```
 1 E:\miniconda3\envs\pytorch\python.exe E:\desktop\
   DeepLearning\cat_vs_dog\resnet18_from_scratch.py
 2 Epoch 1/20
 3 ----------
 4 Training: 100%|          | 547/547 [01:22<00:00,  6.
   66it/s]
 5 Validating:   0%|           | 0/157 [00:00<?, ?it/s]
   Train Loss: 0.3177 Acc: 0.8534
 6 Validating: 100%|         | 157/157 [00:23<00:00,  6
   .70it/s]
 7 Val Loss: 0.2307 Acc: 0.8982
 8 Epoch 2/20
 9 ----------
10 Training: 100%|          | 547/547 [00:55<00:00,  9.
   89it/s]
11 Train Loss: 0.3144 Acc: 0.8567
12 Validating: 100%|         | 157/157 [00:22<00:00,  7
   .03it/s]
13 Val Loss: 0.2194 Acc: 0.9058
14 Training:   0%|           | 0/547 [00:00<?, ?it/s]
   Epoch 3/20
15 ----------
16 Training: 100%|          | 547/547 [00:54<00:00, 10.
   03it/s]
17 Validating:   0%|           | 0/157 [00:00<?, ?it/s]
   Train Loss: 0.2942 Acc: 0.8664
18 Validating: 100%|         | 157/157 [00:22<00:00,  7
   .04it/s]
19 Val Loss: 0.2031 Acc: 0.9122
20 Training:   0%|           | 0/547 [00:00<?, ?it/s]
   Epoch 4/20
21 ----------
22 Training: 100%|          | 547/547 [00:55<00:00,  9.
   94it/s]
23 Train Loss: 0.2896 Acc: 0.8673
24 Validating: 100%|         | 157/157 [00:22<00:00,  7
   .06it/s]
25 Val Loss: 0.2058 Acc: 0.9128
26 Training:   0%|           | 0/547 [00:00<?, ?it/s]
   Epoch 5/20
27 ----------
```

```
28 Training: 100%|████████████| 547/547 [00:54<00:00,  9.
   96it/s]
29 Validating:   0%|          | 0/157 [00:00<?, ?it/s]
   Train Loss: 0.2801 Acc: 0.8740
30 Validating: 100%|████████| 157/157 [00:24<00:00,  6
   .46it/s]
31 Val Loss: 0.2169 Acc: 0.9052
32 Epoch 6/20
33 ----------
34 Training: 100%|████████████| 547/547 [00:56<00:00,  9.
   60it/s]
35 Train Loss: 0.2734 Acc: 0.8773
36 Validating: 100%|████████| 157/157 [00:22<00:00,  6
   .92it/s]
37 Val Loss: 0.1939 Acc: 0.9174
38 Training:   0%|          | 0/547 [00:00<?, ?it/s]
   Epoch 7/20
39 ----------
40 Training: 100%|████████████| 547/547 [00:55<00:00,  9.
   81it/s]
41 Validating:   0%|          | 0/157 [00:00<?, ?it/s]
   Train Loss: 0.2690 Acc: 0.8769
42 Validating: 100%|████████| 157/157 [00:22<00:00,  6
   .93it/s]
43 Val Loss: 0.2021 Acc: 0.9124
44 Epoch 8/20
45 ----------
46 Training: 100%|████████████| 547/547 [00:56<00:00,  9.
   65it/s]
47 Validating:   0%|          | 0/157 [00:00<?, ?it/s]
   Train Loss: 0.2675 Acc: 0.8775
48 Validating: 100%|████████| 157/157 [00:24<00:00,  6
   .33it/s]
49 Val Loss: 0.1934 Acc: 0.9140
50 Epoch 9/20
51 ----------
52 Training: 100%|████████████| 547/547 [01:01<00:00,  8.
   83it/s]
53 Validating:   0%|          | 0/157 [00:00<?, ?it/s]
   Train Loss: 0.2638 Acc: 0.8812
54 Validating: 100%|████████| 157/157 [00:26<00:00,  5
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54 .84it/s]
55 Val Loss: 0.1829 Acc: 0.9208
56 Training:   0%|            | 0/547 [00:00<?, ?it/s]
   Epoch 10/20
57 ----------
58 Training: 100%|████████| 547/547 [01:00<00:00,  9.
   08it/s]
59 Train Loss: 0.2591 Acc: 0.8853
60 Validating: 100%|██████| 157/157 [00:25<00:00,  6
   .07it/s]
61 Training:   0%|            | 0/547 [00:00<?, ?it/s]Val
   Loss: 0.1880 Acc: 0.9200
62 Epoch 11/20
63 ----------
64 Training: 100%|████████| 547/547 [00:56<00:00,  9.
   70it/s]
65 Train Loss: 0.2473 Acc: 0.8923
66 Validating: 100%|██████| 157/157 [00:24<00:00,  6
   .34it/s]
67 Val Loss: 0.1901 Acc: 0.9226
68 Training:   0%|            | 0/547 [00:00<?, ?it/s]
   Epoch 12/20
69 ----------
70 Training: 100%|████████| 547/547 [00:57<00:00,  9.
   51it/s]
71 Validating:   0%|            | 0/157 [00:00<?, ?it/s]
   Train Loss: 0.2506 Acc: 0.8870
72 Validating: 100%|██████| 157/157 [00:24<00:00,  6
   .45it/s]
73 Val Loss: 0.1852 Acc: 0.9214
74 Epoch 13/20
75 ----------
76 Training: 100%|████████| 547/547 [00:57<00:00,  9.
   55it/s]
77 Train Loss: 0.2475 Acc: 0.8858
78 Validating: 100%|██████| 157/157 [00:26<00:00,  5
   .83it/s]
79 Val Loss: 0.1806 Acc: 0.9228
80 Epoch 14/20
81 ----------
82 Training: 100%|████████| 547/547 [00:57<00:00,  9.
```

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 82 49it/s]
 83 Validating:     0%|              | 0/157 [00:00<?, ?it/s]
    Train Loss: 0.2463 Acc: 0.8925
 84 Validating: 100%|██████████| 157/157 [00:25<00:00,
    6.22it/s]
 85 Training:     0%|            | 0/547 [00:00<?, ?it/s]Val
     Loss: 0.1812 Acc: 0.9192
 86 Epoch 15/20
 87 ----------
 88 Training: 100%|██████████| 547/547 [00:57<00:00,  9.
    50it/s]
 89 Validating:     0%|              | 0/157 [00:00<?, ?it/s]
    Train Loss: 0.2386 Acc: 0.8922
 90 Validating: 100%|██████████| 157/157 [00:24<00:00,
    6.46it/s]
 91 Val Loss: 0.1792 Acc: 0.9250
 92 Epoch 16/20
 93 ----------
 94 Training: 100%|██████████| 547/547 [00:56<00:00,  9.
    71it/s]
 95 Train Loss: 0.2299 Acc: 0.8981
 96 Validating: 100%|██████████| 157/157 [00:22<00:00,
    7.11it/s]
 97 Training:     0%|            | 0/547 [00:00<?, ?it/s]Val
     Loss: 0.1844 Acc: 0.9220
 98 Epoch 17/20
 99 ----------
100 Training: 100%|██████████| 547/547 [00:57<00:00,  9.
    48it/s]
101 Validating:     0%|              | 0/157 [00:00<?, ?it/s]
    Train Loss: 0.2331 Acc: 0.8987
102 Validating: 100%|██████████| 157/157 [00:24<00:00,
    6.30it/s]
103 Val Loss: 0.1695 Acc: 0.9292
104 Training:     0%|            | 0/547 [00:00<?, ?it/s]
    Epoch 18/20
105 ----------
106 Training: 100%|██████████| 547/547 [00:58<00:00,  9.
    34it/s]
107 Validating:     0%|              | 0/157 [00:00<?, ?it/s]
    Train Loss: 0.2271 Acc: 0.8974
```

```
108 Validating: 100%|████████| 157/157 [00:25<00:00,
    6.15it/s]
109 Val Loss: 0.1765 Acc: 0.9242
110 Epoch 19/20
111 ----------
112 Training: 100%|████████| 547/547 [01:00<00:00,  9.
    04it/s]
113 Validating:   0%|          | 0/157 [00:00<?, ?it/s]
    Train Loss: 0.2268 Acc: 0.8997
114 Validating: 100%|████████| 157/157 [00:26<00:00,
    5.95it/s]
115 Val Loss: 0.1999 Acc: 0.9202
116 Epoch 20/20
117 ----------
118 Training: 100%|████████| 547/547 [00:59<00:00,  9.
    23it/s]
119 Train Loss: 0.2266 Acc: 0.8985
120 Validating: 100%|████████| 157/157 [00:26<00:00,
    6.00it/s]
121 Val Loss: 0.1753 Acc: 0.9290
122 Traceback (most recent call last):
123   File "E:\desktop\DeepLearning\cat_vs_dog\
    resnet18_from_scratch.py", line 312, in <module>
124     model = train_model(model, criterion, optimizer
    , num_epochs=20)
125   File "E:\desktop\DeepLearning\cat_vs_dog\
    resnet18_from_scratch.py", line 276, in train_model
126     plt.plot(train_accs, label='Train Acc')
127   File "E:\miniconda3\envs\pytorch\Lib\site-packages
    \matplotlib\pyplot.py", line 3794, in plot
128     return gca().plot(
129   File "E:\miniconda3\envs\pytorch\Lib\site-packages
    \matplotlib\axes\_axes.py", line 1779, in plot
130     lines = [*self._get_lines(self, *args, data=data
    , **kwargs)]
131   File "E:\miniconda3\envs\pytorch\Lib\site-packages
    \matplotlib\axes\_base.py", line 296, in __call__
132     yield from self._plot_args(
133   File "E:\miniconda3\envs\pytorch\Lib\site-packages
    \matplotlib\axes\_base.py", line 478, in _plot_args
134     x, y = index_of(xy[-1])
```

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135    File "E:\miniconda3\envs\pytorch\Lib\site-packages
   \matplotlib\cbook.py", line 1719, in index_of
136    y = _check_1d(y)
137    File "E:\miniconda3\envs\pytorch\Lib\site-packages
   \matplotlib\cbook.py", line 1411, in _check_1d
138    return np.atleast_1d(x)
139    File "E:\miniconda3\envs\pytorch\Lib\site-packages
   \numpy\core\shape_base.py", line 65, in atleast_1d
140    ary = asanyarray(ary)
141    File "E:\miniconda3\envs\pytorch\Lib\site-packages
   \torch\_tensor.py", line 1225, in __array__
142    return self.numpy()
143 TypeError: can't convert cuda:0 device type tensor
   to numpy. Use Tensor.cpu() to copy the tensor to
   host memory first.
144
145 ☐☐☐☐☐☐☐☐☐☐☐☐ 1
146
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