**airplane** http://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/airplane10.png

**automobile** http://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/automobile10.png

**bird**  http://www.cs.toronto.edu/~kriz/cifar-10-sample/bird1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/bird2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/bird3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/bird4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/bird5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/bird6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/bird7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/bird8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/bird9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/bird10.png

**cat** http://www.cs.toronto.edu/~kriz/cifar-10-sample/cat1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/cat2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/cat3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/cat4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/cat5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/cat6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/cat7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/cat8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/cat9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/cat10.png

**deer**  http://www.cs.toronto.edu/~kriz/cifar-10-sample/deer1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/deer2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/deer3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/deer4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/deer5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/deer6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/deer7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/deer8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/deer9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/deer10.png

**dog** http://www.cs.toronto.edu/~kriz/cifar-10-sample/dog1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/dog2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/dog3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/dog4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/dog5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/dog6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/dog7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/dog8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/dog9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/dog10.png

**frog**  http://www.cs.toronto.edu/~kriz/cifar-10-sample/frog1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/frog2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/frog3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/frog4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/frog5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/frog6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/frog7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/frog8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/frog9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/frog10.png

**horse** http://www.cs.toronto.edu/~kriz/cifar-10-sample/horse1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/horse2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/horse3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/horse4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/horse5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/horse6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/horse7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/horse8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/horse9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/horse10.png

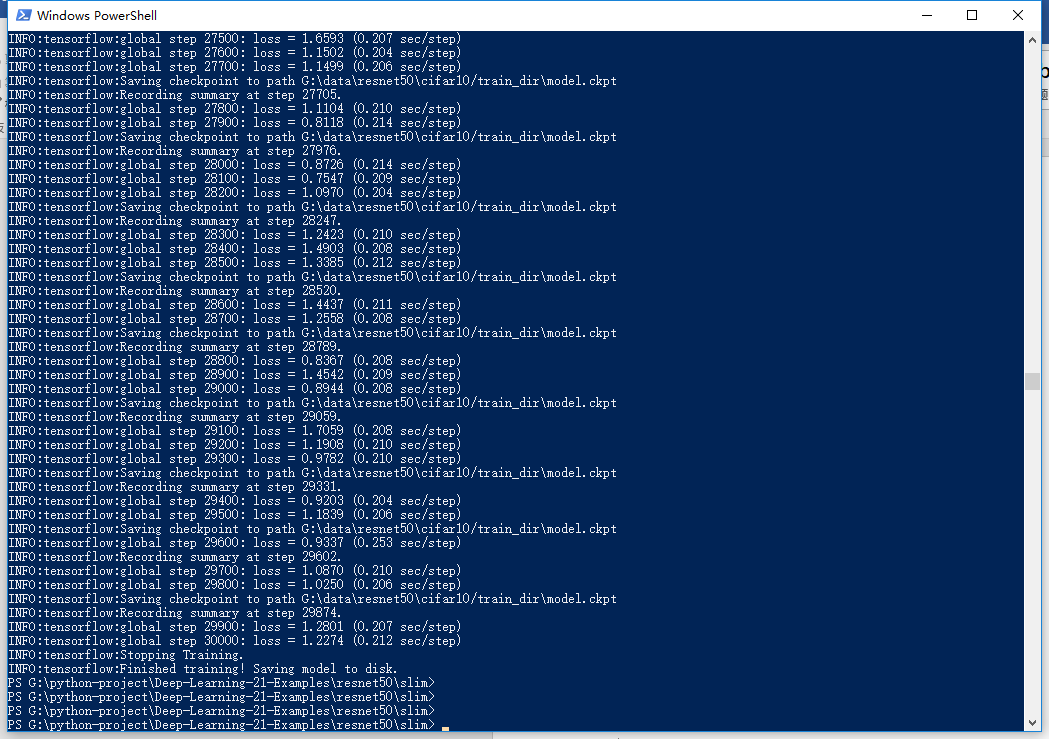
**ship**  http://www.cs.toronto.edu/~kriz/cifar-10-sample/ship1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/ship2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/ship3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/ship4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/ship5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/ship6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/ship7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/ship8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/ship9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/ship10.png

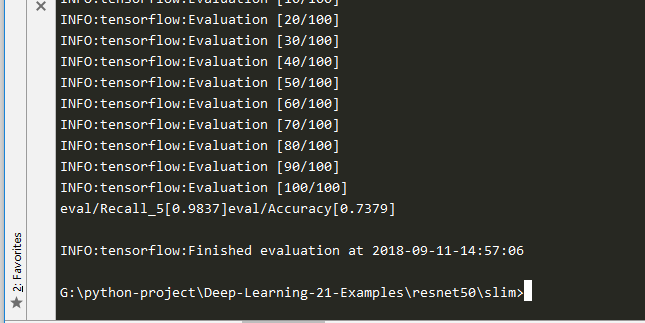
**truck** http://www.cs.toronto.edu/~kriz/cifar-10-sample/truck1.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/truck2.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/truck3.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/truck4.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/truck5.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/truck6.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/truck7.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/truck8.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/truck9.pnghttp://www.cs.toronto.edu/~kriz/cifar-10-sample/truck10.png

只训练最后一层

训练cifar10   
  
```  
python train\_image\_classifier.py --train\_dir=G:\data\resnet50\cifar10/train\_dir \  
 --dataset\_name=cifar10 --dataset\_split\_name=train \  
 --dataset\_dir=G:\data\resnet50\cifar10/data \  
 --model\_name=resnet\_v2\_50 \  
 --heckpoint\_path=G:\data\resnet50\cifar10/pretrained/resnet\_v2\_50.ckpt \  
 --checkpoint\_exclude\_scopes=resnet\_v2\_50/logits \  
 --trainable\_scopes=resnet\_v2\_50/logits \  
 --max\_number\_of\_steps=30000 \  
 --batch\_size=32 \  
 --learning\_rate=0.01 \  
 --save\_interval\_secs=60 \  
 --save\_summaries\_secs=60 \  
 --log\_every\_n\_steps=100 \  
 --optimizer=rmsprop \  
 --weight\_decay=0.00004  
```  
  
验证测试集 Run evaluation

python eval\_image\_classifier.py \  
 --checkpoint\_path=G:\data\resnet50\cifar10\train\_dir \  
 --eval\_dir=G:\data\resnet50\cifar10\eval\_dir \  
 --dataset\_name=cifar10 \  
 --dataset\_split\_name=test \  
 --dataset\_dir=G:\data\resnet50\cifar10\data \  
 --model\_name=resnet\_v2\_50

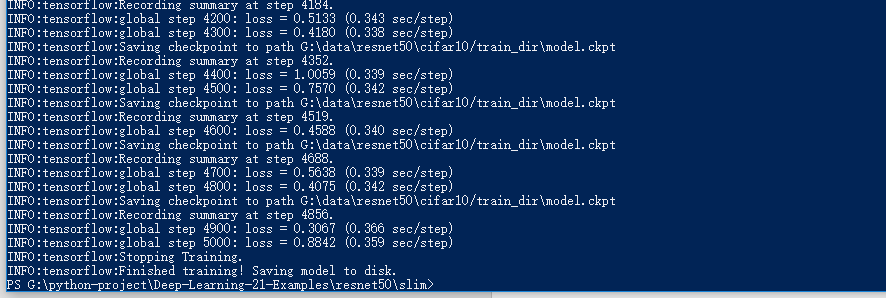


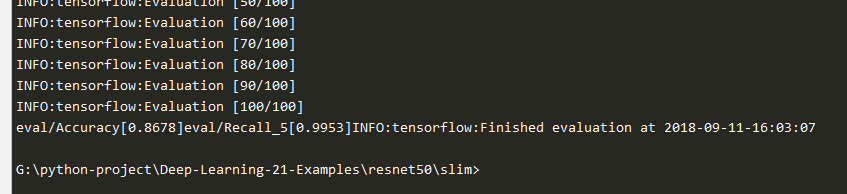


训练全部层

python train\_image\_classifier.py --train\_dir=G:\data\resnet50\cifar10/train\_dir --dataset\_name=cifar10 --dataset\_split\_name=train --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50 --checkpoint\_path=G:\data\resnet50\cifar10/pretrained/resnet\_v2\_50.ckpt --max\_number\_of\_steps=5000 --batch\_size=16 --learning\_rate=0.001 --save\_interval\_secs=60 --save\_summaries\_secs=60 --log\_every\_n\_steps=100 --optimizer=rmsprop --weight\_decay=0.00004 --checkpoint\_exclude\_scopes=resnet\_v2\_50/logits

python eval\_image\_classifier.py --checkpoint\_path=G:\data\resnet50\cifar10/train\_dir --eval\_dir=G:\data\resnet50\cifar10/eval\_dir --dataset\_name=cifar10 --dataset\_split\_name=test --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50



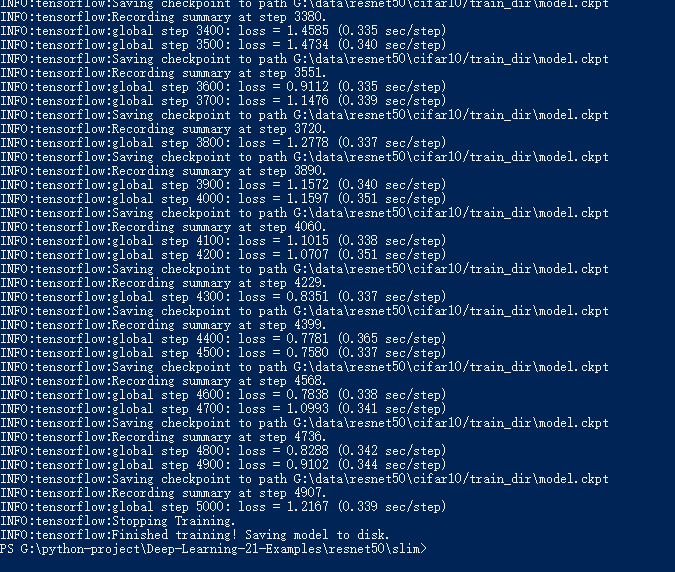


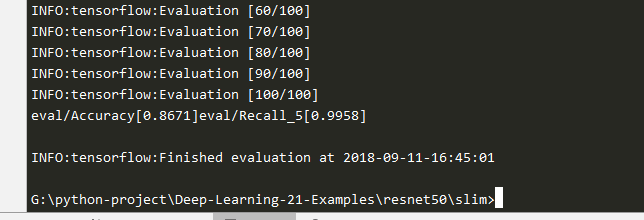
使用adma优化，训练全部层

python train\_image\_classifier.py --train\_dir=G:\data\resnet50\cifar10/train\_dir --dataset\_name=cifar10 --dataset\_split\_name=train --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50 --checkpoint\_path=G:\data\resnet50\cifar10/pretrained/resnet\_v2\_50.ckpt --max\_number\_of\_steps=5000 --batch\_size=16 --learning\_rate=0.001 --save\_interval\_secs=60 --save\_summaries\_secs=60 --log\_every\_n\_steps=100 --optimizer=adam --weight\_decay=0.00004 --checkpoint\_exclude\_scopes=resnet\_v2\_50/logits

python eval\_image\_classifier.py --checkpoint\_path=G:\data\resnet50\cifar10/train\_dir --eval\_dir=G:\data\resnet50\cifar10/eval\_dir --dataset\_name=cifar10 --dataset\_split\_n

ame=test --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50

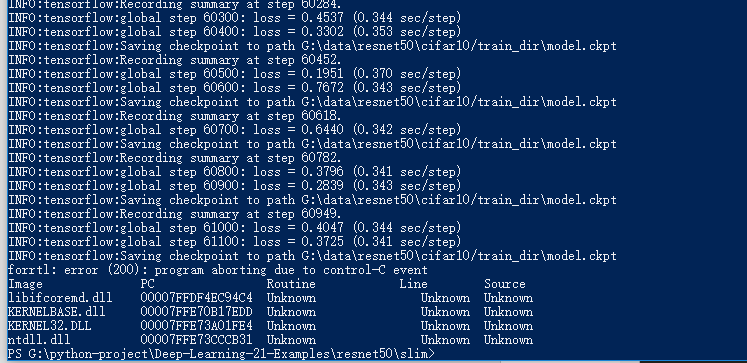


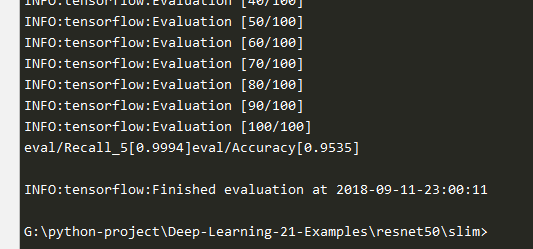


60000步，adma

python train\_image\_classifier.py --train\_dir=G:\data\resnet50\cifar10/train\_dir --dataset\_name=cifar10 --dataset\_split\_name=train --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50 --checkpoint\_path=G:\data\resnet50\cifar10/pretrained/resnet\_v2\_50.ckpt --max\_number\_of\_steps=100000 --batch\_size=16 --learning\_rate=0.001 --save\_interval\_secs=60 --save\_summaries\_secs=60 --log\_every\_n\_steps=100 --optimizer=adam --weight\_decay=0.00004 --checkpoint\_exclude\_scopes=resnet\_v2\_50/logits

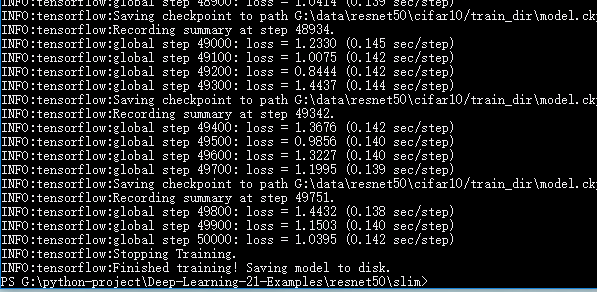
>python eval\_image\_classifier.py --checkpoint\_path=G:\data\resnet50\cifar10/train\_dir --eval\_dir=G:\data\resnet50\cifar10/eval\_dir --dataset\_name=cifar10 --dataset\_split\_name=test --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50



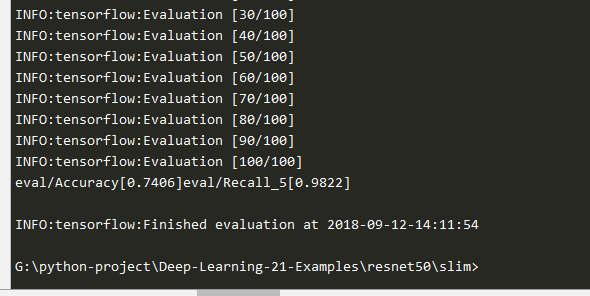


只训练最后一层

python train\_image\_classifier.py --train\_dir=G:\data\resnet50\cifar10/train\_dir --dataset\_name=cifar10 --dataset\_split\_name=train --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50 --checkpoint\_path=G:\data\resnet50\cifar10/pretrained/resnet\_v2\_50.ckpt --max\_number\_of\_steps=50000 --batch\_size=16 --learning\_rate=0.001 --save\_interval\_secs=60 --save\_summaries\_secs=60 --log\_every\_n\_steps=100 --optimizer=adam --weight\_decay=0.00004 --checkpoint\_exclude\_scopes=resnet\_v2\_50/logits --trainable\_scopes=resnet\_v2\_50/logits



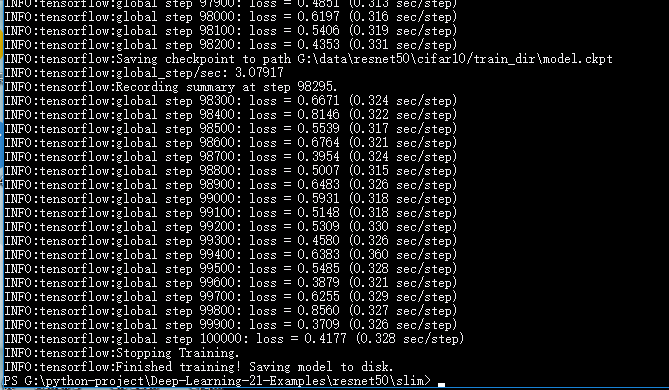
>python eval\_image\_classifier.py --checkpoint\_path=G:\data\resnet50\cifar10/train\_dir --eval\_dir=G:\data\resnet50\cifar10/eval\_dir --dataset\_name=cifar10 --dataset\_split\_name=test --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50



50000步，adma，优化全部层

python train\_image\_classifier.py --train\_dir=G:\data\resnet50\cifar10/train\_dir --dataset\_name=cifar10 --dataset\_split\_name=train --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50 --checkpoint\_path=G:\data\resnet50\cifar10/pretrained/resnet\_v2\_50.ckpt --max\_number\_of\_steps=100000 --batch\_size=16 --learning\_rate=0.1 --log\_every\_n\_steps=100 --optimizer=adam --weight\_decay=0.0001 --momentum=0.9 --checkpoint\_exclude\_scopes=resnet\_v2\_50/logits

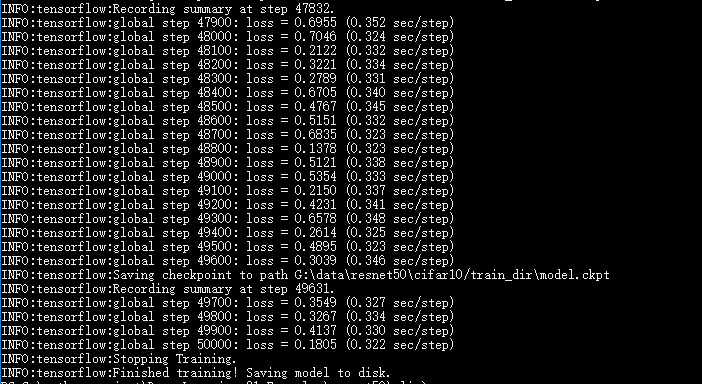
>python eval\_image\_classifier.py --checkpoint\_path=G:\data\resnet50\cifar10/train\_dir --eval\_dir=G:\data\resnet50\cifar10/eval\_dir --dataset\_name=cifar10 --dataset\_split\_name=test --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50



#######################################################

60000步，adma

python train\_image\_classifier.py --train\_dir=G:\data\resnet50\cifar10/train\_dir --dataset\_name=cifar10 --dataset\_split\_name=train --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50 --checkpoint\_path=G:\data\resnet50\cifar10/pretrained/resnet\_v2\_50.ckpt --max\_number\_of\_steps=50000 --batch\_size=16 --learning\_rate=0.001 --log\_every\_n\_steps=100 --optimizer=adam --checkpoint\_exclude\_scopes=resnet\_v2\_50/logits



>python eval\_image\_classifier.py --checkpoint\_path=G:\data\resnet50\cifar10/train\_dir --eval\_dir=G:\data\resnet50\cifar10/eval\_dir --dataset\_name=cifar10 --dataset\_split\_name=test --dataset\_dir=G:\data\resnet50\cifar10/data --model\_name=resnet\_v2\_50

