File - keras_train_test

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"C:\Program Files\Anaconda3\python.exe" "D:/Program Files/JetBrains/localanacondapy3/Chinese_Vehicle_plate_recognition/keras_train_test.py"
Using TensorFlow backend.
building network ...
_________________________________________________________________
Layer (type)                 Output Shape              Param #
Connected to
=================================================================
input_1 (InputLayer)         (None, 72, 272, 3)        0

_________________________________________________________________
conv2d_1 (Conv2D)            (None, 70, 270, 32)       896
input_1[0][0]
_________________________________________________________________
conv2d_2 (Conv2D)            (None, 68, 268, 32)       9248
conv2d_1[0][0]
_________________________________________________________________
max_pooling2d_1 (MaxPooling2D)  (None, 34, 134, 32)    0
conv2d_2[0][0]
_________________________________________________________________
conv2d_3 (Conv2D)            (None, 32, 132, 64)       18496
max_pooling2d_1[0][0]
_________________________________________________________________
conv2d_4 (Conv2D)            (None, 30, 130, 64)       36928
conv2d_3[0][0]
_________________________________________________________________
max_pooling2d_2 (MaxPooling2D)  (None, 15, 65, 64)     0
conv2d_4[0][0]
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20 ____________________________________________________________________________________________
                                                                                                
21 conv2d_5 (Conv2D)               (None, 13, 63, 128)  73856                                   
   max_pooling2d_2[0][0]                                                                        
22 ____________________________________________________________________________________________
                                                                                                
23 conv2d_6 (Conv2D)               (None, 11, 61, 128)  147584                                  
   conv2d_5[0][0]                                                                               
24 ____________________________________________________________________________________________
                                                                                                
25 max_pooling2d_3 (MaxPooling2D)  (None, 5, 30, 128)   0                                       
   conv2d_6[0][0]                                                                               
26 ____________________________________________________________________________________________
                                                                                                
27 flatten_1 (Flatten)             (None, 19200)        0                                       
   max_pooling2d_3[0][0]                                                                        
28 ____________________________________________________________________________________________
                                                                                                
29 dropout_1 (Dropout)             (None, 19200)        0                                       
   flatten_1[0][0]                                                                              
30 ____________________________________________________________________________________________
                                                                                                
31 c1 (Dense)                      (None, 65)           1248065                                 
   dropout_1[0][0]                                                                              
32 ____________________________________________________________________________________________
                                                                                                
33 c2 (Dense)                      (None, 65)           1248065                                 
   dropout_1[0][0]                                                                              
34 ____________________________________________________________________________________________
                                                                                                
35 c3 (Dense)                      (None, 65)           1248065                                 
   dropout_1[0][0]                                                                              
36 ____________________________________________________________________________________________
                                                                                                
37 c4 (Dense)                      (None, 65)           1248065                                 
   dropout_1[0][0]                                                                              
38 ____________________________________________________________________________________________
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38 ____________________________________
39 c5 (Dense)                 (None, 65)           1248065
   dropout_1[0][0]
40 ____________________________________
41 c6 (Dense)                 (None, 65)           1248065
   dropout_1[0][0]
42 ____________________________________
43 c7 (Dense)                 (None, 65)           1248065
   dropout_1[0][0]
44 ==================================================================
   ================================
45 Total params: 9,023,463
46 Trainable params: 9,023,463
47 Non-trainable params: 0
48 ____________________________________
49 save network picture
50 training network ...
51 Epoch 1/30
52 2019-08-01 14:56:08.319306: I tensorflow/core/platform/
   cpu_feature_guard.cc:141] Your CPU supports instructions that
   this TensorFlow binary was not compiled to use: AVX AVX2
53 2019-08-01 14:56:08.321306: I tensorflow/core/common_runtime/
   process_util.cc:69] Creating new thread pool with default inter
   op setting: 8. Tune using inter_op_parallelism_threads for best
   performance.
54  - 112s - loss: 28.5345 - c1_loss: 4.0473 - c2_loss: 3.7604 -
   c3_loss: 4.1771 - c4_loss: 4.1436 - c5_loss: 4.0947 - c6_loss: 4.
   1369 - c7_loss: 4.1744 - c1_acc: 0.0362 - c2_acc: 0.0522 - c3_acc
   : 0.0300 - c4_acc: 0.0344 - c5_acc: 0.0287 - c6_acc: 0.0253 -
   c7_acc: 0.0344 - val_loss: 24.3457 - val_c1_loss: 3.4375 -
   val_c2_loss: 3.1976 - val_c3_loss: 3.5070 - val_c4_loss: 3.5557
    - val_c5_loss: 3.5464 - val_c6_loss: 3.5383 - val_c7_loss: 3.
   5633 - val_c1_acc: 0.0500 - val_c2_acc: 0.0500 - val_c3_acc: 0.
   0219 - val_c4_acc: 0.0375 - val_c5_acc: 0.0500 - val_c6_acc: 0.
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0406 - val_c7_acc: 0.0344
Epoch 2/30
 - 120s - loss: 24.3186 - c1_loss: 3.4546 - c2_loss: 3.1322 - c3_loss: 3.5190 - c4_loss: 3.5426 - c5_loss: 3.5450 - c6_loss: 3.5636 - c7_loss: 3.5615 - c1_acc: 0.0372 - c2_acc: 0.0791 - c3_acc: 0.0425 - c4_acc: 0.0375 - c5_acc: 0.0353 - c6_acc: 0.0322 - c7_acc: 0.0356 - val_loss: 24.0504 - val_c1_loss: 3.4141 - val_c2_loss: 3.0497 - val_c3_loss: 3.4633 - val_c4_loss: 3.4961 - val_c5_loss: 3.5494 - val_c6_loss: 3.5334 - val_c7_loss: 3.5443 - val_c1_acc: 0.0469 - val_c2_acc: 0.1656 - val_c3_acc: 0.0469 - val_c4_acc: 0.0437 - val_c5_acc: 0.0250 - val_c6_acc: 0.0281 - val_c7_acc: 0.0219
Epoch 3/30
 - 115s - loss: 23.7677 - c1_loss: 3.4285 - c2_loss: 2.8778 - c3_loss: 3.3818 - c4_loss: 3.4616 - c5_loss: 3.5108 - c6_loss: 3.5413 - c7_loss: 3.5659 - c1_acc: 0.0531 - c2_acc: 0.1828 - c3_acc: 0.0797 - c4_acc: 0.0706 - c5_acc: 0.0425 - c6_acc: 0.0425 - c7_acc: 0.0312 - val_loss: 23.0002 - val_c1_loss: 3.3682 - val_c2_loss: 2.5909 - val_c3_loss: 3.1984 - val_c4_loss: 3.3314 - val_c5_loss: 3.4450 - val_c6_loss: 3.5143 - val_c7_loss: 3.5520 - val_c1_acc: 0.0969 - val_c2_acc: 0.2656 - val_c3_acc: 0.1594 - val_c4_acc: 0.1000 - val_c5_acc: 0.0844 - val_c6_acc: 0.0594 - val_c7_acc: 0.0250
Epoch 4/30
 - 117s - loss: 22.3204 - c1_loss: 3.3320 - c2_loss: 2.2511 - c3_loss: 3.0383 - c4_loss: 3.2288 - c5_loss: 3.4041 - c6_loss: 3.4890 - c7_loss: 3.5771 - c1_acc: 0.0959 - c2_acc: 0.3900 - c3_acc: 0.1659 - c4_acc: 0.1197 - c5_acc: 0.0837 - c6_acc: 0.0616 - c7_acc: 0.0475 - val_loss: 20.9306 - val_c1_loss: 3.0910 - val_c2_loss: 1.8377 - val_c3_loss: 2.7471 - val_c4_loss: 2.9991 - val_c5_loss: 3.2932 - val_c6_loss: 3.4267 - val_c7_loss: 3.5360 - val_c1_acc: 0.1781 - val_c2_acc: 0.5156 - val_c3_acc: 0.2750 - val_c4_acc: 0.1812 - val_c5_acc: 0.1219 - val_c6_acc: 0.1000 - val_c7_acc: 0.0531
Epoch 5/30
 - 98s - loss: 20.1434 - c1_loss: 3.0514 - c2_loss: 1.5327 - c3_loss: 2.5104 - c4_loss: 2.8762 - c5_loss: 3.2165 - c6_loss: 3.
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4017 - c7_loss: 3.5545 - c1_acc: 0.1700 - c2_acc: 0.5988 - c3_acc
: 0.2978 - c4_acc: 0.2031 - c5_acc: 0.1344 - c6_acc: 0.0919 -
c7_acc: 0.0628 - val_loss: 18.1469 - val_c1_loss: 2.8461 -
val_c2_loss: 1.1793 - val_c3_loss: 2.1624 - val_c4_loss: 2.5463
 - val_c5_loss: 2.8604 - val_c6_loss: 3.1625 - val_c7_loss: 3.
3899 - val_c1_acc: 0.2531 - val_c2_acc: 0.7281 - val_c3_acc: 0.
4313 - val_c4_acc: 0.3156 - val_c5_acc: 0.1906 - val_c6_acc: 0.
1406 - val_c7_acc: 0.1094
Epoch 6/30
 - 102s - loss: 18.1040 - c1_loss: 2.7575 - c2_loss: 1.0912 -
c3_loss: 2.0684 - c4_loss: 2.5345 - c5_loss: 2.9667 - c6_loss: 3.
2514 - c7_loss: 3.4344 - c1_acc: 0.2497 - c2_acc: 0.7188 - c3_acc
: 0.4131 - c4_acc: 0.2756 - c5_acc: 0.1812 - c6_acc: 0.1316 -
c7_acc: 0.0906 - val_loss: 16.6353 - val_c1_loss: 2.5671 -
val_c2_loss: 0.8900 - val_c3_loss: 1.8100 - val_c4_loss: 2.2464
 - val_c5_loss: 2.7095 - val_c6_loss: 3.1918 - val_c7_loss: 3.
2205 - val_c1_acc: 0.3281 - val_c2_acc: 0.7937 - val_c3_acc: 0.
4688 - val_c4_acc: 0.3625 - val_c5_acc: 0.2750 - val_c6_acc: 0.
1125 - val_c7_acc: 0.1219
Epoch 7/30
 - 97s - loss: 16.6992 - c1_loss: 2.4702 - c2_loss: 0.8291 -
c3_loss: 1.7415 - c4_loss: 2.3155 - c5_loss: 2.7810 - c6_loss: 3.
1929 - c7_loss: 3.3691 - c1_acc: 0.3253 - c2_acc: 0.7962 - c3_acc
: 0.4975 - c4_acc: 0.3359 - c5_acc: 0.2194 - c6_acc: 0.1328 -
c7_acc: 0.1075 - val_loss: 14.5746 - val_c1_loss: 2.0896 -
val_c2_loss: 0.5633 - val_c3_loss: 1.4544 - val_c4_loss: 1.9884
 - val_c5_loss: 2.5356 - val_c6_loss: 2.8763 - val_c7_loss: 3.
0668 - val_c1_acc: 0.4531 - val_c2_acc: 0.8969 - val_c3_acc: 0.
6188 - val_c4_acc: 0.4500 - val_c5_acc: 0.2719 - val_c6_acc: 0.
2000 - val_c7_acc: 0.1500
Epoch 8/30
 - 97s - loss: 14.7982 - c1_loss: 2.0936 - c2_loss: 0.5680 -
c3_loss: 1.4166 - c4_loss: 1.9831 - c5_loss: 2.5276 - c6_loss: 3.
0192 - c7_loss: 3.1899 - c1_acc: 0.4141 - c2_acc: 0.8609 - c3_acc
: 0.5800 - c4_acc: 0.4328 - c5_acc: 0.2819 - c6_acc: 0.1897 -
c7_acc: 0.1519 - val_loss: 13.5250 - val_c1_loss: 1.8674 -
val_c2_loss: 0.4809 - val_c3_loss: 1.2773 - val_c4_loss: 1.7587
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 - val_c5_loss: 2.3329 - val_c6_loss: 2.7940 - val_c7_loss: 3.0138 - val_c1_acc: 0.5125 - val_c2_acc: 0.9000 - val_c3_acc: 0.6781 - val_c4_acc: 0.5000 - val_c5_acc: 0.3375 - val_c6_acc: 0.2437 - val_c7_acc: 0.1562
Epoch 9/30
 - 97s - loss: 13.8294 - c1_loss: 1.8650 - c2_loss: 0.4731 - c3_loss: 1.2494 - c4_loss: 1.8095 - c5_loss: 2.3940 - c6_loss: 2.9468 - c7_loss: 3.0915 - c1_acc: 0.4878 - c2_acc: 0.8831 - c3_acc: 0.6422 - c4_acc: 0.4744 - c5_acc: 0.3416 - c6_acc: 0.2291 - c7_acc: 0.1722 - val_loss: 12.0536 - val_c1_loss: 1.5514 - val_c2_loss: 0.3546 - val_c3_loss: 1.0067 - val_c4_loss: 1.6167 - val_c5_loss: 2.1257 - val_c6_loss: 2.5949 - val_c7_loss: 2.8037 - val_c1_acc: 0.5938 - val_c2_acc: 0.9250 - val_c3_acc: 0.7125 - val_c4_acc: 0.5219 - val_c5_acc: 0.4125 - val_c6_acc: 0.2750 - val_c7_acc: 0.2125
Epoch 10/30
 - 97s - loss: 12.6650 - c1_loss: 1.5569 - c2_loss: 0.3886 - c3_loss: 1.0654 - c4_loss: 1.6411 - c5_loss: 2.2091 - c6_loss: 2.8075 - c7_loss: 2.9966 - c1_acc: 0.5859 - c2_acc: 0.9034 - c3_acc: 0.6872 - c4_acc: 0.5231 - c5_acc: 0.3831 - c6_acc: 0.2397 - c7_acc: 0.2034 - val_loss: 10.9818 - val_c1_loss: 1.4644 - val_c2_loss: 0.2899 - val_c3_loss: 0.8369 - val_c4_loss: 1.2832 - val_c5_loss: 1.9403 - val_c6_loss: 2.5322 - val_c7_loss: 2.6348 - val_c1_acc: 0.6500 - val_c2_acc: 0.9313 - val_c3_acc: 0.7781 - val_c4_acc: 0.6375 - val_c5_acc: 0.4719 - val_c6_acc: 0.3000 - val_c7_acc: 0.2562
Epoch 11/30
 - 132s - loss: 11.5427 - c1_loss: 1.3364 - c2_loss: 0.3057 - c3_loss: 0.8606 - c4_loss: 1.4543 - c5_loss: 2.0314 - c6_loss: 2.6603 - c7_loss: 2.8940 - c1_acc: 0.6316 - c2_acc: 0.9219 - c3_acc: 0.7578 - c4_acc: 0.5787 - c5_acc: 0.4309 - c6_acc: 0.2919 - c7_acc: 0.2238 - val_loss: 10.4785 - val_c1_loss: 1.1137 - val_c2_loss: 0.2516 - val_c3_loss: 0.7918 - val_c4_loss: 1.2996 - val_c5_loss: 1.8688 - val_c6_loss: 2.5140 - val_c7_loss: 2.6390 - val_c1_acc: 0.7625 - val_c2_acc: 0.9719 - val_c3_acc: 0.8156 - val_c4_acc: 0.6625 - val_c5_acc: 0.5219 - val_c6_acc: 0.3156 - val_c7_acc: 0.2531
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Epoch 12/30
 - 195s - loss: 10.7024 - c1_loss: 1.1529 - c2_loss: 0.2569 - c3_loss: 0.7635 - c4_loss: 1.3190 - c5_loss: 1.9321 - c6_loss: 2.5503 - c7_loss: 2.7277 - c1_acc: 0.6994 - c2_acc: 0.9384 - c3_acc: 0.7847 - c4_acc: 0.6147 - c5_acc: 0.4637 - c6_acc: 0.3194 - c7_acc: 0.2681 - val_loss: 9.6214 - val_c1_loss: 0.9704 - val_c2_loss: 0.1943 - val_c3_loss: 0.5669 - val_c4_loss: 1.1775 - val_c5_loss: 1.8810 - val_c6_loss: 2.2253 - val_c7_loss: 2.6059 - val_c1_acc: 0.7781 - val_c2_acc: 0.9688 - val_c3_acc: 0.9094 - val_c4_acc: 0.6906 - val_c5_acc: 0.4906 - val_c6_acc: 0.3812 - val_c7_acc: 0.2844
Epoch 13/30
 - 157s - loss: 9.6407 - c1_loss: 0.9354 - c2_loss: 0.1864 - c3_loss: 0.6551 - c4_loss: 1.1182 - c5_loss: 1.7502 - c6_loss: 2.4193 - c7_loss: 2.5761 - c1_acc: 0.7669 - c2_acc: 0.9609 - c3_acc: 0.8150 - c4_acc: 0.6772 - c5_acc: 0.5128 - c6_acc: 0.3500 - c7_acc: 0.2994 - val_loss: 8.7103 - val_c1_loss: 0.7033 - val_c2_loss: 0.2746 - val_c3_loss: 0.5687 - val_c4_loss: 1.0016 - val_c5_loss: 1.5370 - val_c6_loss: 2.1949 - val_c7_loss: 2.4302 - val_c1_acc: 0.8625 - val_c2_acc: 0.9625 - val_c3_acc: 0.8719 - val_c4_acc: 0.7312 - val_c5_acc: 0.5563 - val_c6_acc: 0.4000 - val_c7_acc: 0.3563
Epoch 14/30
 - 125s - loss: 9.3646 - c1_loss: 0.8743 - c2_loss: 0.1969 - c3_loss: 0.5935 - c4_loss: 1.0805 - c5_loss: 1.7218 - c6_loss: 2.3764 - c7_loss: 2.5212 - c1_acc: 0.7828 - c2_acc: 0.9547 - c3_acc: 0.8350 - c4_acc: 0.7003 - c5_acc: 0.5344 - c6_acc: 0.3769 - c7_acc: 0.3297 - val_loss: 8.1056 - val_c1_loss: 0.6793 - val_c2_loss: 0.1905 - val_c3_loss: 0.5022 - val_c4_loss: 0.9080 - val_c5_loss: 1.3608 - val_c6_loss: 2.1091 - val_c7_loss: 2.3558 - val_c1_acc: 0.8500 - val_c2_acc: 0.9875 - val_c3_acc: 0.8875 - val_c4_acc: 0.7594 - val_c5_acc: 0.6188 - val_c6_acc: 0.4437 - val_c7_acc: 0.4094
Epoch 15/30
 - 124s - loss: 8.6470 - c1_loss: 0.7661 - c2_loss: 0.1847 - c3_loss: 0.5040 - c4_loss: 0.9560 - c5_loss: 1.6061 - c6_loss: 2.2187 - c7_loss: 2.4113 - c1_acc: 0.8147 - c2_acc: 0.9644 -
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c3_acc: 0.8653 - c4_acc: 0.7334 - c5_acc: 0.5666 - c6_acc: 0.4044 - c7_acc: 0.3597 - val_loss: 7.5612 - val_c1_loss: 0.7217 - val_c2_loss: 0.3199 - val_c3_loss: 0.4334 - val_c4_loss: 0.8182 - val_c5_loss: 1.2676 - val_c6_loss: 1.8160 - val_c7_loss: 2.1845 - val_c1_acc: 0.8719 - val_c2_acc: 0.9625 - val_c3_acc: 0.8812 - val_c4_acc: 0.8156 - val_c5_acc: 0.6750 - val_c6_acc: 0.5062 - val_c7_acc: 0.4625
Epoch 16/30
 - 128s - loss: 7.9181 - c1_loss: 0.6564 - c2_loss: 0.1280 - c3_loss: 0.4607 - c4_loss: 0.8685 - c5_loss: 1.4200 - c6_loss: 2.1264 - c7_loss: 2.2582 - c1_acc: 0.8378 - c2_acc: 0.9666 - c3_acc: 0.8744 - c4_acc: 0.7609 - c5_acc: 0.6009 - c6_acc: 0.4231 - c7_acc: 0.3903 - val_loss: 7.0563 - val_c1_loss: 0.6143 - val_c2_loss: 0.1617 - val_c3_loss: 0.3957 - val_c4_loss: 0.6761 - val_c5_loss: 1.2407 - val_c6_loss: 1.9337 - val_c7_loss: 2.0341 - val_c1_acc: 0.8719 - val_c2_acc: 0.9812 - val_c3_acc: 0.9250 - val_c4_acc: 0.8281 - val_c5_acc: 0.6500 - val_c6_acc: 0.4813 - val_c7_acc: 0.4688
Epoch 17/30
 - 146s - loss: 7.5534 - c1_loss: 0.6058 - c2_loss: 0.1270 - c3_loss: 0.4223 - c4_loss: 0.8120 - c5_loss: 1.3822 - c6_loss: 2.0012 - c7_loss: 2.2029 - c1_acc: 0.8534 - c2_acc: 0.9725 - c3_acc: 0.8806 - c4_acc: 0.7641 - c5_acc: 0.6241 - c6_acc: 0.4628 - c7_acc: 0.4088 - val_loss: 6.1345 - val_c1_loss: 0.4352 - val_c2_loss: 0.1355 - val_c3_loss: 0.3101 - val_c4_loss: 0.6408 - val_c5_loss: 1.1116 - val_c6_loss: 1.6982 - val_c7_loss: 1.8031 - val_c1_acc: 0.9313 - val_c2_acc: 0.9844 - val_c3_acc: 0.9250 - val_c4_acc: 0.8250 - val_c5_acc: 0.7562 - val_c6_acc: 0.5563 - val_c7_acc: 0.4875
Epoch 18/30
 - 123s - loss: 6.8936 - c1_loss: 0.5155 - c2_loss: 0.1030 - c3_loss: 0.3502 - c4_loss: 0.6913 - c5_loss: 1.2614 - c6_loss: 1.9532 - c7_loss: 2.0189 - c1_acc: 0.8678 - c2_acc: 0.9762 - c3_acc: 0.9044 - c4_acc: 0.8084 - c5_acc: 0.6566 - c6_acc: 0.4725 - c7_acc: 0.4537 - val_loss: 6.2939 - val_c1_loss: 0.5613 - val_c2_loss: 0.2503 - val_c3_loss: 0.2923 - val_c4_loss: 0.5468 - val_c5_loss: 1.1467 - val_c6_loss: 1.7448 - val_c7_loss:
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1.7516 - val_c1_acc: 0.9187 - val_c2_acc: 0.9750 - val_c3_acc: 0
.9219 - val_c4_acc: 0.8656 - val_c5_acc: 0.7156 - val_c6_acc: 0.
5531 - val_c7_acc: 0.5250
Epoch 19/30
 - 124s - loss: 6.6053 - c1_loss: 0.4783 - c2_loss: 0.0938 -
c3_loss: 0.3534 - c4_loss: 0.6414 - c5_loss: 1.1637 - c6_loss: 1
.9049 - c7_loss: 1.9698 - c1_acc: 0.8806 - c2_acc: 0.9800 -
c3_acc: 0.9103 - c4_acc: 0.8137 - c5_acc: 0.6841 - c6_acc: 0.
5006 - c7_acc: 0.4713 - val_loss: 6.0887 - val_c1_loss: 0.3664
 - val_c2_loss: 0.2159 - val_c3_loss: 0.2712 - val_c4_loss: 0.
6884 - val_c5_loss: 1.0308 - val_c6_loss: 1.7961 - val_c7_loss:
1.7198 - val_c1_acc: 0.9250 - val_c2_acc: 0.9844 - val_c3_acc: 0
.9625 - val_c4_acc: 0.8313 - val_c5_acc: 0.7125 - val_c6_acc: 0.
4969 - val_c7_acc: 0.5281
Epoch 20/30
 - 129s - loss: 6.2883 - c1_loss: 0.4640 - c2_loss: 0.0833 -
c3_loss: 0.2905 - c4_loss: 0.5983 - c5_loss: 1.1641 - c6_loss: 1
.8105 - c7_loss: 1.8775 - c1_acc: 0.8831 - c2_acc: 0.9791 -
c3_acc: 0.9178 - c4_acc: 0.8294 - c5_acc: 0.6941 - c6_acc: 0.
5175 - c7_acc: 0.5006 - val_loss: 5.2135 - val_c1_loss: 0.3023
 - val_c2_loss: 0.0377 - val_c3_loss: 0.2615 - val_c4_loss: 0.
4714 - val_c5_loss: 1.0228 - val_c6_loss: 1.4861 - val_c7_loss:
1.6318 - val_c1_acc: 0.9406 - val_c2_acc: 0.9969 - val_c3_acc: 0
.9281 - val_c4_acc: 0.8812 - val_c5_acc: 0.7625 - val_c6_acc: 0.
5750 - val_c7_acc: 0.5625
Epoch 21/30
 - 124s - loss: 6.1216 - c1_loss: 0.4186 - c2_loss: 0.0923 -
c3_loss: 0.2920 - c4_loss: 0.5555 - c5_loss: 1.0832 - c6_loss: 1
.7917 - c7_loss: 1.8883 - c1_acc: 0.9031 - c2_acc: 0.9816 -
c3_acc: 0.9212 - c4_acc: 0.8484 - c5_acc: 0.7150 - c6_acc: 0.
5375 - c7_acc: 0.4956 - val_loss: 6.1972 - val_c1_loss: 0.4681
 - val_c2_loss: 0.2794 - val_c3_loss: 0.4280 - val_c4_loss: 0.
6482 - val_c5_loss: 0.9887 - val_c6_loss: 1.6876 - val_c7_loss:
1.6973 - val_c1_acc: 0.9125 - val_c2_acc: 0.9625 - val_c3_acc: 0
.9344 - val_c4_acc: 0.8594 - val_c5_acc: 0.7531 - val_c6_acc: 0.
5406 - val_c7_acc: 0.5938
Epoch 22/30
```

```
 - 126s - loss: 5.8084 - c1_loss: 0.4035 - c2_loss: 0.0663 - c3_loss: 0.2507 - c4_loss: 0.5412 - c5_loss: 1.0494 - c6_loss: 1.7042 - c7_loss: 1.7931 - c1_acc: 0.9041 - c2_acc: 0.9897 - c3_acc: 0.9375 - c4_acc: 0.8481 - c5_acc: 0.7169 - c6_acc: 0.5478 - c7_acc: 0.5206 - val_loss: 4.7501 - val_c1_loss: 0.3007 - val_c2_loss: 0.0347 - val_c3_loss: 0.1776 - val_c4_loss: 0.4216 - val_c5_loss: 0.8762 - val_c6_loss: 1.4821 - val_c7_loss: 1.4572 - val_c1_acc: 0.9313 - val_c2_acc: 0.9906 - val_c3_acc: 0.9406 - val_c4_acc: 0.8938 - val_c5_acc: 0.7688 - val_c6_acc: 0.5875 - val_c7_acc: 0.6406
Epoch 23/30
 - 127s - loss: 5.3115 - c1_loss: 0.3615 - c2_loss: 0.0617 - c3_loss: 0.1839 - c4_loss: 0.4648 - c5_loss: 0.9531 - c6_loss: 1.6355 - c7_loss: 1.6511 - c1_acc: 0.9116 - c2_acc: 0.9906 - c3_acc: 0.9534 - c4_acc: 0.8666 - c5_acc: 0.7384 - c6_acc: 0.5675 - c7_acc: 0.5591 - val_loss: 4.8011 - val_c1_loss: 0.2557 - val_c2_loss: 0.0647 - val_c3_loss: 0.2198 - val_c4_loss: 0.5282 - val_c5_loss: 0.8823 - val_c6_loss: 1.3762 - val_c7_loss: 1.4741 - val_c1_acc: 0.9469 - val_c2_acc: 0.9906 - val_c3_acc: 0.9594 - val_c4_acc: 0.8812 - val_c5_acc: 0.7844 - val_c6_acc: 0.6219 - val_c7_acc: 0.6375
Epoch 24/30
 - 109s - loss: 5.1257 - c1_loss: 0.3361 - c2_loss: 0.0460 - c3_loss: 0.2154 - c4_loss: 0.4383 - c5_loss: 0.9190 - c6_loss: 1.5735 - c7_loss: 1.5973 - c1_acc: 0.9156 - c2_acc: 0.9919 - c3_acc: 0.9397 - c4_acc: 0.8762 - c5_acc: 0.7512 - c6_acc: 0.5844 - c7_acc: 0.5663 - val_loss: 4.4648 - val_c1_loss: 0.2227 - val_c2_loss: 0.0340 - val_c3_loss: 0.1537 - val_c4_loss: 0.3252 - val_c5_loss: 0.7838 - val_c6_loss: 1.4711 - val_c7_loss: 1.4743 - val_c1_acc: 0.9531 - val_c2_acc: 0.9875 - val_c3_acc: 0.9656 - val_c4_acc: 0.9125 - val_c5_acc: 0.7750 - val_c6_acc: 0.6219 - val_c7_acc: 0.6469
Epoch 25/30
 - 103s - loss: 5.0341 - c1_loss: 0.3023 - c2_loss: 0.0442 - c3_loss: 0.1974 - c4_loss: 0.4345 - c5_loss: 0.8679 - c6_loss: 1.5861 - c7_loss: 1.6015 - c1_acc: 0.9269 - c2_acc: 0.9906 - c3_acc: 0.9456 - c4_acc: 0.8744 - c5_acc: 0.7688 - c6_acc: 0.
```

```
5916 - c7_acc: 0.5744 - val_loss: 4.4429 - val_c1_loss: 0.2384
 - val_c2_loss: 0.0443 - val_c3_loss: 0.1798 - val_c4_loss: 0.
3201 - val_c5_loss: 0.8197 - val_c6_loss: 1.4624 - val_c7_loss:
1.3782 - val_c1_acc: 0.9656 - val_c2_acc: 0.9906 - val_c3_acc: 0
.9500 - val_c4_acc: 0.9250 - val_c5_acc: 0.7781 - val_c6_acc: 0.
6188 - val_c7_acc: 0.6344
Epoch 26/30
 - 97s - loss: 4.7994 - c1_loss: 0.3136 - c2_loss: 0.0455 -
c3_loss: 0.1738 - c4_loss: 0.3956 - c5_loss: 0.8733 - c6_loss: 1
.4758 - c7_loss: 1.5217 - c1_acc: 0.9256 - c2_acc: 0.9897 -
c3_acc: 0.9556 - c4_acc: 0.8909 - c5_acc: 0.7675 - c6_acc: 0.
6047 - c7_acc: 0.5928 - val_loss: 3.7060 - val_c1_loss: 0.1852
 - val_c2_loss: 0.0161 - val_c3_loss: 0.1444 - val_c4_loss: 0.
3084 - val_c5_loss: 0.6345 - val_c6_loss: 1.1097 - val_c7_loss:
1.3078 - val_c1_acc: 0.9688 - val_c2_acc: 1.0000 - val_c3_acc: 0
.9625 - val_c4_acc: 0.9156 - val_c5_acc: 0.8281 - val_c6_acc: 0.
6813 - val_c7_acc: 0.6531
Epoch 27/30
 - 97s - loss: 4.5044 - c1_loss: 0.2654 - c2_loss: 0.0363 -
c3_loss: 0.1740 - c4_loss: 0.3860 - c5_loss: 0.7789 - c6_loss: 1
.4332 - c7_loss: 1.4307 - c1_acc: 0.9387 - c2_acc: 0.9950 -
c3_acc: 0.9547 - c4_acc: 0.8947 - c5_acc: 0.7872 - c6_acc: 0.
6219 - c7_acc: 0.6156 - val_loss: 4.0662 - val_c1_loss: 0.2368
 - val_c2_loss: 0.0896 - val_c3_loss: 0.1898 - val_c4_loss: 0.
2741 - val_c5_loss: 0.7169 - val_c6_loss: 1.3071 - val_c7_loss:
1.2518 - val_c1_acc: 0.9500 - val_c2_acc: 0.9906 - val_c3_acc: 0
.9719 - val_c4_acc: 0.9500 - val_c5_acc: 0.8281 - val_c6_acc: 0.
6656 - val_c7_acc: 0.6656
Epoch 28/30
 - 97s - loss: 4.5612 - c1_loss: 0.2744 - c2_loss: 0.0399 -
c3_loss: 0.1592 - c4_loss: 0.3764 - c5_loss: 0.8130 - c6_loss: 1
.4371 - c7_loss: 1.4613 - c1_acc: 0.9334 - c2_acc: 0.9931 -
c3_acc: 0.9591 - c4_acc: 0.9028 - c5_acc: 0.7775 - c6_acc: 0.
6338 - c7_acc: 0.6081 - val_loss: 3.3533 - val_c1_loss: 0.2275
 - val_c2_loss: 0.0214 - val_c3_loss: 0.1126 - val_c4_loss: 0.
2371 - val_c5_loss: 0.6199 - val_c6_loss: 1.0525 - val_c7_loss:
1.0822 - val_c1_acc: 0.9531 - val_c2_acc: 0.9969 - val_c3_acc: 0
```

```
.9688 - val_c4_acc: 0.9375 - val_c5_acc: 0.8625 - val_c6_acc: 0.
7406 - val_c7_acc: 0.7375
Epoch 29/30
 - 98s - loss: 4.1325 - c1_loss: 0.2665 - c2_loss: 0.0255 -
c3_loss: 0.1363 - c4_loss: 0.3235 - c5_loss: 0.7114 - c6_loss: 1
.3273 - c7_loss: 1.3420 - c1_acc: 0.9372 - c2_acc: 0.9947 -
c3_acc: 0.9644 - c4_acc: 0.9078 - c5_acc: 0.8059 - c6_acc: 0.
6528 - c7_acc: 0.6413 - val_loss: 4.2271 - val_c1_loss: 0.3319
 - val_c2_loss: 0.2084 - val_c3_loss: 0.2248 - val_c4_loss: 0.
3485 - val_c5_loss: 0.7291 - val_c6_loss: 1.2267 - val_c7_loss:
1.1576 - val_c1_acc: 0.9531 - val_c2_acc: 0.9812 - val_c3_acc: 0
.9688 - val_c4_acc: 0.9313 - val_c5_acc: 0.8000 - val_c6_acc: 0.
6750 - val_c7_acc: 0.7031
Epoch 30/30
 - 97s - loss: 4.1007 - c1_loss: 0.2285 - c2_loss: 0.0276 -
c3_loss: 0.1389 - c4_loss: 0.3085 - c5_loss: 0.7260 - c6_loss: 1
.3461 - c7_loss: 1.3252 - c1_acc: 0.9491 - c2_acc: 0.9953 -
c3_acc: 0.9641 - c4_acc: 0.9122 - c5_acc: 0.8087 - c6_acc: 0.
6453 - c7_acc: 0.6341 - val_loss: 3.4249 - val_c1_loss: 0.2196
 - val_c2_loss: 0.0455 - val_c3_loss: 0.1028 - val_c4_loss: 0.
2395 - val_c5_loss: 0.5697 - val_c6_loss: 1.1113 - val_c7_loss:
1.1365 - val_c1_acc: 0.9437 - val_c2_acc: 0.9906 - val_c3_acc: 0
.9781 - val_c4_acc: 0.9375 - val_c5_acc: 0.8656 - val_c6_acc: 0.
7000 - val_c7_acc: 0.6937
loading plate data ...
picture Screen Shot 2016-08-07 at 12.51.56 AM.png size error,
maybe resize before load !
picture Screen Shot 2016-08-07 at 12.53.41 AM.png size error,
maybe resize before load !
picture Screen Shot 2016-08-07 at 12.55.45 AM.png size error,
maybe resize before load !
test_name ['00', '01', '02', '03', '04', '05', '06', '07', '08
', '09', '10', '11', '12']
load the trained model
#################model predict################
results type : <class 'list'>
results type : <class 'numpy.ndarray'>
```

```
results.dtype : float32
results.shape : (7, 13, 65)
results.dtype : int64
results.shape : (13, 7)
results
 [[24 51 52 64 45 33 46]
 [21 55 52 46 39 56 40]
 [18 54 45 40 57 59 41]
 [ 4 54 37 62 57 33 54]
 [26 43 43 55 34 58 54]
 [ 3 53 47 54 56 62 63]
 [27 54 47 52 62 56 38]
 [26 60 31 58 41 48 42]
 [23 63 50 64 36 45 52]
 [24 54 32 33 50 31 44]
 [ 4 64 33 31 56 44 32]
 [14 47 39 50 64 45 31]
 [19 52 54 54 58 48 46]]
key 云
key L
key M
key Z
key E
key 2
key F
key 琼
key Q
key M
key F
key 8
key R
key 9
key 湘
key P
key E
key 9
key S
```

```
key U
key A
key 冀
key P
key 6
key X
key S
key 2
key P
key 陕
key C
key C
key Q
key 3
key T
key P
key 渝
key N
key G
key P
key R
key X
key Y
key 甘
key P
key G
key M
key X
key R
key 7
key 陕
key V
key 0
key T
key A
key H
key B
```

```
196 key 贵
197 key Y
198 key K
199 key Z
200 key 5
201 key E
202 key M
203 key 云
204 key P
205 key 1
206 key 2
207 key K
208 key 0
209 key D
210 key 冀
211 key Z
212 key 2
213 key 0
214 key R
215 key D
216 key 1
217 key 赣
218 key G
219 key 8
220 key K
221 key Z
222 key E
223 key 0
224 key 粤
225 key M
226 key P
227 key P
228 key T
229 key H
230 key F
231 predict_plate_str type : <class 'list'>
232 predict_plate_str
```

```
 [['云', 'L', 'M', 'Z', 'E', '2', 'F'], ['琼', 'Q', 'M', 'F', '8
', 'R', '9'], ['湘', 'P', 'E', '9', 'S', 'U', 'A'], ['冀', 'P
', '6', 'X', 'S', '2', 'P'], ['陕', 'C', 'C', 'Q', '3', 'T', 'P
'], ['渝', 'N', 'G', 'P', 'R', 'X', 'Y'], ['甘', 'P', 'G', 'M
', 'X', 'R', '7'], ['陕', 'V', 'O', 'T', 'A', 'H', 'B'], ['贵
', 'Y', 'K', 'Z', '5', 'E', 'M'], ['云', 'P', '1', '2', 'K', 'O
', 'D'], ['冀', 'Z', '2', 'O', 'R', 'D', '1'], ['赣', 'G', '8
', 'K', 'Z', 'E', 'O'], ['粤', 'M', 'P', 'P', 'T', 'H', 'F']]
################plt results################

Process finished with exit code 0

```