```
Python 3.6.5 |Anaconda custom (64-bit)| (default, Mar 29 2018, 13:32:41) [MSC v.1900 64
bit (AMD64)]
Type "copyright", "credits" or "license" for more information.

IPython 6.4.0 -- An enhanced Interactive Python.

Restarting kernel...
```

In [1]: runfile('E:/deep-learning_projects/pascal-voc-classification/src/main.py',
wdir='E:/deep-learning_projects/pascal-voc-classification/src')

```
Available device =  cuda
-------Epoch 1----------
100%|████████| 358/358 [05:36<00:00,  1.07it/s]
train_loss: 2.7819, train_avg_precision:0.778
100%|████████| 364/364 [02:00<00:00,  3.03it/s]
val_loss: 2.1037, val_avg_precision:0.868
-------Epoch 2----------
100%|████████| 358/358 [05:38<00:00,  1.06it/s]
train_loss: 2.0955, train_avg_precision:0.861
100%|████████| 364/364 [01:59<00:00,  3.05it/s]
val_loss: 2.1048, val_avg_precision:0.866
-------Epoch 3----------
100%|████████| 358/358 [05:44<00:00,  1.04it/s]
train_loss: 1.8666, train_avg_precision:0.885
100%|████████| 364/364 [02:02<00:00,  2.98it/s]
val_loss: 1.8274, val_avg_precision:0.887
-------Epoch 4----------
100%|████████| 358/358 [05:43<00:00,  1.04it/s]
train_loss: 1.6041, train_avg_precision:0.909
100%|████████| 364/364 [02:01<00:00,  2.99it/s]
val_loss: 1.8171, val_avg_precision:0.895
-------Epoch 5----------
100%|████████| 358/358 [05:41<00:00,  1.05it/s]
train_loss: 1.3729, train_avg_precision:0.932
100%|████████| 364/364 [01:56<00:00,  3.11it/s]
val_loss: 1.7336, val_avg_precision:0.906
-------Epoch 6----------
100%|████████| 358/358 [05:43<00:00,  1.04it/s]
train_loss: 1.1237, train_avg_precision:0.952
100%|████████| 364/364 [01:55<00:00,  3.14it/s]
val_loss: 1.7787, val_avg_precision:0.905
-------Epoch 7----------
100%|████████| 358/358 [05:43<00:00,  1.04it/s]
train_loss: 0.9344, train_avg_precision:0.964
100%|████████| 364/364 [01:57<00:00,  3.10it/s]
val_loss: 1.6622, val_avg_precision:0.916
-------Epoch 8----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 0.7461, train_avg_precision:0.979
100%|████████| 364/364 [01:57<00:00,  3.09it/s]
val_loss: 1.5785, val_avg_precision:0.923
-------Epoch 9----------
```
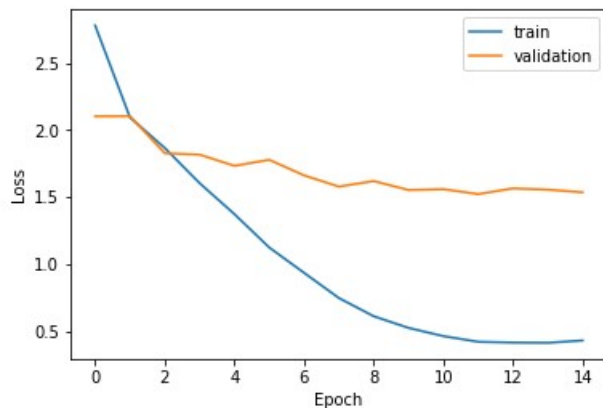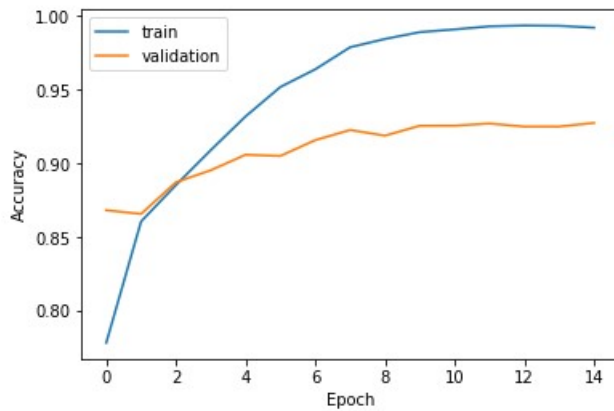
```
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 0.6100, train_avg_precision:0.985
100%|████████| 364/364 [01:58<00:00,  3.08it/s]
val_loss: 1.6196, val_avg_precision:0.919
-------Epoch 10----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 0.5231, train_avg_precision:0.989
100%|████████| 364/364 [01:58<00:00,  3.08it/s]
val_loss: 1.5531, val_avg_precision:0.926
-------Epoch 11----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 0.4617, train_avg_precision:0.991
100%|████████| 364/364 [01:58<00:00,  3.08it/s]
val_loss: 1.5592, val_avg_precision:0.926
-------Epoch 12----------
100%|████████| 358/358 [05:39<00:00,  1.05it/s]
train_loss: 0.4193, train_avg_precision:0.993
100%|████████| 364/364 [01:58<00:00,  3.07it/s]
val_loss: 1.5225, val_avg_precision:0.927
-------Epoch 13----------
100%|████████| 358/358 [05:41<00:00,  1.05it/s]
train_loss: 0.4134, train_avg_precision:0.994
100%|████████| 364/364 [01:58<00:00,  3.08it/s]
val_loss: 1.5648, val_avg_precision:0.925
-------Epoch 14----------
100%|████████| 358/358 [05:41<00:00,  1.05it/s]
train_loss: 0.4117, train_avg_precision:0.993
100%|████████| 364/364 [01:56<00:00,  3.14it/s]
val_loss: 1.5557, val_avg_precision:0.925
-------Epoch 15----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 0.4289, train_avg_precision:0.992
100%|████████| 364/364 [01:56<00:00,  3.13it/s]
val_loss: 1.5356, val_avg_precision:0.928
```
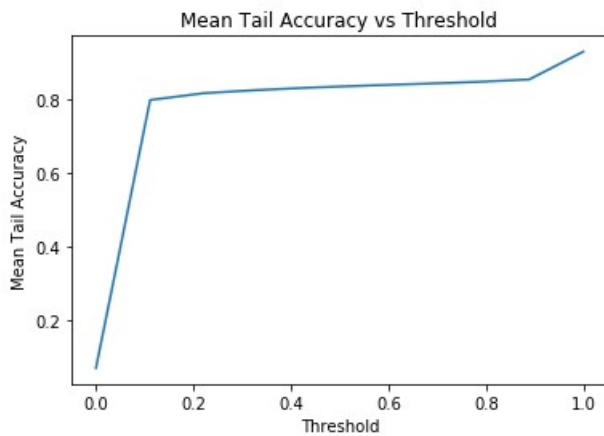
```
Evaluating model on test set
Loading best weights
100%|████████| 1941/1941 [12:09<00:00,  2.66it/s]
test_loss: 1.3569, test_avg_precision:0.938
```



```
In [2]: runfile('E:/deep-learning_projects/pascal-voc-classification/src/main.py',
wdir='E:/deep-learning_projects/pascal-voc-classification/src')
Reloaded modules: dataset, train, utils
Available device =  cuda
-------Epoch 1----------
100%|████████| 358/358 [05:35<00:00,  1.07it/s]
train_loss: 2.7855, train_avg_precision:0.780
100%|████████| 364/364 [01:59<00:00,  3.04it/s]
val_loss: 2.0760, val_avg_precision:0.865
-------Epoch 2----------
100%|████████| 358/358 [05:39<00:00,  1.05it/s]
train_loss: 2.0199, train_avg_precision:0.867
100%|████████| 364/364 [01:57<00:00,  3.09it/s]
val_loss: 2.4253, val_avg_precision:0.844
-------Epoch 3----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 1.7363, train_avg_precision:0.899
100%|████████| 364/364 [01:58<00:00,  3.07it/s]
val_loss: 1.9795, val_avg_precision:0.880
-------Epoch 4----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 1.4866, train_avg_precision:0.921
```
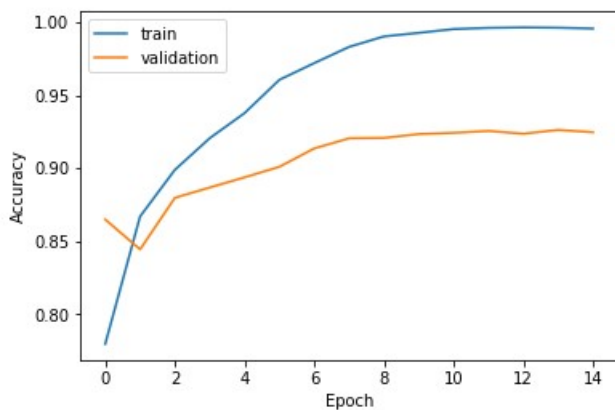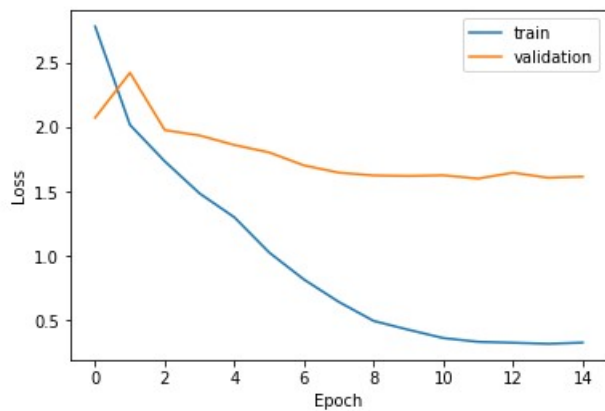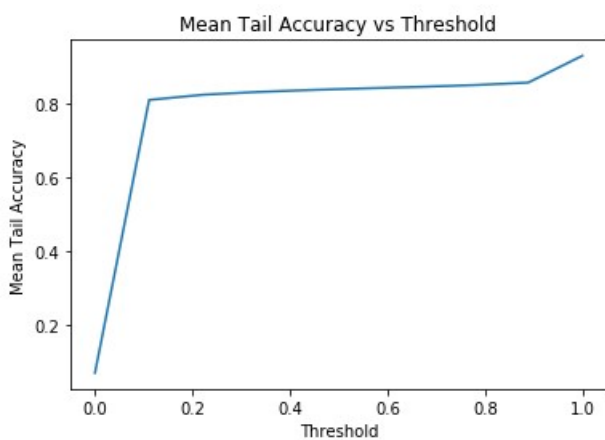
```
100%|████████| 364/364 [01:59<00:00,  3.06it/s]
val_loss: 1.9375, val_avg_precision:0.887
-------Epoch 5----------
100%|████████| 358/358 [05:43<00:00,  1.04it/s]
train_loss: 1.3005, train_avg_precision:0.938
100%|████████| 364/364 [01:58<00:00,  3.07it/s]
val_loss: 1.8635, val_avg_precision:0.894
-------Epoch 6----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 1.0265, train_avg_precision:0.961
100%|████████| 364/364 [01:58<00:00,  3.08it/s]
val_loss: 1.8054, val_avg_precision:0.901
-------Epoch 7----------
100%|████████| 358/358 [05:41<00:00,  1.05it/s]
train_loss: 0.8164, train_avg_precision:0.972
100%|████████| 364/364 [01:58<00:00,  3.06it/s]
val_loss: 1.7043, val_avg_precision:0.913
-------Epoch 8----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 0.6422, train_avg_precision:0.983
100%|████████| 364/364 [01:58<00:00,  3.07it/s]
val_loss: 1.6481, val_avg_precision:0.920
-------Epoch 9----------
100%|████████| 358/358 [05:39<00:00,  1.05it/s]
train_loss: 0.4944, train_avg_precision:0.990
100%|████████| 364/364 [01:58<00:00,  3.08it/s]
val_loss: 1.6265, val_avg_precision:0.921
-------Epoch 10----------
100%|████████| 358/358 [05:39<00:00,  1.05it/s]
train_loss: 0.4258, train_avg_precision:0.993
100%|████████| 364/364 [01:58<00:00,  3.08it/s]
val_loss: 1.6223, val_avg_precision:0.923
-------Epoch 11----------
100%|████████| 358/358 [05:39<00:00,  1.06it/s]
train_loss: 0.3611, train_avg_precision:0.995
100%|████████| 364/364 [01:56<00:00,  3.11it/s]
val_loss: 1.6276, val_avg_precision:0.924
-------Epoch 12----------
100%|████████| 358/358 [05:41<00:00,  1.05it/s]
train_loss: 0.3320, train_avg_precision:0.996
100%|████████| 364/364 [01:57<00:00,  3.11it/s]
val_loss: 1.6022, val_avg_precision:0.925
-------Epoch 13----------
100%|████████| 358/358 [05:41<00:00,  1.05it/s]
train_loss: 0.3249, train_avg_precision:0.996
100%|████████| 364/364 [01:57<00:00,  3.11it/s]
val_loss: 1.6479, val_avg_precision:0.924
-------Epoch 14----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 0.3165, train_avg_precision:0.996
100%|████████| 364/364 [01:56<00:00,  3.14it/s]
val_loss: 1.6089, val_avg_precision:0.926
-------Epoch 15----------
100%|████████| 358/358 [05:40<00:00,  1.05it/s]
train_loss: 0.3258, train_avg_precision:0.996
```

```
100%|████████| 364/364 [01:56<00:00,  3.13it/s]
val_loss: 1.6173, val_avg_precision:0.925
```



```
Evaluating model on test set
Loading best weights
100%|████████| 1941/1941 [12:40<00:00,  2.55it/s]
test_loss: 1.4294, test_avg_precision:0.938
```


Mean Tail Accuracy vs Threshold