

# Practical: ResNet for image classification

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In this assignment, you will get some hands-on experiences in using a convolutional neural network, in particular the ResNet-18.

For this assignment, you are highly recommended to use google Colab to set up your experimental environment. Colab is a free online platform to enable write and execute arbitrary python code through the browser. It is a hosted Jupyter notebook service that requires no setup to use, while providing free access to computing resources including GPUs. For detailed information, please have a look at [here](https://colab.research.google.com/) (<https://colab.research.google.com/>).

Ps: The codes we use in this assignment are partly taken from [this](https://github.com/kuangliu/pytorch-cifar) (<https://github.com/kuangliu/pytorch-cifar>) Github repository. If you are interested in the full version with more examples of other CNN architectures, please check the repo.

### Assignment 3 -- Get a running ResNet for image classification

Step 1: Upload the file 'Practical2.ipynb' to your google drive and then open it through colab.

Step 2: In Nestor, you will find the PyTorch implementation of the ResNet18. Upzip the file and upload the folder to your google drive.

Step 3: Mount your Google Drive to the colab notebook through the code snippet below.

In [1]:

```
from google.colab import drive
drive.mount('/content/gdrive')
```

Mounted at /content/gdrive

Step 4: Execute the code! Before running it, make sure to set **Runtime > change Runtime type to 'GPU'**. Otherwise it may take forever to run the code.

In [ ]:

```
python "/content/gdrive/MyDrive/Computing Science/Block 2A/ISC/Practical2/ResNet18_cifar10/main.py" #change 'your_project_folder' to your project folder
```

==> Preparing data..

Downloading <https://www.cs.toronto.edu/~kriz/cifar-10-python.tar.gz> to ./data/cifar-10-python.tar.gz

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Extracting ./data/cifar-10-python.tar.gz to ./data

Files already downloaded and verified

==> Building model..

Epoch: 0

[=====>] Step: 1s850ms | Tot: 1m25s | Loss: 1.917 | Acc: 31.110% (15555/50000) 391/391  
[=====>] Step: 63ms | Tot: 5s895ms | Loss: 1.541 | Acc: 42.280% (4228/10000) 100/100  
Saving..

Epoch: 1

[=====>] Step: 144ms | Tot: 1m23s | Loss: 1.459 | Acc: 46.226% (23113/50000) 391/391  
[=====>] Step: 53ms | Tot: 5s695ms | Loss: 1.385 | Acc: 49.890% (4989/10000) 100/100  
Saving..

Epoch: 2

[=====>] Step: 148ms | Tot: 1m23s | Loss: 1.222 | Acc: 55.780% (27890/50000) 391/391  
[=====>] Step: 54ms | Tot: 5s864ms | Loss: 1.271 | Acc: 55.760% (5576/10000) 100/100  
Saving..

Epoch: 3

[=====>] Step: 147ms | Tot: 1m23s | Loss: 1.042 | Acc: 62.886% (31443/50000) 391/391  
[=====>] Step: 54ms | Tot: 5s763ms | Loss: 1.277 | Acc: 56.590% (5659/10000) 100/100  
Saving..

Epoch: 4

[=====>] Step: 147ms | Tot: 1m23s | Loss: 0.904 | Acc: 68.120% (34060/50000) 391/391  
[=====>] Step: 55ms | Tot: 5s798ms | Loss: 0.973 | Acc: 67.450% (6745/10000) 100/100  
Saving..

Epoch: 5

[=====>] Step: 147ms | Tot: 1m23s | Loss: 0.792 | Acc: 72.114% (36057/50000) 391/391  
[=====>] Step: 57ms | Tot: 5s741ms | Loss: 0.814 | Acc: 71.510% (7151/10000) 100/100  
Saving..

Epoch: 6

[=====>] Step: 151ms | Tot: 1m23s | Loss: 0.694 | Acc: 75.756% (37878/50000) 391/391  
[=====>] Step: 84ms | Tot: 5s901ms | Loss: 0.823 | Acc: 71.550% (7155/10000) 100/100  
Saving..

Epoch: 7

[=====>] Step: 146ms | Tot: 1m23s | Loss: 0.619 | Acc: 78.720% (39360/50000) 391/391  
[=====>] Step:

p: 55ms | Tot: 5s685ms | Loss: 0.666 | Acc: 77.320% (7732/10000) 100/100  
Saving..

Epoch: 8

[=====>] Ste  
p: 151ms | Tot: 1m23s | Loss: 0.579 | Acc: 80.098% (40049/50000) 391/391  
[=====>] Ste  
p: 83ms | Tot: 5s829ms | Loss: 0.649 | Acc: 77.580% (7758/10000) 100/100  
Saving..

Epoch: 9

[=====>] Ste  
p: 151ms | Tot: 1m24s | Loss: 0.544 | Acc: 81.236% (40618/50000) 391/391  
[=====>] Ste  
p: 55ms | Tot: 5s828ms | Loss: 0.688 | Acc: 76.930% (7693/10000) 100/100

Step 5: Observe the results you got, e.g. the loss and accuracy for a certain epoch(iteration). Describe the results you got in terms of loss and accuracy as epoch increases.

*Your Answer:* We clearly notice that the accuracy increases by a few percent for every iteration of the Epoch. Between Epoch 0 and 1, we notice the biggest increase in accuracy, which is by 15 percent for the training step. However, we see that for each iteration, the accuracy difference between the 2 steps gets smaller and smaller (15%, then 9%, then 7% etc..). The difference in the later Epochs 7-9 starts to get a lot smaller and less significant than the earlier ones. Since this is true, we can state that this follows a logarithmic curve. This also makes sense with the amount of loss, since this also follows a logarithmic decrease with each iteration.

#### Assignment 4 -- Understand and tweak the codes

Read line by line and understand the codes as much as you can.

*Questions-Data:*

1. Briefly describe **Cifar10** dataset used in this implementation, incl. what kinds of images and the categories.
2. what are the **transformations** used in data augmentation? hint: check the function `transforms.Compose()`.

1. CIFAR10 dataset consists of 60000 32x32 colour images in 10 categories, these categories include: 'plane', 'car', 'bird', 'cat', 'deer', 'dog', 'frog', 'horse', 'ship', 'truck'. So each category will contain 6000 colour images.
2. `transforms.RandomCrop(32, padding=4)` - Takes a random 32x32 snippet of the original image and adds a 4x4 black pixel border to this snippet

`transforms.RandomHorizontalFlip` - There is a random probability that the original image gets flipped on the horizontal axis

`transforms.ToTensor()` - Converts an image with a pixel range of [0, 255] to a Tensor of shape (C x H x W) with a range [0.0, 1.0]

`transforms.Normalize((0.4914, 0.4822, 0.4465), (0.2023, 0.1994, 0.2010))` - Colour images have three channels (red, green, blue), The normalize function takes two tuples the first tuple corresponds to the mean values for the three channels and the second is the standard deviation for the three channels. The normalization helps get data within a range and reduces the skewness which helps learn faster and better

### Questions-Model:

1. What is the **optimizer**? what is the initial learning rate? You can change the value of the initial learning rate and check how it influence the model training (fast or slow convergence).
  2. Confirm the sizes of the feature maps after each convolution block. Try to print/display the feature maps. You will need library as 'matplotlib' or 'plotly' to visualize the images.
- 
1. The optimizer is the function that determines the attributes of the neural networks such as the learning rate to minimise certain errors. In this case, we are trying to minimize the loss function. The learning rate decides the amount of changes the updates take place at each training step. As we increase the initial learning rate for the epochs, we notice that through the Mini-batch SGD optimizer, this also results in an increase in the speed of convolution of the Epochs at each iteration. However, if we increase the initial learning rate by too much, this causes too drastic updates, and results in divergent behaviour. Also, if we decrease the initial learning rate by too much, the program would take ages to finish.
  2. We rerun the main.py however, this time we have added print statements to show the sizes of the feature maps and corresponding save statement to store the visualisation of the image (these can be found in the 'ResNet18\_cifar10/images' folder), this is done after each convolution block. This lets us confirm that the sizes of the feature maps are the same after each convolution block.

In [2]:

*#Question 4 Ouput:*

```
!python "/content/gdrive/MyDrive/Computing Science/Block 2A/ISC/Practical2/ResNet18_cifar10/main.py" #change 'your_project_folder' to your project folder
```

==> Preparing data..

Downloading <https://www.cs.toronto.edu/~kriz/cifar-10-python.tar.gz> to ./data/cifar-10-python.tar.gz

170499072it [00:02, 79086470.83it/s]

Extracting ./data/cifar-10-python.tar.gz to ./data

Files already downloaded and verified

==> Building model..

Epoch: 0

layer1: torch.Size([128, 64, 32, 32])

layer2: torch.Size([128, 128, 16, 16])

layer3: torch.Size([128, 256, 8, 8])

layer4: torch.Size([128, 512, 4, 4])

-----  
Feature batch shape: torch.Size([64, 3, 32, 32])

Labels batch shape: torch.Size([64])

iteration: 0

<Figure size 640x480 with 1 Axes>

Label: dog

layer1: torch.Size([128, 64, 32, 32])

layer2: torch.Size([128, 128, 16, 16])

layer3: torch.Size([128, 256, 8, 8])

layer4: torch.Size([128, 512, 4, 4])

-----  
Feature batch shape: torch.Size([64, 3, 32, 32])

Labels batch shape: torch.Size([64])

iteration: 1

<Figure size 640x480 with 1 Axes>

Label: frog

layer1: torch.Size([128, 64, 32, 32])

layer2: torch.Size([128, 128, 16, 16])

layer3: torch.Size([128, 256, 8, 8])

layer4: torch.Size([128, 512, 4, 4])

-----  
Feature batch shape: torch.Size([64, 3, 32, 32])

Labels batch shape: torch.Size([64])

iteration: 2

<Figure size 640x480 with 1 Axes>

Label: bird

layer1: torch.Size([128, 64, 32, 32])

layer2: torch.Size([128, 128, 16, 16])

layer3: torch.Size([128, 256, 8, 8])

layer4: torch.Size([128, 512, 4, 4])

-----  
Feature batch shape: torch.Size([64, 3, 32, 32])

Labels batch shape: torch.Size([64])

iteration: 3

<Figure size 640x480 with 1 Axes>

Label: dog

layer1: torch.Size([128, 64, 32, 32])

layer2: torch.Size([128, 128, 16, 16])

layer3: torch.Size([128, 256, 8, 8])

layer4: torch.Size([128, 512, 4, 4])

-----  
Feature batch shape: torch.Size([64, 3, 32, 32])

Labels batch shape: torch.Size([64])

iteration: 4

<Figure size 640x480 with 1 Axes>

Label: ship

layer1: torch.Size([128, 64, 32, 32])

layer2: torch.Size([128, 128, 16, 16])

```
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 5
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 6
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 7
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 8
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 9
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 10
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
```



```
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 11
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 12
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 13
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 14
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 15
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 16
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
```

```
-----  
Feature batch shape: torch.Size([64, 3, 32, 32])  
Labels batch shape: torch.Size([64])  
iteration: 17  
<Figure size 640x480 with 1 Axes>  
Label: horse  
layer1: torch.Size([128, 64, 32, 32])  
layer2: torch.Size([128, 128, 16, 16])  
layer3: torch.Size([128, 256, 8, 8])  
layer4: torch.Size([128, 512, 4, 4])  
-----  
Feature batch shape: torch.Size([64, 3, 32, 32])  
Labels batch shape: torch.Size([64])  
iteration: 18  
<Figure size 640x480 with 1 Axes>  
Label: dog  
layer1: torch.Size([128, 64, 32, 32])  
layer2: torch.Size([128, 128, 16, 16])  
layer3: torch.Size([128, 256, 8, 8])  
layer4: torch.Size([128, 512, 4, 4])  
-----  
Feature batch shape: torch.Size([64, 3, 32, 32])  
Labels batch shape: torch.Size([64])  
iteration: 19  
<Figure size 640x480 with 1 Axes>  
Label: dog  
layer1: torch.Size([128, 64, 32, 32])  
layer2: torch.Size([128, 128, 16, 16])  
layer3: torch.Size([128, 256, 8, 8])  
layer4: torch.Size([128, 512, 4, 4])  
-----  
Feature batch shape: torch.Size([64, 3, 32, 32])  
Labels batch shape: torch.Size([64])  
iteration: 20  
<Figure size 640x480 with 1 Axes>  
Label: car  
layer1: torch.Size([128, 64, 32, 32])  
layer2: torch.Size([128, 128, 16, 16])  
layer3: torch.Size([128, 256, 8, 8])  
layer4: torch.Size([128, 512, 4, 4])  
-----  
Feature batch shape: torch.Size([64, 3, 32, 32])  
Labels batch shape: torch.Size([64])  
iteration: 21  
<Figure size 640x480 with 1 Axes>  
Label: truck  
layer1: torch.Size([128, 64, 32, 32])  
layer2: torch.Size([128, 128, 16, 16])  
layer3: torch.Size([128, 256, 8, 8])  
layer4: torch.Size([128, 512, 4, 4])  
-----  
Feature batch shape: torch.Size([64, 3, 32, 32])  
Labels batch shape: torch.Size([64])  
iteration: 22  
<Figure size 640x480 with 1 Axes>  
Label: truck  
layer1: torch.Size([128, 64, 32, 32])  
layer2: torch.Size([128, 128, 16, 16])  
layer3: torch.Size([128, 256, 8, 8])  
layer4: torch.Size([128, 512, 4, 4])  
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 23
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 24
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 25
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 26
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 27
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 28
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
```

```
Labels batch shape: torch.Size([64])
iteration: 29
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 30
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 31
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 32
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 33
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 34
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
```

```
iteration: 35
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 36
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 37
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 38
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 39
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 40
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 41
```

```
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 42
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 43
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 44
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 45
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 46
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 47
<Figure size 640x480 with 1 Axes>
```

```
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 48
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 49
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 50
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 51
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 52
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 53
<Figure size 640x480 with 1 Axes>
Label: bird
```

```
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 54
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 55
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 56
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 57
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 58
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 59
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
```



```
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 60
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 61
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 62
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 63
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 64
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 65
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
```

```
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 66
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 67
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 68
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 69
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 70
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 71
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
```

```
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 72
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 73
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 74
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 75
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 76
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 77
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
```

```
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 78
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 79
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 80
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 81
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 82
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 83
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 84
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 85
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 86
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 87
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 88
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 89
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
```

```
Labels batch shape: torch.Size([64])
iteration: 90
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 91
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 92
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 93
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 94
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 95
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
```

```
iteration: 96
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 97
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 98
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 99
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 100
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 101
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 102
```

```
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 103
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 104
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 105
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 106
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 107
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 108
<Figure size 640x480 with 1 Axes>
```



```
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 109
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 110
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 111
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 112
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 113
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 114
<Figure size 640x480 with 1 Axes>
Label: car
```

```
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 115
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 116
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 117
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 118
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 119
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 120
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
```

```
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 121
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 122
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 123
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 124
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 125
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 126
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
```

```
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 127
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 128
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 129
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 130
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 131
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 132
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
```

```
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 133
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 134
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 135
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 136
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 137
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 138
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
```

```
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 139
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 140
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 141
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 142
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 143
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 144
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 145
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 146
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 147
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 148
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 149
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 150
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
```

```
Labels batch shape: torch.Size([64])
iteration: 151
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 152
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 153
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 154
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 155
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 156
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
```



```
iteration: 157
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 158
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 159
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 160
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 161
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 162
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 163
```

```
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 164
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 165
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 166
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 167
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 168
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 169
<Figure size 640x480 with 1 Axes>
```

```
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 170
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 171
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 172
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 173
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 174
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 175
<Figure size 640x480 with 1 Axes>
Label: truck
```

```
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 176
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 177
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 178
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 179
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 180
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 181
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
```

```
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 182
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 183
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 184
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 185
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 186
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 187
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
```

```
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 188
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 189
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 190
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 191
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 192
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 193
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
```

```
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 194
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 195
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 196
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 197
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 198
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 199
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
```

```
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 200
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 201
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 202
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 203
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 204
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 205
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```



```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 206
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 207
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 208
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 209
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 210
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 211
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
```

```
Labels batch shape: torch.Size([64])
iteration: 212
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 213
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 214
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 215
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 216
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 217
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
```

```
iteration: 218
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 219
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 220
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 221
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 222
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 223
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 224
```

```
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 225
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 226
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 227
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 228
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 229
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 230
<Figure size 640x480 with 1 Axes>
```

```
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 231
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 232
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 233
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 234
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 235
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 236
<Figure size 640x480 with 1 Axes>
Label: bird
```

```
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 237
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 238
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 239
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 240
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 241
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 242
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
```

```
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 243
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 244
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 245
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 246
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 247
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 248
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
```

```
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 249
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 250
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 251
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 252
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 253
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 254
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
```



```
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 255
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 256
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 257
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 258
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 259
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 260
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
```

```
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 261
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 262
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 263
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 264
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 265
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 266
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 267
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 268
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 269
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 270
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 271
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 272
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
```

```
Labels batch shape: torch.Size([64])
iteration: 273
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 274
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 275
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 276
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 277
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 278
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
```

```
iteration: 279
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 280
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 281
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 282
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 283
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 284
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 285
```

```
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 286
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 287
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 288
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 289
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 290
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 291
<Figure size 640x480 with 1 Axes>
```

```
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 292
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 293
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 294
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 295
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 296
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 297
<Figure size 640x480 with 1 Axes>
Label: dog
```

```
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 298
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 299
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 300
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 301
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 302
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 303
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
```



```
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 304
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 305
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 306
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 307
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 308
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 309
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
```

```
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 310
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 311
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 312
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 313
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 314
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 315
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
```

```
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 316
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 317
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 318
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 319
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 320
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 321
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
```

```
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 322
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 323
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 324
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 325
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 326
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 327
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 328
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 329
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 330
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 331
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 332
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 333
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

```
Feature batch shape: torch.Size([64, 3, 32, 32])
```

```
Labels batch shape: torch.Size([64])
iteration: 334
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 335
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 336
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 337
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 338
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 339
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
```

```
iteration: 340
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 341
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 342
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 343
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 344
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 345
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 346
```

```
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 347
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 348
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 349
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 350
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 351
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 352
<Figure size 640x480 with 1 Axes>
```



```
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 353
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 354
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 355
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 356
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 357
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 358
<Figure size 640x480 with 1 Axes>
Label: dog
```

```
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 359
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 360
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 361
<Figure size 640x480 with 1 Axes>
Label: ship
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 362
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 363
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 364
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
```

```
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 365
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 366
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 367
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 368
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 369
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 370
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
```

```
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 371
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 372
<Figure size 640x480 with 1 Axes>
Label: plane
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 373
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 374
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 375
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 376
<Figure size 640x480 with 1 Axes>
Label: bird
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
```

```
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 377
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 378
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 379
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 380
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 381
<Figure size 640x480 with 1 Axes>
Label: dog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 382
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
```

```
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 383
<Figure size 640x480 with 1 Axes>
Label: car
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 384
<Figure size 640x480 with 1 Axes>
Label: cat
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 385
<Figure size 640x480 with 1 Axes>
Label: frog
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 386
<Figure size 640x480 with 1 Axes>
Label: truck
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 387
<Figure size 640x480 with 1 Axes>
Label: horse
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
Feature batch shape: torch.Size([64, 3, 32, 32])
Labels batch shape: torch.Size([64])
iteration: 388
<Figure size 640x480 with 1 Axes>
Label: deer
layer1: torch.Size([128, 64, 32, 32])
layer2: torch.Size([128, 128, 16, 16])
layer3: torch.Size([128, 256, 8, 8])
layer4: torch.Size([128, 512, 4, 4])
-----
```

Feature batch shape: torch.Size([64, 3, 32, 32])

Labels batch shape: torch.Size([64])

iteration: 389

<Figure size 640x480 with 1 Axes>

Label: car

layer1: torch.Size([80, 64, 32, 32])

layer2: torch.Size([80, 128, 16, 16])

layer3: torch.Size([80, 256, 8, 8])

layer4: torch.Size([80, 512, 4, 4])

Feature batch shape: torch.Size([64, 3, 32, 32])

Labels batch shape: torch.Size([64])

iteration: 390

<Figure size 640x480 with 1 Axes>

Label: deer

[=====>] Step: 1s905ms | Tot: 1m48s | Loss: 1.789 | Acc: 33.552% (16776/50000) 391/391

layer1: torch.Size([100, 64, 32, 32])

layer2: torch.Size([100, 128, 16, 16])

layer3: torch.Size([100, 256, 8, 8])

layer4: torch.Size([100, 512, 4, 4])

layer1: torch.Size([100, 64, 32, 32])

layer2: torch.Size([100, 128, 16, 16])

layer3: torch.Size([100, 256, 8, 8])

layer4: torch.Size([100, 512, 4, 4])

layer1: torch.Size([100, 64, 32, 32])

layer2: torch.Size([100, 128, 16, 16])

layer3: torch.Size([100, 256, 8, 8])

layer4: torch.Size([100, 512, 4, 4])

layer1: torch.Size([100, 64, 32, 32])

layer2: torch.Size([100, 128, 16, 16])

layer3: torch.Size([100, 256, 8, 8])

layer4: torch.Size([100, 512, 4, 4])

layer1: torch.Size([100, 64, 32, 32])

layer2: torch.Size([100, 128, 16, 16])

layer3: torch.Size([100, 256, 8, 8])

layer4: torch.Size([100, 512, 4, 4])

layer1: torch.Size([100, 64, 32, 32])

layer2: torch.Size([100, 128, 16, 16])

layer3: torch.Size([100, 256, 8, 8])

layer4: torch.Size([100, 512, 4, 4])

layer1: torch.Size([100, 64, 32, 32])

layer2: torch.Size([100, 128, 16, 16])

layer3: torch.Size([100, 256, 8, 8])

layer4: torch.Size([100, 512, 4, 4])

layer1: torch.Size([100, 64, 32, 32])

layer2: torch.Size([100, 128, 16, 16])

layer3: torch.Size([100, 256, 8, 8])

layer4: torch.Size([100, 512, 4, 4])

layer1: torch.Size([100, 64, 32, 32])

layer2: torch.Size([100, 128, 16, 16])

layer3: torch.Size([100, 256, 8, 8])

layer4: torch.Size([100, 512, 4, 4])

-----



[illegible]

[illegible]

[illegible]



-----

[illegible]

```
layer2: torch.Size([100, 128, 16, 16])
layer3: torch.Size([100, 256, 8, 8])
layer4: torch.Size([100, 512, 4, 4])
```

```
layer1: torch.Size([100, 64, 32, 32])
layer2: torch.Size([100, 128, 16, 16])
layer3: torch.Size([100, 256, 8, 8])
layer4: torch.Size([100, 512, 4, 4])
```

```
layer1: torch.Size([100, 64, 32, 32])
layer2: torch.Size([100, 128, 16, 16])
layer3: torch.Size([100, 256, 8, 8])
layer4: torch.Size([100, 512, 4, 4])
```

```
layer1: torch.Size([100, 64, 32, 32])
layer2: torch.Size([100, 128, 16, 16])
layer3: torch.Size([100, 256, 8, 8])
layer4: torch.Size([100, 512, 4, 4])
```

```
layer1: torch.Size([100, 64, 32, 32])
layer2: torch.Size([100, 128, 16, 16])
layer3: torch.Size([100, 256, 8, 8])
layer4: torch.Size([100, 512, 4, 4])
```

```
layer1: torch.Size([100, 64, 32, 32])
layer2: torch.Size([100, 128, 16, 16])
layer3: torch.Size([100, 256, 8, 8])
layer4: torch.Size([100, 512, 4, 4])
```

```
[=====>] Step: 58ms | Tot: 5s846ms | Loss: 1.477 | Acc: 44.880% (4488/10000) 100/100
Saving..
```



**If you can not get your answers for any of the above questions, please also provide an explanation (e.g. the error messages you got). For a collection of certain questions, I will provide a solution/clarification.**