Experiment Tracking and Report

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Part 1

CONFIG Dictionary:

{'batch_size': 8,

 'data_dir': './data',

 'device': 'cuda',

 'epochs': 5,

 'learning_rate': 0.1,

 'model': 'MyModel',

 'num_workers': 4,

 'ood_dir': './data/ood-test',

 'seed': 42,

 'wandb_project': 'sp25-ds542-challenge'}

Model summary:

SimpleCNN(

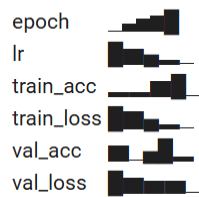 (conv1): Conv2d(3, 32, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1))

  (conv2): Conv2d(32, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1))

  (pool): MaxPool2d(kernel_size=2, stride=2, padding=0, dilation=1, ceil_mode=False)

  (fc1): Linear(in_features=4096, out_features=256, bias=True)

  (fc2): Linear(in_features=256, out_features=100, bias=True)

)

Run history:

epoch	▁▃▅▆█
lr	█▅▃▂▁
train_acc	▁▃▅▆█
train_loss	█▅▃▂▁
val_acc	▁▃█▆▇
val_loss	█▅▃▂▁

Run summary:

epoch	5
lr	0.05905
train_acc	0.8925
train_loss	4.62659
val_acc	0.9
val_loss	4.62801

Part 2

CONFIG Dictionary:

{'batch_size': 8,

'data_dir': './data',

'device': 'cuda',

'epochs': 5,

'learning_rate': 0.1,

'model': 'ResNet18',

'num_workers': 4,

'ood_dir': './data/ood-test',

'seed': 42,

'wandb_project': 'sp25-ds542-challenge'}

/usr/local/lib/python3.11/dist-packages/torch/utils/data/dataloader.py:624: UserWarning: This DataLoader will create 4 worker processes in total. Our suggested max number of worker in current system is 2, which is smaller than what this DataLoader is going to create. Please be aware that excessive worker creation might get DataLoader running slow or even freeze, lower the worker number to avoid potential slowness/freeze if necessary.

  warnings.warn(

/usr/local/lib/python3.11/dist-packages/torchvision/models/_utils.py:208: UserWarning: The parameter 'pretrained' is deprecated since 0.13 and may be removed in the future, please use 'weights' instead.

  warnings.warn(

Model summary:

ResNet(

  (conv1): Conv2d(3, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

  (bn1): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track_running_stats=True)

  (relu): ReLU(inplace=True)

  (maxpool): Identity()

  (layer1): Sequential(

   (0): BasicBlock(

     (conv1): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

     (bn1): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track_running_stats=True)

     (relu): ReLU(inplace=True)

     (conv2): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

     (bn2): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track_running_stats=True)

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   (1): BasicBlock(

     (conv1): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

     (bn1): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track_running_stats=True)

     (relu): ReLU(inplace=True)

     (conv2): Conv2d(64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

     (bn2): BatchNorm2d(64, eps=1e-05, momentum=0.1, affine=True, track_running_stats=True)

```
    )
  )
  (layer2): Sequential(
    (0): BasicBlock(
      (conv1): Conv2d(64, 128, kernel_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)
      (bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
      (relu): ReLU(inplace=True)
      (conv2): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
      (downsample): Sequential(
        (0): Conv2d(64, 128, kernel_size=(1, 1), stride=(2, 2), bias=False)
        (1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
      )
    )
    (1): BasicBlock(
      (conv1): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn1): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
      (relu): ReLU(inplace=True)
      (conv2): Conv2d(128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)
      (bn2): BatchNorm2d(128, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)
    )
  )
  (layer3): Sequential(
    (0): BasicBlock(
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(conv1): Conv2d(128, 256, kernel_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)

      (bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)

      (relu): ReLU(inplace=True)

      (conv2): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

      (bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)

      (downsample): Sequential(

        (0): Conv2d(128, 256, kernel_size=(1, 1), stride=(2, 2), bias=False)

        (1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)

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    (1): BasicBlock(

      (conv1): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

      (bn1): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)

      (relu): ReLU(inplace=True)

      (conv2): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

      (bn2): BatchNorm2d(256, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)

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  (layer4): Sequential(

    (0): BasicBlock(

      (conv1): Conv2d(256, 512, kernel_size=(3, 3), stride=(2, 2), padding=(1, 1), bias=False)

      (bn1): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True,
track_running_stats=True)

      (relu): ReLU(inplace=True)

(conv2): Conv2d(512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

      (bn2): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track_running_stats=True)

      (downsample): Sequential(

        (0): Conv2d(256, 512, kernel_size=(1, 1), stride=(2, 2), bias=False)

        (1): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track_running_stats=True)

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)

    (1): BasicBlock(

      (conv1): Conv2d(512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

      (bn1): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track_running_stats=True)

      (relu): ReLU(inplace=True)

      (conv2): Conv2d(512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1), bias=False)

      (bn2): BatchNorm2d(512, eps=1e-05, momentum=0.1, affine=True, track_running_stats=True)

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)

  (avgpool): AdaptiveAvgPool2d(output_size=(1, 1))

  (fc): Linear(in_features=512, out_features=100, bias=True)

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Run history:

batch_loss	▮▮▮▮▮ ▮▮▮▮ ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮ ▮
epoch	▄▆█
lr	█▆▄▃▂▁
train_acc	▁▃▄▆█
train_loss	█▅▃▂▁
val_acc	▁▃▄▆█
val_loss	█▅▃▂▁

Run summary:

batch_loss	2.61224
epoch	5
lr	0.05905
train_acc	26.05
train_loss	2.98336
val_acc	29.33
val_loss	2.83168

Part 3