


GPU available: False, used: False
 TPU available: False, using: 0 TPU cores
 IPU available: False, using: 0 IPUs

	Name	Type	Params
0	conv1	Conv2d	130
1	pool	MaxPool2d	0
2	conv2	Conv2d	1.8 K
3	layer_1	Linear	26.3 K
4	layer_2	Linear	3.8 K
5	layer_3	Linear	510
6	loss	CrossEntropyLoss	0


32.5 K Trainable params
 0 Non-trainable params
 32.5 K Total params
 0.130 Total estimated model params size (MB)

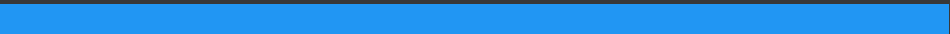
Validation sanity check: 0%  0/2 [00:00<?, ?it/s]

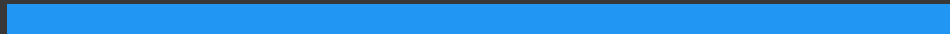
Epoch 19: 100% 


1876/1876 [00:26<00:00, 71.28it/s, loss=0.1, v_num=1, loss/val=0.106, accuracy/val=0.970, loss/train=0.0983, accuracy/train=0.974]

Validating: 96%  300/313 [00:02<00:00, 113.92it/s]

Validating: 100%  313/313 [00:02<00:00, 117.98it/s]

Validating: 96%  300/313 [00:02<00:00, 120.42it/s]


Validating: 100%  313/313 [00:02<00:00, 119.42it/s]

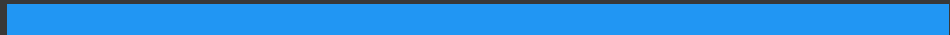
Validating: 100%  313/313 [00:02<00:00, 122.33it/s]


Validating: 100%  313/313 [00:02<00:00, 120.78it/s]

Validating: 100%  313/313 [00:02<00:00, 115.37it/s]


Validating: 100%  313/313 [00:02<00:00, 115.55it/s]

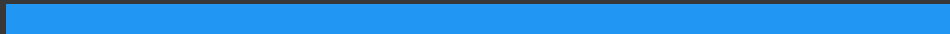
Validating: 100%  313/313 [00:02<00:00, 119.02it/s]

Validating: 100%  313/313 [00:02<00:00, 120.45it/s]

Validating: 100%  313/313 [00:02<00:00, 120.88it/s]

Validating: 100%  313/313 [00:03<00:00, 93.40it/s]

Validating: 100%  313/313 [00:03<00:00, 109.54it/s]

Validating: 100%  313/313 [00:02<00:00, 94.37it/s]

Validating: 100%  313/313 [00:02<00:00, 116.30it/s]

Validating: 96%  300/313 [00:02<00:00, 123.00it/s]

Validating: 100%  313/313 [00:02<00:00, 120.31it/s]

Validating: 100%  313/313 [00:02<00:00, 119.22it/s]

Validating: 100%  313/313 [00:02<00:00, 121.19it/s]

Validating: 100%  313/313 [00:02<00:00, 117.16it/s]

Testing: 100%  313/313 [00:02<00:00, 125.68it/s]

 DATALOADER:0 TEST RESULTS

{'accuracy/test': 0.9732000231742859, 'loss/test': 0.09686305373907089}

 [{'loss/test': 0.09686305373907089, 'accuracy/test': 0.9732000231742859}]

The tensorboard extension is already loaded. To reload it, use:


`%reload_ext tensorboard`

Reusing TensorBoard on port 6006 (pid 389), started 0:21:59 ago. (Use '!kill 389' to kill it.)

GPU available: False, used: False
 TPU available: False, using: 0 TPU cores
 IPU available: False, using: 0 IPUs
 Missing logger folder: ./lightning_logs/convolutional_network_q2

	Name	Type	Params
0	conv1	Conv2d	130
1	pool	MaxPool2d	0
2	conv2	Conv2d	1.8 K
3	layer_1	Linear	26.3 K
4	layer_2	Linear	3.8 K
5	layer_3	Linear	510
6	dropout	Dropout	0
7	loss	CrossEntropyLoss	0


32.5 K Trainable params
 0 Non-trainable params
 32.5 K Total params
 0.130 Total estimated model params size (MB)

Validation sanity check: 0%  0/2 [00:00<?, ?it/s]

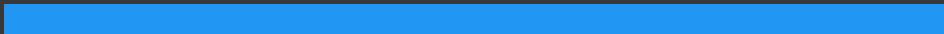
Epoch 19: 100% 

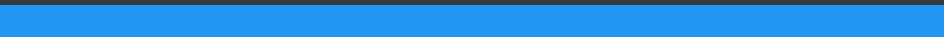
1876/1876 [00:27<00:00, 68.17it/s, loss=0.205, v_num=0, loss/val=0.131, accuracy/val=0.964, loss/train=0.199, accuracy/train=0.950]

Validating: 100%  313/313 [00:02<00:00, 126.72it/s]

Validating: 96%  300/313 [00:02<00:00, 117.52it/s]

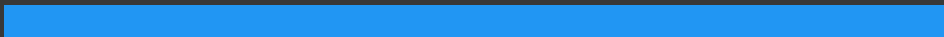
Validating: 96%  300/313 [00:02<00:00, 115.75it/s]


Validating: 100%  313/313 [00:02<00:00, 125.06it/s]

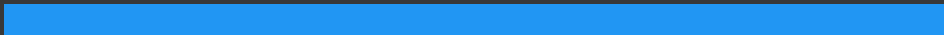
Validating: 96%  300/313 [00:02<00:00, 122.47it/s]

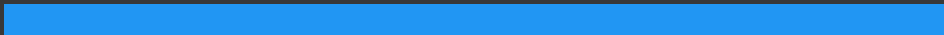
Validating: 100%  313/313 [00:02<00:00, 121.25it/s]

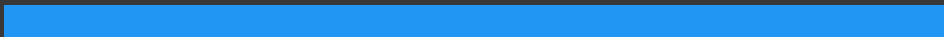
Validating: 100%  313/313 [00:02<00:00, 108.78it/s]


Validating: 100%  313/313 [00:02<00:00, 109.90it/s]

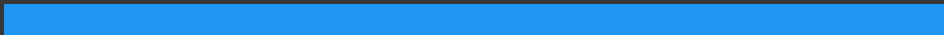
Validating: 100%  313/313 [00:02<00:00, 112.95it/s]

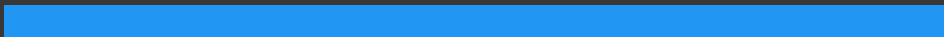
Validating: 100%  313/313 [00:02<00:00, 101.36it/s]

Validating: 100%  313/313 [00:02<00:00, 110.38it/s]

Validating: 100%  313/313 [00:02<00:00, 113.57it/s]

Validating: 100%  313/313 [00:02<00:00, 110.55it/s]

Validating: 100%  313/313 [00:02<00:00, 111.29it/s]

Validating: 100%  313/313 [00:02<00:00, 112.07it/s]

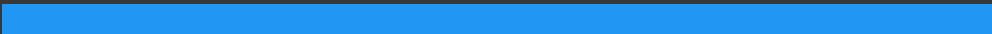
The tensorboard extension is already loaded. To reload it, use:

```
Reusing TensorBoard on port 6006 (pid 389), started 0:31:10 ago. (Use '!kill 389' to kill it.)
```

GPU available: False, used: False
 TPU available: False, using: 0 TPU cores
 IPU available: False, using: 0 IPUs
 Missing logger folder: ./lightning_logs/convolutional_network_q3

	Name	Type	Params
0	conv1	Conv2d	130
1	pool	MaxPool2d	0
2	conv2	Conv2d	1.8 K
3	batch2D	BatchNorm2d	28
4	layer_1	Linear	26.3 K
5	batch1D	BatchNorm1d	150
6	layer_2	Linear	3.8 K
7	layer_3	Linear	510
8	loss	CrossEntropyLoss	0

32.7 K Trainable params
 0 Non-trainable params
 32.7 K Total params
 0.131 Total estimated model params size (MB)

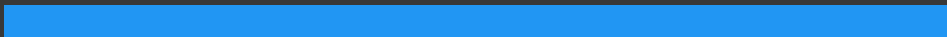
Validation sanity check: 0%  0/2 [00:00<?, ?it/s]

Epoch 19: 100% 

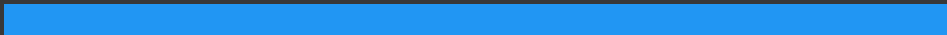
1876/1876 [00:26<00:00, 71.18it/s, loss=0.109, v_num=0, loss/val=0.108, accuracy/val=0.970, loss/train=0.101, accuracy/train=0.973]

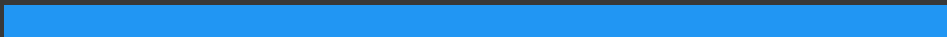
Validating: 100%  313/313 [00:02<00:00, 113.83it/s]

Validating: 96%  300/313 [00:02<00:00, 125.22it/s]

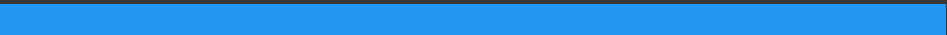
Validating: 100%  313/313 [00:02<00:00, 118.92it/s]

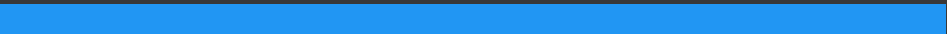
Validating: 100%  313/313 [00:02<00:00, 117.64it/s]

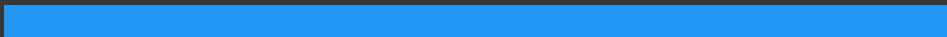
Validating: 100%  313/313 [00:02<00:00, 111.91it/s]

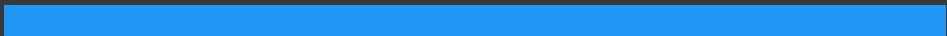
Validating: 100%  313/313 [00:02<00:00, 118.95it/s]

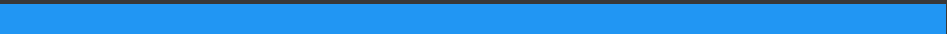
Validating: 96%  300/313 [00:02<00:00, 120.37it/s]

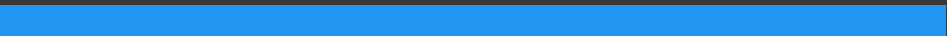
Validating: 96%  300/313 [00:02<00:00, 120.50it/s]

Validating: 96%  300/313 [00:02<00:00, 121.34it/s]

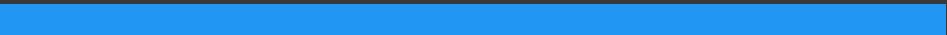
Validating: 100%  313/313 [00:02<00:00, 117.30it/s]

Validating: 100%  313/313 [00:02<00:00, 125.51it/s]

Validating: 96%  300/313 [00:02<00:00, 124.90it/s]

Validating: 96%  300/313 [00:02<00:00, 125.72it/s]

Validating: 96%  300/313 [00:02<00:00, 127.55it/s]

Validating: 96%  300/313 [00:02<00:00, 127.91it/s]

The tensorboard extension is already loaded. To reload it, use:

```
Reusing TensorBoard on port 6006 (pid 389), started 0:39:57 ago. (Use '!kill 389' to kill it.)
```

GPU available: False, used: False
 TPU available: False, using: 0 TPU cores
 IPU available: False, using: 0 IPUs

	Name	Type	Params
0	conv1	Conv2d	130
1	pool	MaxPool2d	0
2	conv2	Conv2d	1.8 K
3	layer_1	Linear	26.3 K
4	layer_2	Linear	3.8 K
5	layer_3	Linear	510
6	loss	CrossEntropyLoss	0


32.5 K Trainable params
 0 Non-trainable params
 32.5 K Total params
 0.130 Total estimated model params size (MB)

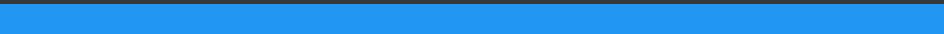
Validation sanity check: 0%  0/2 [00:00<?, ?it/s]

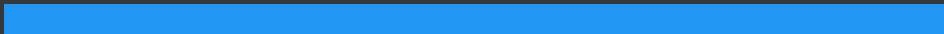
Epoch 19: 100% 

1876/1876 [00:30<00:00, 61.26it/s, loss=0.078, v_num=3, loss/val=0.143, accuracy/val=0.957, loss/train=0.129, accuracy/train=0.960]

Validating: 96%  300/313 [00:02<00:00, 120.85it/s]

Validating: 100%  313/313 [00:02<00:00, 120.65it/s]

Validating: 96%  300/313 [00:02<00:00, 121.57it/s]

Validating: 100%  313/313 [00:02<00:00, 121.33it/s]

Validating: 100%  313/313 [00:02<00:00, 118.55it/s]

Validating: 100%  313/313 [00:02<00:00, 119.88it/s]

Validating: 100%  313/313 [00:02<00:00, 119.11it/s]

Validating: 100%  313/313 [00:02<00:00, 124.08it/s]

Validating: 96%  300/313 [00:02<00:00, 121.61it/s]

Validating: 100%  313/313 [00:02<00:00, 123.60it/s]

Validating: 100%  313/313 [00:02<00:00, 117.21it/s]

Validating: 96%  300/313 [00:02<00:00, 122.48it/s]

Validating: 96%  300/313 [00:02<00:00, 118.50it/s]

Validating: 100%  313/313 [00:02<00:00, 127.36it/s]

Validating: 100%  313/313 [00:02<00:00, 126.02it/s]

Validating: 100%  313/313 [00:02<00:00, 123.18it/s]

Validating: 96%  300/313 [00:02<00:00, 118.14it/s]

Validating: 96%  300/313 [00:02<00:00, 120.23it/s]

Validating: 100%  313/313 [00:02<00:00, 120.22it/s]

Validating: 100%  313/313 [00:02<00:00, 125.28it/s]

Testing: 100%  313/313 [00:02<00:00, 124.46it/s]

 DATALOADER:0 TEST RESULTS

{'accuracy/test': 0.958299994468689, 'loss/test': 0.1301647126674652}

 [{'loss/test': 0.1301647126674652, 'accuracy/test': 0.958299994468689}]

The tensorboard extension is already loaded. To reload it, use:


`%reload_ext tensorboard`

Reusing TensorBoard on port 6006 (pid 389), started 0:49:33 ago. (Use '!kill 389' to kill it.)


```
GPU available: False, used: False
TPU available: False, using: 0 TPU cores
IPU available: False, using: 0 IPU's
```


	Name	Type	Params
0	conv1	Conv2d	40
1	batchnorm	BatchNorm2d	8
2	pool	MaxPool2d	0
3	conv2	Conv2d	518
4	conv3	Conv2d	3.0 K
5	batchnorm2	BatchNorm2d	48
6	conv4	Conv2d	10.8 K
7	layer_1	Linear	3.8 K
8	dropout	Dropout	0
9	layer_2	Linear	5.7 K
10	layer_3	Linear	760
11	loss	CrossEntropyLoss	0

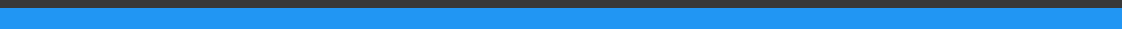
```
-----
24.8 K    Trainable params
0         Non-trainable params
24.8 K    Total params
0.099     Total estimated model params size (MB)
```

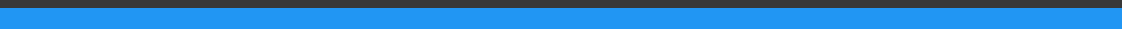
Validation sanity check: 100%  2/2 [00:00<00:00, 8.05it/s]

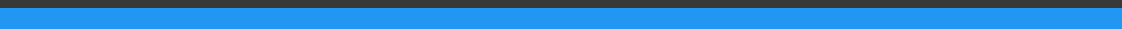
```
/usr/local/lib/python3.7/dist-packages/pytorch_lightning/trainer/data_loading.py:662: UserWarning: Your `val_dataloader` has `shuffle=True`
category=UserWarning,
```

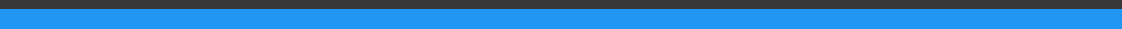
Epoch 19: 100%  1875/1875 [00:58<00:00, 32.01it/s, loss=0.185, v_num=1, loss/val=0.150, accuracy/val=0.975, loss/train=0.174, accuracy/train=0.963]

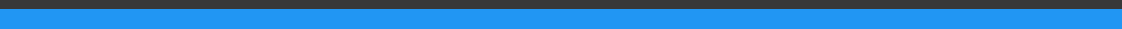
Validating: 100%  375/375 [00:03<00:00, 109.73it/s]

Validating: 100%  375/375 [00:03<00:00, 111.69it/s]

Validating: 100%  375/375 [00:03<00:00, 106.33it/s]

Validating: 100%  375/375 [00:03<00:00, 106.88it/s]


Validating: 100%  375/375 [00:03<00:00, 103.31it/s]

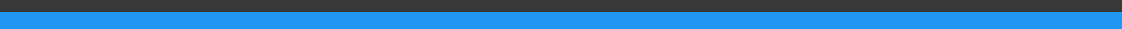
Validating: 100%  375/375 [00:04<00:00, 79.07it/s]


Validating: 100%  375/375 [00:03<00:00, 110.40it/s]

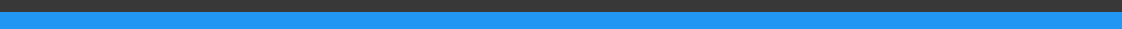
Validating: 100%  375/375 [00:03<00:00, 107.83it/s]

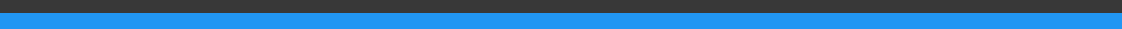
Validating: 100%  375/375 [00:03<00:00, 106.56it/s]

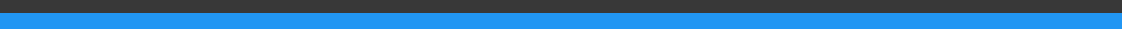
Validating: 100%  375/375 [00:03<00:00, 106.71it/s]

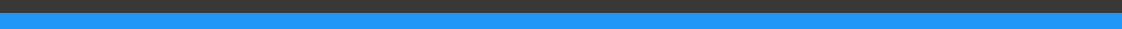
Validating: 100%  375/375 [00:03<00:00, 106.27it/s]

Validating: 100%  375/375 [00:03<00:00, 109.42it/s]

Validating: 100%  375/375 [00:03<00:00, 102.54it/s]

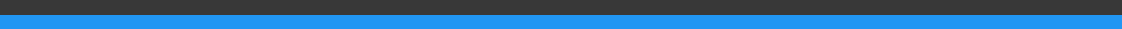
Validating: 100%  375/375 [00:03<00:00, 104.81it/s]

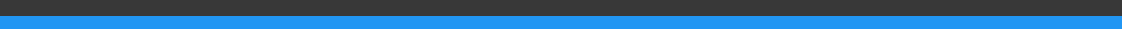
Validating: 100%  375/375 [00:03<00:00, 102.97it/s]

Validating: 100%  375/375 [00:03<00:00, 107.83it/s]

Validating: 100%  375/375 [00:03<00:00, 111.36it/s]

Validating: 100%  375/375 [00:03<00:00, 109.82it/s]

Validating: 100%  375/375 [00:03<00:00, 109.25it/s]

Validating: 100%  375/375 [00:03<00:00, 103.73it/s]

Testing: 100%  313/313 [00:02<00:00, 113.52it/s]

```
-----
DATA LOADER:0 TEST RESULTS
```

```
{'accuracy/test': 0.9805999994277954, 'loss/test': 0.11862890422344208}
```

```
[{'loss/test': 0.11862890422344208, 'accuracy/test': 0.9805999994277954}]
```

```
The tensorboard extension is already loaded. To reload it, use:
```

```
%reload_ext tensorboard
```

```
Reusing TensorBoard on port 6006 (pid 389), started 1:32:05 ago. (Use '!kill 389' to kill it.)
```