**Basic CNN**

Architecture:

| Name | Type | Params

-------------------------------------------

0 | conv1 | Conv2d | 168

1 | conv3 | Conv2d | 660

2 | max3 | MaxPool2d | 0

3 | fc2 | Flatten | 0

4 | d1 | Linear | 4.7 M

5 | loss | CrossEntropyLoss | 0

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4.7 M Trainable params

0 Non-trainable params

4.7 M Total params

18.639 Total estimated model params size (MB)

Training Loss: 4.34

Test Loss: 4.37167501449585

Validation Loss: 4.3728227615356445

Final Test Accuracy: 6.899009704589844

**All Convolution**

Architecture:

| Name | Type | Params

---------------------------------------------

0 | conv1 | Conv2d | 456

1 | bnorm1 | BatchNorm2d | 12

2 | max1 | MaxPool2d | 0

3 | conv2 | Conv2d | 2.4 K

4 | bnorm2 | BatchNorm2d | 32

5 | max2 | MaxPool2d | 0

6 | f | Flatten | 0

7 | li | Linear | 12.1 M

8 | li1 | Linear | 405 K

9 | li2 | Linear | 45.6 K

10 | loss | CrossEntropyLoss | 0

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12.6 M Trainable params

0 Non-trainable params

12.6 M Total params

50.261 Total estimated model params size (MB)

Training Loss: 3.82

Test Loss: 4.414797306060791

Validation Loss: 4.414797306060791

Final Test Accuracy: 4.404572486877441

**Transfer Learning**

Pre-trained model:

Resnet18:

ResNet-18 is a convolutional neural network that is 18 layers deep. You can load a pretrained version of the network trained on more than a million images from the ImageNet database. The pretrained network can classify images into 1000 object categories, such as keyboard, mouse, pencil, and many animals.

Architecture:

| Name | Type | Params

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0 | loss\_fn | CrossEntropyLoss | 0

1 | feature\_extractor | Sequential | 11.2 M

2 | classifier | Linear | 51.8 K

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11.2 M Trainable params

0 Non-trainable params

11.2 M Total params 44.913 Total estimated model params size (MB)

Training Loss: 2.66

Validation Loss: 2.2584116458892822