

The Stats :

Experiment No	No of Epochs	Block	Validation Accuracy	Test Accuracy
1 - Resnet - 20	100	Standard	84.30%	77.24%
2 - Resnet - 20	200	Standard	84.26%	83.06%
3 - Resnet - 11	100	Bottleneck	77.92%	76.87%
4 - Resnet 11	200	Bottleneck	78.22	76.56
5 - Resnet 20	100	Bottleneck	83.36	82.63

Logs For the Parameters:

Resnet - 3, Epochs - 100, Standard Block

Completed reading the dataset!!

50000

Test or Validation

Restored model parameters from model_v1\model-60.ckpt

[illegible]

Test accuracy: 0.8424

Restored model parameters from model_v1\model-70.ckpt

[illegible]

```
C:\Users\sriji\Desktop\Deep Learning\HW2\ResNet\Model.py:102: UserWarning: To copy
construct from a tensor, it is recommended to use sourceTensor.clone().detach() or
sourceTensor.clone().detach().requires_grad_(True), rather than torch.tensor(sourceTensor).
  y = torch.tensor(y, device = 'cuda')
```

Test accuracy: 0.8430

Restored model parameters from model_v1\model-80.ckpt

100%| ██████████ | 5000/5000 [00:27<00:00, 182.12it/s]

Test accuracy: 0.8404

Restored model parameters from model_v1\model-90.ckpt

[illegible]

Test accuracy: 0.8422

Restored model parameters from model_v1\model-100.ckpt

[illegible]

Test accuracy: 0.8426

Training...

Epoch 1 Loss 0.649357 Duration 45.329 seconds.

Epoch 2 Loss 0.581062 Duration 39.653 seconds.

Epoch 3 Loss 0.533485 Duration 39.388 seconds.

Epoch 4 Loss 0.644589 Duration 45.408 seconds.

Epoch 5 Loss 0.535134 Duration 35.708 seconds.

Epoch 6 Loss 0.686265 Duration 35.742 seconds.

Epoch 7 Loss 0.488112 Duration 30.809 seconds.

Epoch 8 Loss 0.672330 Duration 30.065 seconds.

Epoch 9 Loss 0.561430 Duration 38.056 seconds.

Epoch 10 Loss 0.496785 Duration 31.691 seconds.

Checkpoint has been created.

Test or Validation

Restored model parameters from model_v1\model-10.ckpt

[illegible]

Test accuracy: 0.7724

Resnet - 3, Epochs - 200, Standard Block

Preparing Data ---

Completed reading the dataset!!

50000

Training...

Epoch 1 Loss 1.361873 Duration 30.227 seconds.

Epoch 2 Loss 1.351633 Duration 29.485 seconds.

Epoch 3 Loss 0.921678 Duration 26.191 seconds.

Epoch 4 Loss 1.022487 Duration 28.775 seconds.

Epoch 5 Loss 0.968146 Duration 33.382 seconds.

Epoch 6 Loss 0.500876 Duration 32.495 seconds.

Epoch 7 Loss 0.626527 Duration 29.963 seconds.

Epoch 8 Loss 0.758417 Duration 30.087 seconds.

Epoch 9 Loss 0.561948 Duration 29.026 seconds.

Epoch 10 Loss 0.745209 Duration 28.178 seconds.

Checkpoint has been created.

Epoch 11 Loss 0.450306 Duration 28.381 seconds.

Epoch 12 Loss 0.440304 Duration 28.570 seconds.

Epoch 13 Loss 0.491065 Duration 27.360 seconds.

Epoch 14 Loss 0.497488 Duration 27.206 seconds.

Epoch 15 Loss 0.485531 Duration 26.833 seconds.

Epoch 16 Loss 0.354664 Duration 26.716 seconds.

Epoch 17 Loss 0.465873 Duration 27.045 seconds.

Epoch 18 Loss 0.493623 Duration 26.246 seconds.

Epoch 19 Loss 0.349534 Duration 26.131 seconds.

Epoch 20 Loss 0.461768 Duration 25.997 seconds.

Checkpoint has been created.

Epoch 21 Loss 0.381355 Duration 26.481 seconds.

Epoch 22 Loss 0.442596 Duration 26.427 seconds.

Epoch 23 Loss 0.340218 Duration 26.111 seconds.

Epoch 24 Loss 0.358971 Duration 25.828 seconds.

Epoch 25 Loss 0.362995 Duration 26.224 seconds.

Epoch 26 Loss 0.368853 Duration 26.233 seconds.

Epoch 27 Loss 0.305348 Duration 26.399 seconds.

Epoch 28 Loss 0.267141 Duration 27.051 seconds.

Epoch 29 Loss 0.323410 Duration 26.093 seconds.

Epoch 30 Loss 0.342131 Duration 27.747 seconds.

Checkpoint has been created.

Epoch 31 Loss 0.211414 Duration 27.550 seconds.

Epoch 32 Loss 0.191813 Duration 26.807 seconds.

Epoch 33 Loss 0.423558 Duration 26.495 seconds.

Epoch 34 Loss 0.310891 Duration 28.642 seconds.

Epoch 35 Loss 0.360716 Duration 27.967 seconds.

Epoch 36 Loss 0.386439 Duration 29.848 seconds.

Epoch 37 Loss 0.328764 Duration 27.040 seconds.

Epoch 38 Loss 0.364034 Duration 26.196 seconds.

Epoch 39 Loss 0.353388 Duration 27.254 seconds.

Epoch 40 Loss 0.205564 Duration 25.756 seconds.

Checkpoint has been created.

Epoch 41 Loss 0.373402 Duration 26.763 seconds.

Epoch 42 Loss 0.320168 Duration 28.037 seconds.

Epoch 43 Loss 0.290282 Duration 27.815 seconds.

Epoch 44 Loss 0.351086 Duration 26.533 seconds.

Epoch 45 Loss 0.292028 Duration 26.359 seconds.

Epoch 46 Loss 0.363628 Duration 28.536 seconds.

Epoch 47 Loss 0.224253 Duration 28.620 seconds.

Epoch 48 Loss 0.370932 Duration 26.192 seconds.

Epoch 49 Loss 0.329170 Duration 32.992 seconds.

Epoch 50 Loss 0.447193 Duration 26.920 seconds.

Checkpoint has been created.

Epoch 51 Loss 0.380177 Duration 26.187 seconds.

Epoch 52 Loss 0.353145 Duration 26.485 seconds.

Epoch 53 Loss 0.303143 Duration 29.923 seconds.

Epoch 54 Loss 0.267713 Duration 30.471 seconds.

Epoch 55 Loss 0.254443 Duration 27.148 seconds.

Epoch 56 Loss 0.335779 Duration 28.119 seconds.

Epoch 57 Loss 0.357623 Duration 27.704 seconds.

Epoch 58 Loss 0.435130 Duration 27.422 seconds.

Epoch 59 Loss 0.432421 Duration 28.955 seconds.

Epoch 60 Loss 0.326555 Duration 29.931 seconds.

Checkpoint has been created.

Epoch 61 Loss 0.310410 Duration 27.474 seconds.

Epoch 62 Loss 0.431865 Duration 27.550 seconds.

Epoch 63 Loss 0.513210 Duration 29.782 seconds.

Epoch 64 Loss 0.403379 Duration 30.507 seconds.

Epoch 65 Loss 0.447509 Duration 31.418 seconds.

Epoch 66 Loss 0.321718 Duration 30.105 seconds.

Epoch 67 Loss 0.309692 Duration 30.472 seconds.

Epoch 68 Loss 0.305649 Duration 30.462 seconds.

Epoch 69 Loss 0.349861 Duration 31.232 seconds.

Epoch 70 Loss 0.394183 Duration 30.439 seconds.

Checkpoint has been created.

Epoch 71 Loss 0.250729 Duration 30.715 seconds.

Epoch 72 Loss 0.246448 Duration 33.206 seconds.

Epoch 73 Loss 0.257502 Duration 33.191 seconds.

Epoch 74 Loss 0.302530 Duration 31.823 seconds.

Epoch 75 Loss 0.319698 Duration 32.638 seconds.

Epoch 76 Loss 0.369276 Duration 33.613 seconds.

Epoch 77 Loss 0.421967 Duration 35.440 seconds.

Epoch 78 Loss 0.363118 Duration 32.651 seconds.

Epoch 79 Loss 0.330171 Duration 31.416 seconds.

Epoch 80 Loss 0.393114 Duration 31.246 seconds.

Checkpoint has been created.

Epoch 81 Loss 0.347106 Duration 31.144 seconds.

Epoch 82 Loss 0.251623 Duration 35.437 seconds.

Epoch 83 Loss 0.338768 Duration 32.281 seconds.

Epoch 84 Loss 0.269617 Duration 29.808 seconds.

Epoch 85 Loss 0.279143 Duration 28.725 seconds.

Epoch 86 Loss 0.277839 Duration 30.277 seconds.

Epoch 87 Loss 0.475818 Duration 31.740 seconds.

Epoch 88 Loss 0.285714 Duration 31.676 seconds.

Epoch 89 Loss 0.260162 Duration 29.164 seconds.

Epoch 90 Loss 0.334269 Duration 33.381 seconds.

Checkpoint has been created.

Epoch 91 Loss 0.297087 Duration 31.695 seconds.

Epoch 92 Loss 0.334961 Duration 31.092 seconds.

Epoch 93 Loss 0.461824 Duration 30.046 seconds.

Epoch 94 Loss 0.336205 Duration 32.598 seconds.

Epoch 95 Loss 0.345437 Duration 32.831 seconds.

Epoch 96 Loss 0.387099 Duration 29.509 seconds.

Epoch 97 Loss 0.336327 Duration 26.191 seconds.

Epoch 98 Loss 0.305725 Duration 26.699 seconds.

Epoch 99 Loss 0.321487 Duration 26.975 seconds.

Epoch 100 Loss 0.268585 Duration 29.121 seconds.

Checkpoint has been created.

Epoch 101 Loss 0.232766 Duration 28.929 seconds.

Epoch 102 Loss 0.375865 Duration 26.876 seconds.

Epoch 103 Loss 0.422738 Duration 26.999 seconds.

Epoch 104 Loss 0.373966 Duration 25.949 seconds.

Epoch 105 Loss 0.333561 Duration 26.151 seconds.

Epoch 106 Loss 0.412222 Duration 25.933 seconds.

Epoch 107 Loss 0.473312 Duration 26.019 seconds.

Epoch 108 Loss 0.364095 Duration 26.141 seconds.

Epoch 109 Loss 0.393348 Duration 25.918 seconds.

Epoch 110 Loss 0.450009 Duration 25.950 seconds.

Checkpoint has been created.

Epoch 111 Loss 0.317396 Duration 26.328 seconds.

Epoch 112 Loss 0.334044 Duration 27.899 seconds.

Epoch 113 Loss 0.254360 Duration 26.085 seconds.

Epoch 114 Loss 0.322909 Duration 26.110 seconds.

Epoch 115 Loss 0.435818 Duration 25.482 seconds.

Epoch 116 Loss 0.301220 Duration 25.743 seconds.

Epoch 117 Loss 0.306238 Duration 28.161 seconds.

Epoch 118 Loss 0.506473 Duration 27.547 seconds.

Epoch 119 Loss 0.458801 Duration 27.851 seconds.

Epoch 120 Loss 0.247224 Duration 26.868 seconds.

Checkpoint has been created.

Epoch 121 Loss 0.390872 Duration 26.473 seconds.

Epoch 122 Loss 0.203636 Duration 28.164 seconds.

Epoch 123 Loss 0.322501 Duration 26.367 seconds.

Epoch 124 Loss 0.447947 Duration 26.684 seconds.

Epoch 125 Loss 0.271334 Duration 28.251 seconds.

Epoch 126 Loss 0.393040 Duration 27.483 seconds.

Epoch 127 Loss 0.404699 Duration 26.753 seconds.

Epoch 128 Loss 0.269158 Duration 27.826 seconds.

Epoch 129 Loss 0.235165 Duration 27.257 seconds.

Epoch 130 Loss 0.430611 Duration 28.486 seconds.

Checkpoint has been created.

Epoch 131 Loss 0.267108 Duration 26.489 seconds.

Epoch 132 Loss 0.283047 Duration 25.539 seconds.

Epoch 133 Loss 0.418479 Duration 25.710 seconds.

Epoch 134 Loss 0.246782 Duration 25.565 seconds.

Epoch 135 Loss 0.316018 Duration 25.772 seconds.

Epoch 136 Loss 0.461398 Duration 25.965 seconds.

Epoch 137 Loss 0.380196 Duration 25.677 seconds.

Epoch 138 Loss 0.356945 Duration 27.376 seconds.

Epoch 139 Loss 0.383244 Duration 28.060 seconds.

Epoch 140 Loss 0.384871 Duration 29.177 seconds.

Checkpoint has been created.

Epoch 141 Loss 0.387292 Duration 26.458 seconds.

Epoch 142 Loss 0.240318 Duration 27.238 seconds.

Epoch 143 Loss 0.176151 Duration 26.530 seconds.

Epoch 144 Loss 0.290663 Duration 27.437 seconds.

Epoch 145 Loss 0.244184 Duration 27.399 seconds.

Epoch 146 Loss 0.395826 Duration 33.955 seconds.

Epoch 147 Loss 0.385110 Duration 32.760 seconds.

Epoch 148 Loss 0.271124 Duration 32.648 seconds.

Epoch 149 Loss 0.359686 Duration 31.929 seconds.

Epoch 150 Loss 0.337516 Duration 30.708 seconds.

Checkpoint has been created.

Epoch 151 Loss 0.281712 Duration 31.859 seconds.

Epoch 152 Loss 0.333804 Duration 31.264 seconds.

Epoch 153 Loss 0.254568 Duration 26.261 seconds.

Epoch 154 Loss 0.278270 Duration 28.639 seconds.

Epoch 155 Loss 0.393202 Duration 27.293 seconds.

Epoch 156 Loss 0.393388 Duration 28.839 seconds.

Epoch 157 Loss 0.224097 Duration 26.055 seconds.

Epoch 158 Loss 0.321761 Duration 25.589 seconds.

Epoch 159 Loss 0.380752 Duration 26.332 seconds.

Epoch 160 Loss 0.381865 Duration 25.842 seconds.

Checkpoint has been created.

Epoch 161 Loss 0.233103 Duration 29.091 seconds.

Epoch 162 Loss 0.173464 Duration 30.217 seconds.

Epoch 163 Loss 0.351118 Duration 26.850 seconds.

Epoch 164 Loss 0.262293 Duration 26.438 seconds.

Epoch 165 Loss 0.353755 Duration 28.257 seconds.

Epoch 166 Loss 0.421499 Duration 26.063 seconds.

Epoch 167 Loss 0.247021 Duration 26.545 seconds.

Epoch 168 Loss 0.200993 Duration 26.419 seconds.

Epoch 169 Loss 0.449189 Duration 26.733 seconds.

Epoch 170 Loss 0.271473 Duration 27.426 seconds.

Checkpoint has been created.

Epoch 171 Loss 0.281096 Duration 26.536 seconds.

Epoch 172 Loss 0.322165 Duration 26.420 seconds.

Epoch 173 Loss 0.456572 Duration 27.714 seconds.

Epoch 174 Loss 0.350466 Duration 26.935 seconds.

Epoch 175 Loss 0.319249 Duration 27.375 seconds.

Epoch 176 Loss 0.294114 Duration 28.457 seconds.

Epoch 177 Loss 0.421870 Duration 26.907 seconds.

Epoch 178 Loss 0.435981 Duration 26.545 seconds.

Epoch 179 Loss 0.401338 Duration 26.403 seconds.

Epoch 180 Loss 0.428698 Duration 25.852 seconds.

Checkpoint has been created.

Epoch 181 Loss 0.420488 Duration 26.041 seconds.

Epoch 182 Loss 0.384795 Duration 26.385 seconds.

Epoch 183 Loss 0.299920 Duration 25.931 seconds.

Epoch 184 Loss 0.390183 Duration 26.821 seconds.

Epoch 185 Loss 0.390873 Duration 26.201 seconds.

Epoch 186 Loss 0.353734 Duration 25.920 seconds.

Epoch 187 Loss 0.325209 Duration 26.017 seconds.

Epoch 188 Loss 0.366454 Duration 26.202 seconds.

Epoch 189 Loss 0.277580 Duration 41.003 seconds.

Epoch 190 Loss 0.316303 Duration 26.243 seconds.

Checkpoint has been created.

Epoch 191 Loss 0.380795 Duration 26.909 seconds.

Epoch 192 Loss 0.269456 Duration 29.838 seconds.

Epoch 193 Loss 0.438249 Duration 26.551 seconds.

Epoch 194 Loss 0.383961 Duration 28.107 seconds.

Epoch 195 Loss 0.342075 Duration 25.987 seconds.

Epoch 196 Loss 0.326840 Duration 26.845 seconds.

Epoch 197 Loss 0.358740 Duration 26.565 seconds.

Epoch 198 Loss 0.268172 Duration 27.158 seconds.

Epoch 199 Loss 0.439213 Duration 26.681 seconds.

Epoch 200 Loss 0.298281 Duration 26.381 seconds.

Checkpoint has been created.

Test or Validation

Restored model parameters from model_v1\model-160.ckpt

100% |

5000/5000 [00:26<00:00, 186.52it/s]

Test accuracy: 0.8408

Restored model parameters from model v1\model-170.ckpt

100%

```
5000/5000 [00:25<00:00, 198.26it/s]
```

```
C:\Users\sriji\Desktop\Deep Learning\HW2\ResNet\Model.py:102: UserWarning: To copy
construct from a tensor, it is recommended to use sourceTensor.clone().detach() or
sourceTensor.clone().detach().requires_grad_(True), rather than torch.tensor(sourceTensor).
  y = torch.tensor(y, device = 'cuda')
```

Test accuracy: 0.8390

Restored model parameters from model_v1\model-180.ckpt

[illegible]

Test accuracy: 0.8386

Restored model parameters from model_v1\model-190.ckpt

```
100%|██████████| 5000/5000 [00:24<00:00, 202.68it/s]
```

Test accuracy: 0.8426

Restored model parameters from model_v1\model-200.ckpt

100%|██████████| 5000/5000 [00:24<00:00, 206.38it/s]

Test accuracy: 0.8412

Training...

Epoch 1 Loss 0.395673 Duration 28.785 seconds.

Epoch 2 Loss 0.312715 Duration 31.256 seconds.

Epoch 3 Loss 0.402504 Duration 32.248 seconds.

Epoch 4 Loss 0.284212 Duration 30.066 seconds.

Epoch 5 Loss 0.309848 Duration 29.323 seconds.

Epoch 6 Loss 0.425001 Duration 30.679 seconds.

Epoch 7 Loss 0.327921 Duration 30.044 seconds.

Epoch 8 Loss 0.363934 Duration 29.712 seconds.

Epoch 9 Loss 0.319282 Duration 29.209 seconds.

Epoch 10 Loss 0.374895 Duration 29.405 seconds.

Checkpoint has been created.

Test or Validation

Restored model parameters from model v1\model-150.ckpt

100% | 10000/10000 [00:50<00:00, 199.96it/s]

Test accuracy: 0.8306

Resnet - 11 (Bottleneck)

--- Preparing Data ---

Completed reading the dataset!!

50000

```
### Training... ###
```


Epoch 1 Loss 1.336382 Duration 24.900 seconds.
Epoch 2 Loss 1.116934 Duration 24.158 seconds.
Epoch 3 Loss 1.182492 Duration 24.213 seconds.
Epoch 4 Loss 0.907142 Duration 25.276 seconds.
Epoch 5 Loss 1.024339 Duration 25.407 seconds.
Epoch 6 Loss 1.060440 Duration 25.335 seconds.
Epoch 7 Loss 0.845168 Duration 25.562 seconds.
Epoch 8 Loss 0.880041 Duration 25.567 seconds.
Epoch 9 Loss 0.736553 Duration 28.930 seconds.
Epoch 10 Loss 0.814800 Duration 26.541 seconds.
Checkpoint has been created.
Epoch 11 Loss 0.678427 Duration 25.481 seconds.
Epoch 12 Loss 0.812005 Duration 25.476 seconds.
Epoch 13 Loss 0.546474 Duration 25.986 seconds.
Epoch 14 Loss 0.566991 Duration 25.568 seconds.
Epoch 15 Loss 0.638879 Duration 25.683 seconds.
Epoch 16 Loss 0.508791 Duration 25.859 seconds.
Epoch 17 Loss 0.540268 Duration 25.717 seconds.
Epoch 18 Loss 0.579072 Duration 25.656 seconds.
Epoch 19 Loss 0.587402 Duration 25.483 seconds.
Epoch 20 Loss 0.499215 Duration 25.754 seconds.
Checkpoint has been created.
Epoch 21 Loss 0.443198 Duration 26.103 seconds.
Epoch 22 Loss 0.385607 Duration 29.352 seconds.
Epoch 23 Loss 0.548671 Duration 31.705 seconds.
Epoch 24 Loss 0.636081 Duration 30.758 seconds.
Epoch 25 Loss 0.433895 Duration 26.474 seconds.
Epoch 26 Loss 0.613103 Duration 26.912 seconds.
Epoch 27 Loss 0.505148 Duration 26.546 seconds.
Epoch 28 Loss 0.713425 Duration 29.309 seconds.
Epoch 29 Loss 0.447840 Duration 30.724 seconds.
Epoch 30 Loss 0.587942 Duration 27.351 seconds.
Checkpoint has been created.
Epoch 31 Loss 0.431010 Duration 28.059 seconds.
Epoch 32 Loss 0.427251 Duration 26.157 seconds.
Epoch 33 Loss 0.483675 Duration 27.158 seconds.
Epoch 34 Loss 0.474753 Duration 27.718 seconds.
Epoch 35 Loss 0.566788 Duration 25.840 seconds.
Epoch 36 Loss 0.522413 Duration 25.959 seconds.
Epoch 37 Loss 0.426998 Duration 26.104 seconds.
Epoch 38 Loss 0.538242 Duration 25.695 seconds.
Epoch 39 Loss 0.417991 Duration 26.123 seconds.
Epoch 40 Loss 0.565121 Duration 25.603 seconds.
Checkpoint has been created.

Epoch 41 Loss 0.379206 Duration 25.867 seconds.
Epoch 42 Loss 0.479900 Duration 25.929 seconds.
Epoch 43 Loss 0.627629 Duration 26.135 seconds.
Epoch 44 Loss 0.559044 Duration 26.277 seconds.
Epoch 45 Loss 0.543795 Duration 27.150 seconds.
Epoch 46 Loss 0.514402 Duration 25.755 seconds.
Epoch 47 Loss 0.587130 Duration 25.912 seconds.
Epoch 48 Loss 0.397533 Duration 25.719 seconds.
Epoch 49 Loss 0.428555 Duration 25.861 seconds.
Epoch 50 Loss 0.671319 Duration 25.927 seconds.
Checkpoint has been created.
Epoch 51 Loss 0.565688 Duration 25.570 seconds.
Epoch 52 Loss 0.525750 Duration 25.963 seconds.
Epoch 53 Loss 0.531604 Duration 29.758 seconds.
Epoch 54 Loss 0.519964 Duration 29.181 seconds.
Epoch 55 Loss 0.460687 Duration 26.373 seconds.
Epoch 56 Loss 0.498987 Duration 25.969 seconds.
Epoch 57 Loss 0.342590 Duration 25.718 seconds.
Epoch 58 Loss 0.473267 Duration 25.715 seconds.
Epoch 59 Loss 0.466828 Duration 25.947 seconds.
Epoch 60 Loss 0.502064 Duration 25.609 seconds.
Checkpoint has been created.
Epoch 61 Loss 0.494420 Duration 26.083 seconds.
Epoch 62 Loss 0.533138 Duration 26.136 seconds.
Epoch 63 Loss 0.759988 Duration 25.804 seconds.
Epoch 64 Loss 0.443305 Duration 25.677 seconds.
Epoch 65 Loss 0.479499 Duration 25.676 seconds.
Epoch 66 Loss 0.555761 Duration 25.954 seconds.
Epoch 67 Loss 0.434533 Duration 25.301 seconds.
Epoch 68 Loss 0.469990 Duration 25.311 seconds.
Epoch 69 Loss 0.563675 Duration 25.465 seconds.
Epoch 70 Loss 0.481471 Duration 25.116 seconds.
Checkpoint has been created.
Epoch 71 Loss 0.477057 Duration 25.500 seconds.
Epoch 72 Loss 0.527881 Duration 25.300 seconds.
Epoch 73 Loss 0.684669 Duration 25.861 seconds.
Epoch 74 Loss 0.600915 Duration 25.898 seconds.
Epoch 75 Loss 0.432312 Duration 25.557 seconds.
Epoch 76 Loss 0.574495 Duration 25.915 seconds.
Epoch 77 Loss 0.623304 Duration 25.860 seconds.
Epoch 78 Loss 0.411186 Duration 25.708 seconds.
Epoch 79 Loss 0.459303 Duration 25.663 seconds.
Epoch 80 Loss 0.395744 Duration 25.673 seconds.
Checkpoint has been created.

Epoch 81 Loss 0.548312 Duration 25.952 seconds.
Epoch 82 Loss 0.459559 Duration 26.144 seconds.
Epoch 83 Loss 0.465964 Duration 25.646 seconds.
Epoch 84 Loss 0.510267 Duration 26.399 seconds.
Epoch 85 Loss 0.473547 Duration 25.992 seconds.
Epoch 86 Loss 0.365662 Duration 25.657 seconds.
Epoch 87 Loss 0.564589 Duration 25.969 seconds.
Epoch 88 Loss 0.419156 Duration 25.744 seconds.
Epoch 89 Loss 0.499039 Duration 25.913 seconds.
Epoch 90 Loss 0.452807 Duration 26.300 seconds.
Checkpoint has been created.

Epoch 91 Loss 0.488677 Duration 25.553 seconds.
Epoch 92 Loss 0.532406 Duration 25.880 seconds.
Epoch 93 Loss 0.491256 Duration 25.662 seconds.
Epoch 94 Loss 0.322213 Duration 25.567 seconds.
Epoch 95 Loss 0.412595 Duration 25.743 seconds.
Epoch 96 Loss 0.453789 Duration 25.282 seconds.
Epoch 97 Loss 0.544694 Duration 25.258 seconds.
Epoch 98 Loss 0.519721 Duration 24.814 seconds.
Epoch 99 Loss 0.552514 Duration 25.215 seconds.
Epoch 100 Loss 0.481737 Duration 25.141 seconds.
Checkpoint has been created.

Test or Validation

Restored model parameters from model_v1\model-60.ckpt

100%
5000/5000 [00:13<00:00, 360.83it/s]

Test accuracy: 0.7792

Restored model parameters from model_v1\model-70.ckpt

100%
5000/5000 [00:13<00:00, 370.31it/s]

C:\Users\sriji\Desktop\Deep Learning\HW2\ResNet\Model.py:102: UserWarning: To copy construct from a tensor, it is recommended to use sourceTensor.clone().detach() or sourceTensor.clone().detach().requires_grad_(True), rather than torch.tensor(sourceTensor).
y = torch.tensor(y, device = 'cuda')

Test accuracy: 0.7782

Restored model parameters from model_v1\model-80.ckpt

100%
5000/5000 [00:13<00:00, 374.96it/s]

Test accuracy: 0.7792

Restored model parameters from model_v1\model-90.ckpt

100%
5000/5000 [00:13<00:00, 379.17it/s]

Test accuracy: 0.7796

Restored model parameters from model_v1\model-100.ckpt

100%
5000/5000 [00:12<00:00, 389.76it/s]

Test accuracy: 0.7804

Training...

Epoch 1 Loss 0.480581 Duration 28.039 seconds.
Epoch 2 Loss 0.547937 Duration 27.447 seconds.
Epoch 3 Loss 0.547782 Duration 27.605 seconds.
Epoch 4 Loss 0.508376 Duration 28.004 seconds.
Epoch 5 Loss 0.591749 Duration 27.574 seconds.
Epoch 6 Loss 0.699683 Duration 28.244 seconds.
Epoch 7 Loss 0.569428 Duration 28.321 seconds.
Epoch 8 Loss 0.468327 Duration 28.772 seconds.
Epoch 9 Loss 0.316856 Duration 29.241 seconds.
Epoch 10 Loss 0.482934 Duration 28.415 seconds.

Checkpoint has been created.

Test or Validation

Restored model parameters from model_v1\model-50.ckpt

100%
10000/10000 [00:30<00:00, 331.98it/s]

Test accuracy: 0.7687

Resnet 20 with Bottleneck

--- Preparing Data ---

Completed reading the dataset!!

50000

Training...

Epoch 1 Loss 1.190243 Duration 102.875 seconds.
Epoch 2 Loss 1.263438 Duration 111.250 seconds.
Epoch 3 Loss 0.885126 Duration 87.347 seconds.
Epoch 4 Loss 0.796284 Duration 85.407 seconds.
Epoch 5 Loss 0.830714 Duration 93.377 seconds.
Epoch 6 Loss 0.845961 Duration 91.738 seconds.
Epoch 7 Loss 0.756964 Duration 86.242 seconds.
Epoch 8 Loss 0.605301 Duration 89.623 seconds.
Epoch 9 Loss 0.712893 Duration 89.006 seconds.
Epoch 10 Loss 0.716442 Duration 104.860 seconds.
Checkpoint has been created.
Epoch 11 Loss 0.479958 Duration 100.925 seconds.
Epoch 12 Loss 0.424612 Duration 84.839 seconds.
Epoch 13 Loss 0.495408 Duration 102.781 seconds.
Epoch 14 Loss 0.407512 Duration 104.699 seconds.

Epoch 15 Loss 0.355895 Duration 103.309 seconds.
Epoch 16 Loss 0.323387 Duration 100.380 seconds.
Epoch 17 Loss 0.418200 Duration 102.143 seconds.
Epoch 18 Loss 0.364412 Duration 101.946 seconds.
Epoch 19 Loss 0.341325 Duration 98.489 seconds.
Epoch 20 Loss 0.526484 Duration 91.207 seconds.
Checkpoint has been created.
Epoch 21 Loss 0.303135 Duration 90.153 seconds.
Epoch 22 Loss 0.286608 Duration 101.720 seconds.
Epoch 23 Loss 0.281874 Duration 176.561 seconds.
Epoch 24 Loss 0.369260 Duration 188.371 seconds.
Epoch 25 Loss 0.321872 Duration 178.622 seconds.
Epoch 26 Loss 0.241502 Duration 168.646 seconds.
Epoch 27 Loss 0.445596 Duration 160.033 seconds.
Epoch 28 Loss 0.346479 Duration 169.428 seconds.
Epoch 29 Loss 0.279402 Duration 210.109 seconds.
Epoch 30 Loss 0.352782 Duration 475.781 seconds.
Checkpoint has been created.
Epoch 31 Loss 0.405034 Duration 67.601 seconds.
Epoch 32 Loss 0.447618 Duration 45.261 seconds.
Epoch 33 Loss 0.252923 Duration 43.614 seconds.
Epoch 34 Loss 0.278253 Duration 44.701 seconds.
Epoch 35 Loss 0.229297 Duration 43.073 seconds.
Epoch 36 Loss 0.425593 Duration 44.151 seconds.
Epoch 37 Loss 0.217477 Duration 43.149 seconds.
Epoch 38 Loss 0.271454 Duration 41.993 seconds.
Epoch 39 Loss 0.211589 Duration 41.066 seconds.
Epoch 40 Loss 0.544246 Duration 41.205 seconds.
Checkpoint has been created.
Epoch 41 Loss 0.352382 Duration 41.236 seconds.
Epoch 42 Loss 0.382838 Duration 42.454 seconds.
Epoch 43 Loss 0.403250 Duration 42.196 seconds.
Epoch 44 Loss 0.219367 Duration 42.215 seconds.
Epoch 45 Loss 0.315240 Duration 42.119 seconds.
Epoch 46 Loss 0.264843 Duration 42.398 seconds.
Epoch 47 Loss 0.354867 Duration 41.776 seconds.
Epoch 48 Loss 0.496688 Duration 42.813 seconds.
Epoch 49 Loss 0.268889 Duration 42.193 seconds.
Epoch 50 Loss 0.298082 Duration 42.562 seconds.
Checkpoint has been created.
Epoch 51 Loss 0.370867 Duration 42.811 seconds.
Epoch 52 Loss 0.366114 Duration 42.548 seconds.
Epoch 53 Loss 0.303162 Duration 42.198 seconds.
Epoch 54 Loss 0.275738 Duration 43.131 seconds.

Epoch 55 Loss 0.355197 Duration 47.635 seconds.
Epoch 56 Loss 0.265499 Duration 55.823 seconds.
Epoch 57 Loss 0.382834 Duration 45.761 seconds.
Epoch 58 Loss 0.308739 Duration 46.770 seconds.
Epoch 59 Loss 0.399273 Duration 46.186 seconds.
Epoch 60 Loss 0.371984 Duration 46.115 seconds.
Checkpoint has been created.
Epoch 61 Loss 0.283701 Duration 42.547 seconds.
Epoch 62 Loss 0.323874 Duration 42.191 seconds.
Epoch 63 Loss 0.413509 Duration 43.411 seconds.
Epoch 64 Loss 0.346367 Duration 42.889 seconds.
Epoch 65 Loss 0.313866 Duration 43.560 seconds.
Epoch 66 Loss 0.285527 Duration 51.709 seconds.
Epoch 67 Loss 0.239914 Duration 43.507 seconds.
Epoch 68 Loss 0.332169 Duration 43.032 seconds.
Epoch 69 Loss 0.472823 Duration 44.607 seconds.
Epoch 70 Loss 0.377460 Duration 46.057 seconds.
Checkpoint has been created.
Epoch 71 Loss 0.341422 Duration 45.950 seconds.
Epoch 72 Loss 0.358085 Duration 47.257 seconds.
Epoch 73 Loss 0.429985 Duration 46.448 seconds.
Epoch 74 Loss 0.383873 Duration 48.730 seconds.
Epoch 75 Loss 0.326625 Duration 46.858 seconds.
Epoch 76 Loss 0.283958 Duration 47.126 seconds.
Epoch 77 Loss 0.396882 Duration 44.662 seconds.
Epoch 78 Loss 0.238017 Duration 42.683 seconds.
Epoch 79 Loss 0.304349 Duration 43.447 seconds.
Epoch 80 Loss 0.383499 Duration 44.322 seconds.
Checkpoint has been created.
Epoch 81 Loss 0.340306 Duration 44.820 seconds.
Epoch 82 Loss 0.361466 Duration 43.996 seconds.
Epoch 83 Loss 0.277924 Duration 42.107 seconds.
Epoch 84 Loss 0.338869 Duration 45.859 seconds.
Epoch 85 Loss 0.388382 Duration 43.616 seconds.
Epoch 86 Loss 0.378937 Duration 41.068 seconds.
Epoch 87 Loss 0.238809 Duration 40.940 seconds.
Epoch 88 Loss 0.277133 Duration 41.111 seconds.
Epoch 89 Loss 0.308007 Duration 41.040 seconds.
Epoch 90 Loss 0.327703 Duration 41.310 seconds.
Checkpoint has been created.
Epoch 91 Loss 0.249608 Duration 41.190 seconds.
Epoch 92 Loss 0.207688 Duration 41.418 seconds.
Epoch 93 Loss 0.339235 Duration 41.181 seconds.
Epoch 94 Loss 0.403660 Duration 40.963 seconds.

Checkpoint has been created.

Test or Validation

Restored model parameters from model_v1\model-60.ckpt

100%|

[REDACTED] | 10000/10000 [00:52<00:00, 189.67it/s]

Test accuracy: 0.8263