

2020-11-28 08:52:17.383930: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cudart64_101.dll
2020-11-28 08:52:22.117082: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library nvcuda.dll
2020-11-28 08:52:22.188867: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1716] Found device 0 with
properties:
pciBusID: 0000:01:00.0 name: GeForce GTX 1650 with Max-Q Design computeCapability:
7.5
coreClock: 1.245GHz coreCount: 16 deviceMemorySize: 4.00GiB deviceMemoryBandwidth:
104.34GiB/s
2020-11-28 08:52:22.191735: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cudart64_101.dll
2020-11-28 08:52:22.230769: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cublas64_10.dll
2020-11-28 08:52:22.262291: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cufft64_10.dll
2020-11-28 08:52:22.271113: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library curand64_10.dll
2020-11-28 08:52:22.303276: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cusolver64_10.dll
2020-11-28 08:52:22.330065: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cusparse64_10.dll
2020-11-28 08:52:22.434345: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cudnn64_7.dll
2020-11-28 08:52:22.434952: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1858] Adding visible gpu devices:
0
2020-11-28 08:52:22.437497: I tensorflow/core/platform/cpu_feature_guard.cc:142]
This TensorFlow binary is optimized with oneAPI Deep Neural Network Library
(oneDNN) to use the following CPU instructions in performance-critical operations:
AVX2
To enable them in other operations, rebuild TensorFlow with the appropriate
compiler flags.
2020-11-28 08:52:22.475590: I tensorflow/compiler/xla/service/service.cc:168] XLA
service 0x196ce23d980 initialized for platform Host (this does not guarantee that
XLA will be used). Devices:
2020-11-28 08:52:22.476355: I tensorflow/compiler/xla/service/service.cc:176]
StreamExecutor device (0): Host, Default Version
2020-11-28 08:52:22.478461: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1716] Found device 0 with

properties:
pciBusID: 0000:01:00.0 name: GeForce GTX 1650 with Max-Q Design computeCapability:
7.5
coreClock: 1.245GHz coreCount: 16 deviceMemorySize: 4.00GiB deviceMemoryBandwidth:
104.34GiB/s
2020-11-28 08:52:22.479509: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cudart64_101.dll
2020-11-28 08:52:22.480004: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cublas64_10.dll
2020-11-28 08:52:22.480489: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cufft64_10.dll
2020-11-28 08:52:22.480993: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library curand64_10.dll
2020-11-28 08:52:22.481484: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cusolver64_10.dll
2020-11-28 08:52:22.481981: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cusparse64_10.dll
2020-11-28 08:52:22.482476: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cudnn64_7.dll
2020-11-28 08:52:22.482992: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1858] Adding visible gpu devices:
0
2020-11-28 08:52:23.702024: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1257] Device interconnect
StreamExecutor with strength 1 edge matrix:
2020-11-28 08:52:23.702569: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1263] 0
2020-11-28 08:52:23.703050: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1276] 0: N
2020-11-28 08:52:23.705848: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1402] Created TensorFlow device
(/job:localhost/replica:0/task:0/device:GPU:0 with 2907 MB memory) -> physical GPU
(device: 0, name: GeForce GTX 1650 with Max-Q Design, pci bus id: 0000:01:00.0,
compute capability: 7.5)
2020-11-28 08:52:23.713089: I tensorflow/compiler/xla/service/service.cc:168] XLA
service 0x1969baa1940 initialized for platform CUDA (this does not guarantee that
XLA will be used). Devices:
2020-11-28 08:52:23.713778: I tensorflow/compiler/xla/service/service.cc:176]
StreamExecutor device (0): GeForce GTX 1650 with Max-Q Design, Compute Capability
7.5
2020-11-28 08:52:24.536193: I
tensorflow/stream_executor/platform/default/dso_loader.cc:48] Successfully opened
dynamic library cublas64_10.dll

60000 train samples
10000 test samples
Model: "sequential"

Layer (type)	Output Shape	Param #
dense (Dense)	(None, 512)	401920
dropout (Dropout)	(None, 512)	0
dense_1 (Dense)	(None, 512)	262656
dropout_1 (Dropout)	(None, 512)	0
dense_2 (Dense)	(None, 10)	5130

Total params: 669,706
Trainable params: 669,706
Non-trainable params: 0

Epoch 1/20

1/469 [.....] - ETA: 0s - loss: 2.3148 - accuracy: 0.1094
16/469 [>.....] - ETA: 1s - loss: 1.0909 - accuracy: 0.6548
32/469 [= >.....] - ETA: 1s - loss: 0.8019 - accuracy: 0.7480
47/469 [== >.....] - ETA: 1s - loss: 0.6830 - accuracy: 0.7874
63/469 [=== >.....] - ETA: 1s - loss: 0.6041 - accuracy: 0.8121
79/469 [==== >.....] - ETA: 1s - loss: 0.5431 - accuracy: 0.8319
95/469 [===== >.....] - ETA: 1s - loss: 0.4980 - accuracy: 0.8466
110/469 [===== >.....] - ETA: 1s - loss: 0.4702 - accuracy: 0.8558
126/469 [===== >.....] - ETA: 1s - loss: 0.4457 - accuracy: 0.8634
142/469 [===== >.....] - ETA: 1s - loss: 0.4190 - accuracy: 0.8719
158/469 [===== >.....] - ETA: 1s - loss: 0.4002 - accuracy: 0.8770
174/469 [===== >.....] - ETA: 0s - loss: 0.3806 - accuracy: 0.8827
189/469 [===== >.....] - ETA: 0s - loss: 0.3692 - accuracy: 0.8857
203/469 [===== >.....] - ETA: 0s - loss: 0.3594 - accuracy: 0.8883

218/469 [=====>.....] - ETA: 0s - loss: 0.3482 - accuracy:
0.8920
232/469 [=====>.....] - ETA: 0s - loss: 0.3392 - accuracy:
0.8948
247/469 [=====>.....] - ETA: 0s - loss: 0.3291 - accuracy:
0.8980
262/469 [=====>.....] - ETA: 0s - loss: 0.3211 - accuracy:
0.9007
279/469 [=====>.....] - ETA: 0s - loss: 0.3113 - accuracy:
0.9039
296/469 [=====>.....] - ETA: 0s - loss: 0.3020 - accuracy:
0.9068
312/469 [=====>.....] - ETA: 0s - loss: 0.2948 - accuracy:
0.9092
329/469 [=====>.....] - ETA: 0s - loss: 0.2878 - accuracy:
0.9114
346/469 [=====>.....] - ETA: 0s - loss: 0.2813 - accuracy:
0.9135
362/469 [=====>.....] - ETA: 0s - loss: 0.2750 - accuracy:
0.9154
379/469 [=====>.....] - ETA: 0s - loss: 0.2690 - accuracy:
0.9173
395/469 [=====>.....] - ETA: 0s - loss: 0.2639 - accuracy:
0.9190
411/469 [=====>....] - ETA: 0s - loss: 0.2584 - accuracy:
0.9207
427/469 [=====>...] - ETA: 0s - loss: 0.2541 - accuracy:
0.9220
443/469 [=====>..] - ETA: 0s - loss: 0.2498 - accuracy:
0.9231
459/469 [=====>.] - ETA: 0s - loss: 0.2467 - accuracy:
0.9241
469/469 [=====] - 2s 4ms/step - loss: 0.2446 - accuracy:
0.9248 - val_loss: 0.1137 - val_accuracy: 0.9660
Epoch 2/20

1/469 [.....] - ETA: 0s - loss: 0.1197 - accuracy:
0.9688
17/469 [>.....] - ETA: 1s - loss: 0.1027 - accuracy:
0.9660
32/469 [=>.....] - ETA: 1s - loss: 0.1070 - accuracy:
0.9658
48/469 [==>.....] - ETA: 1s - loss: 0.1038 - accuracy:
0.9668
64/469 [===>.....] - ETA: 1s - loss: 0.1086 - accuracy:
0.9659
79/469 [====>.....] - ETA: 1s - loss: 0.1124 - accuracy:
0.9650
95/469 [=====>.....] - ETA: 1s - loss: 0.1108 - accuracy:
0.9657

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111/469 [=====>.....] - ETA: 1s - loss: 0.1091 - accuracy:
0.9667
127/469 [=====>.....] - ETA: 1s - loss: 0.1098 - accuracy:
0.9660
143/469 [=====>.....] - ETA: 1s - loss: 0.1087 - accuracy:
0.9668
159/469 [=====>.....] - ETA: 1s - loss: 0.1076 - accuracy:
0.9672
175/469 [=====>.....] - ETA: 0s - loss: 0.1070 - accuracy:
0.9671
191/469 [=====>.....] - ETA: 0s - loss: 0.1077 - accuracy:
0.9669
207/469 [=====>.....] - ETA: 0s - loss: 0.1085 - accuracy:
0.9669
223/469 [=====>.....] - ETA: 0s - loss: 0.1095 - accuracy:
0.9667
239/469 [=====>.....] - ETA: 0s - loss: 0.1090 - accuracy:
0.9666
256/469 [=====>.....] - ETA: 0s - loss: 0.1092 - accuracy:
0.9664
273/469 [=====>.....] - ETA: 0s - loss: 0.1085 - accuracy:
0.9663
289/469 [=====>.....] - ETA: 0s - loss: 0.1080 - accuracy:
0.9665
302/469 [=====>.....] - ETA: 0s - loss: 0.1085 - accuracy:
0.9664
315/469 [=====>.....] - ETA: 0s - loss: 0.1076 - accuracy:
0.9667
328/469 [=====>.....] - ETA: 0s - loss: 0.1066 - accuracy:
0.9670
344/469 [=====>.....] - ETA: 0s - loss: 0.1058 - accuracy:
0.9671
359/469 [=====>.....] - ETA: 0s - loss: 0.1060 - accuracy:
0.9671
376/469 [=====>.....] - ETA: 0s - loss: 0.1054 - accuracy:
0.9673
393/469 [=====>.....] - ETA: 0s - loss: 0.1054 - accuracy:
0.9672
410/469 [=====>....] - ETA: 0s - loss: 0.1050 - accuracy:
0.9673
426/469 [=====>...] - ETA: 0s - loss: 0.1045 - accuracy:
0.9674
442/469 [=====>..] - ETA: 0s - loss: 0.1046 - accuracy:
0.9676
459/469 [=====>.] - ETA: 0s - loss: 0.1038 - accuracy:
0.9678
469/469 [=====] - 2s 4ms/step - loss: 0.1038 - accuracy:
0.9678 - val_loss: 0.0986 - val_accuracy: 0.9703
Epoch 3/20
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1/469 [.....] - ETA: 0s - loss: 0.0912 - accuracy:
0.9766
17/469 [>.....] - ETA: 1s - loss: 0.0814 - accuracy:
0.9770
33/469 [=>.....] - ETA: 1s - loss: 0.0770 - accuracy:
0.9766
49/469 [==>.....] - ETA: 1s - loss: 0.0807 - accuracy:
0.9764
65/469 [===>.....] - ETA: 1s - loss: 0.0750 - accuracy:
0.9778
82/469 [====>.....] - ETA: 1s - loss: 0.0733 - accuracy:
0.9768
98/469 [=====>.....] - ETA: 1s - loss: 0.0758 - accuracy:
0.9770
114/469 [=====>.....] - ETA: 1s - loss: 0.0750 - accuracy:
0.9768
130/469 [=====>.....] - ETA: 1s - loss: 0.0750 - accuracy:
0.9766
146/469 [=====>.....] - ETA: 1s - loss: 0.0729 - accuracy:
0.9773
160/469 [=====>.....] - ETA: 0s - loss: 0.0739 - accuracy:
0.9768
175/469 [=====>.....] - ETA: 0s - loss: 0.0745 - accuracy:
0.9770
191/469 [=====>.....] - ETA: 0s - loss: 0.0744 - accuracy:
0.9771
207/469 [=====>.....] - ETA: 0s - loss: 0.0745 - accuracy:
0.9770
223/469 [=====>.....] - ETA: 0s - loss: 0.0745 - accuracy:
0.9767
239/469 [=====>.....] - ETA: 0s - loss: 0.0741 - accuracy:
0.9770
255/469 [=====>.....] - ETA: 0s - loss: 0.0733 - accuracy:
0.9774
272/469 [=====>.....] - ETA: 0s - loss: 0.0736 - accuracy:
0.9775
288/469 [=====>.....] - ETA: 0s - loss: 0.0740 - accuracy:
0.9775
304/469 [=====>.....] - ETA: 0s - loss: 0.0740 - accuracy:
0.9775
320/469 [=====>.....] - ETA: 0s - loss: 0.0736 - accuracy:
0.9776
337/469 [=====>.....] - ETA: 0s - loss: 0.0738 - accuracy:
0.9774
353/469 [=====>.....] - ETA: 0s - loss: 0.0749 - accuracy:
0.9771
369/469 [=====>.....] - ETA: 0s - loss: 0.0752 - accuracy:
0.9771
384/469 [=====>.....] - ETA: 0s - loss: 0.0744 - accuracy:
0.9772

397/469 [=====>.....] - ETA: 0s - loss: 0.0748 - accuracy:
0.9770
412/469 [=====>....] - ETA: 0s - loss: 0.0746 - accuracy:
0.9770
427/469 [=====>...] - ETA: 0s - loss: 0.0747 - accuracy:
0.9770
443/469 [=====>..] - ETA: 0s - loss: 0.0747 - accuracy:
0.9771
459/469 [=====>.] - ETA: 0s - loss: 0.0739 - accuracy:
0.9774
469/469 [=====] - 2s 4ms/step - loss: 0.0737 - accuracy:
0.9775 - val_loss: 0.0870 - val_accuracy: 0.9753

Epoch 4/20

1/469 [.....] - ETA: 0s - loss: 0.0577 - accuracy:
0.9844
17/469 [>.....] - ETA: 1s - loss: 0.0446 - accuracy:
0.9848
33/469 [=>.....] - ETA: 1s - loss: 0.0517 - accuracy:
0.9827
49/469 [==>.....] - ETA: 1s - loss: 0.0513 - accuracy:
0.9833
65/469 [===>.....] - ETA: 1s - loss: 0.0495 - accuracy:
0.9840
81/469 [====>.....] - ETA: 1s - loss: 0.0546 - accuracy:
0.9823
96/469 [=====>.....] - ETA: 1s - loss: 0.0570 - accuracy:
0.9817
110/469 [=====>.....] - ETA: 1s - loss: 0.0560 - accuracy:
0.9820
125/469 [=====>.....] - ETA: 1s - loss: 0.0580 - accuracy:
0.9818
141/469 [=====>.....] - ETA: 1s - loss: 0.0588 - accuracy:
0.9820
155/469 [=====>.....] - ETA: 1s - loss: 0.0594 - accuracy:
0.9818
171/469 [=====>.....] - ETA: 0s - loss: 0.0578 - accuracy:
0.9823
186/469 [=====>.....] - ETA: 0s - loss: 0.0573 - accuracy:
0.9824
201/469 [=====>.....] - ETA: 0s - loss: 0.0568 - accuracy:
0.9826
215/469 [=====>.....] - ETA: 0s - loss: 0.0572 - accuracy:
0.9826
227/469 [=====>.....] - ETA: 0s - loss: 0.0576 - accuracy:
0.9825
235/469 [=====>.....] - ETA: 0s - loss: 0.0576 - accuracy:
0.9821
245/469 [=====>.....] - ETA: 0s - loss: 0.0584 - accuracy:
0.9820

259/469 [=====>.....] - ETA: 0s - loss: 0.0583 - accuracy:
0.9821
273/469 [=====>.....] - ETA: 0s - loss: 0.0575 - accuracy:
0.9824
287/469 [=====>.....] - ETA: 0s - loss: 0.0589 - accuracy:
0.9820
297/469 [=====>.....] - ETA: 0s - loss: 0.0586 - accuracy:
0.9821
310/469 [=====>.....] - ETA: 0s - loss: 0.0588 - accuracy:
0.9821
325/469 [=====>.....] - ETA: 0s - loss: 0.0590 - accuracy:
0.9823
341/469 [=====>.....] - ETA: 0s - loss: 0.0595 - accuracy:
0.9821
356/469 [=====>.....] - ETA: 0s - loss: 0.0600 - accuracy:
0.9820
371/469 [=====>.....] - ETA: 0s - loss: 0.0595 - accuracy:
0.9821
387/469 [=====>.....] - ETA: 0s - loss: 0.0592 - accuracy:
0.9822
402/469 [=====>.....] - ETA: 0s - loss: 0.0599 - accuracy:
0.9820
417/469 [=====>....] - ETA: 0s - loss: 0.0600 - accuracy:
0.9820
432/469 [=====>...] - ETA: 0s - loss: 0.0596 - accuracy:
0.9820
448/469 [=====>..] - ETA: 0s - loss: 0.0594 - accuracy:
0.9820
461/469 [=====>.] - ETA: 0s - loss: 0.0593 - accuracy:
0.9821
469/469 [=====] - 2s 4ms/step - loss: 0.0592 - accuracy:
0.9821 - val_loss: 0.0898 - val_accuracy: 0.9762
Epoch 5/20

1/469 [.....] - ETA: 0s - loss: 0.0558 - accuracy:
0.9922
17/469 [>.....] - ETA: 1s - loss: 0.0443 - accuracy:
0.9894
32/469 [=>.....] - ETA: 1s - loss: 0.0430 - accuracy:
0.9871
47/469 [==>.....] - ETA: 1s - loss: 0.0419 - accuracy:
0.9870
61/469 [==>.....] - ETA: 1s - loss: 0.0469 - accuracy:
0.9862
75/469 [===>.....] - ETA: 1s - loss: 0.0489 - accuracy:
0.9854
91/469 [===>.....] - ETA: 1s - loss: 0.0463 - accuracy:
0.9860
107/469 [====>.....] - ETA: 1s - loss: 0.0442 - accuracy:
0.9865

121/469 [=====>.....] - ETA: 1s - loss: 0.0457 - accuracy:
0.9861
136/469 [=====>.....] - ETA: 1s - loss: 0.0449 - accuracy:
0.9865
152/469 [=====>.....] - ETA: 1s - loss: 0.0436 - accuracy:
0.9867
168/469 [=====>.....] - ETA: 1s - loss: 0.0446 - accuracy:
0.9863
184/469 [=====>.....] - ETA: 0s - loss: 0.0442 - accuracy:
0.9864
201/469 [=====>.....] - ETA: 0s - loss: 0.0451 - accuracy:
0.9861
216/469 [=====>.....] - ETA: 0s - loss: 0.0458 - accuracy:
0.9856
232/469 [=====>.....] - ETA: 0s - loss: 0.0458 - accuracy:
0.9858
247/469 [=====>.....] - ETA: 0s - loss: 0.0476 - accuracy:
0.9857
262/469 [=====>.....] - ETA: 0s - loss: 0.0468 - accuracy:
0.9859
277/469 [=====>.....] - ETA: 0s - loss: 0.0465 - accuracy:
0.9859
293/469 [=====>.....] - ETA: 0s - loss: 0.0461 - accuracy:
0.9861
310/469 [=====>.....] - ETA: 0s - loss: 0.0465 - accuracy:
0.9860
326/469 [=====>.....] - ETA: 0s - loss: 0.0466 - accuracy:
0.9861
341/469 [=====>.....] - ETA: 0s - loss: 0.0471 - accuracy:
0.9861
356/469 [=====>.....] - ETA: 0s - loss: 0.0466 - accuracy:
0.9862
372/469 [=====>.....] - ETA: 0s - loss: 0.0478 - accuracy:
0.9857
388/469 [=====>.....] - ETA: 0s - loss: 0.0477 - accuracy:
0.9857
404/469 [=====>.....] - ETA: 0s - loss: 0.0482 - accuracy:
0.9856
420/469 [=====>....] - ETA: 0s - loss: 0.0484 - accuracy:
0.9854
437/469 [=====>...] - ETA: 0s - loss: 0.0479 - accuracy:
0.9855
454/469 [=====>.] - ETA: 0s - loss: 0.0482 - accuracy:
0.9854
469/469 [=====] - 2s 4ms/step - loss: 0.0485 - accuracy:
0.9853 - val_loss: 0.0822 - val_accuracy: 0.9790
Epoch 6/20

1/469 [.....] - ETA: 0s - loss: 0.0465 - accuracy:
0.9844

17/469 [>.....] - ETA: 1s - loss: 0.0347 - accuracy:
0.9913
33/469 [=>.....] - ETA: 1s - loss: 0.0399 - accuracy:
0.9893
49/469 [==>.....] - ETA: 1s - loss: 0.0413 - accuracy:
0.9884
65/469 [===>.....] - ETA: 1s - loss: 0.0407 - accuracy:
0.9876
81/469 [====>.....] - ETA: 1s - loss: 0.0370 - accuracy:
0.9887
98/469 [=====>.....] - ETA: 1s - loss: 0.0385 - accuracy:
0.9884
115/469 [=====>.....] - ETA: 1s - loss: 0.0382 - accuracy:
0.9883
131/469 [=====>.....] - ETA: 1s - loss: 0.0381 - accuracy:
0.9885
147/469 [=====>.....] - ETA: 1s - loss: 0.0380 - accuracy:
0.9888
163/469 [=====>.....] - ETA: 0s - loss: 0.0383 - accuracy:
0.9887
179/469 [=====>.....] - ETA: 0s - loss: 0.0410 - accuracy:
0.9884
195/469 [=====>.....] - ETA: 0s - loss: 0.0426 - accuracy:
0.9880
211/469 [=====>.....] - ETA: 0s - loss: 0.0419 - accuracy:
0.9879
227/469 [=====>.....] - ETA: 0s - loss: 0.0423 - accuracy:
0.9876
243/469 [=====>.....] - ETA: 0s - loss: 0.0425 - accuracy:
0.9876
256/469 [=====>.....] - ETA: 0s - loss: 0.0427 - accuracy:
0.9876
270/469 [=====>.....] - ETA: 0s - loss: 0.0432 - accuracy:
0.9876
285/469 [=====>.....] - ETA: 0s - loss: 0.0427 - accuracy:
0.9876
299/469 [=====>.....] - ETA: 0s - loss: 0.0431 - accuracy:
0.9874
313/469 [=====>.....] - ETA: 0s - loss: 0.0427 - accuracy:
0.9874
327/469 [=====>.....] - ETA: 0s - loss: 0.0428 - accuracy:
0.9874
339/469 [=====>.....] - ETA: 0s - loss: 0.0428 - accuracy:
0.9873
352/469 [=====>.....] - ETA: 0s - loss: 0.0431 - accuracy:
0.9871
366/469 [=====>.....] - ETA: 0s - loss: 0.0430 - accuracy:
0.9871
379/469 [=====>.....] - ETA: 0s - loss: 0.0427 - accuracy:
0.9872

393/469 [=====>.....] - ETA: 0s - loss: 0.0427 - accuracy:
0.9871
409/469 [=====>....] - ETA: 0s - loss: 0.0430 - accuracy:
0.9870
425/469 [=====>...] - ETA: 0s - loss: 0.0428 - accuracy:
0.9870
442/469 [=====>..] - ETA: 0s - loss: 0.0425 - accuracy:
0.9870
456/469 [=====>.] - ETA: 0s - loss: 0.0426 - accuracy:
0.9870
469/469 [=====] - ETA: 0s - loss: 0.0424 - accuracy:
0.9871
469/469 [=====] - 2s 4ms/step - loss: 0.0424 - accuracy:
0.9871 - val_loss: 0.0715 - val_accuracy: 0.9801
Epoch 7/20

1/469 [.....] - ETA: 0s - loss: 0.0247 - accuracy:
0.9922
14/469 [.....] - ETA: 1s - loss: 0.0313 - accuracy:
0.9922
29/469 [>.....] - ETA: 1s - loss: 0.0301 - accuracy:
0.9914
44/469 [=>.....] - ETA: 1s - loss: 0.0307 - accuracy:
0.9909
58/469 [==>.....] - ETA: 1s - loss: 0.0317 - accuracy:
0.9900
72/469 [===>.....] - ETA: 1s - loss: 0.0336 - accuracy:
0.9899
87/469 [====>.....] - ETA: 1s - loss: 0.0347 - accuracy:
0.9892
101/469 [=====>.....] - ETA: 1s - loss: 0.0368 - accuracy:
0.9882
116/469 [=====>.....] - ETA: 1s - loss: 0.0361 - accuracy:
0.9885
132/469 [=====>.....] - ETA: 1s - loss: 0.0348 - accuracy:
0.9889
145/469 [=====>.....] - ETA: 1s - loss: 0.0351 - accuracy:
0.9890
160/469 [=====>.....] - ETA: 1s - loss: 0.0347 - accuracy:
0.9893
176/469 [=====>.....] - ETA: 1s - loss: 0.0338 - accuracy:
0.9895
192/469 [=====>.....] - ETA: 0s - loss: 0.0348 - accuracy:
0.9893
209/469 [=====>.....] - ETA: 0s - loss: 0.0360 - accuracy:
0.9891
226/469 [=====>.....] - ETA: 0s - loss: 0.0352 - accuracy:
0.9893
242/469 [=====>.....] - ETA: 0s - loss: 0.0364 - accuracy:
0.9891

259/469 [=====>.....] - ETA: 0s - loss: 0.0362 - accuracy:
0.9894
275/469 [=====>.....] - ETA: 0s - loss: 0.0357 - accuracy:
0.9894
292/469 [=====>.....] - ETA: 0s - loss: 0.0364 - accuracy:
0.9892
308/469 [=====>.....] - ETA: 0s - loss: 0.0363 - accuracy:
0.9892
324/469 [=====>.....] - ETA: 0s - loss: 0.0368 - accuracy:
0.9891
341/469 [=====>.....] - ETA: 0s - loss: 0.0372 - accuracy:
0.9890
357/469 [=====>.....] - ETA: 0s - loss: 0.0376 - accuracy:
0.9889
374/469 [=====>.....] - ETA: 0s - loss: 0.0381 - accuracy:
0.9889
391/469 [=====>....] - ETA: 0s - loss: 0.0379 - accuracy:
0.9890
407/469 [=====>....] - ETA: 0s - loss: 0.0378 - accuracy:
0.9890
423/469 [=====>...] - ETA: 0s - loss: 0.0377 - accuracy:
0.9890
440/469 [=====>..] - ETA: 0s - loss: 0.0383 - accuracy:
0.9890
456/469 [=====>.] - ETA: 0s - loss: 0.0384 - accuracy:
0.9889
469/469 [=====] - 2s 4ms/step - loss: 0.0381 - accuracy:
0.9890 - val_loss: 0.0797 - val_accuracy: 0.9820
Epoch 8/20

1/469 [.....] - ETA: 0s - loss: 0.1133 - accuracy:
0.9766
17/469 [>.....] - ETA: 1s - loss: 0.0309 - accuracy:
0.9908
34/469 [=>.....] - ETA: 1s - loss: 0.0247 - accuracy:
0.9926
51/469 [==>.....] - ETA: 1s - loss: 0.0261 - accuracy:
0.9926
67/469 [===>.....] - ETA: 1s - loss: 0.0313 - accuracy:
0.9914
84/469 [====>.....] - ETA: 1s - loss: 0.0278 - accuracy:
0.9921
98/469 [=====>.....] - ETA: 1s - loss: 0.0300 - accuracy:
0.9918
112/469 [=====>.....] - ETA: 1s - loss: 0.0289 - accuracy:
0.9916
128/469 [=====>.....] - ETA: 1s - loss: 0.0293 - accuracy:
0.9915
144/469 [=====>.....] - ETA: 1s - loss: 0.0308 - accuracy:
0.9911

160/469 [=====>.....] - ETA: 0s - loss: 0.0312 - accuracy:
0.9909
178/469 [=====>.....] - ETA: 0s - loss: 0.0309 - accuracy:
0.9907
195/469 [=====>.....] - ETA: 0s - loss: 0.0316 - accuracy:
0.9905
211/469 [=====>.....] - ETA: 0s - loss: 0.0328 - accuracy:
0.9903
226/469 [=====>.....] - ETA: 0s - loss: 0.0328 - accuracy:
0.9901
243/469 [=====>.....] - ETA: 0s - loss: 0.0336 - accuracy:
0.9901
260/469 [=====>.....] - ETA: 0s - loss: 0.0340 - accuracy:
0.9902
274/469 [=====>.....] - ETA: 0s - loss: 0.0341 - accuracy:
0.9902
287/469 [=====>.....] - ETA: 0s - loss: 0.0341 - accuracy:
0.9902
303/469 [=====>.....] - ETA: 0s - loss: 0.0348 - accuracy:
0.9901
320/469 [=====>.....] - ETA: 0s - loss: 0.0355 - accuracy:
0.9900
336/469 [=====>.....] - ETA: 0s - loss: 0.0350 - accuracy:
0.9899
350/469 [=====>.....] - ETA: 0s - loss: 0.0353 - accuracy:
0.9896
363/469 [=====>.....] - ETA: 0s - loss: 0.0355 - accuracy:
0.9896
379/469 [=====>.....] - ETA: 0s - loss: 0.0352 - accuracy:
0.9895
395/469 [=====>.....] - ETA: 0s - loss: 0.0349 - accuracy:
0.9896
411/469 [=====>....] - ETA: 0s - loss: 0.0345 - accuracy:
0.9897
425/469 [=====>...] - ETA: 0s - loss: 0.0341 - accuracy:
0.9898
441/469 [=====>..] - ETA: 0s - loss: 0.0342 - accuracy:
0.9898
458/469 [=====>.] - ETA: 0s - loss: 0.0342 - accuracy:
0.9897
469/469 [=====] - 2s 4ms/step - loss: 0.0341 - accuracy:
0.9898 - val_loss: 0.0953 - val_accuracy: 0.9803
Epoch 9/20

1/469 [.....] - ETA: 0s - loss: 0.0831 - accuracy:
0.9766
19/469 [>.....] - ETA: 1s - loss: 0.0313 - accuracy:
0.9930
33/469 [=>.....] - ETA: 1s - loss: 0.0242 - accuracy:
0.9938

48/469 [==>.....] - ETA: 1s - loss: 0.0253 - accuracy:
0.9933
65/469 [===>.....] - ETA: 1s - loss: 0.0296 - accuracy:
0.9928
81/469 [====>.....] - ETA: 1s - loss: 0.0304 - accuracy:
0.9926
96/469 [=====>.....] - ETA: 1s - loss: 0.0310 - accuracy:
0.9922
109/469 [=====>.....] - ETA: 1s - loss: 0.0324 - accuracy:
0.9918
125/469 [=====>.....] - ETA: 1s - loss: 0.0323 - accuracy:
0.9912
142/469 [=====>.....] - ETA: 1s - loss: 0.0318 - accuracy:
0.9913
159/469 [=====>.....] - ETA: 1s - loss: 0.0319 - accuracy:
0.9914
173/469 [=====>.....] - ETA: 0s - loss: 0.0315 - accuracy:
0.9913
189/469 [=====>.....] - ETA: 0s - loss: 0.0300 - accuracy:
0.9916
205/469 [=====>.....] - ETA: 0s - loss: 0.0299 - accuracy:
0.9916
221/469 [=====>.....] - ETA: 0s - loss: 0.0299 - accuracy:
0.9915
235/469 [=====>.....] - ETA: 0s - loss: 0.0301 - accuracy:
0.9916
249/469 [=====>.....] - ETA: 0s - loss: 0.0300 - accuracy:
0.9916
265/469 [=====>.....] - ETA: 0s - loss: 0.0299 - accuracy:
0.9915
281/469 [=====>.....] - ETA: 0s - loss: 0.0302 - accuracy:
0.9913
296/469 [=====>.....] - ETA: 0s - loss: 0.0299 - accuracy:
0.9913
308/469 [=====>.....] - ETA: 0s - loss: 0.0305 - accuracy:
0.9912
323/469 [=====>.....] - ETA: 0s - loss: 0.0300 - accuracy:
0.9913
339/469 [=====>.....] - ETA: 0s - loss: 0.0303 - accuracy:
0.9914
355/469 [=====>.....] - ETA: 0s - loss: 0.0307 - accuracy:
0.9913
370/469 [=====>.....] - ETA: 0s - loss: 0.0304 - accuracy:
0.9914
383/469 [=====>.....] - ETA: 0s - loss: 0.0303 - accuracy:
0.9914
398/469 [=====>.....] - ETA: 0s - loss: 0.0304 - accuracy:
0.9913
414/469 [=====>....] - ETA: 0s - loss: 0.0302 - accuracy:
0.9913

431/469 [=====>...] - ETA: 0s - loss: 0.0304 - accuracy:
0.9913
445/469 [=====>..] - ETA: 0s - loss: 0.0304 - accuracy:
0.9912
458/469 [=====>.] - ETA: 0s - loss: 0.0303 - accuracy:
0.9912
469/469 [=====] - 2s 4ms/step - loss: 0.0305 - accuracy:
0.9911 - val_loss: 0.1088 - val_accuracy: 0.9775
Epoch 10/20

1/469 [.....] - ETA: 0s - loss: 0.1153 - accuracy:
0.9688
17/469 [>.....] - ETA: 1s - loss: 0.0377 - accuracy:
0.9890
33/469 [=>.....] - ETA: 1s - loss: 0.0298 - accuracy:
0.9905
50/469 [==>.....] - ETA: 1s - loss: 0.0290 - accuracy:
0.9908
66/469 [===>.....] - ETA: 1s - loss: 0.0258 - accuracy:
0.9916
82/469 [====>.....] - ETA: 1s - loss: 0.0240 - accuracy:
0.9922
99/469 [=====>.....] - ETA: 1s - loss: 0.0262 - accuracy:
0.9916
116/469 [=====>.....] - ETA: 1s - loss: 0.0278 - accuracy:
0.9914
132/469 [=====>.....] - ETA: 1s - loss: 0.0283 - accuracy:
0.9911
148/469 [=====>.....] - ETA: 1s - loss: 0.0287 - accuracy:
0.9912
165/469 [=====>.....] - ETA: 0s - loss: 0.0294 - accuracy:
0.9912
181/469 [=====>.....] - ETA: 0s - loss: 0.0304 - accuracy:
0.9908
197/469 [=====>.....] - ETA: 0s - loss: 0.0304 - accuracy:
0.9910
213/469 [=====>.....] - ETA: 0s - loss: 0.0299 - accuracy:
0.9912
229/469 [=====>.....] - ETA: 0s - loss: 0.0297 - accuracy:
0.9911
245/469 [=====>.....] - ETA: 0s - loss: 0.0295 - accuracy:
0.9911
261/469 [=====>.....] - ETA: 0s - loss: 0.0294 - accuracy:
0.9911
278/469 [=====>.....] - ETA: 0s - loss: 0.0287 - accuracy:
0.9913
295/469 [=====>.....] - ETA: 0s - loss: 0.0286 - accuracy:
0.9914
312/469 [=====>.....] - ETA: 0s - loss: 0.0291 - accuracy:
0.9913

327/469 [=====>.....] - ETA: 0s - loss: 0.0289 - accuracy:
0.9913
343/469 [=====>.....] - ETA: 0s - loss: 0.0293 - accuracy:
0.9914
359/469 [=====>.....] - ETA: 0s - loss: 0.0290 - accuracy:
0.9914
374/469 [=====>.....] - ETA: 0s - loss: 0.0287 - accuracy:
0.9915
390/469 [=====>.....] - ETA: 0s - loss: 0.0287 - accuracy:
0.9916
407/469 [=====>....] - ETA: 0s - loss: 0.0285 - accuracy:
0.9917
423/469 [=====>...] - ETA: 0s - loss: 0.0285 - accuracy:
0.9917
440/469 [=====>..] - ETA: 0s - loss: 0.0288 - accuracy:
0.9916
456/469 [=====>.] - ETA: 0s - loss: 0.0285 - accuracy:
0.9917
469/469 [=====] - 2s 4ms/step - loss: 0.0292 - accuracy:
0.9915 - val_loss: 0.0824 - val_accuracy: 0.9838
Epoch 11/20

1/469 [.....] - ETA: 0s - loss: 0.0100 - accuracy:
0.9922
18/469 [>.....] - ETA: 1s - loss: 0.0166 - accuracy:
0.9944
35/469 [=>.....] - ETA: 1s - loss: 0.0182 - accuracy:
0.9940
52/469 [==>.....] - ETA: 1s - loss: 0.0175 - accuracy:
0.9946
68/469 [===>.....] - ETA: 1s - loss: 0.0205 - accuracy:
0.9937
84/469 [====>.....] - ETA: 1s - loss: 0.0216 - accuracy:
0.9934
100/469 [=====>.....] - ETA: 1s - loss: 0.0212 - accuracy:
0.9933
116/469 [=====>.....] - ETA: 1s - loss: 0.0219 - accuracy:
0.9935
132/469 [=====>.....] - ETA: 1s - loss: 0.0220 - accuracy:
0.9933
148/469 [=====>.....] - ETA: 1s - loss: 0.0229 - accuracy:
0.9930
164/469 [=====>.....] - ETA: 0s - loss: 0.0227 - accuracy:
0.9929
179/469 [=====>.....] - ETA: 0s - loss: 0.0219 - accuracy:
0.9931
195/469 [=====>.....] - ETA: 0s - loss: 0.0223 - accuracy:
0.9932
211/469 [=====>.....] - ETA: 0s - loss: 0.0228 - accuracy:
0.9932

228/469 [=====>.....] - ETA: 0s - loss: 0.0234 - accuracy:
0.9929
244/469 [=====>.....] - ETA: 0s - loss: 0.0224 - accuracy:
0.9931
260/469 [=====>.....] - ETA: 0s - loss: 0.0221 - accuracy:
0.9931
276/469 [=====>.....] - ETA: 0s - loss: 0.0219 - accuracy:
0.9931
293/469 [=====>.....] - ETA: 0s - loss: 0.0227 - accuracy:
0.9929
310/469 [=====>.....] - ETA: 0s - loss: 0.0231 - accuracy:
0.9930
326/469 [=====>.....] - ETA: 0s - loss: 0.0235 - accuracy:
0.9928
343/469 [=====>.....] - ETA: 0s - loss: 0.0241 - accuracy:
0.9927
360/469 [=====>.....] - ETA: 0s - loss: 0.0248 - accuracy:
0.9926
377/469 [=====>.....] - ETA: 0s - loss: 0.0252 - accuracy:
0.9924
393/469 [=====>.....] - ETA: 0s - loss: 0.0265 - accuracy:
0.9922
409/469 [=====>....] - ETA: 0s - loss: 0.0265 - accuracy:
0.9922
424/469 [=====>...] - ETA: 0s - loss: 0.0268 - accuracy:
0.9922
441/469 [=====>..] - ETA: 0s - loss: 0.0270 - accuracy:
0.9921
458/469 [=====>.] - ETA: 0s - loss: 0.0268 - accuracy:
0.9921
469/469 [=====] - 2s 4ms/step - loss: 0.0274 - accuracy:
0.9920 - val_loss: 0.0916 - val_accuracy: 0.9825
Epoch 12/20

1/469 [.....] - ETA: 0s - loss: 0.0049 - accuracy:
1.0000
19/469 [>.....] - ETA: 1s - loss: 0.0117 - accuracy:
0.9967
36/469 [=>.....] - ETA: 1s - loss: 0.0163 - accuracy:
0.9952
52/469 [==>.....] - ETA: 1s - loss: 0.0142 - accuracy:
0.9958
69/469 [===>.....] - ETA: 1s - loss: 0.0141 - accuracy:
0.9959
86/469 [====>.....] - ETA: 1s - loss: 0.0175 - accuracy:
0.9947
102/469 [=====>.....] - ETA: 1s - loss: 0.0183 - accuracy:
0.9948
119/469 [=====>.....] - ETA: 1s - loss: 0.0189 - accuracy:
0.9947

135/469 [=====>.....] - ETA: 1s - loss: 0.0212 - accuracy:
0.9943
152/469 [=====>.....] - ETA: 0s - loss: 0.0212 - accuracy:
0.9943
167/469 [=====>.....] - ETA: 0s - loss: 0.0222 - accuracy:
0.9940
183/469 [=====>.....] - ETA: 0s - loss: 0.0220 - accuracy:
0.9939
198/469 [=====>.....] - ETA: 0s - loss: 0.0221 - accuracy:
0.9937
214/469 [=====>.....] - ETA: 0s - loss: 0.0219 - accuracy:
0.9938
230/469 [=====>.....] - ETA: 0s - loss: 0.0214 - accuracy:
0.9937
246/469 [=====>.....] - ETA: 0s - loss: 0.0219 - accuracy:
0.9936
262/469 [=====>.....] - ETA: 0s - loss: 0.0217 - accuracy:
0.9935
278/469 [=====>.....] - ETA: 0s - loss: 0.0218 - accuracy:
0.9935
294/469 [=====>.....] - ETA: 0s - loss: 0.0219 - accuracy:
0.9935
310/469 [=====>.....] - ETA: 0s - loss: 0.0216 - accuracy:
0.9936
326/469 [=====>.....] - ETA: 0s - loss: 0.0213 - accuracy:
0.9936
341/469 [=====>.....] - ETA: 0s - loss: 0.0218 - accuracy:
0.9935
356/469 [=====>.....] - ETA: 0s - loss: 0.0215 - accuracy:
0.9937
371/469 [=====>.....] - ETA: 0s - loss: 0.0211 - accuracy:
0.9937
386/469 [=====>.....] - ETA: 0s - loss: 0.0213 - accuracy:
0.9936
401/469 [=====>.....] - ETA: 0s - loss: 0.0220 - accuracy:
0.9935
416/469 [=====>....] - ETA: 0s - loss: 0.0221 - accuracy:
0.9934
432/469 [=====>...] - ETA: 0s - loss: 0.0225 - accuracy:
0.9933
448/469 [=====>..] - ETA: 0s - loss: 0.0226 - accuracy:
0.9933
465/469 [=====>.] - ETA: 0s - loss: 0.0225 - accuracy:
0.9934
469/469 [=====] - 2s 4ms/step - loss: 0.0225 - accuracy:
0.9934 - val_loss: 0.0854 - val_accuracy: 0.9844
Epoch 13/20

1/469 [.....] - ETA: 0s - loss: 0.0042 - accuracy:
1.0000

11/469 [.....] - ETA: 2s - loss: 0.0153 - accuracy:
0.9972
20/469 [>.....] - ETA: 2s - loss: 0.0153 - accuracy:
0.9961
31/469 [>.....] - ETA: 2s - loss: 0.0130 - accuracy:
0.9962
45/469 [=>.....] - ETA: 1s - loss: 0.0125 - accuracy:
0.9960
61/469 [==>.....] - ETA: 1s - loss: 0.0174 - accuracy:
0.9950
77/469 [===>.....] - ETA: 1s - loss: 0.0168 - accuracy:
0.9952
93/469 [====>.....] - ETA: 1s - loss: 0.0187 - accuracy:
0.9946
107/469 [=====>.....] - ETA: 1s - loss: 0.0187 - accuracy:
0.9946
123/469 [=====>.....] - ETA: 1s - loss: 0.0194 - accuracy:
0.9943
139/469 [=====>.....] - ETA: 1s - loss: 0.0189 - accuracy:
0.9944
155/469 [=====>.....] - ETA: 1s - loss: 0.0193 - accuracy:
0.9945
172/469 [=====>.....] - ETA: 1s - loss: 0.0192 - accuracy:
0.9946
187/469 [=====>.....] - ETA: 1s - loss: 0.0191 - accuracy:
0.9945
203/469 [=====>.....] - ETA: 0s - loss: 0.0192 - accuracy:
0.9944
219/469 [=====>.....] - ETA: 0s - loss: 0.0198 - accuracy:
0.9941
235/469 [=====>.....] - ETA: 0s - loss: 0.0204 - accuracy:
0.9940
251/469 [=====>.....] - ETA: 0s - loss: 0.0200 - accuracy:
0.9941
267/469 [=====>.....] - ETA: 0s - loss: 0.0204 - accuracy:
0.9939
283/469 [=====>.....] - ETA: 0s - loss: 0.0206 - accuracy:
0.9937
299/469 [=====>.....] - ETA: 0s - loss: 0.0209 - accuracy:
0.9937
315/469 [=====>.....] - ETA: 0s - loss: 0.0206 - accuracy:
0.9938
331/469 [=====>.....] - ETA: 0s - loss: 0.0204 - accuracy:
0.9938
347/469 [=====>.....] - ETA: 0s - loss: 0.0201 - accuracy:
0.9939
363/469 [=====>.....] - ETA: 0s - loss: 0.0205 - accuracy:
0.9937
379/469 [=====>.....] - ETA: 0s - loss: 0.0205 - accuracy:
0.9937

395/469 [=====>.....] - ETA: 0s - loss: 0.0209 - accuracy:
0.9937
411/469 [=====>....] - ETA: 0s - loss: 0.0207 - accuracy:
0.9937
427/469 [=====>...] - ETA: 0s - loss: 0.0213 - accuracy:
0.9936
444/469 [=====>..] - ETA: 0s - loss: 0.0213 - accuracy:
0.9936
460/469 [=====>.] - ETA: 0s - loss: 0.0214 - accuracy:
0.9936
469/469 [=====] - 2s 4ms/step - loss: 0.0218 - accuracy:
0.9936 - val_loss: 0.0937 - val_accuracy: 0.9818

Epoch 14/20

1/469 [.....] - ETA: 0s - loss: 0.0474 - accuracy:
0.9844
17/469 [>.....] - ETA: 1s - loss: 0.0239 - accuracy:
0.9926
33/469 [=>.....] - ETA: 1s - loss: 0.0238 - accuracy:
0.9934
49/469 [==>.....] - ETA: 1s - loss: 0.0223 - accuracy:
0.9943
65/469 [===>.....] - ETA: 1s - loss: 0.0207 - accuracy:
0.9947
80/469 [====>.....] - ETA: 1s - loss: 0.0217 - accuracy:
0.9946
96/469 [=====>.....] - ETA: 1s - loss: 0.0217 - accuracy:
0.9945
112/469 [=====>.....] - ETA: 1s - loss: 0.0230 - accuracy:
0.9943
127/469 [=====>.....] - ETA: 1s - loss: 0.0217 - accuracy:
0.9947
142/469 [=====>.....] - ETA: 1s - loss: 0.0203 - accuracy:
0.9949
158/469 [=====>.....] - ETA: 1s - loss: 0.0204 - accuracy:
0.9947
174/469 [=====>.....] - ETA: 0s - loss: 0.0202 - accuracy:
0.9947
191/469 [=====>.....] - ETA: 0s - loss: 0.0205 - accuracy:
0.9946
207/469 [=====>.....] - ETA: 0s - loss: 0.0208 - accuracy:
0.9946
224/469 [=====>.....] - ETA: 0s - loss: 0.0210 - accuracy:
0.9945
240/469 [=====>.....] - ETA: 0s - loss: 0.0209 - accuracy:
0.9944
256/469 [=====>.....] - ETA: 0s - loss: 0.0204 - accuracy:
0.9945
272/469 [=====>.....] - ETA: 0s - loss: 0.0206 - accuracy:
0.9944

288/469 [=====>.....] - ETA: 0s - loss: 0.0208 - accuracy:
0.9942
305/469 [=====>.....] - ETA: 0s - loss: 0.0204 - accuracy:
0.9943
321/469 [=====>.....] - ETA: 0s - loss: 0.0200 - accuracy:
0.9944
337/469 [=====>.....] - ETA: 0s - loss: 0.0202 - accuracy:
0.9944
353/469 [=====>.....] - ETA: 0s - loss: 0.0200 - accuracy:
0.9943
369/469 [=====>.....] - ETA: 0s - loss: 0.0203 - accuracy:
0.9942
386/469 [=====>.....] - ETA: 0s - loss: 0.0207 - accuracy:
0.9942
402/469 [=====>.....] - ETA: 0s - loss: 0.0214 - accuracy:
0.9941
419/469 [=====>....] - ETA: 0s - loss: 0.0222 - accuracy:
0.9940
435/469 [=====>...] - ETA: 0s - loss: 0.0224 - accuracy:
0.9939
451/469 [=====>..] - ETA: 0s - loss: 0.0226 - accuracy:
0.9940
467/469 [=====>.] - ETA: 0s - loss: 0.0228 - accuracy:
0.9938
469/469 [=====] - 2s 4ms/step - loss: 0.0227 - accuracy:
0.9939 - val_loss: 0.1014 - val_accuracy: 0.9838
Epoch 15/20

1/469 [.....] - ETA: 0s - loss: 0.1100 - accuracy:
0.9922
17/469 [>.....] - ETA: 1s - loss: 0.0261 - accuracy:
0.9936
34/469 [=>.....] - ETA: 1s - loss: 0.0194 - accuracy:
0.9945
50/469 [==>.....] - ETA: 1s - loss: 0.0191 - accuracy:
0.9941
66/469 [===>.....] - ETA: 1s - loss: 0.0209 - accuracy:
0.9942
83/469 [====>.....] - ETA: 1s - loss: 0.0218 - accuracy:
0.9942
97/469 [=====>.....] - ETA: 1s - loss: 0.0234 - accuracy:
0.9940
112/469 [=====>.....] - ETA: 1s - loss: 0.0222 - accuracy:
0.9943
126/469 [=====>.....] - ETA: 1s - loss: 0.0211 - accuracy:
0.9942
142/469 [=====>.....] - ETA: 1s - loss: 0.0208 - accuracy:
0.9941
156/469 [=====>.....] - ETA: 1s - loss: 0.0217 - accuracy:
0.9940

```
169/469 [=====>.....] - ETA: 1s - loss: 0.0211 - accuracy:
0.9941
181/469 [=====>.....] - ETA: 0s - loss: 0.0206 - accuracy:
0.9941
190/469 [=====>.....] - ETA: 0s - loss: 0.0206 - accuracy:
0.9942
198/469 [=====>.....] - ETA: 0s - loss: 0.0205 - accuracy:
0.9943
207/469 [=====>.....] - ETA: 0s - loss: 0.0210 - accuracy:
0.9941
216/469 [=====>.....] - ETA: 0s - loss: 0.0210 - accuracy:
0.9941
225/469 [=====>.....] - ETA: 0s - loss: 0.0208 - accuracy:
0.9941
237/469 [=====>.....] - ETA: 0s - loss: 0.0206 - accuracy:
0.9942
250/469 [=====>.....] - ETA: 0s - loss: 0.0208 - accuracy:
0.9941
263/469 [=====>.....] - ETA: 0s - loss: 0.0212 - accuracy:
0.9939
276/469 [=====>.....] - ETA: 0s - loss: 0.0208 - accuracy:
0.9941
291/469 [=====>.....] - ETA: 0s - loss: 0.0203 - accuracy:
0.9942
307/469 [=====>.....] - ETA: 0s - loss: 0.0200 - accuracy:
0.9943
319/469 [=====>.....] - ETA: 0s - loss: 0.0202 - accuracy:
0.9941
332/469 [=====>.....] - ETA: 0s - loss: 0.0197 - accuracy:
0.9943
348/469 [=====>.....] - ETA: 0s - loss: 0.0194 - accuracy:
0.9944
363/469 [=====>.....] - ETA: 0s - loss: 0.0195 - accuracy:
0.9944
378/469 [=====>.....] - ETA: 0s - loss: 0.0195 - accuracy:
0.9944
394/469 [=====>.....] - ETA: 0s - loss: 0.0197 - accuracy:
0.9943
410/469 [=====>....] - ETA: 0s - loss: 0.0197 - accuracy:
0.9943
426/469 [=====>...] - ETA: 0s - loss: 0.0201 - accuracy:
0.9942
442/469 [=====>..] - ETA: 0s - loss: 0.0202 - accuracy:
0.9943
456/469 [=====>.] - ETA: 0s - loss: 0.0207 - accuracy:
0.9942
469/469 [=====] - 2s 4ms/step - loss: 0.0210 - accuracy:
0.9941 - val_loss: 0.1039 - val_accuracy: 0.9834
Epoch 16/20
```

1/469 [.....] - ETA: 0s - loss: 0.0016 - accuracy:
1.0000
16/469 [>.....] - ETA: 1s - loss: 0.0130 - accuracy:
0.9971
32/469 [=>.....] - ETA: 1s - loss: 0.0111 - accuracy:
0.9971
48/469 [==>.....] - ETA: 1s - loss: 0.0147 - accuracy:
0.9961
63/469 [===>.....] - ETA: 1s - loss: 0.0164 - accuracy:
0.9957
78/469 [====>.....] - ETA: 1s - loss: 0.0157 - accuracy:
0.9958
93/469 [=====>.....] - ETA: 1s - loss: 0.0150 - accuracy:
0.9956
108/469 [=====>.....] - ETA: 1s - loss: 0.0160 - accuracy:
0.9953
123/469 [=====>.....] - ETA: 1s - loss: 0.0153 - accuracy:
0.9954
139/469 [=====>.....] - ETA: 1s - loss: 0.0155 - accuracy:
0.9953
153/469 [=====>.....] - ETA: 1s - loss: 0.0151 - accuracy:
0.9954
169/469 [=====>.....] - ETA: 1s - loss: 0.0163 - accuracy:
0.9951
184/469 [=====>.....] - ETA: 0s - loss: 0.0168 - accuracy:
0.9950
200/469 [=====>.....] - ETA: 0s - loss: 0.0168 - accuracy:
0.9951
216/469 [=====>.....] - ETA: 0s - loss: 0.0167 - accuracy:
0.9950
231/469 [=====>.....] - ETA: 0s - loss: 0.0169 - accuracy:
0.9949
246/469 [=====>.....] - ETA: 0s - loss: 0.0171 - accuracy:
0.9950
261/469 [=====>.....] - ETA: 0s - loss: 0.0180 - accuracy:
0.9947
276/469 [=====>.....] - ETA: 0s - loss: 0.0182 - accuracy:
0.9947
292/469 [=====>.....] - ETA: 0s - loss: 0.0182 - accuracy:
0.9948
307/469 [=====>.....] - ETA: 0s - loss: 0.0181 - accuracy:
0.9948
322/469 [=====>.....] - ETA: 0s - loss: 0.0182 - accuracy:
0.9947
338/469 [=====>.....] - ETA: 0s - loss: 0.0183 - accuracy:
0.9948
353/469 [=====>.....] - ETA: 0s - loss: 0.0183 - accuracy:
0.9947
367/469 [=====>.....] - ETA: 0s - loss: 0.0184 - accuracy:
0.9948

382/469 [=====>.....] - ETA: 0s - loss: 0.0184 - accuracy:
0.9948
397/469 [=====>.....] - ETA: 0s - loss: 0.0186 - accuracy:
0.9947
413/469 [=====>....] - ETA: 0s - loss: 0.0183 - accuracy:
0.9948
429/469 [=====>...] - ETA: 0s - loss: 0.0179 - accuracy:
0.9948
445/469 [=====>..] - ETA: 0s - loss: 0.0180 - accuracy:
0.9948
461/469 [=====>.] - ETA: 0s - loss: 0.0183 - accuracy:
0.9947
469/469 [=====] - 2s 4ms/step - loss: 0.0182 - accuracy:
0.9947 - val_loss: 0.1198 - val_accuracy: 0.9836
Epoch 17/20

1/469 [.....] - ETA: 0s - loss: 0.0092 - accuracy:
0.9922
15/469 [.....] - ETA: 1s - loss: 0.0223 - accuracy:
0.9948
31/469 [>.....] - ETA: 1s - loss: 0.0187 - accuracy:
0.9945
47/469 [==>.....] - ETA: 1s - loss: 0.0219 - accuracy:
0.9947
64/469 [===>.....] - ETA: 1s - loss: 0.0201 - accuracy:
0.9950
80/469 [====>.....] - ETA: 1s - loss: 0.0193 - accuracy:
0.9951
95/469 [=====>.....] - ETA: 1s - loss: 0.0192 - accuracy:
0.9947
111/469 [=====>.....] - ETA: 1s - loss: 0.0186 - accuracy:
0.9948
127/469 [=====>.....] - ETA: 1s - loss: 0.0194 - accuracy:
0.9946
142/469 [=====>.....] - ETA: 1s - loss: 0.0199 - accuracy:
0.9946
157/469 [=====>.....] - ETA: 1s - loss: 0.0194 - accuracy:
0.9945
173/469 [=====>.....] - ETA: 0s - loss: 0.0185 - accuracy:
0.9947
189/469 [=====>.....] - ETA: 0s - loss: 0.0188 - accuracy:
0.9945
204/469 [=====>.....] - ETA: 0s - loss: 0.0192 - accuracy:
0.9943
220/469 [=====>.....] - ETA: 0s - loss: 0.0196 - accuracy:
0.9941
236/469 [=====>.....] - ETA: 0s - loss: 0.0197 - accuracy:
0.9941
252/469 [=====>.....] - ETA: 0s - loss: 0.0196 - accuracy:
0.9942

268/469 [=====>.....] - ETA: 0s - loss: 0.0197 - accuracy:
0.9943
284/469 [=====>.....] - ETA: 0s - loss: 0.0200 - accuracy:
0.9942
300/469 [=====>.....] - ETA: 0s - loss: 0.0195 - accuracy:
0.9944
316/469 [=====>.....] - ETA: 0s - loss: 0.0193 - accuracy:
0.9945
331/469 [=====>.....] - ETA: 0s - loss: 0.0188 - accuracy:
0.9946
347/469 [=====>.....] - ETA: 0s - loss: 0.0187 - accuracy:
0.9947
363/469 [=====>.....] - ETA: 0s - loss: 0.0182 - accuracy:
0.9948
380/469 [=====>.....] - ETA: 0s - loss: 0.0180 - accuracy:
0.9948
396/469 [=====>.....] - ETA: 0s - loss: 0.0184 - accuracy:
0.9947
413/469 [=====>....] - ETA: 0s - loss: 0.0190 - accuracy:
0.9947
430/469 [=====>...] - ETA: 0s - loss: 0.0186 - accuracy:
0.9948
447/469 [=====>..] - ETA: 0s - loss: 0.0185 - accuracy:
0.9948
464/469 [=====>.] - ETA: 0s - loss: 0.0187 - accuracy:
0.9948
469/469 [=====] - 2s 4ms/step - loss: 0.0186 - accuracy:
0.9948 - val_loss: 0.1123 - val_accuracy: 0.9848
Epoch 18/20

1/469 [.....] - ETA: 0s - loss: 8.1622e-05 - accuracy:
1.0000
19/469 [>.....] - ETA: 1s - loss: 0.0252 - accuracy:
0.9942
36/469 [=>.....] - ETA: 1s - loss: 0.0177 - accuracy:
0.9959
53/469 [==>.....] - ETA: 1s - loss: 0.0154 - accuracy:
0.9960
70/469 [===>.....] - ETA: 1s - loss: 0.0149 - accuracy:
0.9961
86/469 [====>.....] - ETA: 1s - loss: 0.0151 - accuracy:
0.9960
102/469 [=====>.....] - ETA: 1s - loss: 0.0159 - accuracy:
0.9956
116/469 [=====>.....] - ETA: 1s - loss: 0.0162 - accuracy:
0.9954
131/469 [=====>.....] - ETA: 1s - loss: 0.0164 - accuracy:
0.9954
147/469 [=====>.....] - ETA: 1s - loss: 0.0162 - accuracy:
0.9955

163/469 [=====>.....] - ETA: 0s - loss: 0.0157 - accuracy:
0.9956
179/469 [=====>.....] - ETA: 0s - loss: 0.0154 - accuracy:
0.9956
195/469 [=====>.....] - ETA: 0s - loss: 0.0158 - accuracy:
0.9954
211/469 [=====>.....] - ETA: 0s - loss: 0.0154 - accuracy:
0.9955
227/469 [=====>.....] - ETA: 0s - loss: 0.0164 - accuracy:
0.9952
243/469 [=====>.....] - ETA: 0s - loss: 0.0164 - accuracy:
0.9952
257/469 [=====>.....] - ETA: 0s - loss: 0.0161 - accuracy:
0.9954
271/469 [=====>.....] - ETA: 0s - loss: 0.0163 - accuracy:
0.9953
287/469 [=====>.....] - ETA: 0s - loss: 0.0159 - accuracy:
0.9954
304/469 [=====>.....] - ETA: 0s - loss: 0.0159 - accuracy:
0.9954
320/469 [=====>.....] - ETA: 0s - loss: 0.0166 - accuracy:
0.9952
336/469 [=====>.....] - ETA: 0s - loss: 0.0164 - accuracy:
0.9953
351/469 [=====>.....] - ETA: 0s - loss: 0.0165 - accuracy:
0.9952
368/469 [=====>.....] - ETA: 0s - loss: 0.0164 - accuracy:
0.9952
383/469 [=====>.....] - ETA: 0s - loss: 0.0169 - accuracy:
0.9951
399/469 [=====>.....] - ETA: 0s - loss: 0.0166 - accuracy:
0.9951
416/469 [=====>....] - ETA: 0s - loss: 0.0167 - accuracy:
0.9951
431/469 [=====>...] - ETA: 0s - loss: 0.0170 - accuracy:
0.9951
447/469 [=====>..] - ETA: 0s - loss: 0.0173 - accuracy:
0.9950
463/469 [=====>.] - ETA: 0s - loss: 0.0177 - accuracy:
0.9950
469/469 [=====] - 2s 4ms/step - loss: 0.0176 - accuracy:
0.9950 - val_loss: 0.1093 - val_accuracy: 0.9851
Epoch 19/20

1/469 [.....] - ETA: 0s - loss: 0.0134 - accuracy:
0.9922
17/469 [>.....] - ETA: 1s - loss: 0.0129 - accuracy:
0.9954
33/469 [=>.....] - ETA: 1s - loss: 0.0168 - accuracy:
0.9955

50/469 [==>.....] - ETA: 1s - loss: 0.0209 - accuracy:
0.9948
67/469 [===>.....] - ETA: 1s - loss: 0.0172 - accuracy:
0.9956
81/469 [====>.....] - ETA: 1s - loss: 0.0166 - accuracy:
0.9955
97/469 [=====>.....] - ETA: 1s - loss: 0.0192 - accuracy:
0.9951
110/469 [=====>.....] - ETA: 1s - loss: 0.0184 - accuracy:
0.9952
122/469 [=====>.....] - ETA: 1s - loss: 0.0176 - accuracy:
0.9954
136/469 [=====>.....] - ETA: 1s - loss: 0.0173 - accuracy:
0.9956
149/469 [=====>.....] - ETA: 1s - loss: 0.0168 - accuracy:
0.9956
163/469 [=====>.....] - ETA: 1s - loss: 0.0165 - accuracy:
0.9956
177/469 [=====>.....] - ETA: 1s - loss: 0.0169 - accuracy:
0.9955
192/469 [=====>.....] - ETA: 0s - loss: 0.0171 - accuracy:
0.9955
208/469 [=====>.....] - ETA: 0s - loss: 0.0174 - accuracy:
0.9954
224/469 [=====>.....] - ETA: 0s - loss: 0.0172 - accuracy:
0.9955
240/469 [=====>.....] - ETA: 0s - loss: 0.0170 - accuracy:
0.9955
257/469 [=====>.....] - ETA: 0s - loss: 0.0172 - accuracy:
0.9954
273/469 [=====>.....] - ETA: 0s - loss: 0.0174 - accuracy:
0.9954
288/469 [=====>.....] - ETA: 0s - loss: 0.0175 - accuracy:
0.9954
301/469 [=====>.....] - ETA: 0s - loss: 0.0176 - accuracy:
0.9954
316/469 [=====>.....] - ETA: 0s - loss: 0.0170 - accuracy:
0.9954
330/469 [=====>.....] - ETA: 0s - loss: 0.0168 - accuracy:
0.9954
346/469 [=====>.....] - ETA: 0s - loss: 0.0170 - accuracy:
0.9954
362/469 [=====>.....] - ETA: 0s - loss: 0.0168 - accuracy:
0.9954
377/469 [=====>.....] - ETA: 0s - loss: 0.0164 - accuracy:
0.9955
392/469 [=====>.....] - ETA: 0s - loss: 0.0164 - accuracy:
0.9955
407/469 [=====>.....] - ETA: 0s - loss: 0.0169 - accuracy:
0.9955

422/469 [=====>....] - ETA: 0s - loss: 0.0168 - accuracy:
0.9954
435/469 [=====>...] - ETA: 0s - loss: 0.0172 - accuracy:
0.9954
451/469 [=====>..] - ETA: 0s - loss: 0.0172 - accuracy:
0.9954
467/469 [=====>.] - ETA: 0s - loss: 0.0171 - accuracy:
0.9954
469/469 [=====] - 2s 4ms/step - loss: 0.0174 - accuracy:
0.9953 - val_loss: 0.1075 - val_accuracy: 0.9837
Epoch 20/20

1/469 [.....] - ETA: 0s - loss: 0.0021 - accuracy:
1.0000
18/469 [>.....] - ETA: 1s - loss: 0.0073 - accuracy:
0.9983
34/469 [=>.....] - ETA: 1s - loss: 0.0161 - accuracy:
0.9961
49/469 [==>.....] - ETA: 1s - loss: 0.0142 - accuracy:
0.9957
63/469 [===>.....] - ETA: 1s - loss: 0.0148 - accuracy:
0.9958
77/469 [===>.....] - ETA: 1s - loss: 0.0149 - accuracy:
0.9957
92/469 [====>.....] - ETA: 1s - loss: 0.0136 - accuracy:
0.9958
107/469 [====>.....] - ETA: 1s - loss: 0.0131 - accuracy:
0.9958
123/469 [=====>.....] - ETA: 1s - loss: 0.0128 - accuracy:
0.9959
140/469 [=====>.....] - ETA: 1s - loss: 0.0133 - accuracy:
0.9959
157/469 [=====>.....] - ETA: 1s - loss: 0.0133 - accuracy:
0.9958
174/469 [=====>.....] - ETA: 0s - loss: 0.0133 - accuracy:
0.9958
190/469 [=====>.....] - ETA: 0s - loss: 0.0145 - accuracy:
0.9958
206/469 [=====>.....] - ETA: 0s - loss: 0.0151 - accuracy:
0.9955
222/469 [=====>.....] - ETA: 0s - loss: 0.0148 - accuracy:
0.9956
238/469 [=====>.....] - ETA: 0s - loss: 0.0153 - accuracy:
0.9956
253/469 [=====>.....] - ETA: 0s - loss: 0.0148 - accuracy:
0.9958
269/469 [=====>.....] - ETA: 0s - loss: 0.0149 - accuracy:
0.9958
284/469 [=====>.....] - ETA: 0s - loss: 0.0150 - accuracy:
0.9957

300/469 [=====>.....] - ETA: 0s - loss: 0.0151 - accuracy:
0.9958
316/469 [=====>.....] - ETA: 0s - loss: 0.0161 - accuracy:
0.9957
333/469 [=====>.....] - ETA: 0s - loss: 0.0166 - accuracy:
0.9954
350/469 [=====>.....] - ETA: 0s - loss: 0.0166 - accuracy:
0.9954
366/469 [=====>.....] - ETA: 0s - loss: 0.0166 - accuracy:
0.9953
382/469 [=====>.....] - ETA: 0s - loss: 0.0169 - accuracy:
0.9953
398/469 [=====>.....] - ETA: 0s - loss: 0.0174 - accuracy:
0.9952
414/469 [=====>....] - ETA: 0s - loss: 0.0172 - accuracy:
0.9953
431/469 [=====>...] - ETA: 0s - loss: 0.0171 - accuracy:
0.9954
447/469 [=====>..] - ETA: 0s - loss: 0.0170 - accuracy:
0.9954
463/469 [=====>.] - ETA: 0s - loss: 0.0176 - accuracy:
0.9953
469/469 [=====] - 2s 4ms/step - loss: 0.0178 - accuracy:
0.9953 - val_loss: 0.1235 - val_accuracy: 0.9835
Test loss: 0.12346364557743073
Test accuracy: 0.9835000038146973