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 2019-07-25 13:02:50.543969: 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 2019-07-25 13:02:50.545969: 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  - 101s - loss: 25.0745 - c1_loss: 3.5737 - c2_loss: 3.2702 -
   c3_loss: 3.6582 - c4_loss: 3.6475 - c5_loss: 3.6523 - c6_loss: 3.
   6380 - c7_loss: 3.6348 - c1_acc: 0.0275 - c2_acc: 0.0553 - c3_acc
   : 0.0328 - c4_acc: 0.0281 - c5_acc: 0.0309 - c6_acc: 0.0338 -
   c7_acc: 0.0294 - val_loss: 24.3876 - val_c1_loss: 3.4925 -
   val_c2_loss: 3.0971 - val_c3_loss: 3.5133 - val_c4_loss: 3.5432
    - val_c5_loss: 3.5753 - val_c6_loss: 3.5823 - val_c7_loss: 3.
   5838 - val_c1_acc: 0.0469 - val_c2_acc: 0.1094 - val_c3_acc: 0.
   0625 - val_c4_acc: 0.0531 - val_c5_acc: 0.0469 - val_c6_acc: 0.
```

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0125 - val_c7_acc: 0.0187
Epoch 2/30
 - 98s - loss: 23.7819 - c1_loss: 3.4639 - c2_loss: 2.8508 - c3_loss: 3.3851 - c4_loss: 3.4709 - c5_loss: 3.5036 - c6_loss: 3.5402 - c7_loss: 3.5674 - c1_acc: 0.0431 - c2_acc: 0.1737 - c3_acc: 0.0731 - c4_acc: 0.0541 - c5_acc: 0.0453 - c6_acc: 0.0422 - c7_acc: 0.0372 - val_loss: 22.3428 - val_c1_loss: 3.3942 - val_c2_loss: 2.3400 - val_c3_loss: 3.0369 - val_c4_loss: 3.1968 - val_c5_loss: 3.3389 - val_c6_loss: 3.4995 - val_c7_loss: 3.5364 - val_c1_acc: 0.0750 - val_c2_acc: 0.3219 - val_c3_acc: 0.1969 - val_c4_acc: 0.1062 - val_c5_acc: 0.0875 - val_c6_acc: 0.0594 - val_c7_acc: 0.0437
Epoch 3/30
 - 98s - loss: 21.1734 - c1_loss: 3.3327 - c2_loss: 1.9451 - c3_loss: 2.7943 - c4_loss: 3.0343 - c5_loss: 3.2565 - c6_loss: 3.3823 - c7_loss: 3.4283 - c1_acc: 0.0806 - c2_acc: 0.4047 - c3_acc: 0.2003 - c4_acc: 0.1375 - c5_acc: 0.1038 - c6_acc: 0.0794 - c7_acc: 0.0694 - val_loss: 19.8375 - val_c1_loss: 3.1271 - val_c2_loss: 1.6121 - val_c3_loss: 2.5801 - val_c4_loss: 2.8309 - val_c5_loss: 3.1044 - val_c6_loss: 3.2348 - val_c7_loss: 3.3482 - val_c1_acc: 0.1437 - val_c2_acc: 0.4781 - val_c3_acc: 0.2406 - val_c4_acc: 0.1969 - val_c5_acc: 0.1344 - val_c6_acc: 0.1219 - val_c7_acc: 0.0781
Epoch 4/30
 - 98s - loss: 18.2465 - c1_loss: 2.9143 - c2_loss: 1.2283 - c3_loss: 2.1374 - c4_loss: 2.5320 - c5_loss: 2.8950 - c6_loss: 3.2345 - c7_loss: 3.3050 - c1_acc: 0.1891 - c2_acc: 0.6166 - c3_acc: 0.3572 - c4_acc: 0.2616 - c5_acc: 0.1803 - c6_acc: 0.1197 - c7_acc: 0.1050 - val_loss: 16.0711 - val_c1_loss: 2.4343 - val_c2_loss: 0.8901 - val_c3_loss: 1.6789 - val_c4_loss: 2.1721 - val_c5_loss: 2.6730 - val_c6_loss: 3.0398 - val_c7_loss: 3.1829 - val_c1_acc: 0.3156 - val_c2_acc: 0.7000 - val_c3_acc: 0.4938 - val_c4_acc: 0.3312 - val_c5_acc: 0.2219 - val_c6_acc: 0.1562 - val_c7_acc: 0.1375
Epoch 5/30
 - 98s - loss: 15.4060 - c1_loss: 2.2971 - c2_loss: 0.7851 - c3_loss: 1.5933 - c4_loss: 2.0977 - c5_loss: 2.5454 - c6_loss: 2.
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9679 - c7_loss: 3.1197 - c1_acc: 0.3503 - c2_acc: 0.7503 - c3_acc
: 0.5031 - c4_acc: 0.3597 - c5_acc: 0.2637 - c6_acc: 0.1747 -
c7_acc: 0.1544 - val_loss: 13.1079 - val_c1_loss: 1.7870 -
val_c2_loss: 0.4733 - val_c3_loss: 1.2396 - val_c4_loss: 1.6698
 - val_c5_loss: 2.3804 - val_c6_loss: 2.7161 - val_c7_loss: 2.
8417 - val_c1_acc: 0.4844 - val_c2_acc: 0.8688 - val_c3_acc: 0.
6000 - val_c4_acc: 0.4562 - val_c5_acc: 0.3281 - val_c6_acc: 0.
2406 - val_c7_acc: 0.2250
Epoch 6/30
 - 98s - loss: 13.0432 - c1_loss: 1.8009 - c2_loss: 0.5180 -
c3_loss: 1.1462 - c4_loss: 1.6860 - c5_loss: 2.2232 - c6_loss: 2.
7532 - c7_loss: 2.9159 - c1_acc: 0.4681 - c2_acc: 0.8413 - c3_acc
: 0.6444 - c4_acc: 0.4803 - c5_acc: 0.3581 - c6_acc: 0.2394 -
c7_acc: 0.2072 - val_loss: 11.7290 - val_c1_loss: 1.6119 -
val_c2_loss: 0.4673 - val_c3_loss: 0.9403 - val_c4_loss: 1.5104
 - val_c5_loss: 1.9499 - val_c6_loss: 2.4559 - val_c7_loss: 2.
7934 - val_c1_acc: 0.5375 - val_c2_acc: 0.9094 - val_c3_acc: 0.
7438 - val_c4_acc: 0.5719 - val_c5_acc: 0.4156 - val_c6_acc: 0.
3031 - val_c7_acc: 0.2250
Epoch 7/30
 - 99s - loss: 10.8920 - c1_loss: 1.3732 - c2_loss: 0.3274 -
c3_loss: 0.8218 - c4_loss: 1.3290 - c5_loss: 1.8904 - c6_loss: 2.
5060 - c7_loss: 2.6442 - c1_acc: 0.5916 - c2_acc: 0.9056 - c3_acc
: 0.7369 - c4_acc: 0.5941 - c5_acc: 0.4375 - c6_acc: 0.2966 -
c7_acc: 0.2772 - val_loss: 9.8191 - val_c1_loss: 1.2540 -
val_c2_loss: 0.2280 - val_c3_loss: 0.6272 - val_c4_loss: 1.1815
 - val_c5_loss: 1.6562 - val_c6_loss: 2.3491 - val_c7_loss: 2.
5231 - val_c1_acc: 0.6406 - val_c2_acc: 0.9437 - val_c3_acc: 0.
8156 - val_c4_acc: 0.6469 - val_c5_acc: 0.5281 - val_c6_acc: 0.
3406 - val_c7_acc: 0.2906
Epoch 8/30
 - 100s - loss: 9.7247 - c1_loss: 1.1550 - c2_loss: 0.2586 -
c3_loss: 0.6611 - c4_loss: 1.1202 - c5_loss: 1.6796 - c6_loss: 2.
3825 - c7_loss: 2.4677 - c1_acc: 0.6587 - c2_acc: 0.9284 - c3_acc
: 0.7881 - c4_acc: 0.6594 - c5_acc: 0.5166 - c6_acc: 0.3522 -
c7_acc: 0.3297 - val_loss: 7.1941 - val_c1_loss: 0.7432 -
val_c2_loss: 0.1461 - val_c3_loss: 0.3824 - val_c4_loss: 0.7050
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 - val_c5_loss: 1.3284 - val_c6_loss: 1.9519 - val_c7_loss: 1.
9371 - val_c1_acc: 0.8063 - val_c2_acc: 0.9625 - val_c3_acc: 0.
8906 - val_c4_acc: 0.7969 - val_c5_acc: 0.6406 - val_c6_acc: 0.
4531 - val_c7_acc: 0.4469
Epoch 9/30
 - 99s - loss: 8.6714 - c1_loss: 0.9496 - c2_loss: 0.2058 -
c3_loss: 0.5462 - c4_loss: 0.9722 - c5_loss: 1.5147 - c6_loss: 2
.2053 - c7_loss: 2.2776 - c1_acc: 0.7172 - c2_acc: 0.9403 -
c3_acc: 0.8319 - c4_acc: 0.7041 - c5_acc: 0.5637 - c6_acc: 0.
3894 - c7_acc: 0.3722 - val_loss: 7.0696 - val_c1_loss: 0.6541
 - val_c2_loss: 0.1229 - val_c3_loss: 0.3634 - val_c4_loss: 0.
8084 - val_c5_loss: 1.2299 - val_c6_loss: 1.9180 - val_c7_loss:
1.9728 - val_c1_acc: 0.8156 - val_c2_acc: 0.9750 - val_c3_acc: 0
.8938 - val_c4_acc: 0.7281 - val_c5_acc: 0.6469 - val_c6_acc: 0.
4562 - val_c7_acc: 0.4500
Epoch 10/30
 - 98s - loss: 7.8192 - c1_loss: 0.8178 - c2_loss: 0.1743 -
c3_loss: 0.4612 - c4_loss: 0.8258 - c5_loss: 1.3612 - c6_loss: 2
.0780 - c7_loss: 2.1010 - c1_acc: 0.7622 - c2_acc: 0.9578 -
c3_acc: 0.8609 - c4_acc: 0.7444 - c5_acc: 0.6072 - c6_acc: 0.
4238 - c7_acc: 0.4231 - val_loss: 7.0903 - val_c1_loss: 0.7761
 - val_c2_loss: 0.3891 - val_c3_loss: 0.5662 - val_c4_loss: 0.
7909 - val_c5_loss: 1.1447 - val_c6_loss: 1.7737 - val_c7_loss:
1.6495 - val_c1_acc: 0.8219 - val_c2_acc: 0.9625 - val_c3_acc: 0
.8812 - val_c4_acc: 0.8125 - val_c5_acc: 0.6750 - val_c6_acc: 0.
5312 - val_c7_acc: 0.5406
Epoch 11/30
 - 98s - loss: 6.9938 - c1_loss: 0.6634 - c2_loss: 0.1238 -
c3_loss: 0.3733 - c4_loss: 0.7078 - c5_loss: 1.2273 - c6_loss: 1
.9543 - c7_loss: 1.9440 - c1_acc: 0.8100 - c2_acc: 0.9672 -
c3_acc: 0.8797 - c4_acc: 0.7844 - c5_acc: 0.6416 - c6_acc: 0.
4609 - c7_acc: 0.4547 - val_loss: 5.6918 - val_c1_loss: 0.4959
 - val_c2_loss: 0.0874 - val_c3_loss: 0.2931 - val_c4_loss: 0.
5549 - val_c5_loss: 0.8962 - val_c6_loss: 1.6811 - val_c7_loss:
1.6831 - val_c1_acc: 0.8594 - val_c2_acc: 0.9781 - val_c3_acc: 0
.9062 - val_c4_acc: 0.8438 - val_c5_acc: 0.7500 - val_c6_acc: 0.
5281 - val_c7_acc: 0.5312
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Epoch 12/30
 - 98s - loss: 6.5108 - c1_loss: 0.5864 - c2_loss: 0.1032 - c3_loss: 0.3376 - c4_loss: 0.6526 - c5_loss: 1.1707 - c6_loss: 1.8218 - c7_loss: 1.8386 - c1_acc: 0.8297 - c2_acc: 0.9734 - c3_acc: 0.8953 - c4_acc: 0.7981 - c5_acc: 0.6594 - c6_acc: 0.4831 - c7_acc: 0.4822 - val_loss: 4.5397 - val_c1_loss: 0.3100 - val_c2_loss: 0.0274 - val_c3_loss: 0.1755 - val_c4_loss: 0.3675 - val_c5_loss: 0.6849 - val_c6_loss: 1.5240 - val_c7_loss: 1.4505 - val_c1_acc: 0.9125 - val_c2_acc: 0.9969 - val_c3_acc: 0.9500 - val_c4_acc: 0.9062 - val_c5_acc: 0.8187 - val_c6_acc: 0.5875 - val_c7_acc: 0.5750
Epoch 13/30
 - 98s - loss: 6.5186 - c1_loss: 0.6331 - c2_loss: 0.1457 - c3_loss: 0.3647 - c4_loss: 0.6476 - c5_loss: 1.1456 - c6_loss: 1.8334 - c7_loss: 1.7484 - c1_acc: 0.8269 - c2_acc: 0.9656 - c3_acc: 0.8975 - c4_acc: 0.8047 - c5_acc: 0.6791 - c6_acc: 0.4984 - c7_acc: 0.5019 - val_loss: 6.2982 - val_c1_loss: 0.6831 - val_c2_loss: 0.3532 - val_c3_loss: 0.4834 - val_c4_loss: 0.6447 - val_c5_loss: 0.9089 - val_c6_loss: 1.5546 - val_c7_loss: 1.6703 - val_c1_acc: 0.8750 - val_c2_acc: 0.9594 - val_c3_acc: 0.9219 - val_c4_acc: 0.8656 - val_c5_acc: 0.7750 - val_c6_acc: 0.6000 - val_c7_acc: 0.5219
Epoch 14/30
 - 99s - loss: 5.5898 - c1_loss: 0.4821 - c2_loss: 0.0965 - c3_loss: 0.2858 - c4_loss: 0.5266 - c5_loss: 0.9348 - c6_loss: 1.5865 - c7_loss: 1.6775 - c1_acc: 0.8672 - c2_acc: 0.9772 - c3_acc: 0.9119 - c4_acc: 0.8375 - c5_acc: 0.7234 - c6_acc: 0.5622 - c7_acc: 0.5363 - val_loss: 4.4292 - val_c1_loss: 0.3003 - val_c2_loss: 0.1210 - val_c3_loss: 0.2555 - val_c4_loss: 0.3690 - val_c5_loss: 0.8216 - val_c6_loss: 1.3186 - val_c7_loss: 1.2432 - val_c1_acc: 0.9187 - val_c2_acc: 0.9844 - val_c3_acc: 0.9469 - val_c4_acc: 0.9094 - val_c5_acc: 0.8063 - val_c6_acc: 0.6500 - val_c7_acc: 0.6562
Epoch 15/30
 - 100s - loss: 5.4091 - c1_loss: 0.4626 - c2_loss: 0.0804 - c3_loss: 0.2290 - c4_loss: 0.4491 - c5_loss: 0.9694 - c6_loss: 1.6277 - c7_loss: 1.5909 - c1_acc: 0.8656 - c2_acc: 0.9800 -
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c3_acc: 0.9266 - c4_acc: 0.8622 - c5_acc: 0.7197 - c6_acc: 0.
5725 - c7_acc: 0.5553 - val_loss: 4.5751 - val_c1_loss: 0.3783
 - val_c2_loss: 0.0505 - val_c3_loss: 0.1591 - val_c4_loss: 0.
3299 - val_c5_loss: 0.6766 - val_c6_loss: 1.3834 - val_c7_loss:
1.5973 - val_c1_acc: 0.9031 - val_c2_acc: 0.9812 - val_c3_acc: 0
.9625 - val_c4_acc: 0.9000 - val_c5_acc: 0.7812 - val_c6_acc: 0.
6219 - val_c7_acc: 0.5375
Epoch 16/30
 - 100s - loss: 5.0805 - c1_loss: 0.4483 - c2_loss: 0.0848 -
c3_loss: 0.2301 - c4_loss: 0.4504 - c5_loss: 0.8352 - c6_loss: 1
.5373 - c7_loss: 1.4944 - c1_acc: 0.8709 - c2_acc: 0.9819 -
c3_acc: 0.9275 - c4_acc: 0.8594 - c5_acc: 0.7566 - c6_acc: 0.
5847 - c7_acc: 0.5803 - val_loss: 4.1215 - val_c1_loss: 0.4367
 - val_c2_loss: 0.2146 - val_c3_loss: 0.2120 - val_c4_loss: 0.
3009 - val_c5_loss: 0.6460 - val_c6_loss: 1.1414 - val_c7_loss:
1.1699 - val_c1_acc: 0.9031 - val_c2_acc: 0.9844 - val_c3_acc: 0
.9406 - val_c4_acc: 0.9156 - val_c5_acc: 0.8313 - val_c6_acc: 0.
6844 - val_c7_acc: 0.6594
Epoch 17/30
 - 99s - loss: 4.6637 - c1_loss: 0.3883 - c2_loss: 0.0573 -
c3_loss: 0.1769 - c4_loss: 0.3869 - c5_loss: 0.8059 - c6_loss: 1
.4470 - c7_loss: 1.4014 - c1_acc: 0.8797 - c2_acc: 0.9844 -
c3_acc: 0.9466 - c4_acc: 0.8750 - c5_acc: 0.7700 - c6_acc: 0.
5925 - c7_acc: 0.5944 - val_loss: 4.0700 - val_c1_loss: 0.3493
 - val_c2_loss: 0.0804 - val_c3_loss: 0.1680 - val_c4_loss: 0.
2328 - val_c5_loss: 0.6792 - val_c6_loss: 1.2195 - val_c7_loss:
1.3409 - val_c1_acc: 0.9187 - val_c2_acc: 0.9844 - val_c3_acc: 0
.9656 - val_c4_acc: 0.9281 - val_c5_acc: 0.8187 - val_c6_acc: 0.
6969 - val_c7_acc: 0.6000
Epoch 18/30
 - 99s - loss: 4.4785 - c1_loss: 0.3705 - c2_loss: 0.0550 -
c3_loss: 0.1861 - c4_loss: 0.3637 - c5_loss: 0.7603 - c6_loss: 1
.3921 - c7_loss: 1.3508 - c1_acc: 0.8884 - c2_acc: 0.9856 -
c3_acc: 0.9416 - c4_acc: 0.8887 - c5_acc: 0.7806 - c6_acc: 0.
6147 - c7_acc: 0.6138 - val_loss: 3.3407 - val_c1_loss: 0.2194
 - val_c2_loss: 0.0187 - val_c3_loss: 0.0895 - val_c4_loss: 0.
2330 - val_c5_loss: 0.5821 - val_c6_loss: 1.1382 - val_c7_loss:
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1.0599 - val_c1_acc: 0.9437 - val_c2_acc: 0.9969 - val_c3_acc: 0
.9750 - val_c4_acc: 0.9313 - val_c5_acc: 0.8562 - val_c6_acc: 0.
6594 - val_c7_acc: 0.7031
Epoch 19/30
 - 99s - loss: 4.3458 - c1_loss: 0.3216 - c2_loss: 0.0494 -
c3_loss: 0.1640 - c4_loss: 0.3690 - c5_loss: 0.7235 - c6_loss: 1
.3978 - c7_loss: 1.3205 - c1_acc: 0.9128 - c2_acc: 0.9875 -
c3_acc: 0.9528 - c4_acc: 0.8913 - c5_acc: 0.7894 - c6_acc: 0.
6322 - c7_acc: 0.6234 - val_loss: 3.3911 - val_c1_loss: 0.2459
 - val_c2_loss: 0.0328 - val_c3_loss: 0.1245 - val_c4_loss: 0.
2662 - val_c5_loss: 0.5132 - val_c6_loss: 1.2327 - val_c7_loss:
0.9758 - val_c1_acc: 0.9313 - val_c2_acc: 0.9906 - val_c3_acc: 0
.9594 - val_c4_acc: 0.9375 - val_c5_acc: 0.8438 - val_c6_acc: 0.
6469 - val_c7_acc: 0.7156
Epoch 20/30
 - 99s - loss: 4.2423 - c1_loss: 0.3245 - c2_loss: 0.0555 -
c3_loss: 0.1615 - c4_loss: 0.3208 - c5_loss: 0.7231 - c6_loss: 1
.3620 - c7_loss: 1.2949 - c1_acc: 0.9031 - c2_acc: 0.9863 -
c3_acc: 0.9503 - c4_acc: 0.9069 - c5_acc: 0.7919 - c6_acc: 0.
6253 - c7_acc: 0.6394 - val_loss: 2.8446 - val_c1_loss: 0.1077
 - val_c2_loss: 0.0252 - val_c3_loss: 0.1075 - val_c4_loss: 0.
1569 - val_c5_loss: 0.5513 - val_c6_loss: 1.0119 - val_c7_loss:
0.8841 - val_c1_acc: 0.9844 - val_c2_acc: 0.9906 - val_c3_acc: 0
.9719 - val_c4_acc: 0.9469 - val_c5_acc: 0.8500 - val_c6_acc: 0.
7094 - val_c7_acc: 0.7500
Epoch 21/30
 - 100s - loss: 4.0313 - c1_loss: 0.3163 - c2_loss: 0.0492 -
c3_loss: 0.1544 - c4_loss: 0.3106 - c5_loss: 0.7115 - c6_loss: 1
.3127 - c7_loss: 1.1766 - c1_acc: 0.9072 - c2_acc: 0.9872 -
c3_acc: 0.9531 - c4_acc: 0.9006 - c5_acc: 0.7981 - c6_acc: 0.
6491 - c7_acc: 0.6653 - val_loss: 3.5808 - val_c1_loss: 0.2962
 - val_c2_loss: 0.0152 - val_c3_loss: 0.0698 - val_c4_loss: 0.
2168 - val_c5_loss: 0.5082 - val_c6_loss: 1.2487 - val_c7_loss:
1.2258 - val_c1_acc: 0.9219 - val_c2_acc: 0.9969 - val_c3_acc: 0
.9812 - val_c4_acc: 0.9250 - val_c5_acc: 0.8719 - val_c6_acc: 0.
6469 - val_c7_acc: 0.6875
Epoch 22/30
```

```
 - 98s - loss: 4.0590 - c1_loss: 0.3216 - c2_loss: 0.0820 - c3_loss: 0.1624 - c4_loss: 0.3237 - c5_loss: 0.6825 - c6_loss: 1.3482 - c7_loss: 1.1385 - c1_acc: 0.9078 - c2_acc: 0.9844 - c3_acc: 0.9578 - c4_acc: 0.9059 - c5_acc: 0.8119 - c6_acc: 0.6419 - c7_acc: 0.6906 - val_loss: 2.7566 - val_c1_loss: 0.2258 - val_c2_loss: 0.0772 - val_c3_loss: 0.0690 - val_c4_loss: 0.1529 - val_c5_loss: 0.4257 - val_c6_loss: 0.9604 - val_c7_loss: 0.8456 - val_c1_acc: 0.9469 - val_c2_acc: 0.9906 - val_c3_acc: 0.9844 - val_c4_acc: 0.9625 - val_c5_acc: 0.8656 - val_c6_acc: 0.7188 - val_c7_acc: 0.7719
Epoch 23/30
 - 98s - loss: 3.6878 - c1_loss: 0.2846 - c2_loss: 0.0369 - c3_loss: 0.1198 - c4_loss: 0.2573 - c5_loss: 0.5977 - c6_loss: 1.2321 - c7_loss: 1.1594 - c1_acc: 0.9163 - c2_acc: 0.9900 - c3_acc: 0.9656 - c4_acc: 0.9125 - c5_acc: 0.8291 - c6_acc: 0.6712 - c7_acc: 0.6919 - val_loss: 2.5361 - val_c1_loss: 0.1473 - val_c2_loss: 0.0134 - val_c3_loss: 0.0657 - val_c4_loss: 0.1412 - val_c5_loss: 0.4315 - val_c6_loss: 0.9275 - val_c7_loss: 0.8095 - val_c1_acc: 0.9563 - val_c2_acc: 0.9969 - val_c3_acc: 0.9844 - val_c4_acc: 0.9531 - val_c5_acc: 0.8719 - val_c6_acc: 0.7562 - val_c7_acc: 0.7312
Epoch 24/30
 - 99s - loss: 3.5475 - c1_loss: 0.2712 - c2_loss: 0.0498 - c3_loss: 0.1342 - c4_loss: 0.2276 - c5_loss: 0.5861 - c6_loss: 1.2106 - c7_loss: 1.0681 - c1_acc: 0.9200 - c2_acc: 0.9903 - c3_acc: 0.9644 - c4_acc: 0.9297 - c5_acc: 0.8278 - c6_acc: 0.6747 - c7_acc: 0.7025 - val_loss: 2.4579 - val_c1_loss: 0.1320 - val_c2_loss: 0.0669 - val_c3_loss: 0.1226 - val_c4_loss: 0.2241 - val_c5_loss: 0.3439 - val_c6_loss: 0.8417 - val_c7_loss: 0.7267 - val_c1_acc: 0.9563 - val_c2_acc: 0.9906 - val_c3_acc: 0.9812 - val_c4_acc: 0.9437 - val_c5_acc: 0.9125 - val_c6_acc: 0.7562 - val_c7_acc: 0.7750
Epoch 25/30
 - 157s - loss: 3.3484 - c1_loss: 0.2657 - c2_loss: 0.0370 - c3_loss: 0.1294 - c4_loss: 0.2447 - c5_loss: 0.5424 - c6_loss: 1.1732 - c7_loss: 0.9559 - c1_acc: 0.9263 - c2_acc: 0.9906 - c3_acc: 0.9625 - c4_acc: 0.9241 - c5_acc: 0.8375 - c6_acc: 0.
```

```
6925 - c7_acc: 0.7288 - val_loss: 2.6507 - val_c1_loss: 0.1098
 - val_c2_loss: 0.0140 - val_c3_loss: 0.0751 - val_c4_loss: 0.
1695 - val_c5_loss: 0.4860 - val_c6_loss: 0.9551 - val_c7_loss:
0.8412 - val_c1_acc: 0.9719 - val_c2_acc: 0.9969 - val_c3_acc: 0
.9750 - val_c4_acc: 0.9563 - val_c5_acc: 0.8625 - val_c6_acc: 0.
7438 - val_c7_acc: 0.7750
Epoch 26/30
 - 159s - loss: 3.6183 - c1_loss: 0.2775 - c2_loss: 0.0433 -
c3_loss: 0.1177 - c4_loss: 0.2698 - c5_loss: 0.6097 - c6_loss: 1
.2262 - c7_loss: 1.0742 - c1_acc: 0.9172 - c2_acc: 0.9878 -
c3_acc: 0.9647 - c4_acc: 0.9153 - c5_acc: 0.8278 - c6_acc: 0.
6731 - c7_acc: 0.6956 - val_loss: 2.6332 - val_c1_loss: 0.1909
 - val_c2_loss: 0.0145 - val_c3_loss: 0.0891 - val_c4_loss: 0.
1433 - val_c5_loss: 0.4153 - val_c6_loss: 0.8953 - val_c7_loss:
0.8848 - val_c1_acc: 0.9469 - val_c2_acc: 1.0000 - val_c3_acc: 0
.9781 - val_c4_acc: 0.9531 - val_c5_acc: 0.8750 - val_c6_acc: 0.
7656 - val_c7_acc: 0.7219
Epoch 27/30
 - 167s - loss: 3.3414 - c1_loss: 0.2519 - c2_loss: 0.0351 -
c3_loss: 0.1179 - c4_loss: 0.2452 - c5_loss: 0.5585 - c6_loss: 1
.1702 - c7_loss: 0.9625 - c1_acc: 0.9228 - c2_acc: 0.9916 -
c3_acc: 0.9606 - c4_acc: 0.9247 - c5_acc: 0.8391 - c6_acc: 0.
6819 - c7_acc: 0.7306 - val_loss: 2.4821 - val_c1_loss: 0.1374
 - val_c2_loss: 0.0163 - val_c3_loss: 0.0689 - val_c4_loss: 0.
1771 - val_c5_loss: 0.4120 - val_c6_loss: 0.9200 - val_c7_loss:
0.7504 - val_c1_acc: 0.9594 - val_c2_acc: 0.9969 - val_c3_acc: 0
.9750 - val_c4_acc: 0.9437 - val_c5_acc: 0.8875 - val_c6_acc: 0.
7531 - val_c7_acc: 0.7906
Epoch 28/30
 - 143s - loss: 3.1834 - c1_loss: 0.2554 - c2_loss: 0.0360 -
c3_loss: 0.0936 - c4_loss: 0.2062 - c5_loss: 0.5236 - c6_loss: 1
.0707 - c7_loss: 0.9980 - c1_acc: 0.9275 - c2_acc: 0.9903 -
c3_acc: 0.9725 - c4_acc: 0.9381 - c5_acc: 0.8556 - c6_acc: 0.
7069 - c7_acc: 0.7269 - val_loss: 2.3469 - val_c1_loss: 0.1293
 - val_c2_loss: 0.0307 - val_c3_loss: 0.0467 - val_c4_loss: 0.
1292 - val_c5_loss: 0.3628 - val_c6_loss: 0.7724 - val_c7_loss:
0.8758 - val_c1_acc: 0.9688 - val_c2_acc: 0.9938 - val_c3_acc: 0
```

```
.9906 - val_c4_acc: 0.9563 - val_c5_acc: 0.9156 - val_c6_acc: 0.7969 - val_c7_acc: 0.7688
Epoch 29/30
 - 152s - loss: 3.1178 - c1_loss: 0.2217 - c2_loss: 0.0314 - c3_loss: 0.0987 - c4_loss: 0.2077 - c5_loss: 0.5032 - c6_loss: 1.1178 - c7_loss: 0.9373 - c1_acc: 0.9350 - c2_acc: 0.9919 - c3_acc: 0.9675 - c4_acc: 0.9347 - c5_acc: 0.8538 - c6_acc: 0.6972 - c7_acc: 0.7422 - val_loss: 2.5644 - val_c1_loss: 0.1898 - val_c2_loss: 0.0227 - val_c3_loss: 0.0596 - val_c4_loss: 0.1743 - val_c5_loss: 0.4425 - val_c6_loss: 0.8760 - val_c7_loss: 0.7995 - val_c1_acc: 0.9375 - val_c2_acc: 0.9938 - val_c3_acc: 0.9844 - val_c4_acc: 0.9500 - val_c5_acc: 0.8719 - val_c6_acc: 0.7312 - val_c7_acc: 0.7562
Epoch 30/30
 - 153s - loss: 2.9808 - c1_loss: 0.2352 - c2_loss: 0.0231 - c3_loss: 0.0892 - c4_loss: 0.2090 - c5_loss: 0.5024 - c6_loss: 1.0300 - c7_loss: 0.8918 - c1_acc: 0.9278 - c2_acc: 0.9953 - c3_acc: 0.9712 - c4_acc: 0.9334 - c5_acc: 0.8550 - c6_acc: 0.7163 - c7_acc: 0.7431 - val_loss: 2.8172 - val_c1_loss: 0.1609 - val_c2_loss: 0.0304 - val_c3_loss: 0.0572 - val_c4_loss: 0.1624 - val_c5_loss: 0.4353 - val_c6_loss: 1.0561 - val_c7_loss: 0.9148 - val_c1_acc: 0.9531 - val_c2_acc: 0.9906 - val_c3_acc: 0.9875 - val_c4_acc: 0.9531 - val_c5_acc: 0.8688 - val_c6_acc: 0.7375 - val_c7_acc: 0.7500
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 41 45]
 [21 55 52 46 39 56 40]
 [18 54 45 40 57 59 35]
 [ 4 54 37 62 57 33 54]
 [26 43 43 55 34 58 54]
 [ 3 53 47 54 33 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 55]
 [ 4 64 33 55 56 44 59]
 [14 47 39 50 64 36 37]
 [19 52 54 54 58 59 46]]
key 云
key L
key M
key Z
key E
key A
key E
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 4
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 2
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 O
209 key Q
210 key 冀
211 key Z
212 key 2
213 key Q
214 key R
215 key D
216 key U
217 key 赣
218 key G
219 key 8
220 key K
221 key Z
222 key 5
223 key 6
224 key 粤
225 key M
226 key P
227 key P
228 key T
229 key U
230 key F
231 predict_plate_str type : <class 'list'>
232 predict_plate_str
```

```
 [['云', 'L', 'M', 'Z', 'E', 'A', 'E'], ['琼', 'Q', 'M', 'F', '8
', 'R', '9'], ['湘', 'P', 'E', '9', 'S', 'U', '4'], ['冀', 'P
', '6', 'X', 'S', '2', 'P'], ['陕', 'C', 'C', 'Q', '3', 'T', 'P
'], ['渝', 'N', 'G', 'P', '2', '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
', 'Q'], ['冀', 'Z', '2', 'Q', 'R', 'D', 'U'], ['赣', 'G', '8
', 'K', 'Z', '5', '6'], ['粤', 'M', 'P', 'P', 'T', 'U', 'F']]
################plt results################

Process finished with exit code 0

```