

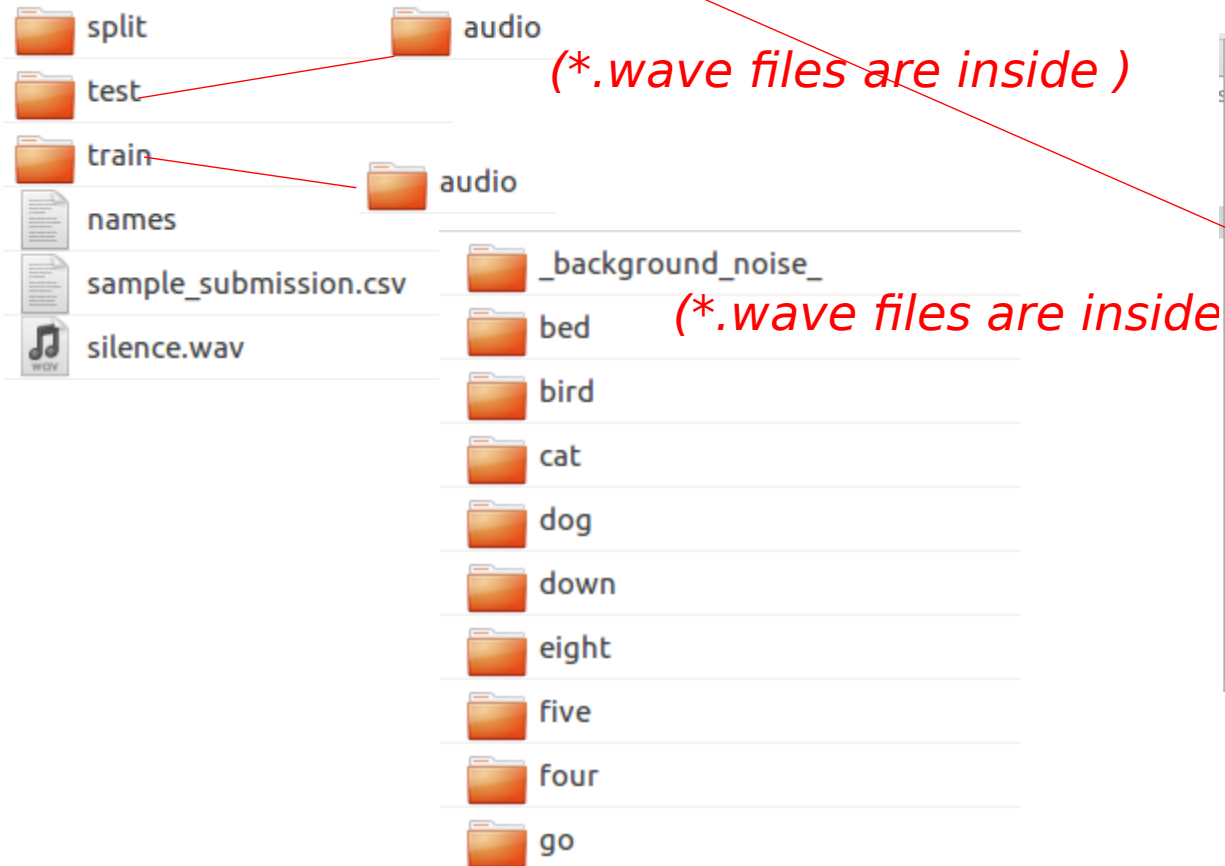
1. verify setup is

correct using pycharm as python IDE

- pytorch 0.3 / python 3.6

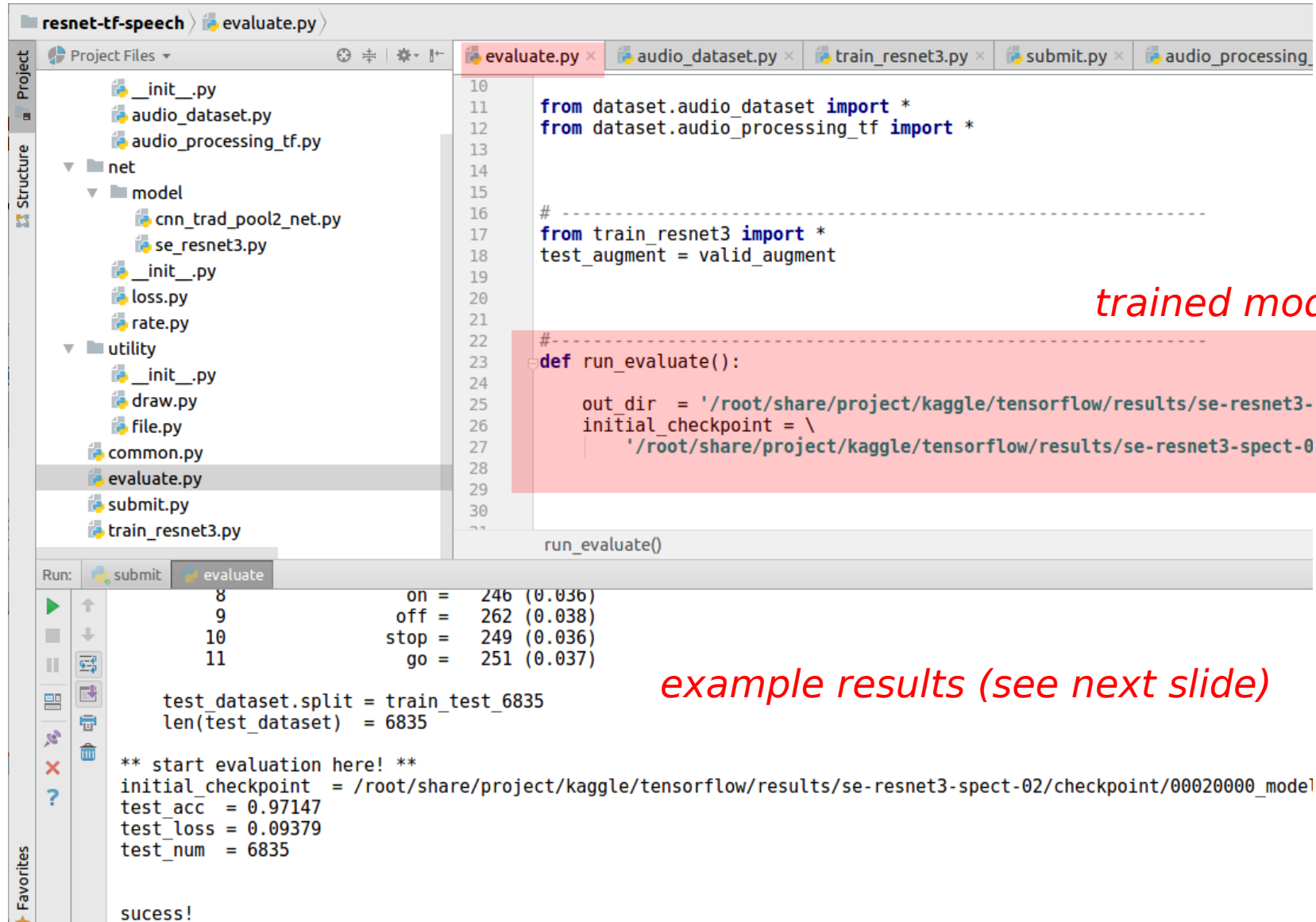
A. setup data

/root/share/project/kaggle/tensorflow/data



```
audio_dataset.py x evaluate.py x train_resnet3.py x submit.py x audio_pr
1  ## https://www.kaggle.com/c/tensorflow-speech-recognition-chatter
2  ## https://www.kaggle.com/davids1992/data-visualization-and-inves
3
4  from utility.file import *
5  from utility.draw import *
6
7
8  AUDIO_DIR = '/root/share/project/kaggle/tensorflow/data'
9  AUDIO_NUM_CLASSES = 12
10 AUDIO_NAMES = ['silence', 'unknown', 'yes', 'no', 'up', 'down', 'l
11 assert(AUDIO_NUM_CLASSES==len(AUDIO_NAMES))
12
13 AUDIO_SR = 16000 #sampling rate
14 AUDIO_LENGTH = 16000
15 sd.default.samplerate = AUDIO_SR
16
17
18 AUDIO_NOISES=[]
19 for file in ['dude_miaowing.wav', 'pink_noise.wav', 'white_nois
20             'exercise_bike.wav', 'running_tap.wav']:
21     audio_file = AUDIO_DIR + '/train/audio/_background_noise/' +
22     wave = librosa.core.load(audio_file, sr=AUDIO_SR)[0]
23     AUDIO_NOISES.append(wave)
24
```

B. run evaluation



The screenshot displays an IDE window for a project named 'resnet-tf-speech'. The left sidebar shows the project structure, including files like `_init_.py`, `audio_dataset.py`, `audio_processing_tf.py`, `net`, `model`, `cnn_trad_pool2_net.py`, `se_resnet3.py`, `_init_.py`, `loss.py`, `rate.py`, `utility`, `_init_.py`, `draw.py`, `file.py`, `common.py`, `evaluate.py`, `submit.py`, and `train_resnet3.py`. The main editor shows the `evaluate.py` file, which contains the following code:

```
10
11 from dataset.audio_dataset import *
12 from dataset.audio_processing_tf import *
13
14
15
16 # -----
17 from train_resnet3 import *
18 test_augment = valid_augment
19
20
21
22 #-----
23 def run_evaluate():
24
25     out_dir = '/root/share/project/kaggle/tensorflow/results/se-resnet3-
26     initial_checkpoint = \
27         '/root/share/project/kaggle/tensorflow/results/se-resnet3-spect-0
28
29
30
31 run_evaluate()
```

The bottom pane shows the output of the evaluation script, including a table of results and a success message:

```
Run: submit evaluate
8      on = 246 (0.036)
9      off = 262 (0.038)
10     stop = 249 (0.036)
11     go = 251 (0.037)

test_dataset.split = train_test_6835
len(test_dataset) = 6835

** start evaluation here! **
initial_checkpoint = /root/share/project/kaggle/tensorflow/results/se-resnet3-spect-02/checkpoint/00020000_model
test_acc = 0.97147
test_loss = 0.09379
test_num = 6835

sucess!
```

trained model

example results (see next slide)

make sure you get this!

```
initial_checkpoint = /root/share/project/kaggle/tensorflow/results/se-resnet3-spect-02/checkpoint/00020000_model.pth  
<class 'net.model.se_resnet3.SeResNet3'>
```

```
** dataset setting **
```

```
time = 0.00 min
```

```
num_ids = 6835
```

```
num_classes = 12
```

| | | |
|----|-----------|--------------|
| 0 | silence = | 0 (0.000) |
| 1 | unknown = | 4268 (0.624) |
| 2 | yes = | 256 (0.037) |
| 3 | no = | 252 (0.037) |
| 4 | up = | 272 (0.040) |
| 5 | down = | 253 (0.037) |
| 6 | left = | 267 (0.039) |
| 7 | right = | 259 (0.038) |
| 8 | on = | 246 (0.036) |
| 9 | off = | 262 (0.038) |
| 10 | stop = | 249 (0.036) |
| 11 | go = | 251 (0.037) |

```
test_dataset.split = train_test_6835
```

```
len(test_dataset) = 6835
```

```
** start evaluation here! **
```

```
initial_checkpoint = /root/share/project/kaggle/tensorflow/results/se-resnet3-spect-02/checkpoint/00020000_model.pth
```

```
test_acc = 0.97147
```

```
test_loss = 0.09379
```

```
test_num = 6835
```

```
|
```

```
sucess!
```

C. for csv submission, see submit.py

submission.csv

3 days ago by [Heng CherKeng](#)

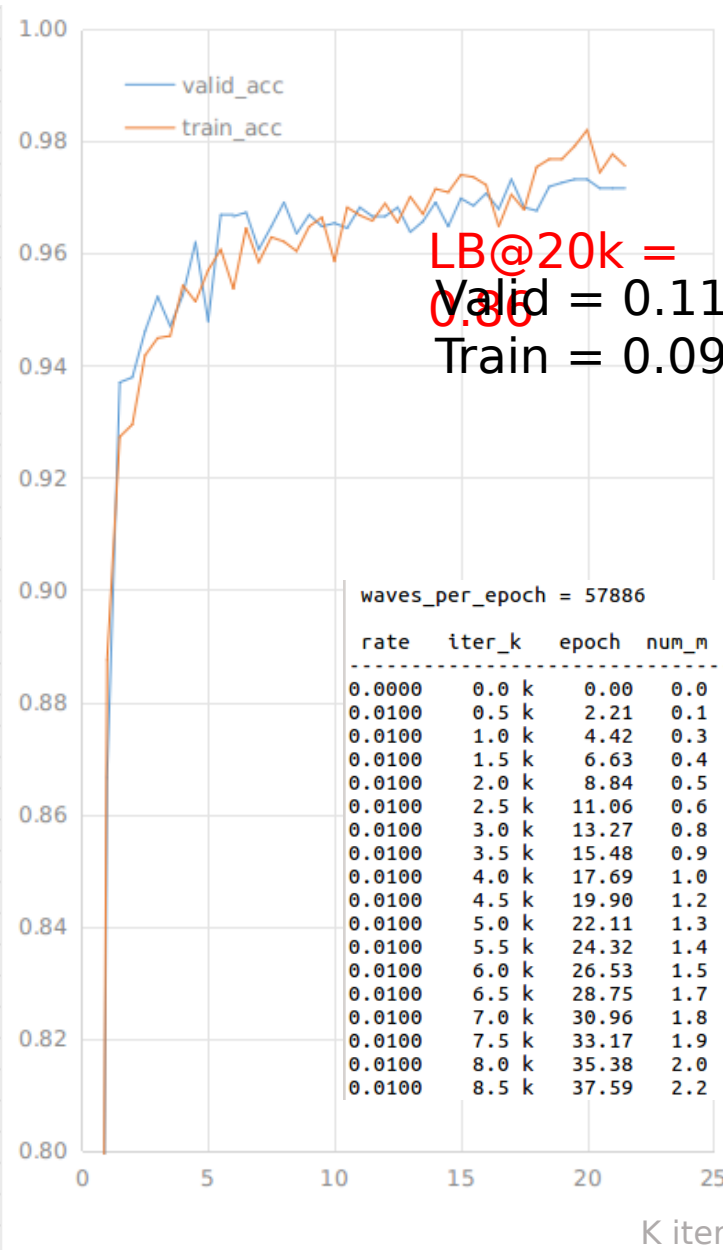
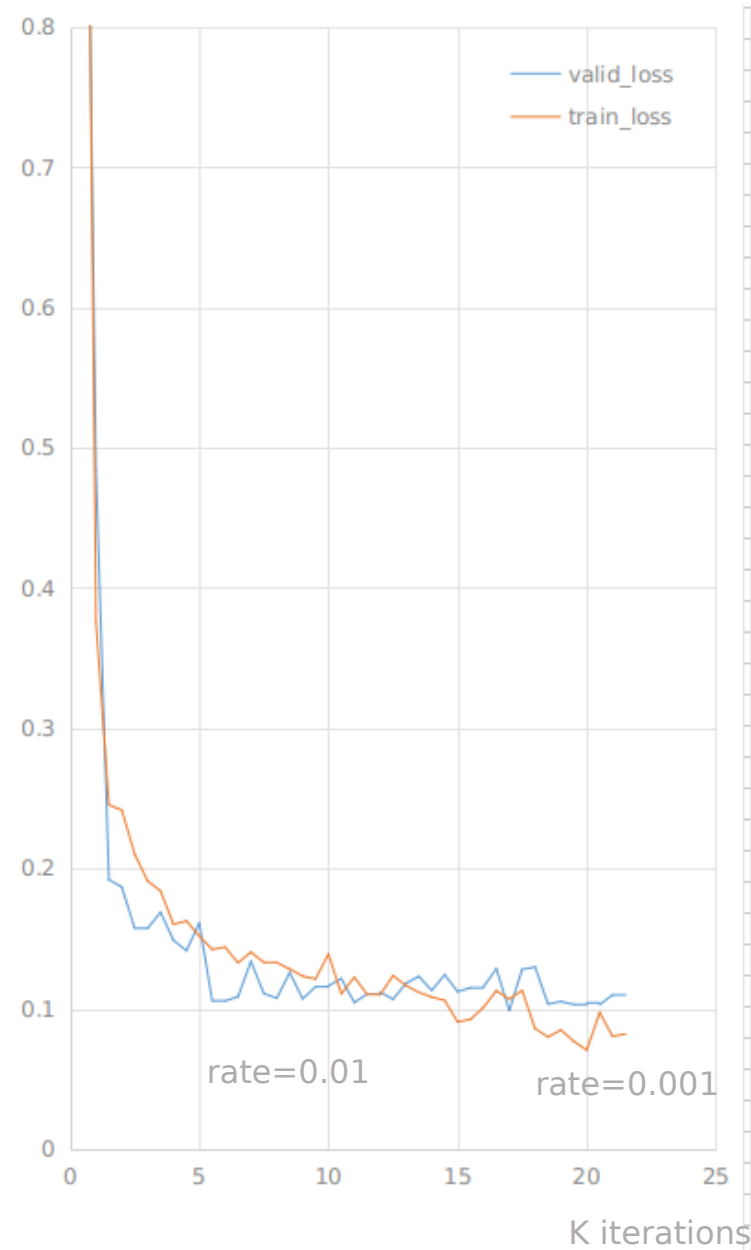
0.86



/root/share/project/kaggle/tensorflow/results/se-resnet3-spect-02/submit

D. for training, see train_resnet3.py

/root/share/project/kaggle/tensorflow/results/se-resnet3-spect-02/checkpoint/00020000_model.pth



Valid = 0.1130 0.9688
Train = 0.0988 0.9719

waves_per_epoch = 57886

| rate | iter_k | epoch | num_m | valid_loss/acc | | train_loss/acc | | batch_loss/acc | | time |
|--------|--------|-------|-------|----------------|--------|----------------|--------|----------------|--------|-------------|
| 0.0000 | 0.0 k | 0.00 | 0.0 | 2.4853 | 0.0808 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0 hr 00 min |
| 0.0100 | 0.5 k | 2.21 | 0.1 | 1.1928 | 0.5332 | 1.3250 | 0.4996 | 1.0544 | 0.6133 | 0 hr 01 min |
| 0.0100 | 1.0 k | 4.42 | 0.3 | 0.4840 | 0.8665 | 0.3761 | 0.8875 | 0.4057 | 0.8711 | 0 hr 02 min |
| 0.0100 | 1.5 k | 6.63 | 0.4 | 0.1921 | 0.9370 | 0.2454 | 0.9273 | 0.3459 | 0.8945 | 0 hr 03 min |
| 0.0100 | 2.0 k | 8.84 | 0.5 | 0.1868 | 0.9379 | 0.2417 | 0.9295 | 0.2735 | 0.9102 | 0 hr 04 min |
| 0.0100 | 2.5 k | 11.06 | 0.6 | 0.1574 | 0.9461 | 0.2103 | 0.9418 | 0.2307 | 0.9375 | 0 hr 06 min |
| 0.0100 | 3.0 k | 13.27 | 0.8 | 0.1575 | 0.9523 | 0.1911 | 0.9449 | 0.2082 | 0.9336 | 0 hr 07 min |
| 0.0100 | 3.5 k | 15.48 | 0.9 | 0.1688 | 0.9470 | 0.1840 | 0.9453 | 0.1646 | 0.9492 | 0 hr 08 min |
| 0.0100 | 4.0 k | 17.69 | 1.0 | 0.1489 | 0.9526 | 0.1603 | 0.9543 | 0.1255 | 0.9648 | 0 hr 09 min |
| 0.0100 | 4.5 k | 19.90 | 1.2 | 0.1415 | 0.9620 | 0.1627 | 0.9514 | 0.1444 | 0.9531 | 0 hr 11 min |
| 0.0100 | 5.0 k | 22.11 | 1.3 | 0.1612 | 0.9479 | 0.1519 | 0.9570 | 0.1685 | 0.9531 | 0 hr 12 min |
| 0.0100 | 5.5 k | 24.32 | 1.4 | 0.1058 | 0.9669 | 0.1424 | 0.9607 | 0.1294 | 0.9688 | 0 hr 13 min |
| 0.0100 | 6.0 k | 26.53 | 1.5 | 0.1056 | 0.9666 | 0.1440 | 0.9537 | 0.1208 | 0.9688 | 0 hr 14 min |
| 0.0100 | 6.5 k | 28.75 | 1.7 | 0.1087 | 0.9673 | 0.1328 | 0.9645 | 0.1358 | 0.9570 | 0 hr 15 min |
| 0.0100 | 7.0 k | 30.96 | 1.8 | 0.1339 | 0.9607 | 0.1404 | 0.9584 | 0.0958 | 0.9766 | 0 hr 17 min |
| 0.0100 | 7.5 k | 33.17 | 1.9 | 0.1109 | 0.9648 | 0.1331 | 0.9629 | 0.1499 | 0.9414 | 0 hr 18 min |
| 0.0100 | 8.0 k | 35.38 | 2.0 | 0.1076 | 0.9691 | 0.1330 | 0.9621 | 0.0753 | 0.9844 | 0 hr 19 min |
| 0.0100 | 8.5 k | 37.59 | 2.2 | 0.1259 | 0.9635 | 0.1283 | 0.9604 | 0.1998 | 0.9414 | 0 hr 20 min |