Animal_Classification-base

June 10, 2024

1 Base Model

This is initial model that was provided this no modification

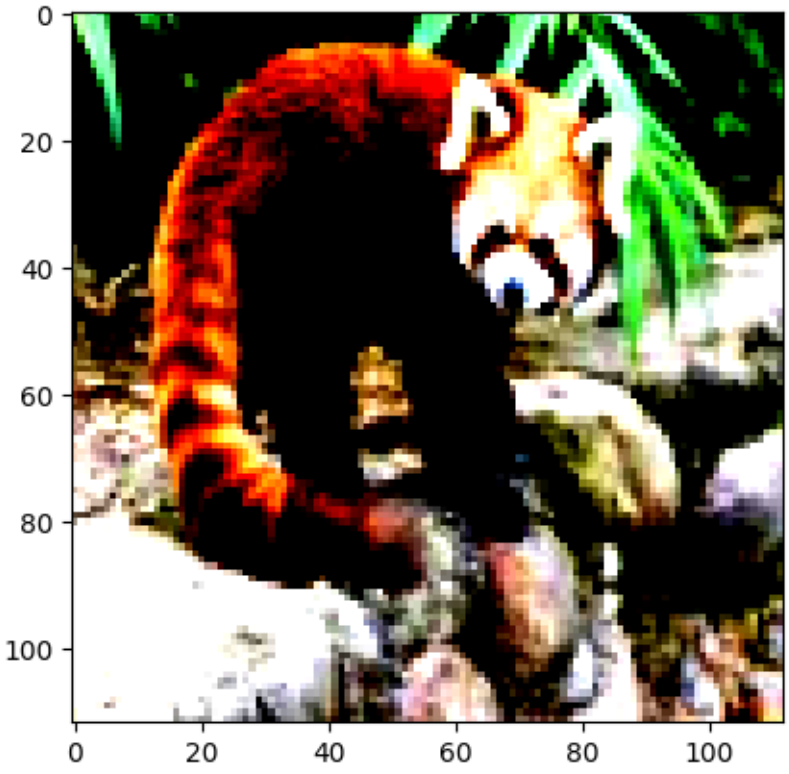
Validation Loss: 5.016 Validation Accuracy: 37.45% FLOPS: 0.69G

```
Size of training dataset : 6270
```

```
torch.Size([3, 112, 112])
```

```
Clipping input data to the valid range for imshow with RGB data ([0..1] for
floats or [0..255] for integers).
```

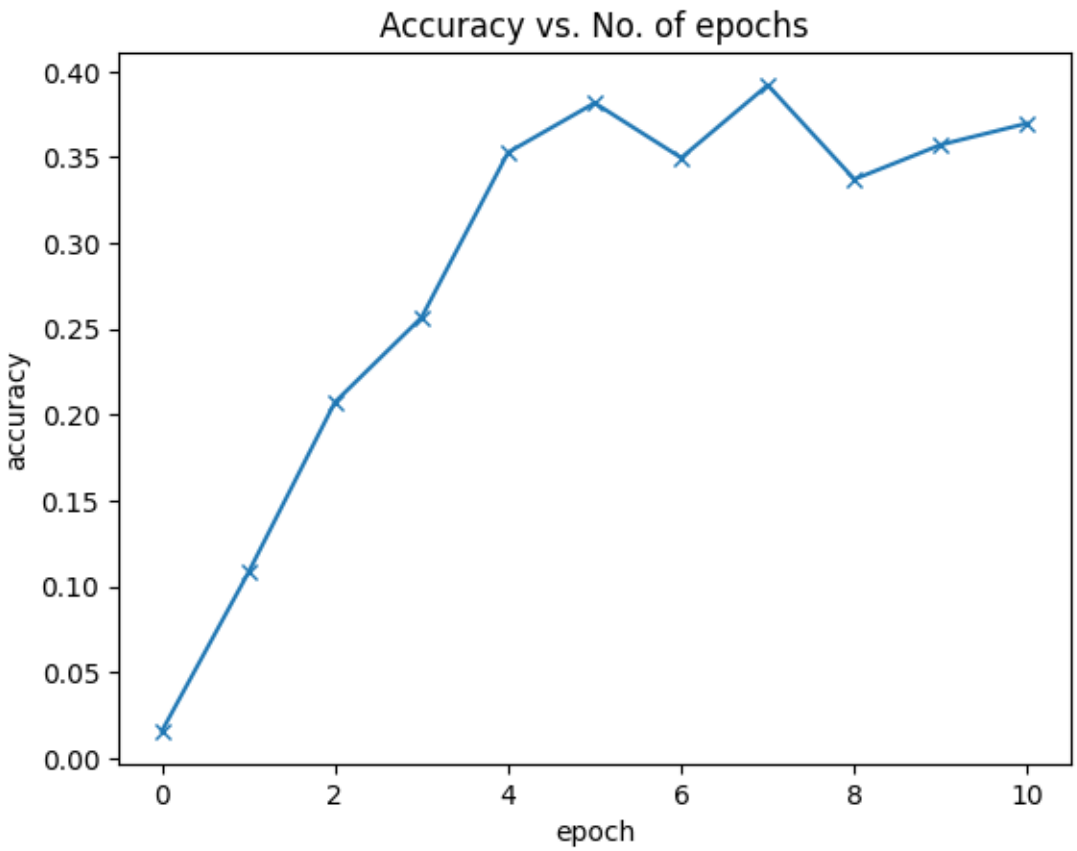
```
Label:  ailurus-fulgens (5)
```

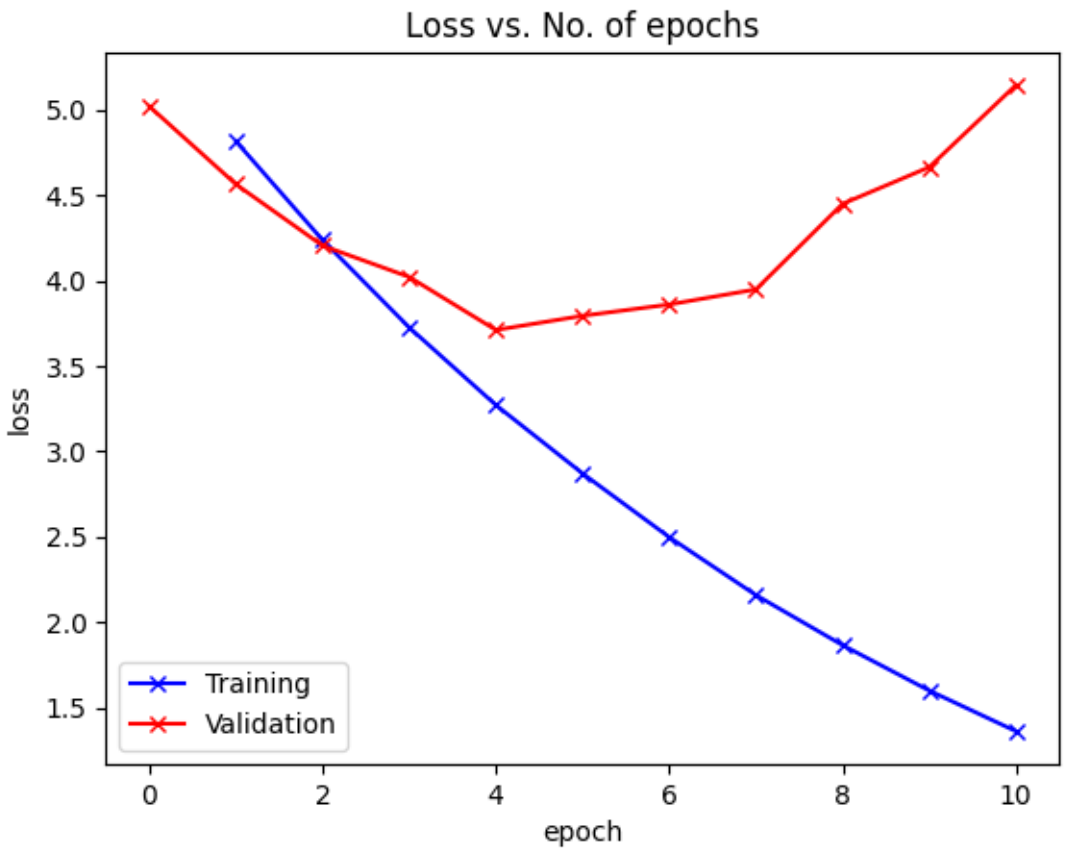


```
(5330, 313, 627)

Clipping input data to the valid range for imshow with RGB data ([0..1] for
floats or [0..255] for integers).
```

```
ConvolutionalNetwork(
  (conv1): Conv2d(3, 64, kernel_size=(5, 5), stride=(1, 1))
  (conv2): Conv2d(64, 128, kernel_size=(3, 3), stride=(1, 1))
  (conv3): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1))
  (conv4): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1))
  (fc1): Linear(in_features=3200, out_features=151, bias=True)
)

images.shape: torch.Size([16, 3, 112, 112])
out.shape: torch.Size([16, 151])
out[0]: tensor([-4.9810, -4.9628, -5.0004, -5.1166, -5.0207, -4.9754, -5.0287,
-5.0343,
        -4.9360, -5.0579, -4.9739, -5.0181, -5.0816, -4.9687, -4.9360, -4.9672,
        -5.0258, -4.9406, -5.0533, -5.0462, -5.0246, -4.9779, -4.9872, -5.0308,
        -5.0082, -5.0983, -5.0357, -5.0262, -5.0195, -4.9694, -4.9170, -5.1058,
        -5.0232, -5.0241, -5.0034, -5.0520, -4.9604, -5.0360, -5.0646, -4.9893,
        -4.9578, -5.0355, -5.0061, -5.0049, -5.0020, -5.0383, -5.0278, -5.0336,
        -5.0096, -4.9908, -5.0240, -5.0019, -4.9970, -5.0736, -5.0690, -5.0367,
        -4.9537, -5.0003, -5.0393, -5.0141, -4.9773, -4.9391, -4.9872, -4.9851,
        -5.0518, -5.1146, -5.0664, -4.9889, -5.0137, -5.0829, -4.9924, -4.9548,
        -5.0350, -4.9460, -5.0569, -5.0219, -5.0776, -5.0656, -5.0113, -5.0106,
        -5.0152, -4.9609, -5.0398, -4.9941, -4.9092, -5.0280, -5.0567, -4.9632,
        -5.0684, -4.9715, -5.0328, -5.0997, -5.0250, -5.0109, -5.0317, -5.0543,
        -5.0015, -4.9797, -4.9785, -5.0108, -5.0724, -5.0358, -5.1008, -4.9554,
        -5.0832, -5.0400, -4.9942, -5.0438, -5.0266, -5.0275, -5.0620, -5.0990,
        -5.0138, -5.0264, -5.0076, -4.9963, -4.9973, -4.9772, -5.0009, -5.0275,
        -5.0152, -5.0921, -5.0375, -5.0536, -5.0141, -5.0301, -4.9980, -5.0565,
        -5.0409, -5.0632, -5.0884, -5.0344, -5.0536, -4.9807, -5.0489, -5.0162,
        -4.9376, -5.0788, -5.0771, -4.9925, -5.0671, -5.0719, -5.0379, -4.9975,
        -4.9232, -4.9465, -4.9842, -4.9278, -5.0468, -5.0441, -5.0029],
       device='cuda:0', grad_fn=<SelectBackward0>)

ConvolutionalNetwork(
  (conv1): Conv2d(3, 64, kernel_size=(5, 5), stride=(1, 1))
  (conv2): Conv2d(64, 128, kernel_size=(3, 3), stride=(1, 1))
  (conv3): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1))
  (conv4): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1))
```

```
  (fc1): Linear(in_features=3200, out_features=151, bias=True)
)

[{'val_loss': 5.020401954650879, 'val_acc': 0.015625}]

627

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [0], train_loss: 4.8155, val_loss: 4.5634, val_acc: 0.1080

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [1], train_loss: 4.2369, val_loss: 4.2035, val_acc: 0.2073

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [2], train_loss: 3.7248, val_loss: 4.0203, val_acc: 0.2566

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [3], train_loss: 3.2704, val_loss: 3.7099, val_acc: 0.3528

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [4], train_loss: 2.8699, val_loss: 3.7928, val_acc: 0.3816

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [5], train_loss: 2.4970, val_loss: 3.8591, val_acc: 0.3497

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [6], train_loss: 2.1576, val_loss: 3.9476, val_acc: 0.3920

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [7], train_loss: 1.8643, val_loss: 4.4483, val_acc: 0.3372

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [8], train_loss: 1.5983, val_loss: 4.6634, val_acc: 0.3573

  0%|          | 0/334 [00:00<?, ?it/s]

Epoch [9], train_loss: 1.3605, val_loss: 5.1438, val_acc: 0.3698
```


Accuracy vs. No. of epochs
accuracy
epoch
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0
2
4
6
8
10




```
{'val_loss': 5.015594005584717, 'val_acc': 0.37447917461395264}
```

1.1 FLOPs

```
+ Number of FLOPs: 0.69G
```