707283183
used time = 14.651457786560059
tot_cnt=45980 acc_cnt=44890 true_cnt=1298 pred_cnt=758 true_pred_cnt=274
acc.=0.976294 pre.=0.361478 rec.=0.211094 f1=0.266537
--------------------------------------------------------------------------------
epoch2 :
avg_training_loss =  0.06508348343220163
used time = 14.66781234741211
tot_cnt=45980 acc_cnt=44913 true_cnt=1298 pred_cnt=837 true_pred_cnt=277
acc.=0.976794 pre.=0.330944 rec.=0.213405 f1=0.259485
--------------------------------------------------------------------------------
epoch3 :
avg_training_loss =  0.05263464501563539
used time = 14.643909215927124
tot_cnt=45980 acc_cnt=45139 true_cnt=1298 pred_cnt=1042 true_pred_cnt=525
acc.=0.981709 pre.=0.503839 rec.=0.404468 f1=0.448718
--------------------------------------------------------------------------------
epoch4 :
```

```
avg_training_loss =  0.04337532469566832
used time = 14.636521816253662
tot_cnt=45980 acc_cnt=45314 true_cnt=1298 pred_cnt=1177 true_pred_cnt=729
acc.=0.985515 pre.=0.619371 rec.=0.561633 f1=0.589091
-------------------------------------------------------------------------------
epoch5 :
avg_training_loss =  0.032622456550598145
used time = 14.606231451034546
tot_cnt=45980 acc_cnt=45348 true_cnt=1298 pred_cnt=1292 true_pred_cnt=779
acc.=0.986255 pre.=0.602941 rec.=0.600154 f1=0.601544
-------------------------------------------------------------------------------
epoch6 :
avg_training_loss =  0.028421559232346554
used time = 14.697530746459961
tot_cnt=45980 acc_cnt=45430 true_cnt=1298 pred_cnt=1253 true_pred_cnt=845
acc.=0.988038 pre.=0.674381 rec.=0.651002 f1=0.662485
-------------------------------------------------------------------------------
epoch7 :
avg_training_loss =  0.023927044361195665
used time = 14.667606353759766
tot_cnt=45980 acc_cnt=45457 true_cnt=1298 pred_cnt=1234 true_pred_cnt=864
acc.=0.988625 pre.=0.700162 rec.=0.665639 f1=0.682464
-------------------------------------------------------------------------------
epoch8 :
avg_training_loss =  0.019701728161345137
used time = 14.65583848953247
tot_cnt=45980 acc_cnt=45478 true_cnt=1298 pred_cnt=1269 true_pred_cnt=897
acc.=0.989082 pre.=0.706856 rec.=0.691063 f1=0.698870
-------------------------------------------------------------------------------
epoch9 :
avg_training_loss =  0.017289989806236104
used time = 14.680236577987671
tot_cnt=45980 acc_cnt=45431 true_cnt=1298 pred_cnt=1333 true_pred_cnt=885
acc.=0.988060 pre.=0.663916 rec.=0.681818 f1=0.672748
-------------------------------------------------------------------------------
epoch10 :
avg_training_loss =  0.013949451294351132
used time = 14.667273998260498
tot_cnt=45980 acc_cnt=45475 true_cnt=1298 pred_cnt=1257 true_pred_cnt=875
acc.=0.989017 pre.=0.696102 rec.=0.674114 f1=0.684932
-------------------------------------------------------------------------------
epoch11 :
avg_training_loss =  0.011769894589769079
used time = 14.618703842163086
tot_cnt=45980 acc_cnt=45467 true_cnt=1298 pred_cnt=1297 true_pred_cnt=890
acc.=0.988843 pre.=0.686199 rec.=0.685670 f1=0.685934
-------------------------------------------------------------------------------
epoch12 :
avg_training_loss =  0.010000726009937042
used time = 14.648568868637085
tot_cnt=45980 acc_cnt=45448 true_cnt=1298 pred_cnt=1273 true_pred_cnt=862
acc.=0.988430 pre.=0.677141 rec.=0.664099 f1=0.670556
-------------------------------------------------------------------------------
epoch13 :
avg_training_loss =  0.008125430725990458
used time = 14.652028799057007
tot_cnt=45980 acc_cnt=45496 true_cnt=1298 pred_cnt=1256 true_pred_cnt=896
acc.=0.989474 pre.=0.713376 rec.=0.690293 f1=0.701644
-------------------------------------------------------------------------------
epoch14 :
avg_training_loss =  0.007936007164894267
used time = 14.649565935134888
tot_cnt=45980 acc_cnt=45469 true_cnt=1298 pred_cnt=1218 true_pred_cnt=858
acc.=0.988886 pre.=0.704433 rec.=0.661017 f1=0.682035
-------------------------------------------------------------------------------
epoch15 :
avg_training_loss =  0.00659160537922636
used time = 14.641708612442017
tot_cnt=45980 acc_cnt=45474 true_cnt=1298 pred_cnt=1200 true_pred_cnt=870
acc.=0.988995 pre.=0.725000 rec.=0.670262 f1=0.696557
-------------------------------------------------------------------------------
epoch16 :
avg_training_loss =  0.005870360643305677
used time = 14.633955001831055
tot_cnt=45980 acc_cnt=45496 true_cnt=1298 pred_cnt=1284 true_pred_cnt=917
acc.=0.989474 pre.=0.714174 rec.=0.706471 f1=0.710302
-------------------------------------------------------------------------------
epoch17 :
avg_training_loss =  0.004322116679333626
used time = 14.6509690284729
```

```
tot_cnt=45980 acc_cnt=45504 true_cnt=1298 pred_cnt=1242 true_pred_cnt=901
acc.=0.989648 pre.=0.725443 rec.=0.694145 f1=0.709449
------------------------------------------------------------------------------
epoch18 :
avg_training_loss =  0.004565497028066757
used time = 14.619930744171143
tot_cnt=45980 acc_cnt=45488 true_cnt=1298 pred_cnt=1321 true_pred_cnt=921
acc.=0.989300 pre.=0.697199 rec.=0.709553 f1=0.703322
------------------------------------------------------------------------------
epoch19 :
avg_training_loss =  0.004344606336126936
used time = 14.627217531204224
tot_cnt=45980 acc_cnt=45499 true_cnt=1298 pred_cnt=1250 true_pred_cnt=898
acc.=0.989539 pre.=0.718400 rec.=0.691834 f1=0.704867
------------------------------------------------------------------------------
epoch20 :
avg_training_loss =  0.004641200316713211
used time = 14.685160398483276
tot_cnt=45980 acc_cnt=45469 true_cnt=1298 pred_cnt=1230 true_pred_cnt=866
acc.=0.988886 pre.=0.704065 rec.=0.667180 f1=0.685127
------------------------------------------------------------------------------
epoch21 :
avg_training_loss =  0.003575596086522366
used time = 14.692811965942383
tot_cnt=45980 acc_cnt=45495 true_cnt=1298 pred_cnt=1234 true_pred_cnt=890
acc.=0.989452 pre.=0.721232 rec.=0.685670 f1=0.703002
------------------------------------------------------------------------------
epoch22 :
avg_training_loss =  0.0034376135531892166
used time = 14.653187036514282
tot_cnt=45980 acc_cnt=45494 true_cnt=1298 pred_cnt=1317 true_pred_cnt=935
acc.=0.989430 pre.=0.709947 rec.=0.720339 f1=0.715105
------------------------------------------------------------------------------
epoch23 :
avg_training_loss =  0.003028598871636898
used time = 14.697938919067383
tot_cnt=45980 acc_cnt=45496 true_cnt=1298 pred_cnt=1217 true_pred_cnt=884
acc.=0.989474 pre.=0.726376 rec.=0.681048 f1=0.702982
------------------------------------------------------------------------------
epoch24 :
avg_training_loss =  0.0025263355767473263
used time = 14.574113845825195
tot_cnt=45980 acc_cnt=45501 true_cnt=1298 pred_cnt=1235 true_pred_cnt=894
acc.=0.989582 pre.=0.723887 rec.=0.688752 f1=0.705882
------------------------------------------------------------------------------
epoch25 :
avg_training_loss =  0.0025885626673698425
used time = 14.593967199325562
tot_cnt=45980 acc_cnt=45475 true_cnt=1298 pred_cnt=1228 true_pred_cnt=870
acc.=0.989017 pre.=0.708469 rec.=0.670262 f1=0.688836
------------------------------------------------------------------------------
epoch26 :
avg_training_loss =  0.0029401747470206405
used time = 14.603491067886353
tot_cnt=45980 acc_cnt=45490 true_cnt=1298 pred_cnt=1240 true_pred_cnt=890
acc.=0.989343 pre.=0.717742 rec.=0.685670 f1=0.701340
------------------------------------------------------------------------------
epoch27 :
avg_training_loss =  0.005295469722849258
used time = 14.588247060775757
tot_cnt=45980 acc_cnt=45441 true_cnt=1298 pred_cnt=1242 true_pred_cnt=840
acc.=0.988278 pre.=0.676329 rec.=0.647149 f1=0.661417
------------------------------------------------------------------------------
epoch28 :
avg_training_loss =  0.004257004945836169
used time = 14.605201959609985
tot_cnt=45980 acc_cnt=45507 true_cnt=1298 pred_cnt=1216 true_pred_cnt=888
acc.=0.989713 pre.=0.730263 rec.=0.684129 f1=0.706444
------------------------------------------------------------------------------
epoch29 :
avg_training_loss =  0.0035383736199521005
used time = 14.60241985321045
tot_cnt=45980 acc_cnt=45516 true_cnt=1298 pred_cnt=1249 true_pred_cnt=909
acc.=0.989909 pre.=0.727782 rec.=0.700308 f1=0.713781
------------------------------------------------------------------------------
epoch30 :
avg_training_loss =  0.002433883382918987
used time = 14.62031078338623
tot_cnt=45980 acc_cnt=45509 true_cnt=1298 pred_cnt=1252 true_pred_cnt=908
acc.=0.989756 pre.=0.725240 rec.=0.699538 f1=0.712157
```

```
----------------------------------------------------------------------
epoch31 :
avg_training_loss =  0.0024284316187209273
used time = 14.61806583404541
tot_cnt=45980 acc_cnt=45493 true_cnt=1298 pred_cnt=1231 true_pred_cnt=882
acc.=0.989408 pre.=0.716491 rec.=0.679507 f1=0.697509
----------------------------------------------------------------------
epoch32 :
avg_training_loss =  0.0020719687355325576
used time = 14.602450132369995
tot_cnt=45980 acc_cnt=45479 true_cnt=1298 pred_cnt=1193 true_pred_cnt=858
acc.=0.989104 pre.=0.719195 rec.=0.661017 f1=0.688880
----------------------------------------------------------------------
epoch33 :
avg_training_loss =  0.0017694805530791588
used time = 14.603629112243652
tot_cnt=45980 acc_cnt=45498 true_cnt=1298 pred_cnt=1261 true_pred_cnt=891
acc.=0.989517 pre.=0.706582 rec.=0.686441 f1=0.696366
----------------------------------------------------------------------
epoch34 :
avg_training_loss =  0.0018927914665100422
used time = 14.686835289001465
tot_cnt=45980 acc_cnt=45489 true_cnt=1298 pred_cnt=1282 true_pred_cnt=911
acc.=0.989321 pre.=0.710608 rec.=0.701849 f1=0.706202
----------------------------------------------------------------------
epoch35 :
avg_training_loss =  0.001903987152779356
used time = 14.69480013847351
tot_cnt=45980 acc_cnt=45491 true_cnt=1298 pred_cnt=1229 true_pred_cnt=887
acc.=0.989365 pre.=0.721725 rec.=0.683359 f1=0.702018
----------------------------------------------------------------------
epoch36 :
avg_training_loss =  0.0017041086833527747
used time = 14.63521432876587
tot_cnt=45980 acc_cnt=45509 true_cnt=1298 pred_cnt=1193 true_pred_cnt=882
acc.=0.989756 pre.=0.739313 rec.=0.679507 f1=0.708149
----------------------------------------------------------------------
epoch37 :
avg_training_loss =  0.0019474175382167736
used time = 14.663444757461548
tot_cnt=45980 acc_cnt=45498 true_cnt=1298 pred_cnt=1279 true_pred_cnt=908
acc.=0.989517 pre.=0.709930 rec.=0.699538 f1=0.704695
----------------------------------------------------------------------
epoch38 :
avg_training_loss =  0.002783978556064849
used time = 14.639153003692627
tot_cnt=45980 acc_cnt=45471 true_cnt=1298 pred_cnt=1223 true_pred_cnt=860
acc.=0.988930 pre.=0.703189 rec.=0.662558 f1=0.682269
----------------------------------------------------------------------
epoch39 :
avg_training_loss =  0.0024506766745384704
used time = 14.664657592773438
tot_cnt=45980 acc_cnt=45473 true_cnt=1298 pred_cnt=1196 true_pred_cnt=858
acc.=0.988973 pre.=0.717391 rec.=0.661017 f1=0.688051
----------------------------------------------------------------------
epoch0 :
avg_training_loss =  0.11769747226796251
used time = 15.49403691291809
tot_cnt=45980 acc_cnt=44754 true_cnt=1298 pred_cnt=565 true_pred_cnt=136
acc.=0.973336 pre.=0.240708 rec.=0.104777 f1=0.146001
----------------------------------------------------------------------
epoch1 :
avg_training_loss =  0.0643455982208252
used time = 15.511069059371948
tot_cnt=45980 acc_cnt=44996 true_cnt=1298 pred_cnt=944 true_pred_cnt=378
acc.=0.978599 pre.=0.400424 rec.=0.291217 f1=0.337199
----------------------------------------------------------------------
epoch2 :
avg_training_loss =  0.04941382306687375
used time = 15.51241421699524
tot_cnt=45980 acc_cnt=45183 true_cnt=1298 pred_cnt=1144 true_pred_cnt=605
acc.=0.982666 pre.=0.528846 rec.=0.466102 f1=0.495495
----------------------------------------------------------------------
epoch3 :
avg_training_loss =  0.037904574515971734
used time = 15.526757717132568
tot_cnt=45980 acc_cnt=45274 true_cnt=1298 pred_cnt=1046 true_pred_cnt=659
acc.=0.984645 pre.=0.630019 rec.=0.507704 f1=0.562287
----------------------------------------------------------------------
epoch4 :
```

```
avg_training_loss =  0.029930548464998284
used time = 15.535873889923096
tot_cnt=45980 acc_cnt=45321 true_cnt=1298 pred_cnt=1049 true_pred_cnt=702
acc.=0.985668 pre.=0.669209 rec.=0.540832 f1=0.598210
-------------------------------------------------------------------------------
epoch5 :
avg_training_loss =  0.02462572493451707
used time = 15.52702283859253
tot_cnt=45980 acc_cnt=45329 true_cnt=1298 pred_cnt=1011 true_pred_cnt=693
acc.=0.985842 pre.=0.685460 rec.=0.533898 f1=0.600260
-------------------------------------------------------------------------------
epoch6 :
avg_training_loss =  0.019529771297535997
used time = 15.54477572441101
tot_cnt=45980 acc_cnt=45415 true_cnt=1298 pred_cnt=1131 true_pred_cnt=794
acc.=0.987712 pre.=0.702034 rec.=0.611710 f1=0.653767
-------------------------------------------------------------------------------
epoch7 :
avg_training_loss =  0.013314025199159663
used time = 15.576085805892944
tot_cnt=45980 acc_cnt=45464 true_cnt=1298 pred_cnt=1199 true_pred_cnt=856
acc.=0.988778 pre.=0.713928 rec.=0.659476 f1=0.685623
-------------------------------------------------------------------------------
epoch8 :
avg_training_loss =  0.011237069647362891
used time = 15.541532754898071
tot_cnt=45980 acc_cnt=45412 true_cnt=1298 pred_cnt=1133 true_pred_cnt=790
acc.=0.987647 pre.=0.697264 rec.=0.608629 f1=0.649938
-------------------------------------------------------------------------------
epoch9 :
avg_training_loss =  0.009307296986275531
used time = 15.559076070785522
tot_cnt=45980 acc_cnt=45418 true_cnt=1298 pred_cnt=1097 true_pred_cnt=788
acc.=0.987777 pre.=0.718323 rec.=0.607088 f1=0.658038
-------------------------------------------------------------------------------
epoch10 :
avg_training_loss =  0.007532973238762388
used time = 15.540789604187012
tot_cnt=45980 acc_cnt=45449 true_cnt=1298 pred_cnt=1205 true_pred_cnt=840
acc.=0.988452 pre.=0.697095 rec.=0.647149 f1=0.671195
-------------------------------------------------------------------------------
epoch11 :
avg_training_loss =  0.007049871251938191
used time = 15.541400909423828
tot_cnt=45980 acc_cnt=45484 true_cnt=1298 pred_cnt=1242 true_pred_cnt=883
acc.=0.989213 pre.=0.710950 rec.=0.680277 f1=0.695276
-------------------------------------------------------------------------------
epoch12 :
avg_training_loss =  0.007068044961766994
used time = 15.556220293045044
tot_cnt=45980 acc_cnt=45455 true_cnt=1298 pred_cnt=1252 true_pred_cnt=861
acc.=0.988582 pre.=0.687700 rec.=0.663328 f1=0.675294
-------------------------------------------------------------------------------
epoch13 :
avg_training_loss =  0.007070640300182586
used time = 15.448782682418823
tot_cnt=45980 acc_cnt=45424 true_cnt=1298 pred_cnt=1209 true_pred_cnt=818
acc.=0.987908 pre.=0.676592 rec.=0.630200 f1=0.652573
-------------------------------------------------------------------------------
epoch14 :
avg_training_loss =  0.005557321487589085
used time = 15.494533061981201
tot_cnt=45980 acc_cnt=45460 true_cnt=1298 pred_cnt=1257 true_pred_cnt=867
acc.=0.988691 pre.=0.689737 rec.=0.667951 f1=0.678669
-------------------------------------------------------------------------------
epoch15 :
avg_training_loss =  0.004138329561720503
used time = 15.47136664390564
tot_cnt=45980 acc_cnt=45461 true_cnt=1298 pred_cnt=1192 true_pred_cnt=849
acc.=0.988712 pre.=0.712248 rec.=0.654083 f1=0.681928
-------------------------------------------------------------------------------
epoch16 :
avg_training_loss =  0.004298217436100574
used time = 15.494585514068604
tot_cnt=45980 acc_cnt=45447 true_cnt=1298 pred_cnt=1232 true_pred_cnt=846
acc.=0.988408 pre.=0.686688 rec.=0.651772 f1=0.668775
-------------------------------------------------------------------------------
epoch17 :
avg_training_loss =  0.003376819034840198
used time = 15.511720657348633
```

```
tot_cnt=45980 acc_cnt=45471 true_cnt=1298 pred_cnt=1177 true_pred_cnt=846
acc.=0.988930 pre.=0.718777 rec.=0.651772 f1=0.683636
------------------------------------------------------------------------------
epoch18 :
avg_training_loss =  0.003547137722055963
used time = 15.493534564971924
tot_cnt=45980 acc_cnt=45469 true_cnt=1298 pred_cnt=1190 true_pred_cnt=851
acc.=0.988886 pre.=0.715126 rec.=0.655624 f1=0.684084
------------------------------------------------------------------------------
epoch19 :
avg_training_loss =  0.004252742896688745
used time = 15.496909618377686
tot_cnt=45980 acc_cnt=45482 true_cnt=1298 pred_cnt=1260 true_pred_cnt=891
acc.=0.989169 pre.=0.707143 rec.=0.686441 f1=0.696638
------------------------------------------------------------------------------
epoch20 :
avg_training_loss =  0.003015003939892383
used time = 15.511269330978394
tot_cnt=45980 acc_cnt=45472 true_cnt=1298 pred_cnt=1172 true_pred_cnt=853
acc.=0.988952 pre.=0.727816 rec.=0.657165 f1=0.690688
------------------------------------------------------------------------------
epoch21 :
avg_training_loss =  0.0034393002378179673
used time = 15.538898944854736
tot_cnt=45980 acc_cnt=45465 true_cnt=1298 pred_cnt=1164 true_pred_cnt=846
acc.=0.988799 pre.=0.726804 rec.=0.651772 f1=0.687246
------------------------------------------------------------------------------
epoch22 :
avg_training_loss =  0.0037422230903138504
used time = 15.540973901748657
tot_cnt=45980 acc_cnt=45465 true_cnt=1298 pred_cnt=1195 true_pred_cnt=851
acc.=0.988799 pre.=0.712134 rec.=0.655624 f1=0.682712
------------------------------------------------------------------------------
epoch23 :
avg_training_loss =  0.004110586135945422
used time = 15.590233325958252
tot_cnt=45980 acc_cnt=45450 true_cnt=1298 pred_cnt=1187 true_pred_cnt=837
acc.=0.988473 pre.=0.705139 rec.=0.644838 f1=0.673642
------------------------------------------------------------------------------
epoch24 :
avg_training_loss =  0.0036143074010280850
used time = 15.572283029556274
tot_cnt=45980 acc_cnt=45487 true_cnt=1298 pred_cnt=1219 true_pred_cnt=879
acc.=0.989278 pre.=0.721083 rec.=0.677196 f1=0.698451
------------------------------------------------------------------------------
epoch25 :
avg_training_loss =  0.005429778961425132
used time = 15.58937668800354
tot_cnt=45980 acc_cnt=45462 true_cnt=1298 pred_cnt=1277 true_pred_cnt=885
acc.=0.988734 pre.=0.693031 rec.=0.681818 f1=0.687379
------------------------------------------------------------------------------
epoch26 :
avg_training_loss =  0.0038530154431119876
used time = 15.556813478469849
tot_cnt=45980 acc_cnt=45434 true_cnt=1298 pred_cnt=1237 true_pred_cnt=843
acc.=0.988125 pre.=0.681487 rec.=0.649461 f1=0.665089
------------------------------------------------------------------------------
epoch27 :
avg_training_loss =  0.0026580567689652138
used time = 15.541969299316406
tot_cnt=45980 acc_cnt=45449 true_cnt=1298 pred_cnt=1268 true_pred_cnt=867
acc.=0.988452 pre.=0.683754 rec.=0.667951 f1=0.675760
------------------------------------------------------------------------------
epoch28 :
avg_training_loss =  0.002305002764184424
used time = 15.54111099243164
tot_cnt=45980 acc_cnt=45460 true_cnt=1298 pred_cnt=1236 true_pred_cnt=860
acc.=0.988691 pre.=0.695793 rec.=0.662558 f1=0.678769
------------------------------------------------------------------------------
epoch29 :
avg_training_loss =  0.0019414321856295808
used time = 15.509674787521362
tot_cnt=45980 acc_cnt=45457 true_cnt=1298 pred_cnt=1227 true_pred_cnt=854
acc.=0.988625 pre.=0.696007 rec.=0.657935 f1=0.676436
------------------------------------------------------------------------------
epoch30 :
avg_training_loss =  0.001704582191528158
used time = 15.557720184326172
tot_cnt=45980 acc_cnt=45411 true_cnt=1298 pred_cnt=1175 true_pred_cnt=792
acc.=0.987625 pre.=0.674043 rec.=0.610169 f1=0.640518
```

```
------------------------------------------------------------------------------------
epoch31 :
avg_training_loss =  0.0023321420588391893
used time = 15.527604818344116
tot_cnt=45980 acc_cnt=45463 true_cnt=1298 pred_cnt=1160 true_pred_cnt=837
acc.=0.988756 pre.=0.721552 rec.=0.644838 f1=0.681041
------------------------------------------------------------------------------------
epoch32 :
avg_training_loss =  0.0020531117916107178
used time = 15.546279668807983
tot_cnt=45980 acc_cnt=45448 true_cnt=1298 pred_cnt=1216 true_pred_cnt=840
acc.=0.988430 pre.=0.690789 rec.=0.647149 f1=0.668258
------------------------------------------------------------------------------------
epoch33 :
avg_training_loss =  0.0019708632471713613
used time = 15.811128377914429
tot_cnt=45980 acc_cnt=45435 true_cnt=1298 pred_cnt=1264 true_pred_cnt=855
acc.=0.988147 pre.=0.676424 rec.=0.658706 f1=0.667447
------------------------------------------------------------------------------------
epoch34 :
avg_training_loss =  0.0021410248381026247
used time = 15.965481281280518
tot_cnt=45980 acc_cnt=45475 true_cnt=1298 pred_cnt=1196 true_pred_cnt=857
acc.=0.989017 pre.=0.716555 rec.=0.660247 f1=0.687249
------------------------------------------------------------------------------------
epoch35 :
avg_training_loss =  0.0015987999578739734
used time = 15.79822826385498
tot_cnt=45980 acc_cnt=45464 true_cnt=1298 pred_cnt=1230 true_pred_cnt=863
acc.=0.988778 pre.=0.701626 rec.=0.664869 f1=0.682753
------------------------------------------------------------------------------------
epoch36 :
avg_training_loss =  0.001851614326872724
used time = 15.559624910354614
tot_cnt=45980 acc_cnt=45459 true_cnt=1298 pred_cnt=1215 true_pred_cnt=844
acc.=0.988669 pre.=0.694650 rec.=0.650231 f1=0.671707
------------------------------------------------------------------------------------
epoch37 :
avg_training_loss =  0.0023173317313194275
used time = 15.56017541885376
tot_cnt=45980 acc_cnt=45410 true_cnt=1298 pred_cnt=1058 true_pred_cnt=766
acc.=0.987603 pre.=0.724008 rec.=0.590139 f1=0.650255
------------------------------------------------------------------------------------
epoch38 :
avg_training_loss =  0.0020389991237762125
used time = 15.528578519821167
tot_cnt=45980 acc_cnt=45482 true_cnt=1298 pred_cnt=1242 true_pred_cnt=879
acc.=0.989169 pre.=0.707729 rec.=0.677196 f1=0.692126
------------------------------------------------------------------------------------
epoch39 :
avg_training_loss =  0.0013706566805535174
used time = 15.547595024108887
tot_cnt=45980 acc_cnt=45453 true_cnt=1298 pred_cnt=1234 true_pred_cnt=846
acc.=0.988538 pre.=0.685575 rec.=0.651772 f1=0.668246
------------------------------------------------------------------------------------
max F1_measure for BertAndLinear = 0.6409
max F1_measure for BertAndTransformer = 0.6653
max F1_measure for RoBERTaAndLinear = 0.7151
max F1_measure for RoBERTaAndTransformer = 0.6985

进程结束,退出代码0
```