Project - Perceiver
Submitted by Danny Savla (24D0295) and Priyanka Talwar (23D1387)
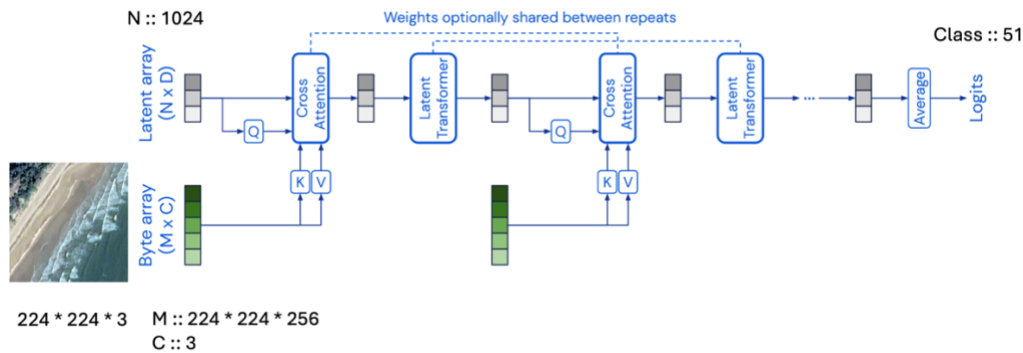
Model Details

Architecture
1. **Perceiver Architecture : Pre-trained model**
2. **For out features, the model's classification head is replaced for classification of 51 classes.**

Device details:
- **The model is trained using CUDA-enabled GPUs for faster computation.**

Training Details

Table 1- Data Set Count Details

Data Set	Split	Remarks
Training	80%	Random split
Test	20%	

Transformations:
Training Images: Resize to 224x224, normalization and Shuffle as True
Test Images: Resize to 224x224, normalization and Shuffle as False

Hyperparameters:
Learning Rate: 5e-5
Epochs: 10
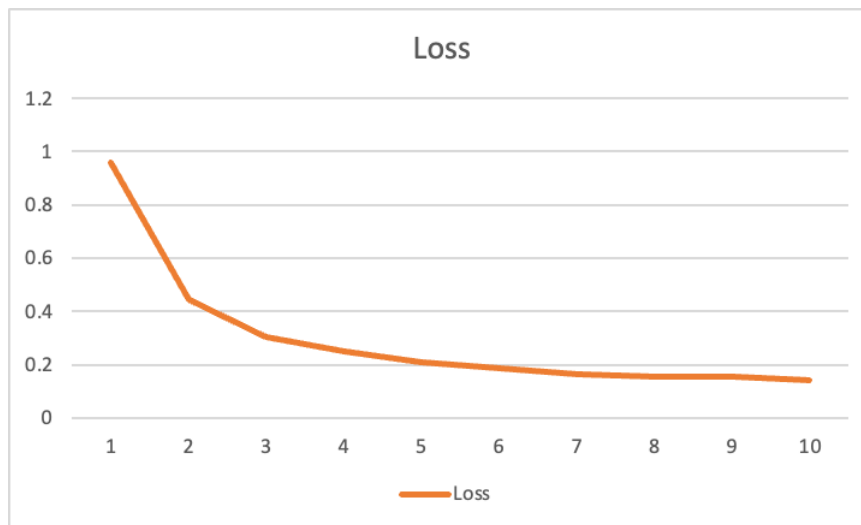**Batch Size**: 2
Optimizer : AdamW
Scheduler** : CosineAnnealingLR, total_steps = 40000 [Batch size * epcohs], eta_min= 1e-6 [*Used in 2nd run*]
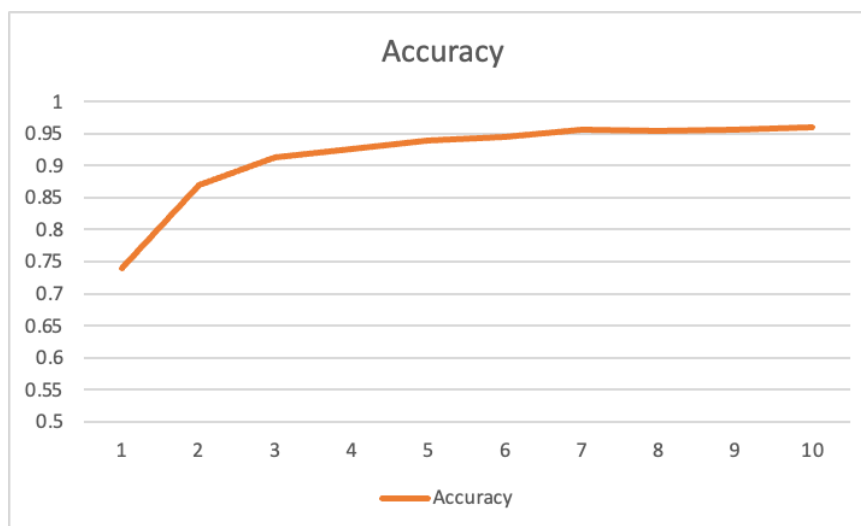
Output

Accuracy on Test set (20%) [Without scheduler, 1st run]: **89.45%**
Accuracy on Test set (20%) [With scheduler, 2nd run]: **87.5%**

Logs from Training set (80%) [With scheduler, 2nd run] :

Loss Curve for 10 Epochs

Accuracy Curve for 10 Epochs

Accuracy from Test set (20%) [With scheduler, 2nd run] :

```
Model saved after epoch 9
Epoch: 9

   0%|          | 0/4000 [00:00<?, ?it/s]

C:\Users\Prof.RaajRamsankaran\AppData\Local\Programs\Python\Python310\lib\site-packages\PIL\Image.py:3167: DecompressionBombW
arning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS attack.
  warnings.warn(

Model saved after epoch 10

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arning: Image size (93508900 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS attack.
  warnings.warn(

Accuracy on test set: {'accuracy': 0.875}
```

Screenshots while running without Scheduler [1st run] **

```
Epoch: 0

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```

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 1
Epoch: 1

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 2
Epoch: 2

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 3
Epoch: 3

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 4
Epoch: 4

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```

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 5
Epoch: 5

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 6
Epoch: 6

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 7
Epoch: 7

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 8
Epoch: 8

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 9
Epoch: 9

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```

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ssionBombWarning: Image size (110124036 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS a
ttack.
  warnings.warn(

```
Model saved after epoch 10

  0%|          | 0/1000 [00:00<?, ?it/s]
```

C:\Users\Prof.RaajRamsankaran\AppData\Local\Programs\Python\Python310\lib\site-packages\PIL\Image.py:3167: Decompre
ssionBombWarning: Image size (93508900 pixels) exceeds limit of 89478485 pixels, could be decompression bomb DOS at
tack.
  warnings.warn(

```
Accuracy on test set: {'accuracy': 0.8945}
```

*Note : ** The logs file were not generated due to juypter notebook issue.*