

2022R1 Advance Topics in AI (CMSC5707)

Assignment 2 Report

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1. Task 1

Training Details The scripts *cnn_mnist1.py* and *cnn_mnist1.ipynb* were run on my Mac Book Pro with Intel UHD Graphics 630 and Colab, respectively. See Figure for more details. The model trained in *cnn_mnist1.py* shows a loss value of 0.68324 and an accuracy rate of 0.8442.

```
Epoch 1/12
469/469 [-----] - 47s 100ms/step - loss: 2.2750 - accuracy: 0.1692 - val_loss: 2.2374 - val_accuracy: 0.4061
Epoch 2/12
469/469 [-----] - 46s 98ms/step - loss: 2.2134 - accuracy: 0.2082 - val_loss: 2.1600 - val_accuracy: 0.5358
Epoch 3/12
469/469 [-----] - 44s 93ms/step - loss: 2.1310 - accuracy: 0.3927 - val_loss: 2.0562 - val_accuracy: 0.6294
Epoch 4/12
469/469 [-----] - 50s 106ms/step - loss: 2.0224 - accuracy: 0.4715 - val_loss: 1.9163 - val_accuracy: 0.6914
Epoch 5/12
469/469 [-----] - 48s 102ms/step - loss: 1.8790 - accuracy: 0.5317 - val_loss: 1.7354 - val_accuracy: 0.7346
Epoch 6/12
469/469 [-----] - 50s 107ms/step - loss: 1.7050 - accuracy: 0.5779 - val_loss: 1.5224 - val_accuracy: 0.7657
Epoch 7/12
469/469 [-----] - 46s 99ms/step - loss: 1.5214 - accuracy: 0.6125 - val_loss: 1.3032 - val_accuracy: 0.7897
Epoch 8/12
469/469 [-----] - 49s 105ms/step - loss: 1.3479 - accuracy: 0.6451 - val_loss: 1.1090 - val_accuracy: 0.8054
Epoch 9/12
469/469 [-----] - 47s 100ms/step - loss: 1.2004 - accuracy: 0.6689 - val_loss: 0.9539 - val_accuracy: 0.8198
Epoch 10/12
469/469 [-----] - 47s 101ms/step - loss: 1.0826 - accuracy: 0.6916 - val_loss: 0.8362 - val_accuracy: 0.8267
Epoch 11/12
469/469 [-----] - 47s 100ms/step - loss: 0.9954 - accuracy: 0.7063 - val_loss: 0.7499 - val_accuracy: 0.8369
Epoch 12/12
469/469 [-----] - 46s 99ms/step - loss: 0.9250 - accuracy: 0.7241 - val_loss: 0.6832 - val_accuracy: 0.8442
Test loss: 0.6832401156425476
Test accuracy: 0.8442000150680542
```

Figure 1. MBP Execution Result

The model trained in *cnn_mnist1.ipynb* shows a loss of 0.8903 and an accuracy of 0.8234 on the test dataset.

```
model.fit(x_train, y_train,
        batch_size=batch_size,
        epochs=epochs,
        verbose=1,
        validation_data=(x_test, y_test))

Epoch 1/12
469/469 [-----] - 5s 10ms/step - loss: 1.0505 - accuracy: 0.6972 - val_loss: 0.7977 - val_accuracy: 0.8341
Epoch 2/12
469/469 [-----] - 4s 9ms/step - loss: 0.9759 - accuracy: 0.7152 - val_loss: 0.7263 - val_accuracy: 0.8425
Epoch 3/12
469/469 [-----] - 4s 9ms/step - loss: 0.9180 - accuracy: 0.7269 - val_loss: 0.6694 - val_accuracy: 0.8505
Epoch 4/12
469/469 [-----] - 5s 10ms/step - loss: 0.8689 - accuracy: 0.7413 - val_loss: 0.6245 - val_accuracy: 0.8561
Epoch 5/12
469/469 [-----] - 4s 9ms/step - loss: 0.8257 - accuracy: 0.7519 - val_loss: 0.5875 - val_accuracy: 0.8616
Epoch 6/12
469/469 [-----] - 5s 10ms/step - loss: 0.7917 - accuracy: 0.7619 - val_loss: 0.5571 - val_accuracy: 0.8664
Epoch 7/12
469/469 [-----] - 4s 9ms/step - loss: 0.7653 - accuracy: 0.7663 - val_loss: 0.5310 - val_accuracy: 0.8713
Epoch 8/12
469/469 [-----] - 4s 9ms/step - loss: 0.7357 - accuracy: 0.7755 - val_loss: 0.5085 - val_accuracy: 0.8751
Epoch 9/12
469/469 [-----] - 5s 10ms/step - loss: 0.7104 - accuracy: 0.7846 - val_loss: 0.4888 - val_accuracy: 0.8790
Epoch 10/12
469/469 [-----] - 5s 10ms/step - loss: 0.6886 - accuracy: 0.7898 - val_loss: 0.4714 - val_accuracy: 0.8810
Epoch 11/12
469/469 [-----] - 4s 9ms/step - loss: 0.6666 - accuracy: 0.7973 - val_loss: 0.4555 - val_accuracy: 0.8844
Epoch 12/12
469/469 [-----] - 4s 9ms/step - loss: 0.6491 - accuracy: 0.8029 - val_loss: 0.4421 - val_accuracy: 0.8872
<keras.callbacks.History at 0x7f605f8b0530>

[8] score = model.evaluate(x_test, y_test, verbose=0)
print('Test loss:', score[0])
print('Test accuracy:', score[1])

Test loss: 0.8903228640556335
Test accuracy: 0.8234000205993652
```

Figure 2. Colab Execution Result

Results & Analysis The model trained on Colab performs a bit worse than the model trained on my Mac Book

Pro. Both training performances are the benchmark for my own design training model.

2. Task 2&3

The benchmark model only trains 12 epochs, which is obviously not enough for the learning model to reduce the loss function. Besides, the model with few convolution layers may not be able to view more details about images. Adding additional convolution layers can collect more information about the input and enhance local features. Since the benchmark model applied Adam Algorithm to accelerate gradient descent and use cross entropy to compute loss value, they are good enough for CNN training, so we won't change them anymore. By considering the above thinking, the first strategy to improve the accuracy is training the model more times. The second strategy is adding another convolution layer.

I modify the program by adding another convolution layer after the first max pooling layer. And I also add another max pooling layer after the new convolution layer.

Implementation Details My Convolution Neural Network contains 10 layers. In the order of execution, they are convolution layer, convolution layer, max pooling layer, convolution layer, max pooling layer, dropout layer, flatten layer, dense layer, dropout layer, and dense layer. The pseudo-code of my implementation is as the following:

```
model = Sequential()
# C1
Conv2D(32, kernel_size=(3, 3),
      activation='relu',
      input_shape=input_shape)

# C2
Conv2D(64, (3, 3), activation='relu')
# S1
MaxPooling2D(pool_size=(2, 2))
# C3
Conv2D(64, (3, 3), activation='relu')
# S2
```

```

MaxPooling2D(pool_size=(2, 2))
Dropout(0.25)
Flatten()
# F1
Dense(128, activation='relu')
Dropout(0.5)
# F2
Dense(num_classes, activation='softmax')
model.compile(loss=crossentropy,
              optimizer=Adadelta,
              metrics=['accuracy'])

```

The model was trained on 60000 samples of 28×28 images from the MNIST database. The first convolution layer takes input images with a size of 28×28 . All convolution layers in my program use *ReLU* as their activation functions except the last layer, which uses *softmax* instead. The training processes run 1200 epochs in total.

C1 This convolution layer applied 32 kernels with sizes of 3×3 . The number of parameters in this layer is $3 \times 3 \times 32 \times 1 + 32 = 320$.

C2 This convolution layer applied 64 kernels with sizes of 3×3 . The number of parameters in this layer is $3 \times 3 \times 32 \times 64 + 64 = 18496$.

C3 This convolution layer applied 64 kernels with sizes of 3×3 . The number of parameters in this layer is $3 \times 3 \times 64 \times 64 + 64 = 36928$.

F1 This fully-connected layer takes 1600 inputs, and the output size is 128. The number of parameters in this layer is $1600 \times 128 + 128 = 204928$.

F2 This fully-connected layer takes 128 inputs, and the output size is 10, which is the number of classes. The number of parameters in this layer is $1280 \times 10 + 10 = 1290$.

Other layers The others layers don't have any parameters to learn. The total number of parameters is 261962.

Results & Analysis The whole training records can be viewed in Appendix. After finishing training, the model was

```

Epoch 1198/1200
469/469 [=====] - 2s 4ms/step - loss: 0.0680 - accuracy: 0.9796 - val_loss: 0.0312 - val_accuracy: 0.9894
Epoch 1199/1200
469/469 [=====] - 2s 4ms/step - loss: 0.0681 - accuracy: 0.9794 - val_loss: 0.0313 - val_accuracy: 0.9895
Epoch 1200/1200
469/469 [=====] - 2s 4ms/step - loss: 0.0694 - accuracy: 0.9794 - val_loss: 0.0312 - val_accuracy: 0.9895

9) score = model.evaluate(x_test, y_test, verbose=0)
print('Test loss:', score[0])
print('Test accuracy:', score[1])
score
Test loss: 0.03122054785490036
Test accuracy: 0.9894999861717224
[0.03122054785490036, 0.9894999861717224]

```

Figure 3. My Training Results, epochs=1200

tested on a test dataset of 10000 samples. The test results report that the loss value of my model is 0.03122, and the accuracy of my model is 0.9895. From the graphs of comparison between training accuracy and test accuracy (validated by test data), it's clear that the validation accuracy is always higher than training accuracy during the training, which means my model is still not overfitting as far as 1200 epochs completed.

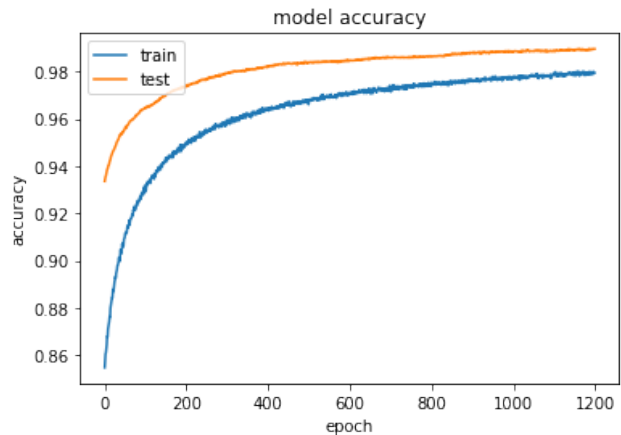


Figure 4. Accuracy Comparison

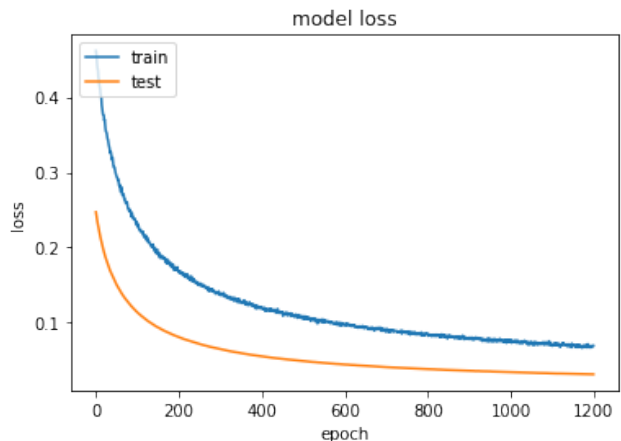


Figure 5. Loss Comparison

By estimating two curves of accuracy, they may merge after 3000 epochs. Due to resource limitations, I was unable to check this threshold. The following two graphs show the accuracy and loss value within 3000 epochs. Even training 3000 epochs, the training accuracy is still lower than the test accuracy in each epoch. However, we can see that they are quite close to each other. Perhaps they will intersect with each other after 4000 epochs.

The reason why my model performs much better than the benchmark model is that I add another convolution layer to extract local features more precisely. By doing the first

```

Epoch 2995/3000
449/449 [=====] - 5s 12ms/step - loss: 0.0451 - accuracy: 0.9861 - val_loss: 0.0235 - val_accuracy: 0.9926
Epoch 2999/3000
449/449 [=====] - 5s 12ms/step - loss: 0.0435 - accuracy: 0.9871 - val_loss: 0.0236 - val_accuracy: 0.9927
Epoch 3000/3000
449/449 [=====] - 5s 11ms/step - loss: 0.0437 - accuracy: 0.9866 - val_loss: 0.0235 - val_accuracy: 0.9928

[8] score = model.evaluate(x_test, y_test, verbose=0)
print('Test Loss:', score[0])
print('Test accuracy:', score[1])
score
Test Loss: 0.023534296080470085
Test accuracy: 0.9927999973297119
[0.023534296080470085, 0.9927999973297119]

```

Figure 6. My Training Results, epochs=1200

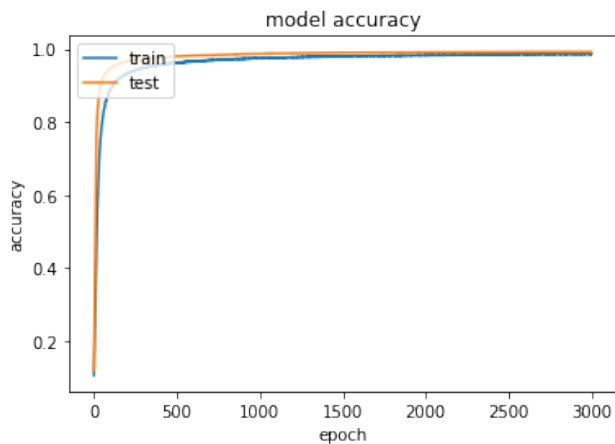


Figure 7. Accuracy Comparison

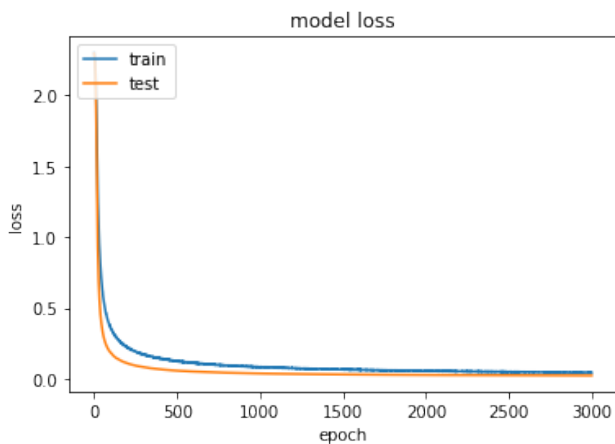


Figure 8. Loss Comparison

convolution, the model may roughly know about the global distribution of images. By doing the second convolution and max pooling, the model extracts more details of the global information and filters out the most outstanding ones. That's not enough for fine-grained recognition. So, an additional convolution layer and max pooling layer append to the end to further refine the outstanding features extracted from previous layers to make the image more explicit to be recognized. The model gains more information about from the pixels around the pixel doing convolution. Moreover, more epochs allow the model to solidly learn about any details of images and give the model more chances to conduct trial-and-error.

3. Appendix

Epoch 1/1200
469/469 - loss: 0.4618 - accuracy: 0.8548 - val_loss: 0.2470 - val_accuracy: 0.9336
Epoch 2/1200
469/469 - loss: 0.4579 - accuracy: 0.8575 - val_loss: 0.2432 - val_accuracy: 0.9347
Epoch 3/1200
469/469 - loss: 0.4493 - accuracy: 0.8606 - val_loss: 0.2397 - val_accuracy: 0.9355
Epoch 4/1200
469/469 - loss: 0.4425 - accuracy: 0.8612 - val_loss: 0.2363 - val_accuracy: 0.9359
Epoch 5/1200
469/469 - loss: 0.4379 - accuracy: 0.8631 - val_loss: 0.2328 - val_accuracy: 0.9368
Epoch 6/1200
469/469 - loss: 0.4358 - accuracy: 0.8645 - val_loss: 0.2299 - val_accuracy: 0.9377
Epoch 7/1200
469/469 - loss: 0.4259 - accuracy: 0.8680 - val_loss: 0.2265 - val_accuracy: 0.9386
Epoch 8/1200
469/469 - loss: 0.4239 - accuracy: 0.8678 - val_loss: 0.2235 - val_accuracy: 0.9388
Epoch 9/1200
469/469 - loss: 0.4171 - accuracy: 0.8710 - val_loss: 0.2207 - val_accuracy: 0.9397
Epoch 10/1200
469/469 - loss: 0.4146 - accuracy: 0.8720 - val_loss: 0.2178 - val_accuracy: 0.9403
Epoch 11/1200
469/469 - loss: 0.4109 - accuracy: 0.8732 - val_loss: 0.2157 - val_accuracy: 0.9404
Epoch 12/1200
469/469 - loss: 0.4046 - accuracy: 0.8743 - val_loss: 0.2131 - val_accuracy: 0.9410
Epoch 13/1200
469/469 - loss: 0.4012 - accuracy: 0.8763 - val_loss: 0.2107 - val_accuracy: 0.9419
Epoch 14/1200
469/469 - loss: 0.4001 - accuracy: 0.8761 - val_loss: 0.2082 - val_accuracy: 0.9423
Epoch 15/1200
469/469 - loss: 0.3897 - accuracy: 0.8799 - val_loss: 0.2057 - val_accuracy: 0.9428
Epoch 16/1200
469/469 - loss: 0.3855 - accuracy: 0.8811 - val_loss: 0.2033 - val_accuracy: 0.9438
Epoch 17/1200
469/469 - loss: 0.3815 - accuracy: 0.8823 - val_loss: 0.2011 - val_accuracy: 0.9443
Epoch 18/1200
469/469 - loss: 0.3768 - accuracy: 0.8839 - val_loss: 0.1988 - val_accuracy: 0.9449
Epoch 19/1200
469/469 - loss: 0.3762 - accuracy: 0.8845 - val_loss: 0.1968 - val_accuracy: 0.9453
Epoch 20/1200
469/469 - loss: 0.3760 - accuracy: 0.8844 - val_loss: 0.1948 - val_accuracy: 0.9456
Epoch 21/1200
469/469 - loss: 0.3692 - accuracy: 0.8878 - val_loss: 0.1929 - val_accuracy: 0.9461
Epoch 22/1200
469/469 - loss: 0.3701 - accuracy: 0.8870 - val_loss: 0.1909 - val_accuracy: 0.9465
Epoch 23/1200
469/469 - loss: 0.3635 - accuracy: 0.8877 - val_loss: 0.1889 - val_accuracy: 0.9467
Epoch 24/1200
469/469 - loss: 0.3582 - accuracy: 0.8893 - val_loss: 0.1870 - val_accuracy: 0.9470
Epoch 25/1200
469/469 - loss: 0.3545 - accuracy: 0.8910 - val_loss: 0.1853 - val_accuracy: 0.9474
Epoch 26/1200
469/469 - loss: 0.3536 - accuracy: 0.8918 - val_loss: 0.1838 - val_accuracy: 0.9479

Epoch 27/1200
469/469 - loss: 0.3521 - accuracy: 0.8931 - val_loss: 0.1820 - val_accuracy: 0.9484
Epoch 28/1200
469/469 - loss: 0.3472 - accuracy: 0.8927 - val_loss: 0.1804 - val_accuracy: 0.9486
Epoch 29/1200
469/469 - loss: 0.3445 - accuracy: 0.8947 - val_loss: 0.1787 - val_accuracy: 0.9494
Epoch 30/1200
469/469 - loss: 0.3436 - accuracy: 0.8954 - val_loss: 0.1769 - val_accuracy: 0.9499
Epoch 31/1200
469/469 - loss: 0.3394 - accuracy: 0.8962 - val_loss: 0.1754 - val_accuracy: 0.9502
Epoch 32/1200
469/469 - loss: 0.3364 - accuracy: 0.8979 - val_loss: 0.1738 - val_accuracy: 0.9504
Epoch 33/1200
469/469 - loss: 0.3337 - accuracy: 0.8981 - val_loss: 0.1724 - val_accuracy: 0.9509
Epoch 34/1200
469/469 - loss: 0.3316 - accuracy: 0.8990 - val_loss: 0.1711 - val_accuracy: 0.9511
Epoch 35/1200
469/469 - loss: 0.3258 - accuracy: 0.8997 - val_loss: 0.1694 - val_accuracy: 0.9515
Epoch 36/1200
469/469 - loss: 0.3262 - accuracy: 0.9014 - val_loss: 0.1682 - val_accuracy: 0.9521
Epoch 37/1200
469/469 - loss: 0.3271 - accuracy: 0.8996 - val_loss: 0.1670 - val_accuracy: 0.9526
Epoch 38/1200
469/469 - loss: 0.3236 - accuracy: 0.9016 - val_loss: 0.1656 - val_accuracy: 0.9532
Epoch 39/1200
469/469 - loss: 0.3208 - accuracy: 0.9025 - val_loss: 0.1644 - val_accuracy: 0.9532
Epoch 40/1200
469/469 - loss: 0.3166 - accuracy: 0.9047 - val_loss: 0.1631 - val_accuracy: 0.9532
Epoch 41/1200
469/469 - loss: 0.3196 - accuracy: 0.9029 - val_loss: 0.1621 - val_accuracy: 0.9532
Epoch 42/1200
469/469 - loss: 0.3137 - accuracy: 0.9046 - val_loss: 0.1607 - val_accuracy: 0.9539
Epoch 43/1200
469/469 - loss: 0.3092 - accuracy: 0.9048 - val_loss: 0.1595 - val_accuracy: 0.9541
Epoch 44/1200
469/469 - loss: 0.3067 - accuracy: 0.9072 - val_loss: 0.1579 - val_accuracy: 0.9538
Epoch 45/1200
469/469 - loss: 0.3069 - accuracy: 0.9058 - val_loss: 0.1568 - val_accuracy: 0.9542
Epoch 46/1200
469/469 - loss: 0.3065 - accuracy: 0.9070 - val_loss: 0.1557 - val_accuracy: 0.9546
Epoch 47/1200
469/469 - loss: 0.3028 - accuracy: 0.9062 - val_loss: 0.1546 - val_accuracy: 0.9546
Epoch 48/1200
469/469 - loss: 0.3001 - accuracy: 0.9089 - val_loss: 0.1534 - val_accuracy: 0.9549
Epoch 49/1200
469/469 - loss: 0.2982 - accuracy: 0.9095 - val_loss: 0.1524 - val_accuracy: 0.9555
Epoch 50/1200
469/469 - loss: 0.2967 - accuracy: 0.9097 - val_loss: 0.1514 - val_accuracy: 0.9557
Epoch 51/1200
469/469 - loss: 0.2941 - accuracy: 0.9113 - val_loss: 0.1502 - val_accuracy: 0.9559
Epoch 52/1200
469/469 - loss: 0.2936 - accuracy: 0.9118 - val_loss: 0.1493 - val_accuracy: 0.9566
Epoch 53/1200

469/469 - loss: 0.2918 - accuracy: 0.9118 - val_loss: 0.1483 - val_accuracy: 0.9560
Epoch 54/1200
469/469 - loss: 0.2894 - accuracy: 0.9115 - val_loss: 0.1473 - val_accuracy: 0.9567
Epoch 55/1200
469/469 - loss: 0.2902 - accuracy: 0.9120 - val_loss: 0.1463 - val_accuracy: 0.9570
Epoch 56/1200
469/469 - loss: 0.2869 - accuracy: 0.9138 - val_loss: 0.1452 - val_accuracy: 0.9571
Epoch 57/1200
469/469 - loss: 0.2825 - accuracy: 0.9147 - val_loss: 0.1443 - val_accuracy: 0.9571
Epoch 58/1200
469/469 - loss: 0.2837 - accuracy: 0.9139 - val_loss: 0.1434 - val_accuracy: 0.9576
Epoch 59/1200
469/469 - loss: 0.2801 - accuracy: 0.9149 - val_loss: 0.1425 - val_accuracy: 0.9577
Epoch 60/1200
469/469 - loss: 0.2809 - accuracy: 0.9149 - val_loss: 0.1417 - val_accuracy: 0.9581
Epoch 61/1200
469/469 - loss: 0.2740 - accuracy: 0.9171 - val_loss: 0.1407 - val_accuracy: 0.9584
Epoch 62/1200
469/469 - loss: 0.2804 - accuracy: 0.9151 - val_loss: 0.1399 - val_accuracy: 0.9587
Epoch 63/1200
469/469 - loss: 0.2740 - accuracy: 0.9167 - val_loss: 0.1391 - val_accuracy: 0.9590
Epoch 64/1200
469/469 - loss: 0.2735 - accuracy: 0.9173 - val_loss: 0.1382 - val_accuracy: 0.9591
Epoch 65/1200
469/469 - loss: 0.2695 - accuracy: 0.9179 - val_loss: 0.1372 - val_accuracy: 0.9591
Epoch 66/1200
469/469 - loss: 0.2708 - accuracy: 0.9180 - val_loss: 0.1363 - val_accuracy: 0.9593
Epoch 67/1200
469/469 - loss: 0.2711 - accuracy: 0.9184 - val_loss: 0.1357 - val_accuracy: 0.9595
Epoch 68/1200
469/469 - loss: 0.2695 - accuracy: 0.9194 - val_loss: 0.1348 - val_accuracy: 0.9596
Epoch 69/1200
469/469 - loss: 0.2651 - accuracy: 0.9197 - val_loss: 0.1339 - val_accuracy: 0.9598
Epoch 70/1200
469/469 - loss: 0.2653 - accuracy: 0.9191 - val_loss: 0.1332 - val_accuracy: 0.9597
Epoch 71/1200
469/469 - loss: 0.2624 - accuracy: 0.9214 - val_loss: 0.1324 - val_accuracy: 0.9599
Epoch 72/1200
469/469 - loss: 0.2611 - accuracy: 0.9209 - val_loss: 0.1317 - val_accuracy: 0.9601
Epoch 73/1200
469/469 - loss: 0.2588 - accuracy: 0.9228 - val_loss: 0.1310 - val_accuracy: 0.9604
Epoch 74/1200
469/469 - loss: 0.2595 - accuracy: 0.9218 - val_loss: 0.1304 - val_accuracy: 0.9606
Epoch 75/1200
469/469 - loss: 0.2608 - accuracy: 0.9214 - val_loss: 0.1298 - val_accuracy: 0.9606
Epoch 76/1200
469/469 - loss: 0.2602 - accuracy: 0.9215 - val_loss: 0.1290 - val_accuracy: 0.9609
Epoch 77/1200
469/469 - loss: 0.2565 - accuracy: 0.9220 - val_loss: 0.1283 - val_accuracy: 0.9614
Epoch 78/1200
469/469 - loss: 0.2526 - accuracy: 0.9231 - val_loss: 0.1275 - val_accuracy: 0.9613
Epoch 79/1200
469/469 - loss: 0.2514 - accuracy: 0.9239 - val_loss: 0.1270 - val_accuracy: 0.9616

Epoch 80/1200
469/469 - loss: 0.2508 - accuracy: 0.9233 - val_loss: 0.1262 - val_accuracy: 0.9617
Epoch 81/1200
469/469 - loss: 0.2486 - accuracy: 0.9248 - val_loss: 0.1255 - val_accuracy: 0.9618
Epoch 82/1200
469/469 - loss: 0.2509 - accuracy: 0.9254 - val_loss: 0.1248 - val_accuracy: 0.9619
Epoch 83/1200
469/469 - loss: 0.2480 - accuracy: 0.9248 - val_loss: 0.1242 - val_accuracy: 0.9620
Epoch 84/1200
469/469 - loss: 0.2472 - accuracy: 0.9251 - val_loss: 0.1235 - val_accuracy: 0.9622
Epoch 85/1200
469/469 - loss: 0.2463 - accuracy: 0.9250 - val_loss: 0.1229 - val_accuracy: 0.9625
Epoch 86/1200
469/469 - loss: 0.2473 - accuracy: 0.9252 - val_loss: 0.1222 - val_accuracy: 0.9628
Epoch 87/1200
469/469 - loss: 0.2409 - accuracy: 0.9266 - val_loss: 0.1215 - val_accuracy: 0.9628
Epoch 88/1200
469/469 - loss: 0.2453 - accuracy: 0.9260 - val_loss: 0.1209 - val_accuracy: 0.9634
Epoch 89/1200
469/469 - loss: 0.2422 - accuracy: 0.9275 - val_loss: 0.1204 - val_accuracy: 0.9634
Epoch 90/1200
469/469 - loss: 0.2411 - accuracy: 0.9266 - val_loss: 0.1199 - val_accuracy: 0.9636
Epoch 91/1200
469/469 - loss: 0.2389 - accuracy: 0.9280 - val_loss: 0.1193 - val_accuracy: 0.9639
Epoch 92/1200
469/469 - loss: 0.2376 - accuracy: 0.9288 - val_loss: 0.1186 - val_accuracy: 0.9639
Epoch 93/1200
469/469 - loss: 0.2391 - accuracy: 0.9285 - val_loss: 0.1180 - val_accuracy: 0.9638
Epoch 94/1200
469/469 - loss: 0.2384 - accuracy: 0.9288 - val_loss: 0.1175 - val_accuracy: 0.9639
Epoch 95/1200
469/469 - loss: 0.2377 - accuracy: 0.9278 - val_loss: 0.1169 - val_accuracy: 0.9640
Epoch 96/1200
469/469 - loss: 0.2363 - accuracy: 0.9295 - val_loss: 0.1163 - val_accuracy: 0.9641
Epoch 97/1200
469/469 - loss: 0.2328 - accuracy: 0.9306 - val_loss: 0.1157 - val_accuracy: 0.9642
Epoch 98/1200
469/469 - loss: 0.2344 - accuracy: 0.9293 - val_loss: 0.1151 - val_accuracy: 0.9645
Epoch 99/1200
469/469 - loss: 0.2307 - accuracy: 0.9317 - val_loss: 0.1147 - val_accuracy: 0.9644
Epoch 100/1200
469/469 - loss: 0.2317 - accuracy: 0.9290 - val_loss: 0.1142 - val_accuracy: 0.9645
Epoch 101/1200
469/469 - loss: 0.2275 - accuracy: 0.9315 - val_loss: 0.1136 - val_accuracy: 0.9644
Epoch 102/1200
469/469 - loss: 0.2313 - accuracy: 0.9297 - val_loss: 0.1131 - val_accuracy: 0.9649
Epoch 103/1200
469/469 - loss: 0.2295 - accuracy: 0.9318 - val_loss: 0.1126 - val_accuracy: 0.9649
Epoch 104/1200
469/469 - loss: 0.2283 - accuracy: 0.9326 - val_loss: 0.1121 - val_accuracy: 0.9650
Epoch 105/1200
469/469 - loss: 0.2259 - accuracy: 0.9319 - val_loss: 0.1116 - val_accuracy: 0.9648
Epoch 106/1200

469/469 - loss: 0.2229 - accuracy: 0.9334 - val_loss: 0.1111 - val_accuracy: 0.9651
Epoch 107/1200
469/469 - loss: 0.2233 - accuracy: 0.9329 - val_loss: 0.1107 - val_accuracy: 0.9652
Epoch 108/1200
469/469 - loss: 0.2226 - accuracy: 0.9329 - val_loss: 0.1102 - val_accuracy: 0.9653
Epoch 109/1200
469/469 - loss: 0.2222 - accuracy: 0.9330 - val_loss: 0.1097 - val_accuracy: 0.9654
Epoch 110/1200
469/469 - loss: 0.2205 - accuracy: 0.9338 - val_loss: 0.1093 - val_accuracy: 0.9651
Epoch 111/1200
469/469 - loss: 0.2206 - accuracy: 0.9343 - val_loss: 0.1088 - val_accuracy: 0.9651
Epoch 112/1200
469/469 - loss: 0.2219 - accuracy: 0.9327 - val_loss: 0.1084 - val_accuracy: 0.9652
Epoch 113/1200
469/469 - loss: 0.2193 - accuracy: 0.9343 - val_loss: 0.1079 - val_accuracy: 0.9657
Epoch 114/1200
469/469 - loss: 0.2210 - accuracy: 0.9342 - val_loss: 0.1075 - val_accuracy: 0.9657
Epoch 115/1200
469/469 - loss: 0.2168 - accuracy: 0.9346 - val_loss: 0.1070 - val_accuracy: 0.9659
Epoch 116/1200
469/469 - loss: 0.2155 - accuracy: 0.9354 - val_loss: 0.1066 - val_accuracy: 0.9657
Epoch 117/1200
469/469 - loss: 0.2153 - accuracy: 0.9360 - val_loss: 0.1061 - val_accuracy: 0.9658
Epoch 118/1200
469/469 - loss: 0.2135 - accuracy: 0.9354 - val_loss: 0.1058 - val_accuracy: 0.9659
Epoch 119/1200
469/469 - loss: 0.2151 - accuracy: 0.9354 - val_loss: 0.1053 - val_accuracy: 0.9661
Epoch 120/1200
469/469 - loss: 0.2141 - accuracy: 0.9363 - val_loss: 0.1048 - val_accuracy: 0.9663
Epoch 121/1200
469/469 - loss: 0.2162 - accuracy: 0.9349 - val_loss: 0.1044 - val_accuracy: 0.9664
Epoch 122/1200
469/469 - loss: 0.2119 - accuracy: 0.9346 - val_loss: 0.1039 - val_accuracy: 0.9664
Epoch 123/1200
469/469 - loss: 0.2130 - accuracy: 0.9354 - val_loss: 0.1036 - val_accuracy: 0.9668
Epoch 124/1200
469/469 - loss: 0.2090 - accuracy: 0.9367 - val_loss: 0.1031 - val_accuracy: 0.9668
Epoch 125/1200
469/469 - loss: 0.2128 - accuracy: 0.9358 - val_loss: 0.1027 - val_accuracy: 0.9669
Epoch 126/1200
469/469 - loss: 0.2090 - accuracy: 0.9373 - val_loss: 0.1024 - val_accuracy: 0.9669
Epoch 127/1200
469/469 - loss: 0.2070 - accuracy: 0.9382 - val_loss: 0.1019 - val_accuracy: 0.9674
Epoch 128/1200
469/469 - loss: 0.2087 - accuracy: 0.9373 - val_loss: 0.1015 - val_accuracy: 0.9673
Epoch 129/1200
469/469 - loss: 0.2076 - accuracy: 0.9381 - val_loss: 0.1011 - val_accuracy: 0.9673
Epoch 130/1200
469/469 - loss: 0.2059 - accuracy: 0.9378 - val_loss: 0.1007 - val_accuracy: 0.9674
Epoch 131/1200
469/469 - loss: 0.2054 - accuracy: 0.9376 - val_loss: 0.1002 - val_accuracy: 0.9675
Epoch 132/1200
469/469 - loss: 0.2039 - accuracy: 0.9392 - val_loss: 0.0999 - val_accuracy: 0.9678

Epoch 133/1200
 469/469 - loss: 0.2037 - accuracy: 0.9385 - val_loss: 0.0996 - val_accuracy: 0.9676
 Epoch 134/1200
 469/469 - loss: 0.2020 - accuracy: 0.9398 - val_loss: 0.0992 - val_accuracy: 0.9679
 Epoch 135/1200
 469/469 - loss: 0.2013 - accuracy: 0.9394 - val_loss: 0.0990 - val_accuracy: 0.9680
 Epoch 136/1200
 469/469 - loss: 0.2003 - accuracy: 0.9393 - val_loss: 0.0987 - val_accuracy: 0.9686
 Epoch 137/1200
 469/469 - loss: 0.2018 - accuracy: 0.9390 - val_loss: 0.0984 - val_accuracy: 0.9684
 Epoch 138/1200
 469/469 - loss: 0.2043 - accuracy: 0.9386 - val_loss: 0.0979 - val_accuracy: 0.9688
 Epoch 139/1200
 469/469 - loss: 0.1999 - accuracy: 0.9406 - val_loss: 0.0975 - val_accuracy: 0.9688
 Epoch 140/1200
 469/469 - loss: 0.1995 - accuracy: 0.9401 - val_loss: 0.0971 - val_accuracy: 0.9689
 Epoch 141/1200
 469/469 - loss: 0.2006 - accuracy: 0.9398 - val_loss: 0.0966 - val_accuracy: 0.9691
 Epoch 142/1200
 469/469 - loss: 0.1975 - accuracy: 0.9400 - val_loss: 0.0963 - val_accuracy: 0.9691
 Epoch 143/1200
 469/469 - loss: 0.1948 - accuracy: 0.9414 - val_loss: 0.0959 - val_accuracy: 0.9694
 Epoch 144/1200
 469/469 - loss: 0.1964 - accuracy: 0.9410 - val_loss: 0.0956 - val_accuracy: 0.9695
 Epoch 145/1200
 469/469 - loss: 0.1967 - accuracy: 0.9410 - val_loss: 0.0953 - val_accuracy: 0.9694
 Epoch 146/1200
 469/469 - loss: 0.1925 - accuracy: 0.9417 - val_loss: 0.0949 - val_accuracy: 0.9694
 Epoch 147/1200
 469/469 - loss: 0.1951 - accuracy: 0.9417 - val_loss: 0.0946 - val_accuracy: 0.9695
 Epoch 148/1200
 469/469 - loss: 0.1978 - accuracy: 0.9418 - val_loss: 0.0943 - val_accuracy: 0.9698
 Epoch 149/1200
 469/469 - loss: 0.1950 - accuracy: 0.9416 - val_loss: 0.0940 - val_accuracy: 0.9696
 Epoch 150/1200
 469/469 - loss: 0.1919 - accuracy: 0.9433 - val_loss: 0.0938 - val_accuracy: 0.9698
 Epoch 151/1200
 469/469 - loss: 0.1921 - accuracy: 0.9431 - val_loss: 0.0935 - val_accuracy: 0.9701
 Epoch 152/1200
 469/469 - loss: 0.1900 - accuracy: 0.9434 - val_loss: 0.0933 - val_accuracy: 0.9703
 Epoch 153/1200
 469/469 - loss: 0.1930 - accuracy: 0.9420 - val_loss: 0.0930 - val_accuracy: 0.9704
 Epoch 154/1200
 469/469 - loss: 0.1908 - accuracy: 0.9430 - val_loss: 0.0927 - val_accuracy: 0.9705
 Epoch 155/1200
 469/469 - loss: 0.1864 - accuracy: 0.9430 - val_loss: 0.0923 - val_accuracy: 0.9708
 Epoch 156/1200
 469/469 - loss: 0.1905 - accuracy: 0.9431 - val_loss: 0.0920 - val_accuracy: 0.9708
 Epoch 157/1200
 469/469 - loss: 0.1889 - accuracy: 0.9436 - val_loss: 0.0917 - val_accuracy: 0.9709
 Epoch 158/1200
 469/469 - loss: 0.1865 - accuracy: 0.9445 - val_loss: 0.0913 - val_accuracy: 0.9709
 Epoch 159/1200

469/469 - loss: 0.1858 - accuracy: 0.9436 - val_loss: 0.0910 - val_accuracy: 0.9709
Epoch 160/1200
469/469 - loss: 0.1871 - accuracy: 0.9440 - val_loss: 0.0907 - val_accuracy: 0.9710
Epoch 161/1200
469/469 - loss: 0.1884 - accuracy: 0.9436 - val_loss: 0.0905 - val_accuracy: 0.9710
Epoch 162/1200
469/469 - loss: 0.1868 - accuracy: 0.9437 - val_loss: 0.0901 - val_accuracy: 0.9712
Epoch 163/1200
469/469 - loss: 0.1870 - accuracy: 0.9438 - val_loss: 0.0899 - val_accuracy: 0.9714
Epoch 164/1200
469/469 - loss: 0.1861 - accuracy: 0.9445 - val_loss: 0.0896 - val_accuracy: 0.9714
Epoch 165/1200
469/469 - loss: 0.1857 - accuracy: 0.9444 - val_loss: 0.0894 - val_accuracy: 0.9715
Epoch 166/1200
469/469 - loss: 0.1847 - accuracy: 0.9452 - val_loss: 0.0891 - val_accuracy: 0.9717
Epoch 167/1200
469/469 - loss: 0.1857 - accuracy: 0.9435 - val_loss: 0.0887 - val_accuracy: 0.9719
Epoch 168/1200
469/469 - loss: 0.1821 - accuracy: 0.9460 - val_loss: 0.0885 - val_accuracy: 0.9719
Epoch 169/1200
469/469 - loss: 0.1827 - accuracy: 0.9452 - val_loss: 0.0883 - val_accuracy: 0.9719
Epoch 170/1200
469/469 - loss: 0.1820 - accuracy: 0.9458 - val_loss: 0.0881 - val_accuracy: 0.9718
Epoch 171/1200
469/469 - loss: 0.1792 - accuracy: 0.9463 - val_loss: 0.0878 - val_accuracy: 0.9720
Epoch 172/1200
469/469 - loss: 0.1846 - accuracy: 0.9456 - val_loss: 0.0875 - val_accuracy: 0.9721
Epoch 173/1200
469/469 - loss: 0.1787 - accuracy: 0.9455 - val_loss: 0.0873 - val_accuracy: 0.9721
Epoch 174/1200
469/469 - loss: 0.1802 - accuracy: 0.9450 - val_loss: 0.0870 - val_accuracy: 0.9723
Epoch 175/1200
469/469 - loss: 0.1796 - accuracy: 0.9459 - val_loss: 0.0867 - val_accuracy: 0.9723
Epoch 176/1200
469/469 - loss: 0.1819 - accuracy: 0.9455 - val_loss: 0.0864 - val_accuracy: 0.9724
Epoch 177/1200
469/469 - loss: 0.1816 - accuracy: 0.9459 - val_loss: 0.0863 - val_accuracy: 0.9723
Epoch 178/1200
469/469 - loss: 0.1780 - accuracy: 0.9469 - val_loss: 0.0860 - val_accuracy: 0.9724
Epoch 179/1200
469/469 - loss: 0.1790 - accuracy: 0.9459 - val_loss: 0.0858 - val_accuracy: 0.9725
Epoch 180/1200
469/469 - loss: 0.1755 - accuracy: 0.9474 - val_loss: 0.0856 - val_accuracy: 0.9726
Epoch 181/1200
469/469 - loss: 0.1780 - accuracy: 0.9477 - val_loss: 0.0853 - val_accuracy: 0.9726
Epoch 182/1200
469/469 - loss: 0.1791 - accuracy: 0.9468 - val_loss: 0.0851 - val_accuracy: 0.9728
Epoch 183/1200
469/469 - loss: 0.1771 - accuracy: 0.9464 - val_loss: 0.0847 - val_accuracy: 0.9729
Epoch 184/1200
469/469 - loss: 0.1755 - accuracy: 0.9475 - val_loss: 0.0845 - val_accuracy: 0.9728
Epoch 185/1200
469/469 - loss: 0.1743 - accuracy: 0.9477 - val_loss: 0.0842 - val_accuracy: 0.9728

Epoch 186/1200
469/469 - loss: 0.1731 - accuracy: 0.9490 - val_loss: 0.0841 - val_accuracy: 0.9731
Epoch 187/1200
469/469 - loss: 0.1773 - accuracy: 0.9461 - val_loss: 0.0839 - val_accuracy: 0.9730
Epoch 188/1200
469/469 - loss: 0.1707 - accuracy: 0.9488 - val_loss: 0.0836 - val_accuracy: 0.9731
Epoch 189/1200
469/469 - loss: 0.1728 - accuracy: 0.9468 - val_loss: 0.0833 - val_accuracy: 0.9728
Epoch 190/1200
469/469 - loss: 0.1707 - accuracy: 0.9481 - val_loss: 0.0831 - val_accuracy: 0.9730
Epoch 191/1200
469/469 - loss: 0.1729 - accuracy: 0.9474 - val_loss: 0.0828 - val_accuracy: 0.9732
Epoch 192/1200
469/469 - loss: 0.1732 - accuracy: 0.9478 - val_loss: 0.0826 - val_accuracy: 0.9731
Epoch 193/1200
469/469 - loss: 0.1701 - accuracy: 0.9488 - val_loss: 0.0824 - val_accuracy: 0.9734
Epoch 194/1200
469/469 - loss: 0.1732 - accuracy: 0.9481 - val_loss: 0.0821 - val_accuracy: 0.9734
Epoch 195/1200
469/469 - loss: 0.1711 - accuracy: 0.9481 - val_loss: 0.0821 - val_accuracy: 0.9733
Epoch 196/1200
469/469 - loss: 0.1718 - accuracy: 0.9486 - val_loss: 0.0818 - val_accuracy: 0.9734
Epoch 197/1200
469/469 - loss: 0.1740 - accuracy: 0.9483 - val_loss: 0.0816 - val_accuracy: 0.9737
Epoch 198/1200
469/469 - loss: 0.1702 - accuracy: 0.9488 - val_loss: 0.0813 - val_accuracy: 0.9732
Epoch 199/1200
469/469 - loss: 0.1686 - accuracy: 0.9488 - val_loss: 0.0810 - val_accuracy: 0.9736
Epoch 200/1200
469/469 - loss: 0.1673 - accuracy: 0.9500 - val_loss: 0.0807 - val_accuracy: 0.9737
Epoch 201/1200
469/469 - loss: 0.1687 - accuracy: 0.9492 - val_loss: 0.0806 - val_accuracy: 0.9739
Epoch 202/1200
469/469 - loss: 0.1667 - accuracy: 0.9493 - val_loss: 0.0804 - val_accuracy: 0.9739
Epoch 203/1200
469/469 - loss: 0.1669 - accuracy: 0.9496 - val_loss: 0.0801 - val_accuracy: 0.9743
Epoch 204/1200
469/469 - loss: 0.1665 - accuracy: 0.9504 - val_loss: 0.0799 - val_accuracy: 0.9742
Epoch 205/1200
469/469 - loss: 0.1683 - accuracy: 0.9496 - val_loss: 0.0797 - val_accuracy: 0.9741
Epoch 206/1200
469/469 - loss: 0.1652 - accuracy: 0.9502 - val_loss: 0.0795 - val_accuracy: 0.9744
Epoch 207/1200
469/469 - loss: 0.1662 - accuracy: 0.9513 - val_loss: 0.0793 - val_accuracy: 0.9742
Epoch 208/1200
469/469 - loss: 0.1664 - accuracy: 0.9506 - val_loss: 0.0791 - val_accuracy: 0.9742
Epoch 209/1200
469/469 - loss: 0.1643 - accuracy: 0.9507 - val_loss: 0.0789 - val_accuracy: 0.9743
Epoch 210/1200
469/469 - loss: 0.1636 - accuracy: 0.9503 - val_loss: 0.0786 - val_accuracy: 0.9744
Epoch 211/1200
469/469 - loss: 0.1659 - accuracy: 0.9510 - val_loss: 0.0784 - val_accuracy: 0.9746
Epoch 212/1200

469/469 - loss: 0.1660 - accuracy: 0.9497 - val_loss: 0.0783 - val_accuracy: 0.9748
Epoch 213/1200
469/469 - loss: 0.1631 - accuracy: 0.9500 - val_loss: 0.0781 - val_accuracy: 0.9747
Epoch 214/1200
469/469 - loss: 0.1634 - accuracy: 0.9509 - val_loss: 0.0779 - val_accuracy: 0.9749
Epoch 215/1200
469/469 - loss: 0.1609 - accuracy: 0.9518 - val_loss: 0.0778 - val_accuracy: 0.9748
Epoch 216/1200
469/469 - loss: 0.1644 - accuracy: 0.9506 - val_loss: 0.0776 - val_accuracy: 0.9749
Epoch 217/1200
469/469 - loss: 0.1639 - accuracy: 0.9509 - val_loss: 0.0773 - val_accuracy: 0.9750
Epoch 218/1200
469/469 - loss: 0.1630 - accuracy: 0.9513 - val_loss: 0.0771 - val_accuracy: 0.9749
Epoch 219/1200
469/469 - loss: 0.1641 - accuracy: 0.9513 - val_loss: 0.0770 - val_accuracy: 0.9751
Epoch 220/1200
469/469 - loss: 0.1623 - accuracy: 0.9524 - val_loss: 0.0768 - val_accuracy: 0.9751
Epoch 221/1200
469/469 - loss: 0.1598 - accuracy: 0.9516 - val_loss: 0.0766 - val_accuracy: 0.9750
Epoch 222/1200
469/469 - loss: 0.1640 - accuracy: 0.9506 - val_loss: 0.0764 - val_accuracy: 0.9751
Epoch 223/1200
469/469 - loss: 0.1604 - accuracy: 0.9513 - val_loss: 0.0762 - val_accuracy: 0.9750
Epoch 224/1200
469/469 - loss: 0.1603 - accuracy: 0.9517 - val_loss: 0.0760 - val_accuracy: 0.9751
Epoch 225/1200
469/469 - loss: 0.1606 - accuracy: 0.9528 - val_loss: 0.0758 - val_accuracy: 0.9752
Epoch 226/1200
469/469 - loss: 0.1586 - accuracy: 0.9523 - val_loss: 0.0756 - val_accuracy: 0.9751
Epoch 227/1200
469/469 - loss: 0.1568 - accuracy: 0.9521 - val_loss: 0.0754 - val_accuracy: 0.9754
Epoch 228/1200
469/469 - loss: 0.1608 - accuracy: 0.9525 - val_loss: 0.0753 - val_accuracy: 0.9754
Epoch 229/1200
469/469 - loss: 0.1571 - accuracy: 0.9527 - val_loss: 0.0752 - val_accuracy: 0.9758
Epoch 230/1200
469/469 - loss: 0.1576 - accuracy: 0.9523 - val_loss: 0.0749 - val_accuracy: 0.9757
Epoch 231/1200
469/469 - loss: 0.1616 - accuracy: 0.9521 - val_loss: 0.0748 - val_accuracy: 0.9756
Epoch 232/1200
469/469 - loss: 0.1571 - accuracy: 0.9532 - val_loss: 0.0746 - val_accuracy: 0.9757
Epoch 233/1200
469/469 - loss: 0.1547 - accuracy: 0.9544 - val_loss: 0.0744 - val_accuracy: 0.9761
Epoch 234/1200
469/469 - loss: 0.1564 - accuracy: 0.9541 - val_loss: 0.0742 - val_accuracy: 0.9760
Epoch 235/1200
469/469 - loss: 0.1579 - accuracy: 0.9522 - val_loss: 0.0740 - val_accuracy: 0.9763
Epoch 236/1200
469/469 - loss: 0.1552 - accuracy: 0.9532 - val_loss: 0.0739 - val_accuracy: 0.9763
Epoch 237/1200
469/469 - loss: 0.1580 - accuracy: 0.9524 - val_loss: 0.0737 - val_accuracy: 0.9764
Epoch 238/1200
469/469 - loss: 0.1547 - accuracy: 0.9540 - val_loss: 0.0735 - val_accuracy: 0.9765

Epoch 239/1200
469/469 - loss: 0.1542 - accuracy: 0.9536 - val_loss: 0.0733 - val_accuracy: 0.9766
Epoch 240/1200
469/469 - loss: 0.1535 - accuracy: 0.9541 - val_loss: 0.0733 - val_accuracy: 0.9764
Epoch 241/1200
469/469 - loss: 0.1546 - accuracy: 0.9543 - val_loss: 0.0731 - val_accuracy: 0.9764
Epoch 242/1200
469/469 - loss: 0.1530 - accuracy: 0.9531 - val_loss: 0.0729 - val_accuracy: 0.9765
Epoch 243/1200
469/469 - loss: 0.1541 - accuracy: 0.9535 - val_loss: 0.0727 - val_accuracy: 0.9764
Epoch 244/1200
469/469 - loss: 0.1543 - accuracy: 0.9539 - val_loss: 0.0726 - val_accuracy: 0.9765
Epoch 245/1200
469/469 - loss: 0.1517 - accuracy: 0.9543 - val_loss: 0.0724 - val_accuracy: 0.9766
Epoch 246/1200
469/469 - loss: 0.1537 - accuracy: 0.9537 - val_loss: 0.0722 - val_accuracy: 0.9767
Epoch 247/1200
469/469 - loss: 0.1501 - accuracy: 0.9553 - val_loss: 0.0721 - val_accuracy: 0.9763
Epoch 248/1200
469/469 - loss: 0.1506 - accuracy: 0.9543 - val_loss: 0.0719 - val_accuracy: 0.9764
Epoch 249/1200
469/469 - loss: 0.1512 - accuracy: 0.9540 - val_loss: 0.0717 - val_accuracy: 0.9765
Epoch 250/1200
469/469 - loss: 0.1508 - accuracy: 0.9555 - val_loss: 0.0716 - val_accuracy: 0.9765
Epoch 251/1200
469/469 - loss: 0.1498 - accuracy: 0.9544 - val_loss: 0.0714 - val_accuracy: 0.9768
Epoch 252/1200
469/469 - loss: 0.1525 - accuracy: 0.9543 - val_loss: 0.0713 - val_accuracy: 0.9768
Epoch 253/1200
469/469 - loss: 0.1507 - accuracy: 0.9549 - val_loss: 0.0711 - val_accuracy: 0.9772
Epoch 254/1200
469/469 - loss: 0.1488 - accuracy: 0.9550 - val_loss: 0.0709 - val_accuracy: 0.9770
Epoch 255/1200
469/469 - loss: 0.1508 - accuracy: 0.9551 - val_loss: 0.0708 - val_accuracy: 0.9771
Epoch 256/1200
469/469 - loss: 0.1505 - accuracy: 0.9553 - val_loss: 0.0707 - val_accuracy: 0.9770
Epoch 257/1200
469/469 - loss: 0.1507 - accuracy: 0.9548 - val_loss: 0.0706 - val_accuracy: 0.9772
Epoch 258/1200
469/469 - loss: 0.1492 - accuracy: 0.9548 - val_loss: 0.0704 - val_accuracy: 0.9776
Epoch 259/1200
469/469 - loss: 0.1486 - accuracy: 0.9560 - val_loss: 0.0702 - val_accuracy: 0.9776
Epoch 260/1200
469/469 - loss: 0.1475 - accuracy: 0.9556 - val_loss: 0.0701 - val_accuracy: 0.9774
Epoch 261/1200
469/469 - loss: 0.1501 - accuracy: 0.9549 - val_loss: 0.0699 - val_accuracy: 0.9776
Epoch 262/1200
469/469 - loss: 0.1489 - accuracy: 0.9558 - val_loss: 0.0698 - val_accuracy: 0.9776
Epoch 263/1200
469/469 - loss: 0.1487 - accuracy: 0.9555 - val_loss: 0.0697 - val_accuracy: 0.9774
Epoch 264/1200
469/469 - loss: 0.1472 - accuracy: 0.9559 - val_loss: 0.0695 - val_accuracy: 0.9777
Epoch 265/1200

469/469 - loss: 0.1478 - accuracy: 0.9564 - val_loss: 0.0694 - val_accuracy: 0.9776
Epoch 266/1200
469/469 - loss: 0.1461 - accuracy: 0.9564 - val_loss: 0.0693 - val_accuracy: 0.9777
Epoch 267/1200
469/469 - loss: 0.1467 - accuracy: 0.9569 - val_loss: 0.0692 - val_accuracy: 0.9777
Epoch 268/1200
469/469 - loss: 0.1454 - accuracy: 0.9565 - val_loss: 0.0690 - val_accuracy: 0.9777
Epoch 269/1200
469/469 - loss: 0.1471 - accuracy: 0.9557 - val_loss: 0.0688 - val_accuracy: 0.9778
Epoch 270/1200
469/469 - loss: 0.1449 - accuracy: 0.9554 - val_loss: 0.0687 - val_accuracy: 0.9775
Epoch 271/1200
469/469 - loss: 0.1474 - accuracy: 0.9566 - val_loss: 0.0686 - val_accuracy: 0.9778
Epoch 272/1200
469/469 - loss: 0.1429 - accuracy: 0.9578 - val_loss: 0.0684 - val_accuracy: 0.9780
Epoch 273/1200
469/469 - loss: 0.1419 - accuracy: 0.9573 - val_loss: 0.0683 - val_accuracy: 0.9783
Epoch 274/1200
469/469 - loss: 0.1435 - accuracy: 0.9573 - val_loss: 0.0681 - val_accuracy: 0.9780
Epoch 275/1200
469/469 - loss: 0.1434 - accuracy: 0.9574 - val_loss: 0.0679 - val_accuracy: 0.9779
Epoch 276/1200
469/469 - loss: 0.1426 - accuracy: 0.9566 - val_loss: 0.0678 - val_accuracy: 0.9781
Epoch 277/1200
469/469 - loss: 0.1432 - accuracy: 0.9569 - val_loss: 0.0676 - val_accuracy: 0.9780
Epoch 278/1200
469/469 - loss: 0.1450 - accuracy: 0.9569 - val_loss: 0.0675 - val_accuracy: 0.9782
Epoch 279/1200
469/469 - loss: 0.1428 - accuracy: 0.9569 - val_loss: 0.0674 - val_accuracy: 0.9780
Epoch 280/1200
469/469 - loss: 0.1426 - accuracy: 0.9575 - val_loss: 0.0673 - val_accuracy: 0.9784
Epoch 281/1200
469/469 - loss: 0.1443 - accuracy: 0.9563 - val_loss: 0.0671 - val_accuracy: 0.9782
Epoch 282/1200
469/469 - loss: 0.1413 - accuracy: 0.9571 - val_loss: 0.0670 - val_accuracy: 0.9787
Epoch 283/1200
469/469 - loss: 0.1415 - accuracy: 0.9569 - val_loss: 0.0669 - val_accuracy: 0.9783
Epoch 284/1200
469/469 - loss: 0.1436 - accuracy: 0.9570 - val_loss: 0.0668 - val_accuracy: 0.9783
Epoch 285/1200
469/469 - loss: 0.1417 - accuracy: 0.9570 - val_loss: 0.0666 - val_accuracy: 0.9780
Epoch 286/1200
469/469 - loss: 0.1419 - accuracy: 0.9574 - val_loss: 0.0665 - val_accuracy: 0.9784
Epoch 287/1200
469/469 - loss: 0.1413 - accuracy: 0.9581 - val_loss: 0.0664 - val_accuracy: 0.9786
Epoch 288/1200
469/469 - loss: 0.1405 - accuracy: 0.9566 - val_loss: 0.0663 - val_accuracy: 0.9786
Epoch 289/1200
469/469 - loss: 0.1385 - accuracy: 0.9583 - val_loss: 0.0662 - val_accuracy: 0.9788
Epoch 290/1200
469/469 - loss: 0.1408 - accuracy: 0.9578 - val_loss: 0.0660 - val_accuracy: 0.9788
Epoch 291/1200
469/469 - loss: 0.1402 - accuracy: 0.9576 - val_loss: 0.0659 - val_accuracy: 0.9787

Epoch 292/1200
469/469 - loss: 0.1391 - accuracy: 0.9575 - val_loss: 0.0657 - val_accuracy: 0.9788
Epoch 293/1200
469/469 - loss: 0.1397 - accuracy: 0.9575 - val_loss: 0.0657 - val_accuracy: 0.9791
Epoch 294/1200
469/469 - loss: 0.1404 - accuracy: 0.9586 - val_loss: 0.0654 - val_accuracy: 0.9788
Epoch 295/1200
469/469 - loss: 0.1407 - accuracy: 0.9570 - val_loss: 0.0654 - val_accuracy: 0.9790
Epoch 296/1200
469/469 - loss: 0.1382 - accuracy: 0.9586 - val_loss: 0.0651 - val_accuracy: 0.9791
Epoch 297/1200
469/469 - loss: 0.1417 - accuracy: 0.9570 - val_loss: 0.0650 - val_accuracy: 0.9790
Epoch 298/1200
469/469 - loss: 0.1373 - accuracy: 0.9589 - val_loss: 0.0651 - val_accuracy: 0.9793
Epoch 299/1200
469/469 - loss: 0.1379 - accuracy: 0.9585 - val_loss: 0.0648 - val_accuracy: 0.9792
Epoch 300/1200
469/469 - loss: 0.1390 - accuracy: 0.9581 - val_loss: 0.0647 - val_accuracy: 0.9792
Epoch 301/1200
469/469 - loss: 0.1366 - accuracy: 0.9590 - val_loss: 0.0647 - val_accuracy: 0.9793
Epoch 302/1200
469/469 - loss: 0.1372 - accuracy: 0.9596 - val_loss: 0.0645 - val_accuracy: 0.9793
Epoch 303/1200
469/469 - loss: 0.1378 - accuracy: 0.9583 - val_loss: 0.0644 - val_accuracy: 0.9795
Epoch 304/1200
469/469 - loss: 0.1364 - accuracy: 0.9590 - val_loss: 0.0643 - val_accuracy: 0.9796
Epoch 305/1200
469/469 - loss: 0.1368 - accuracy: 0.9591 - val_loss: 0.0642 - val_accuracy: 0.9793
Epoch 306/1200
469/469 - 2s 5ms/step - loss: 0.1389 - accuracy: 0.9577 - val_loss: 0.0640 - val_accuracy: 0.9793
Epoch 307/1200
469/469 - loss: 0.1367 - accuracy: 0.9596 - val_loss: 0.0640 - val_accuracy: 0.9797
Epoch 308/1200
469/469 - loss: 0.1374 - accuracy: 0.9591 - val_loss: 0.0639 - val_accuracy: 0.9795
Epoch 309/1200
469/469 - loss: 0.1395 - accuracy: 0.9581 - val_loss: 0.0638 - val_accuracy: 0.9797
Epoch 310/1200
469/469 - loss: 0.1366 - accuracy: 0.9589 - val_loss: 0.0637 - val_accuracy: 0.9797
Epoch 311/1200
469/469 - loss: 0.1371 - accuracy: 0.9592 - val_loss: 0.0636 - val_accuracy: 0.9797
Epoch 312/1200
469/469 - loss: 0.1342 - accuracy: 0.9606 - val_loss: 0.0635 - val_accuracy: 0.9796
Epoch 313/1200
469/469 - loss: 0.1355 - accuracy: 0.9591 - val_loss: 0.0633 - val_accuracy: 0.9799
Epoch 314/1200
469/469 - loss: 0.1362 - accuracy: 0.9600 - val_loss: 0.0632 - val_accuracy: 0.9798
Epoch 315/1200
469/469 - loss: 0.1345 - accuracy: 0.9594 - val_loss: 0.0630 - val_accuracy: 0.9797
Epoch 316/1200
469/469 - loss: 0.1339 - accuracy: 0.9602 - val_loss: 0.0629 - val_accuracy: 0.9800
Epoch 317/1200
469/469 - loss: 0.1353 - accuracy: 0.9584 - val_loss: 0.0628 - val_accuracy: 0.9800
Epoch 318/1200

469/469 - loss: 0.1341 - accuracy: 0.9596 - val_loss: 0.0627 - val_accuracy: 0.9801
Epoch 319/1200
469/469 - loss: 0.1337 - accuracy: 0.9603 - val_loss: 0.0626 - val_accuracy: 0.9801
Epoch 320/1200
469/469 - loss: 0.1345 - accuracy: 0.9595 - val_loss: 0.0625 - val_accuracy: 0.9799
Epoch 321/1200
469/469 - loss: 0.1320 - accuracy: 0.9602 - val_loss: 0.0624 - val_accuracy: 0.9800
Epoch 322/1200
469/469 - loss: 0.1325 - accuracy: 0.9599 - val_loss: 0.0622 - val_accuracy: 0.9801
Epoch 323/1200
469/469 - loss: 0.1342 - accuracy: 0.9590 - val_loss: 0.0621 - val_accuracy: 0.9799
Epoch 324/1200
469/469 - loss: 0.1344 - accuracy: 0.9592 - val_loss: 0.0621 - val_accuracy: 0.9799
Epoch 325/1200
469/469 - loss: 0.1331 - accuracy: 0.9606 - val_loss: 0.0619 - val_accuracy: 0.9800
Epoch 326/1200
469/469 - loss: 0.1316 - accuracy: 0.9600 - val_loss: 0.0618 - val_accuracy: 0.9801
Epoch 327/1200
469/469 - loss: 0.1322 - accuracy: 0.9604 - val_loss: 0.0617 - val_accuracy: 0.9801
Epoch 328/1200
469/469 - loss: 0.1306 - accuracy: 0.9603 - val_loss: 0.0616 - val_accuracy: 0.9800
Epoch 329/1200
469/469 - loss: 0.1331 - accuracy: 0.9591 - val_loss: 0.0615 - val_accuracy: 0.9801
Epoch 330/1200
469/469 - loss: 0.1308 - accuracy: 0.9602 - val_loss: 0.0614 - val_accuracy: 0.9801
Epoch 331/1200
469/469 - loss: 0.1319 - accuracy: 0.9605 - val_loss: 0.0613 - val_accuracy: 0.9802
Epoch 332/1200
469/469 - loss: 0.1325 - accuracy: 0.9610 - val_loss: 0.0612 - val_accuracy: 0.9801
Epoch 333/1200
469/469 - loss: 0.1291 - accuracy: 0.9608 - val_loss: 0.0611 - val_accuracy: 0.9802
Epoch 334/1200
469/469 - loss: 0.1299 - accuracy: 0.9612 - val_loss: 0.0609 - val_accuracy: 0.9802
Epoch 335/1200
469/469 - loss: 0.1332 - accuracy: 0.9600 - val_loss: 0.0608 - val_accuracy: 0.9802
Epoch 336/1200
469/469 - loss: 0.1303 - accuracy: 0.9607 - val_loss: 0.0608 - val_accuracy: 0.9803
Epoch 337/1200
469/469 - loss: 0.1304 - accuracy: 0.9610 - val_loss: 0.0608 - val_accuracy: 0.9801
Epoch 338/1200
469/469 - loss: 0.1299 - accuracy: 0.9614 - val_loss: 0.0606 - val_accuracy: 0.9802
Epoch 339/1200
469/469 - loss: 0.1290 - accuracy: 0.9611 - val_loss: 0.0605 - val_accuracy: 0.9803
Epoch 340/1200
469/469 - loss: 0.1315 - accuracy: 0.9602 - val_loss: 0.0604 - val_accuracy: 0.9805
Epoch 341/1200
469/469 - loss: 0.1283 - accuracy: 0.9619 - val_loss: 0.0604 - val_accuracy: 0.9805
Epoch 342/1200
469/469 - loss: 0.1296 - accuracy: 0.9610 - val_loss: 0.0603 - val_accuracy: 0.9803
Epoch 343/1200
469/469 - loss: 0.1269 - accuracy: 0.9615 - val_loss: 0.0603 - val_accuracy: 0.9801
Epoch 344/1200
469/469 - loss: 0.1312 - accuracy: 0.9609 - val_loss: 0.0602 - val_accuracy: 0.9802

Epoch 345/1200
469/469 - loss: 0.1300 - accuracy: 0.9609 - val_loss: 0.0599 - val_accuracy: 0.9805
Epoch 346/1200
469/469 - loss: 0.1316 - accuracy: 0.9603 - val_loss: 0.0599 - val_accuracy: 0.9803
Epoch 347/1200
469/469 - loss: 0.1279 - accuracy: 0.9611 - val_loss: 0.0598 - val_accuracy: 0.9805
Epoch 348/1200
469/469 - loss: 0.1273 - accuracy: 0.9624 - val_loss: 0.0596 - val_accuracy: 0.9809
Epoch 349/1200
469/469 - loss: 0.1276 - accuracy: 0.9618 - val_loss: 0.0596 - val_accuracy: 0.9806
Epoch 350/1200
469/469 - loss: 0.1275 - accuracy: 0.9613 - val_loss: 0.0594 - val_accuracy: 0.9808
Epoch 351/1200
469/469 - loss: 0.1275 - accuracy: 0.9619 - val_loss: 0.0594 - val_accuracy: 0.9805
Epoch 352/1200
469/469 - loss: 0.1260 - accuracy: 0.9622 - val_loss: 0.0593 - val_accuracy: 0.9806
Epoch 353/1200
469/469 - loss: 0.1268 - accuracy: 0.9621 - val_loss: 0.0591 - val_accuracy: 0.9808
Epoch 354/1200
469/469 - loss: 0.1281 - accuracy: 0.9618 - val_loss: 0.0592 - val_accuracy: 0.9807
Epoch 355/1200
469/469 - loss: 0.1272 - accuracy: 0.9610 - val_loss: 0.0590 - val_accuracy: 0.9809
Epoch 356/1200
469/469 - loss: 0.1284 - accuracy: 0.9615 - val_loss: 0.0589 - val_accuracy: 0.9808
Epoch 357/1200
469/469 - loss: 0.1282 - accuracy: 0.9615 - val_loss: 0.0588 - val_accuracy: 0.9809
Epoch 358/1200
469/469 - loss: 0.1265 - accuracy: 0.9619 - val_loss: 0.0586 - val_accuracy: 0.9809
Epoch 359/1200
469/469 - loss: 0.1295 - accuracy: 0.9605 - val_loss: 0.0586 - val_accuracy: 0.9808
Epoch 360/1200
469/469 - loss: 0.1247 - accuracy: 0.9621 - val_loss: 0.0585 - val_accuracy: 0.9808
Epoch 361/1200
469/469 - loss: 0.1278 - accuracy: 0.9619 - val_loss: 0.0583 - val_accuracy: 0.9810
Epoch 362/1200
469/469 - loss: 0.1239 - accuracy: 0.9629 - val_loss: 0.0582 - val_accuracy: 0.9811
Epoch 363/1200
469/469 - loss: 0.1245 - accuracy: 0.9628 - val_loss: 0.0581 - val_accuracy: 0.9810
Epoch 364/1200
469/469 - loss: 0.1263 - accuracy: 0.9618 - val_loss: 0.0581 - val_accuracy: 0.9809
Epoch 365/1200
469/469 - loss: 0.1259 - accuracy: 0.9627 - val_loss: 0.0580 - val_accuracy: 0.9810
Epoch 366/1200
469/469 - loss: 0.1257 - accuracy: 0.9619 - val_loss: 0.0580 - val_accuracy: 0.9809
Epoch 367/1200
469/469 - loss: 0.1229 - accuracy: 0.9630 - val_loss: 0.0579 - val_accuracy: 0.9808
Epoch 368/1200
469/469 - loss: 0.1242 - accuracy: 0.9629 - val_loss: 0.0578 - val_accuracy: 0.9809
Epoch 369/1200
469/469 - loss: 0.1256 - accuracy: 0.9622 - val_loss: 0.0577 - val_accuracy: 0.9809
Epoch 370/1200
469/469 - loss: 0.1251 - accuracy: 0.9627 - val_loss: 0.0575 - val_accuracy: 0.9809
Epoch 371/1200

469/469 - loss: 0.1274 - accuracy: 0.9617 - val_loss: 0.0575 - val_accuracy: 0.9811
Epoch 372/1200
469/469 - loss: 0.1258 - accuracy: 0.9618 - val_loss: 0.0574 - val_accuracy: 0.9811
Epoch 373/1200
469/469 - loss: 0.1243 - accuracy: 0.9628 - val_loss: 0.0573 - val_accuracy: 0.9815
Epoch 374/1200
469/469 - loss: 0.1235 - accuracy: 0.9628 - val_loss: 0.0572 - val_accuracy: 0.9812
Epoch 375/1200
469/469 - loss: 0.1227 - accuracy: 0.9632 - val_loss: 0.0571 - val_accuracy: 0.9813
Epoch 376/1200
469/469 - loss: 0.1250 - accuracy: 0.9625 - val_loss: 0.0570 - val_accuracy: 0.9812
Epoch 377/1200
469/469 - loss: 0.1238 - accuracy: 0.9636 - val_loss: 0.0570 - val_accuracy: 0.9814
Epoch 378/1200
469/469 - loss: 0.1238 - accuracy: 0.9626 - val_loss: 0.0570 - val_accuracy: 0.9812
Epoch 379/1200
469/469 - loss: 0.1226 - accuracy: 0.9630 - val_loss: 0.0569 - val_accuracy: 0.9813
Epoch 380/1200
469/469 - loss: 0.1244 - accuracy: 0.9625 - val_loss: 0.0568 - val_accuracy: 0.9816
Epoch 381/1200
469/469 - loss: 0.1235 - accuracy: 0.9635 - val_loss: 0.0567 - val_accuracy: 0.9816
Epoch 382/1200
469/469 - loss: 0.1230 - accuracy: 0.9641 - val_loss: 0.0566 - val_accuracy: 0.9817
Epoch 383/1200
469/469 - loss: 0.1225 - accuracy: 0.9624 - val_loss: 0.0566 - val_accuracy: 0.9816
Epoch 384/1200
469/469 - loss: 0.1200 - accuracy: 0.9638 - val_loss: 0.0565 - val_accuracy: 0.9816
Epoch 385/1200
469/469 - loss: 0.1211 - accuracy: 0.9638 - val_loss: 0.0564 - val_accuracy: 0.9818
Epoch 386/1200
469/469 - loss: 0.1230 - accuracy: 0.9633 - val_loss: 0.0564 - val_accuracy: 0.9816
Epoch 387/1200
469/469 - loss: 0.1185 - accuracy: 0.9647 - val_loss: 0.0562 - val_accuracy: 0.9814
Epoch 388/1200
469/469 - loss: 0.1212 - accuracy: 0.9633 - val_loss: 0.0561 - val_accuracy: 0.9816
Epoch 389/1200
469/469 - loss: 0.1227 - accuracy: 0.9629 - val_loss: 0.0560 - val_accuracy: 0.9816
Epoch 390/1200
469/469 - loss: 0.1223 - accuracy: 0.9639 - val_loss: 0.0560 - val_accuracy: 0.9817
Epoch 391/1200
469/469 - loss: 0.1205 - accuracy: 0.9635 - val_loss: 0.0559 - val_accuracy: 0.9818
Epoch 392/1200
469/469 - loss: 0.1209 - accuracy: 0.9631 - val_loss: 0.0558 - val_accuracy: 0.9819
Epoch 393/1200
469/469 - loss: 0.1199 - accuracy: 0.9636 - val_loss: 0.0556 - val_accuracy: 0.9819
Epoch 394/1200
469/469 - loss: 0.1187 - accuracy: 0.9644 - val_loss: 0.0556 - val_accuracy: 0.9819
Epoch 395/1200
469/469 - loss: 0.1202 - accuracy: 0.9635 - val_loss: 0.0556 - val_accuracy: 0.9818
Epoch 396/1200
469/469 - loss: 0.1209 - accuracy: 0.9638 - val_loss: 0.0555 - val_accuracy: 0.9819
Epoch 397/1200
469/469 - loss: 0.1211 - accuracy: 0.9643 - val_loss: 0.0554 - val_accuracy: 0.9820

Epoch 398/1200
469/469 - loss: 0.1209 - accuracy: 0.9637 - val_loss: 0.0553 - val_accuracy: 0.9819
Epoch 399/1200
469/469 - loss: 0.1211 - accuracy: 0.9637 - val_loss: 0.0553 - val_accuracy: 0.9817
Epoch 400/1200
469/469 - loss: 0.1187 - accuracy: 0.9642 - val_loss: 0.0552 - val_accuracy: 0.9822
Epoch 401/1200
469/469 - loss: 0.1186 - accuracy: 0.9646 - val_loss: 0.0551 - val_accuracy: 0.9819
Epoch 402/1200
469/469 - loss: 0.1193 - accuracy: 0.9634 - val_loss: 0.0550 - val_accuracy: 0.9821
Epoch 403/1200
469/469 - loss: 0.1190 - accuracy: 0.9647 - val_loss: 0.0549 - val_accuracy: 0.9822
Epoch 404/1200
469/469 - loss: 0.1195 - accuracy: 0.9639 - val_loss: 0.0548 - val_accuracy: 0.9823
Epoch 405/1200
469/469 - loss: 0.1180 - accuracy: 0.9644 - val_loss: 0.0548 - val_accuracy: 0.9824
Epoch 406/1200
469/469 - loss: 0.1184 - accuracy: 0.9646 - val_loss: 0.0547 - val_accuracy: 0.9824
Epoch 407/1200
469/469 - loss: 0.1199 - accuracy: 0.9647 - val_loss: 0.0545 - val_accuracy: 0.9822
Epoch 408/1200
469/469 - loss: 0.1168 - accuracy: 0.9639 - val_loss: 0.0545 - val_accuracy: 0.9823
Epoch 409/1200
469/469 - loss: 0.1177 - accuracy: 0.9640 - val_loss: 0.0545 - val_accuracy: 0.9825
Epoch 410/1200
469/469 - loss: 0.1153 - accuracy: 0.9651 - val_loss: 0.0544 - val_accuracy: 0.9824
Epoch 411/1200
469/469 - loss: 0.1174 - accuracy: 0.9647 - val_loss: 0.0543 - val_accuracy: 0.9824
Epoch 412/1200
469/469 - loss: 0.1178 - accuracy: 0.9639 - val_loss: 0.0542 - val_accuracy: 0.9824
Epoch 413/1200
469/469 - loss: 0.1190 - accuracy: 0.9643 - val_loss: 0.0542 - val_accuracy: 0.9825
Epoch 414/1200
469/469 - loss: 0.1174 - accuracy: 0.9644 - val_loss: 0.0542 - val_accuracy: 0.9825
Epoch 415/1200
469/469 - loss: 0.1162 - accuracy: 0.9642 - val_loss: 0.0541 - val_accuracy: 0.9826
Epoch 416/1200
469/469 - loss: 0.1165 - accuracy: 0.9643 - val_loss: 0.0540 - val_accuracy: 0.9823
Epoch 417/1200
469/469 - loss: 0.1161 - accuracy: 0.9644 - val_loss: 0.0540 - val_accuracy: 0.9828
Epoch 418/1200
469/469 - loss: 0.1167 - accuracy: 0.9645 - val_loss: 0.0539 - val_accuracy: 0.9827
Epoch 419/1200
469/469 - loss: 0.1174 - accuracy: 0.9650 - val_loss: 0.0537 - val_accuracy: 0.9828
Epoch 420/1200
469/469 - loss: 0.1156 - accuracy: 0.9651 - val_loss: 0.0537 - val_accuracy: 0.9828
Epoch 421/1200
469/469 - loss: 0.1185 - accuracy: 0.9644 - val_loss: 0.0536 - val_accuracy: 0.9828
Epoch 422/1200
469/469 - loss: 0.1161 - accuracy: 0.9650 - val_loss: 0.0536 - val_accuracy: 0.9829
Epoch 423/1200
469/469 - loss: 0.1155 - accuracy: 0.9652 - val_loss: 0.0535 - val_accuracy: 0.9829
Epoch 424/1200

469/469 - loss: 0.1180 - accuracy: 0.9645 - val_loss: 0.0534 - val_accuracy: 0.9827
Epoch 425/1200
469/469 - loss: 0.1156 - accuracy: 0.9653 - val_loss: 0.0533 - val_accuracy: 0.9828
Epoch 426/1200
469/469 - loss: 0.1170 - accuracy: 0.9646 - val_loss: 0.0533 - val_accuracy: 0.9830
Epoch 427/1200
469/469 - loss: 0.1165 - accuracy: 0.9651 - val_loss: 0.0532 - val_accuracy: 0.9830
Epoch 428/1200
469/469 - loss: 0.1155 - accuracy: 0.9649 - val_loss: 0.0531 - val_accuracy: 0.9831
Epoch 429/1200
469/469 - loss: 0.1161 - accuracy: 0.9646 - val_loss: 0.0530 - val_accuracy: 0.9831
Epoch 430/1200
469/469 - loss: 0.1173 - accuracy: 0.9647 - val_loss: 0.0531 - val_accuracy: 0.9830
Epoch 431/1200
469/469 - loss: 0.1151 - accuracy: 0.9661 - val_loss: 0.0529 - val_accuracy: 0.9831
Epoch 432/1200
469/469 - loss: 0.1154 - accuracy: 0.9650 - val_loss: 0.0528 - val_accuracy: 0.9831
Epoch 433/1200
469/469 - loss: 0.1144 - accuracy: 0.9658 - val_loss: 0.0528 - val_accuracy: 0.9831
Epoch 434/1200
469/469 - loss: 0.1143 - accuracy: 0.9655 - val_loss: 0.0528 - val_accuracy: 0.9829
Epoch 435/1200
469/469 - loss: 0.1171 - accuracy: 0.9658 - val_loss: 0.0527 - val_accuracy: 0.9831
Epoch 436/1200
469/469 - loss: 0.1129 - accuracy: 0.9661 - val_loss: 0.0527 - val_accuracy: 0.9832
Epoch 437/1200
469/469 - loss: 0.1132 - accuracy: 0.9655 - val_loss: 0.0526 - val_accuracy: 0.9831
Epoch 438/1200
469/469 - loss: 0.1153 - accuracy: 0.9654 - val_loss: 0.0525 - val_accuracy: 0.9834
Epoch 439/1200
469/469 - loss: 0.1182 - accuracy: 0.9646 - val_loss: 0.0524 - val_accuracy: 0.9832
Epoch 440/1200
469/469 - loss: 0.1160 - accuracy: 0.9646 - val_loss: 0.0525 - val_accuracy: 0.9831
Epoch 441/1200
469/469 - loss: 0.1132 - accuracy: 0.9658 - val_loss: 0.0524 - val_accuracy: 0.9831
Epoch 442/1200
469/469 - loss: 0.1129 - accuracy: 0.9665 - val_loss: 0.0523 - val_accuracy: 0.9833
Epoch 443/1200
469/469 - loss: 0.1133 - accuracy: 0.9661 - val_loss: 0.0522 - val_accuracy: 0.9831
Epoch 444/1200
469/469 - loss: 0.1137 - accuracy: 0.9663 - val_loss: 0.0521 - val_accuracy: 0.9832
Epoch 445/1200
469/469 - loss: 0.1127 - accuracy: 0.9664 - val_loss: 0.0521 - val_accuracy: 0.9833
Epoch 446/1200
469/469 - loss: 0.1132 - accuracy: 0.9656 - val_loss: 0.0520 - val_accuracy: 0.9832
Epoch 447/1200
469/469 - loss: 0.1130 - accuracy: 0.9669 - val_loss: 0.0519 - val_accuracy: 0.9833
Epoch 448/1200
469/469 - loss: 0.1141 - accuracy: 0.9659 - val_loss: 0.0519 - val_accuracy: 0.9834
Epoch 449/1200
469/469 - loss: 0.1126 - accuracy: 0.9661 - val_loss: 0.0519 - val_accuracy: 0.9833
Epoch 450/1200
469/469 - loss: 0.1131 - accuracy: 0.9664 - val_loss: 0.0518 - val_accuracy: 0.9834

Epoch 451/1200
469/469 - loss: 0.1139 - accuracy: 0.9664 - val_loss: 0.0517 - val_accuracy: 0.9833
Epoch 452/1200
469/469 - loss: 0.1090 - accuracy: 0.9673 - val_loss: 0.0517 - val_accuracy: 0.9835
Epoch 453/1200
469/469 - loss: 0.1123 - accuracy: 0.9658 - val_loss: 0.0516 - val_accuracy: 0.9833
Epoch 454/1200
469/469 - loss: 0.1129 - accuracy: 0.9654 - val_loss: 0.0515 - val_accuracy: 0.9833
Epoch 455/1200
469/469 - loss: 0.1111 - accuracy: 0.9665 - val_loss: 0.0514 - val_accuracy: 0.9833
Epoch 456/1200
469/469 - loss: 0.1122 - accuracy: 0.9657 - val_loss: 0.0514 - val_accuracy: 0.9833
Epoch 457/1200
469/469 - loss: 0.1108 - accuracy: 0.9652 - val_loss: 0.0513 - val_accuracy: 0.9832
Epoch 458/1200
469/469 - loss: 0.1131 - accuracy: 0.9657 - val_loss: 0.0513 - val_accuracy: 0.9832
Epoch 459/1200
469/469 - loss: 0.1124 - accuracy: 0.9661 - val_loss: 0.0512 - val_accuracy: 0.9832
Epoch 460/1200
469/469 - loss: 0.1131 - accuracy: 0.9660 - val_loss: 0.0511 - val_accuracy: 0.9833
Epoch 461/1200
469/469 - loss: 0.1104 - accuracy: 0.9662 - val_loss: 0.0511 - val_accuracy: 0.9832
Epoch 462/1200
469/469 - loss: 0.1098 - accuracy: 0.9673 - val_loss: 0.0510 - val_accuracy: 0.9833
Epoch 463/1200
469/469 - loss: 0.1130 - accuracy: 0.9661 - val_loss: 0.0510 - val_accuracy: 0.9835
Epoch 464/1200
469/469 - loss: 0.1123 - accuracy: 0.9656 - val_loss: 0.0509 - val_accuracy: 0.9834
Epoch 465/1200
469/469 - loss: 0.1101 - accuracy: 0.9671 - val_loss: 0.0509 - val_accuracy: 0.9835
Epoch 466/1200
469/469 - loss: 0.1122 - accuracy: 0.9667 - val_loss: 0.0508 - val_accuracy: 0.9835
Epoch 467/1200
469/469 - loss: 0.1120 - accuracy: 0.9663 - val_loss: 0.0508 - val_accuracy: 0.9833
Epoch 468/1200
469/469 - loss: 0.1103 - accuracy: 0.9670 - val_loss: 0.0507 - val_accuracy: 0.9832
Epoch 469/1200
469/469 - loss: 0.1117 - accuracy: 0.9669 - val_loss: 0.0507 - val_accuracy: 0.9833
Epoch 470/1200
469/469 - loss: 0.1126 - accuracy: 0.9665 - val_loss: 0.0506 - val_accuracy: 0.9833
Epoch 471/1200
469/469 - loss: 0.1107 - accuracy: 0.9671 - val_loss: 0.0505 - val_accuracy: 0.9830
Epoch 472/1200
469/469 - loss: 0.1085 - accuracy: 0.9673 - val_loss: 0.0505 - val_accuracy: 0.9835
Epoch 473/1200
469/469 - loss: 0.1121 - accuracy: 0.9663 - val_loss: 0.0504 - val_accuracy: 0.9831
Epoch 474/1200
469/469 - loss: 0.1094 - accuracy: 0.9672 - val_loss: 0.0504 - val_accuracy: 0.9831
Epoch 475/1200
469/469 - loss: 0.1092 - accuracy: 0.9668 - val_loss: 0.0503 - val_accuracy: 0.9835
Epoch 476/1200
469/469 - loss: 0.1100 - accuracy: 0.9665 - val_loss: 0.0503 - val_accuracy: 0.9834
Epoch 477/1200

469/469 - loss: 0.1093 - accuracy: 0.9674 - val_loss: 0.0502 - val_accuracy: 0.9835
Epoch 478/1200
469/469 - loss: 0.1102 - accuracy: 0.9668 - val_loss: 0.0502 - val_accuracy: 0.9834
Epoch 479/1200
469/469 - loss: 0.1085 - accuracy: 0.9672 - val_loss: 0.0501 - val_accuracy: 0.9834
Epoch 480/1200
469/469 - loss: 0.1073 - accuracy: 0.9674 - val_loss: 0.0501 - val_accuracy: 0.9834
Epoch 481/1200
469/469 - loss: 0.1091 - accuracy: 0.9665 - val_loss: 0.0500 - val_accuracy: 0.9836
Epoch 482/1200
469/469 - loss: 0.1096 - accuracy: 0.9673 - val_loss: 0.0499 - val_accuracy: 0.9835
Epoch 483/1200
469/469 - loss: 0.1109 - accuracy: 0.9665 - val_loss: 0.0498 - val_accuracy: 0.9839
Epoch 484/1200
469/469 - loss: 0.1094 - accuracy: 0.9673 - val_loss: 0.0497 - val_accuracy: 0.9837
Epoch 485/1200
469/469 - loss: 0.1084 - accuracy: 0.9672 - val_loss: 0.0498 - val_accuracy: 0.9834
Epoch 486/1200
469/469 - loss: 0.1072 - accuracy: 0.9677 - val_loss: 0.0496 - val_accuracy: 0.9836
Epoch 487/1200
469/469 - loss: 0.1062 - accuracy: 0.9680 - val_loss: 0.0497 - val_accuracy: 0.9832
Epoch 488/1200
469/469 - loss: 0.1067 - accuracy: 0.9674 - val_loss: 0.0495 - val_accuracy: 0.9835
Epoch 489/1200
469/469 - loss: 0.1104 - accuracy: 0.9668 - val_loss: 0.0495 - val_accuracy: 0.9840
Epoch 490/1200
469/469 - loss: 0.1086 - accuracy: 0.9668 - val_loss: 0.0494 - val_accuracy: 0.9840
Epoch 491/1200
469/469 - loss: 0.1087 - accuracy: 0.9671 - val_loss: 0.0495 - val_accuracy: 0.9837
Epoch 492/1200
469/469 - loss: 0.1071 - accuracy: 0.9674 - val_loss: 0.0493 - val_accuracy: 0.9839
Epoch 493/1200
469/469 - loss: 0.1074 - accuracy: 0.9679 - val_loss: 0.0492 - val_accuracy: 0.9840
Epoch 494/1200
469/469 - loss: 0.1091 - accuracy: 0.9671 - val_loss: 0.0492 - val_accuracy: 0.9839
Epoch 495/1200
469/469 - loss: 0.1084 - accuracy: 0.9681 - val_loss: 0.0492 - val_accuracy: 0.9836
Epoch 496/1200
469/469 - loss: 0.1074 - accuracy: 0.9680 - val_loss: 0.0491 - val_accuracy: 0.9839
Epoch 497/1200
469/469 - loss: 0.1056 - accuracy: 0.9679 - val_loss: 0.0492 - val_accuracy: 0.9835
Epoch 498/1200
469/469 - loss: 0.1065 - accuracy: 0.9674 - val_loss: 0.0491 - val_accuracy: 0.9837
Epoch 499/1200
469/469 - loss: 0.1071 - accuracy: 0.9670 - val_loss: 0.0490 - val_accuracy: 0.9837
Epoch 500/1200
469/469 - loss: 0.1089 - accuracy: 0.9661 - val_loss: 0.0489 - val_accuracy: 0.9839
Epoch 501/1200
469/469 - loss: 0.1053 - accuracy: 0.9678 - val_loss: 0.0488 - val_accuracy: 0.9838
Epoch 502/1200
469/469 - loss: 0.1053 - accuracy: 0.9682 - val_loss: 0.0488 - val_accuracy: 0.9838
Epoch 503/1200
469/469 - loss: 0.1079 - accuracy: 0.9675 - val_loss: 0.0487 - val_accuracy: 0.9839

Epoch 504/1200
469/469 - loss: 0.1047 - accuracy: 0.9678 - val_loss: 0.0487 - val_accuracy: 0.9840
Epoch 505/1200
469/469 - loss: 0.1081 - accuracy: 0.9676 - val_loss: 0.0486 - val_accuracy: 0.9839
Epoch 506/1200
469/469 - loss: 0.1083 - accuracy: 0.9683 - val_loss: 0.0486 - val_accuracy: 0.9839
Epoch 507/1200
469/469 - loss: 0.1076 - accuracy: 0.9679 - val_loss: 0.0485 - val_accuracy: 0.9840
Epoch 508/1200
469/469 - loss: 0.1059 - accuracy: 0.9684 - val_loss: 0.0485 - val_accuracy: 0.9837
Epoch 509/1200
469/469 - loss: 0.1047 - accuracy: 0.9680 - val_loss: 0.0484 - val_accuracy: 0.9837
Epoch 510/1200
469/469 - loss: 0.1076 - accuracy: 0.9677 - val_loss: 0.0483 - val_accuracy: 0.9838
Epoch 511/1200
469/469 - loss: 0.1066 - accuracy: 0.9679 - val_loss: 0.0482 - val_accuracy: 0.9840
Epoch 512/1200
469/469 - loss: 0.1055 - accuracy: 0.9686 - val_loss: 0.0482 - val_accuracy: 0.9838
Epoch 513/1200
469/469 - loss: 0.1060 - accuracy: 0.9688 - val_loss: 0.0481 - val_accuracy: 0.9839
Epoch 514/1200
469/469 - loss: 0.1069 - accuracy: 0.9682 - val_loss: 0.0482 - val_accuracy: 0.9838
Epoch 515/1200
469/469 - loss: 0.1041 - accuracy: 0.9682 - val_loss: 0.0481 - val_accuracy: 0.9838
Epoch 516/1200
469/469 - loss: 0.1042 - accuracy: 0.9684 - val_loss: 0.0480 - val_accuracy: 0.9840
Epoch 517/1200
469/469 - loss: 0.1061 - accuracy: 0.9687 - val_loss: 0.0480 - val_accuracy: 0.9841
Epoch 518/1200
469/469 - loss: 0.1050 - accuracy: 0.9686 - val_loss: 0.0480 - val_accuracy: 0.9840
Epoch 519/1200
469/469 - loss: 0.1021 - accuracy: 0.9687 - val_loss: 0.0479 - val_accuracy: 0.9839
Epoch 520/1200
469/469 - loss: 0.1051 - accuracy: 0.9678 - val_loss: 0.0478 - val_accuracy: 0.9838
Epoch 521/1200
469/469 - loss: 0.1047 - accuracy: 0.9686 - val_loss: 0.0477 - val_accuracy: 0.9840
Epoch 522/1200
469/469 - loss: 0.1057 - accuracy: 0.9682 - val_loss: 0.0476 - val_accuracy: 0.9840
Epoch 523/1200
469/469 - loss: 0.1050 - accuracy: 0.9689 - val_loss: 0.0476 - val_accuracy: 0.9840
Epoch 524/1200
469/469 - loss: 0.1056 - accuracy: 0.9679 - val_loss: 0.0476 - val_accuracy: 0.9840
Epoch 525/1200
469/469 - loss: 0.1058 - accuracy: 0.9686 - val_loss: 0.0476 - val_accuracy: 0.9838
Epoch 526/1200
469/469 - loss: 0.1049 - accuracy: 0.9684 - val_loss: 0.0475 - val_accuracy: 0.9840
Epoch 527/1200
469/469 - loss: 0.1031 - accuracy: 0.9682 - val_loss: 0.0475 - val_accuracy: 0.9839
Epoch 528/1200
469/469 - loss: 0.1051 - accuracy: 0.9681 - val_loss: 0.0475 - val_accuracy: 0.9839
Epoch 529/1200
469/469 - loss: 0.1052 - accuracy: 0.9680 - val_loss: 0.0474 - val_accuracy: 0.9840
Epoch 530/1200

469/469 - loss: 0.1015 - accuracy: 0.9694 - val_loss: 0.0473 - val_accuracy: 0.9841
Epoch 531/1200
469/469 - loss: 0.1014 - accuracy: 0.9699 - val_loss: 0.0472 - val_accuracy: 0.9840
Epoch 532/1200
469/469 - loss: 0.1045 - accuracy: 0.9686 - val_loss: 0.0473 - val_accuracy: 0.9840
Epoch 533/1200
469/469 - loss: 0.1032 - accuracy: 0.9688 - val_loss: 0.0472 - val_accuracy: 0.9839
Epoch 534/1200
469/469 - loss: 0.1036 - accuracy: 0.9689 - val_loss: 0.0471 - val_accuracy: 0.9841
Epoch 535/1200
469/469 - loss: 0.0987 - accuracy: 0.9703 - val_loss: 0.0471 - val_accuracy: 0.9841
Epoch 536/1200
469/469 - loss: 0.1023 - accuracy: 0.9692 - val_loss: 0.0470 - val_accuracy: 0.9840
Epoch 537/1200
469/469 - loss: 0.1031 - accuracy: 0.9682 - val_loss: 0.0470 - val_accuracy: 0.9842
Epoch 538/1200
469/469 - loss: 0.1026 - accuracy: 0.9689 - val_loss: 0.0470 - val_accuracy: 0.9840
Epoch 539/1200
469/469 - loss: 0.1041 - accuracy: 0.9686 - val_loss: 0.0470 - val_accuracy: 0.9840
Epoch 540/1200
469/469 - loss: 0.1031 - accuracy: 0.9687 - val_loss: 0.0469 - val_accuracy: 0.9840
Epoch 541/1200
469/469 - loss: 0.1034 - accuracy: 0.9692 - val_loss: 0.0469 - val_accuracy: 0.9842
Epoch 542/1200
469/469 - loss: 0.1014 - accuracy: 0.9690 - val_loss: 0.0468 - val_accuracy: 0.9840
Epoch 543/1200
469/469 - loss: 0.1029 - accuracy: 0.9696 - val_loss: 0.0467 - val_accuracy: 0.9842
Epoch 544/1200
469/469 - loss: 0.1018 - accuracy: 0.9690 - val_loss: 0.0467 - val_accuracy: 0.9842
Epoch 545/1200
469/469 - loss: 0.1016 - accuracy: 0.9698 - val_loss: 0.0466 - val_accuracy: 0.9842
Epoch 546/1200
469/469 - loss: 0.1043 - accuracy: 0.9692 - val_loss: 0.0466 - val_accuracy: 0.9842
Epoch 547/1200
469/469 - loss: 0.1006 - accuracy: 0.9693 - val_loss: 0.0466 - val_accuracy: 0.9841
Epoch 548/1200
469/469 - loss: 0.1007 - accuracy: 0.9697 - val_loss: 0.0465 - val_accuracy: 0.9842
Epoch 549/1200
469/469 - loss: 0.1040 - accuracy: 0.9689 - val_loss: 0.0465 - val_accuracy: 0.9841
Epoch 550/1200
469/469 - loss: 0.0999 - accuracy: 0.9695 - val_loss: 0.0465 - val_accuracy: 0.9841
Epoch 551/1200
469/469 - loss: 0.1026 - accuracy: 0.9689 - val_loss: 0.0464 - val_accuracy: 0.9842
Epoch 552/1200
469/469 - loss: 0.1013 - accuracy: 0.9694 - val_loss: 0.0463 - val_accuracy: 0.9842
Epoch 553/1200
469/469 - loss: 0.1027 - accuracy: 0.9699 - val_loss: 0.0464 - val_accuracy: 0.9842
Epoch 554/1200
469/469 - loss: 0.1007 - accuracy: 0.9691 - val_loss: 0.0463 - val_accuracy: 0.9841
Epoch 555/1200
469/469 - loss: 0.1015 - accuracy: 0.9703 - val_loss: 0.0461 - val_accuracy: 0.9843
Epoch 556/1200
469/469 - loss: 0.1019 - accuracy: 0.9694 - val_loss: 0.0462 - val_accuracy: 0.9842

Epoch 557/1200
469/469 - loss: 0.1017 - accuracy: 0.9693 - val_loss: 0.0461 - val_accuracy: 0.9841
Epoch 558/1200
469/469 - loss: 0.1013 - accuracy: 0.9691 - val_loss: 0.0460 - val_accuracy: 0.9843
Epoch 559/1200
469/469 - loss: 0.1023 - accuracy: 0.9689 - val_loss: 0.0460 - val_accuracy: 0.9841
Epoch 560/1200
469/469 - loss: 0.1016 - accuracy: 0.9691 - val_loss: 0.0460 - val_accuracy: 0.9840
Epoch 561/1200
469/469 - loss: 0.1013 - accuracy: 0.9693 - val_loss: 0.0458 - val_accuracy: 0.9843
Epoch 562/1200
469/469 - loss: 0.1008 - accuracy: 0.9694 - val_loss: 0.0458 - val_accuracy: 0.9844
Epoch 563/1200
469/469 - loss: 0.1017 - accuracy: 0.9692 - val_loss: 0.0458 - val_accuracy: 0.9843
Epoch 564/1200
469/469 - loss: 0.1006 - accuracy: 0.9697 - val_loss: 0.0458 - val_accuracy: 0.9840
Epoch 565/1200
469/469 - loss: 0.0994 - accuracy: 0.9702 - val_loss: 0.0457 - val_accuracy: 0.9842
Epoch 566/1200
469/469 - loss: 0.1011 - accuracy: 0.9695 - val_loss: 0.0457 - val_accuracy: 0.9842
Epoch 567/1200
469/469 - loss: 0.0995 - accuracy: 0.9696 - val_loss: 0.0457 - val_accuracy: 0.9839
Epoch 568/1200
469/469 - loss: 0.1012 - accuracy: 0.9688 - val_loss: 0.0456 - val_accuracy: 0.9842
Epoch 569/1200
469/469 - loss: 0.1008 - accuracy: 0.9698 - val_loss: 0.0456 - val_accuracy: 0.9841
Epoch 570/1200
469/469 - loss: 0.0996 - accuracy: 0.9696 - val_loss: 0.0456 - val_accuracy: 0.9840
Epoch 571/1200
469/469 - loss: 0.0994 - accuracy: 0.9701 - val_loss: 0.0454 - val_accuracy: 0.9844
Epoch 572/1200
469/469 - loss: 0.0990 - accuracy: 0.9705 - val_loss: 0.0455 - val_accuracy: 0.9838
Epoch 573/1200
469/469 - loss: 0.0998 - accuracy: 0.9701 - val_loss: 0.0454 - val_accuracy: 0.9841
Epoch 574/1200
469/469 - loss: 0.1002 - accuracy: 0.9697 - val_loss: 0.0454 - val_accuracy: 0.9844
Epoch 575/1200
469/469 - loss: 0.0988 - accuracy: 0.9706 - val_loss: 0.0453 - val_accuracy: 0.9843
Epoch 576/1200
469/469 - loss: 0.0982 - accuracy: 0.9709 - val_loss: 0.0453 - val_accuracy: 0.9839
Epoch 577/1200
469/469 - loss: 0.0995 - accuracy: 0.9704 - val_loss: 0.0452 - val_accuracy: 0.9842
Epoch 578/1200
469/469 - loss: 0.0999 - accuracy: 0.9703 - val_loss: 0.0452 - val_accuracy: 0.9844
Epoch 579/1200
469/469 - loss: 0.0986 - accuracy: 0.9702 - val_loss: 0.0451 - val_accuracy: 0.9843
Epoch 580/1200
469/469 - loss: 0.0992 - accuracy: 0.9705 - val_loss: 0.0450 - val_accuracy: 0.9845
Epoch 581/1200
469/469 - loss: 0.1005 - accuracy: 0.9695 - val_loss: 0.0451 - val_accuracy: 0.9845
Epoch 582/1200
469/469 - loss: 0.0989 - accuracy: 0.9699 - val_loss: 0.0451 - val_accuracy: 0.9843
Epoch 583/1200

469/469 - loss: 0.0968 - accuracy: 0.9709 - val_loss: 0.0451 - val_accuracy: 0.9843
Epoch 584/1200
469/469 - loss: 0.1001 - accuracy: 0.9704 - val_loss: 0.0450 - val_accuracy: 0.9845
Epoch 585/1200
469/469 - loss: 0.0986 - accuracy: 0.9698 - val_loss: 0.0449 - val_accuracy: 0.9844
Epoch 586/1200
469/469 - loss: 0.0988 - accuracy: 0.9705 - val_loss: 0.0449 - val_accuracy: 0.9844
Epoch 587/1200
469/469 - loss: 0.0975 - accuracy: 0.9703 - val_loss: 0.0449 - val_accuracy: 0.9846
Epoch 588/1200
469/469 - loss: 0.0966 - accuracy: 0.9707 - val_loss: 0.0448 - val_accuracy: 0.9845
Epoch 589/1200
469/469 - loss: 0.0977 - accuracy: 0.9708 - val_loss: 0.0447 - val_accuracy: 0.9844
Epoch 590/1200
469/469 - loss: 0.1002 - accuracy: 0.9700 - val_loss: 0.0447 - val_accuracy: 0.9844
Epoch 591/1200
469/469 - loss: 0.0964 - accuracy: 0.9708 - val_loss: 0.0447 - val_accuracy: 0.9845
Epoch 592/1200
469/469 - loss: 0.0974 - accuracy: 0.9714 - val_loss: 0.0446 - val_accuracy: 0.9847
Epoch 593/1200
469/469 - loss: 0.0967 - accuracy: 0.9705 - val_loss: 0.0446 - val_accuracy: 0.9845
Epoch 594/1200
469/469 - loss: 0.0982 - accuracy: 0.9699 - val_loss: 0.0445 - val_accuracy: 0.9846
Epoch 595/1200
469/469 - loss: 0.0974 - accuracy: 0.9707 - val_loss: 0.0445 - val_accuracy: 0.9849
Epoch 596/1200
469/469 - loss: 0.0982 - accuracy: 0.9701 - val_loss: 0.0445 - val_accuracy: 0.9844
Epoch 597/1200
469/469 - loss: 0.0977 - accuracy: 0.9703 - val_loss: 0.0445 - val_accuracy: 0.9845
Epoch 598/1200
469/469 - loss: 0.0969 - accuracy: 0.9711 - val_loss: 0.0444 - val_accuracy: 0.9844
Epoch 599/1200
469/469 - loss: 0.0985 - accuracy: 0.9701 - val_loss: 0.0443 - val_accuracy: 0.9847
Epoch 600/1200
469/469 - loss: 0.0976 - accuracy: 0.9708 - val_loss: 0.0443 - val_accuracy: 0.9846
Epoch 601/1200
469/469 - loss: 0.0964 - accuracy: 0.9705 - val_loss: 0.0442 - val_accuracy: 0.9846
Epoch 602/1200
469/469 - loss: 0.0973 - accuracy: 0.9704 - val_loss: 0.0441 - val_accuracy: 0.9846
Epoch 603/1200
469/469 - loss: 0.0978 - accuracy: 0.9707 - val_loss: 0.0442 - val_accuracy: 0.9847
Epoch 604/1200
469/469 - loss: 0.0968 - accuracy: 0.9707 - val_loss: 0.0442 - val_accuracy: 0.9847
Epoch 605/1200
469/469 - loss: 0.0985 - accuracy: 0.9712 - val_loss: 0.0441 - val_accuracy: 0.9846
Epoch 606/1200
469/469 - loss: 0.0965 - accuracy: 0.9715 - val_loss: 0.0441 - val_accuracy: 0.9846
Epoch 607/1200
469/469 - loss: 0.0982 - accuracy: 0.9703 - val_loss: 0.0441 - val_accuracy: 0.9846
Epoch 608/1200
469/469 - loss: 0.0982 - accuracy: 0.9703 - val_loss: 0.0441 - val_accuracy: 0.9846
Epoch 609/1200
469/469 - loss: 0.0985 - accuracy: 0.9708 - val_loss: 0.0441 - val_accuracy: 0.9846

Epoch 610/1200
469/469 - loss: 0.0972 - accuracy: 0.9704 - val_loss: 0.0440 - val_accuracy: 0.9846
Epoch 611/1200
469/469 - loss: 0.0962 - accuracy: 0.9709 - val_loss: 0.0439 - val_accuracy: 0.9847
Epoch 612/1200
469/469 - loss: 0.0957 - accuracy: 0.9718 - val_loss: 0.0438 - val_accuracy: 0.9847
Epoch 613/1200
469/469 - loss: 0.0966 - accuracy: 0.9707 - val_loss: 0.0437 - val_accuracy: 0.9847
Epoch 614/1200
469/469 - loss: 0.0974 - accuracy: 0.9705 - val_loss: 0.0437 - val_accuracy: 0.9846
Epoch 615/1200
469/469 - loss: 0.0961 - accuracy: 0.9714 - val_loss: 0.0437 - val_accuracy: 0.9847
Epoch 616/1200
469/469 - loss: 0.0957 - accuracy: 0.9711 - val_loss: 0.0437 - val_accuracy: 0.9848
Epoch 617/1200
469/469 - loss: 0.0952 - accuracy: 0.9710 - val_loss: 0.0436 - val_accuracy: 0.9851
Epoch 618/1200
469/469 - loss: 0.0957 - accuracy: 0.9710 - val_loss: 0.0436 - val_accuracy: 0.9849
Epoch 619/1200
469/469 - loss: 0.0962 - accuracy: 0.9713 - val_loss: 0.0436 - val_accuracy: 0.9850
Epoch 620/1200
469/469 - loss: 0.0971 - accuracy: 0.9707 - val_loss: 0.0436 - val_accuracy: 0.9848
Epoch 621/1200
469/469 - loss: 0.0962 - accuracy: 0.9710 - val_loss: 0.0435 - val_accuracy: 0.9852
Epoch 622/1200
469/469 - loss: 0.0967 - accuracy: 0.9715 - val_loss: 0.0435 - val_accuracy: 0.9850
Epoch 623/1200
469/469 - loss: 0.0951 - accuracy: 0.9714 - val_loss: 0.0434 - val_accuracy: 0.9848
Epoch 624/1200
469/469 - loss: 0.0942 - accuracy: 0.9722 - val_loss: 0.0434 - val_accuracy: 0.9849
Epoch 625/1200
469/469 - loss: 0.0964 - accuracy: 0.9711 - val_loss: 0.0434 - val_accuracy: 0.9848
Epoch 626/1200
469/469 - loss: 0.0957 - accuracy: 0.9710 - val_loss: 0.0434 - val_accuracy: 0.9847
Epoch 627/1200
469/469 - loss: 0.0946 - accuracy: 0.9711 - val_loss: 0.0434 - val_accuracy: 0.9847
Epoch 628/1200
469/469 - loss: 0.0946 - accuracy: 0.9712 - val_loss: 0.0433 - val_accuracy: 0.9848
Epoch 629/1200
469/469 - loss: 0.0943 - accuracy: 0.9717 - val_loss: 0.0432 - val_accuracy: 0.9852
Epoch 630/1200
469/469 - loss: 0.0941 - accuracy: 0.9715 - val_loss: 0.0432 - val_accuracy: 0.9852
Epoch 631/1200
469/469 - loss: 0.0951 - accuracy: 0.9714 - val_loss: 0.0431 - val_accuracy: 0.9851
Epoch 632/1200
469/469 - loss: 0.0932 - accuracy: 0.9720 - val_loss: 0.0432 - val_accuracy: 0.9849
Epoch 633/1200
469/469 - loss: 0.0934 - accuracy: 0.9719 - val_loss: 0.0431 - val_accuracy: 0.9852
Epoch 634/1200
469/469 - loss: 0.0945 - accuracy: 0.9723 - val_loss: 0.0431 - val_accuracy: 0.9851
Epoch 635/1200
469/469 - loss: 0.0942 - accuracy: 0.9716 - val_loss: 0.0430 - val_accuracy: 0.9852
Epoch 636/1200

469/469 - loss: 0.0952 - accuracy: 0.9708 - val_loss: 0.0430 - val_accuracy: 0.9852
Epoch 637/1200
469/469 - loss: 0.0949 - accuracy: 0.9711 - val_loss: 0.0429 - val_accuracy: 0.9852
Epoch 638/1200
469/469 - loss: 0.0931 - accuracy: 0.9723 - val_loss: 0.0429 - val_accuracy: 0.9853
Epoch 639/1200
469/469 - loss: 0.0936 - accuracy: 0.9718 - val_loss: 0.0428 - val_accuracy: 0.9853
Epoch 640/1200
469/469 - loss: 0.0936 - accuracy: 0.9722 - val_loss: 0.0428 - val_accuracy: 0.9851
Epoch 641/1200
469/469 - loss: 0.0953 - accuracy: 0.9715 - val_loss: 0.0428 - val_accuracy: 0.9852
Epoch 642/1200
469/469 - loss: 0.0947 - accuracy: 0.9708 - val_loss: 0.0428 - val_accuracy: 0.9852
Epoch 643/1200
469/469 - loss: 0.0940 - accuracy: 0.9721 - val_loss: 0.0428 - val_accuracy: 0.9853
Epoch 644/1200
469/469 - loss: 0.0956 - accuracy: 0.9711 - val_loss: 0.0427 - val_accuracy: 0.9854
Epoch 645/1200
469/469 - loss: 0.0952 - accuracy: 0.9715 - val_loss: 0.0427 - val_accuracy: 0.9854
Epoch 646/1200
469/469 - loss: 0.0929 - accuracy: 0.9723 - val_loss: 0.0427 - val_accuracy: 0.9852
Epoch 647/1200
469/469 - loss: 0.0924 - accuracy: 0.9717 - val_loss: 0.0427 - val_accuracy: 0.9853
Epoch 648/1200
469/469 - loss: 0.0928 - accuracy: 0.9728 - val_loss: 0.0426 - val_accuracy: 0.9851
Epoch 649/1200
469/469 - loss: 0.0937 - accuracy: 0.9712 - val_loss: 0.0426 - val_accuracy: 0.9854
Epoch 650/1200
469/469 - loss: 0.0945 - accuracy: 0.9711 - val_loss: 0.0426 - val_accuracy: 0.9852
Epoch 651/1200
469/469 - loss: 0.0946 - accuracy: 0.9707 - val_loss: 0.0426 - val_accuracy: 0.9853
Epoch 652/1200
469/469 - loss: 0.0931 - accuracy: 0.9720 - val_loss: 0.0425 - val_accuracy: 0.9854
Epoch 653/1200
469/469 - loss: 0.0937 - accuracy: 0.9719 - val_loss: 0.0425 - val_accuracy: 0.9853
Epoch 654/1200
469/469 - loss: 0.0930 - accuracy: 0.9726 - val_loss: 0.0424 - val_accuracy: 0.9855
Epoch 655/1200
469/469 - loss: 0.0926 - accuracy: 0.9716 - val_loss: 0.0423 - val_accuracy: 0.9856
Epoch 656/1200
469/469 - loss: 0.0937 - accuracy: 0.9706 - val_loss: 0.0423 - val_accuracy: 0.9857
Epoch 657/1200
469/469 - loss: 0.0914 - accuracy: 0.9719 - val_loss: 0.0423 - val_accuracy: 0.9857
Epoch 658/1200
469/469 - loss: 0.0913 - accuracy: 0.9718 - val_loss: 0.0423 - val_accuracy: 0.9854
Epoch 659/1200
469/469 - loss: 0.0930 - accuracy: 0.9719 - val_loss: 0.0423 - val_accuracy: 0.9855
Epoch 660/1200
469/469 - loss: 0.0917 - accuracy: 0.9730 - val_loss: 0.0422 - val_accuracy: 0.9854
Epoch 661/1200
469/469 - loss: 0.0927 - accuracy: 0.9718 - val_loss: 0.0421 - val_accuracy: 0.9857
Epoch 662/1200
469/469 - loss: 0.0909 - accuracy: 0.9728 - val_loss: 0.0421 - val_accuracy: 0.9856

Epoch 663/1200
 469/469 - loss: 0.0920 - accuracy: 0.9724 - val_loss: 0.0420 - val_accuracy: 0.9856
 Epoch 664/1200
 469/469 - loss: 0.0931 - accuracy: 0.9720 - val_loss: 0.0419 - val_accuracy: 0.9860
 Epoch 665/1200
 469/469 - loss: 0.0922 - accuracy: 0.9722 - val_loss: 0.0419 - val_accuracy: 0.9858
 Epoch 666/1200
 469/469 - loss: 0.0938 - accuracy: 0.9711 - val_loss: 0.0419 - val_accuracy: 0.9857
 Epoch 667/1200
 469/469 - loss: 0.0935 - accuracy: 0.9721 - val_loss: 0.0419 - val_accuracy: 0.9857
 Epoch 668/1200
 469/469 - loss: 0.0917 - accuracy: 0.9722 - val_loss: 0.0418 - val_accuracy: 0.9857
 Epoch 669/1200
 469/469 - loss: 0.0924 - accuracy: 0.9723 - val_loss: 0.0418 - val_accuracy: 0.9856
 Epoch 670/1200
 469/469 - loss: 0.0912 - accuracy: 0.9725 - val_loss: 0.0418 - val_accuracy: 0.9856
 Epoch 671/1200
 469/469 - loss: 0.0895 - accuracy: 0.9732 - val_loss: 0.0418 - val_accuracy: 0.9857
 Epoch 672/1200
 469/469 - loss: 0.0915 - accuracy: 0.9725 - val_loss: 0.0417 - val_accuracy: 0.9856
 Epoch 673/1200
 469/469 - loss: 0.0906 - accuracy: 0.9722 - val_loss: 0.0417 - val_accuracy: 0.9858
 Epoch 674/1200
 469/469 - loss: 0.0924 - accuracy: 0.9722 - val_loss: 0.0416 - val_accuracy: 0.9857
 Epoch 675/1200
 469/469 - loss: 0.0911 - accuracy: 0.9726 - val_loss: 0.0417 - val_accuracy: 0.9856
 Epoch 676/1200
 469/469 - loss: 0.0909 - accuracy: 0.9730 - val_loss: 0.0416 - val_accuracy: 0.9856
 Epoch 677/1200
 469/469 - loss: 0.0931 - accuracy: 0.9719 - val_loss: 0.0416 - val_accuracy: 0.9857
 Epoch 678/1200
 469/469 - loss: 0.0919 - accuracy: 0.9722 - val_loss: 0.0416 - val_accuracy: 0.9858
 Epoch 679/1200
 469/469 - loss: 0.0919 - accuracy: 0.9722 - val_loss: 0.0415 - val_accuracy: 0.9857
 Epoch 680/1200
 469/469 - loss: 0.0910 - accuracy: 0.9727 - val_loss: 0.0415 - val_accuracy: 0.9859
 Epoch 681/1200
 469/469 - loss: 0.0932 - accuracy: 0.9721 - val_loss: 0.0415 - val_accuracy: 0.9859
 Epoch 682/1200
 469/469 - loss: 0.0922 - accuracy: 0.9719 - val_loss: 0.0414 - val_accuracy: 0.9858
 Epoch 683/1200
 469/469 - loss: 0.0919 - accuracy: 0.9726 - val_loss: 0.0415 - val_accuracy: 0.9859
 Epoch 684/1200
 469/469 - loss: 0.0930 - accuracy: 0.9726 - val_loss: 0.0414 - val_accuracy: 0.9858
 Epoch 685/1200
 469/469 - loss: 0.0914 - accuracy: 0.9719 - val_loss: 0.0414 - val_accuracy: 0.9858
 Epoch 686/1200
 469/469 - loss: 0.0934 - accuracy: 0.9715 - val_loss: 0.0414 - val_accuracy: 0.9859
 Epoch 687/1200
 469/469 - loss: 0.0898 - accuracy: 0.9727 - val_loss: 0.0412 - val_accuracy: 0.9857
 Epoch 688/1200
 469/469 - loss: 0.0894 - accuracy: 0.9726 - val_loss: 0.0413 - val_accuracy: 0.9858
 Epoch 689/1200

469/469 - loss: 0.0919 - accuracy: 0.9727 - val_loss: 0.0413 - val_accuracy: 0.9860
Epoch 690/1200
469/469 - loss: 0.0889 - accuracy: 0.9729 - val_loss: 0.0412 - val_accuracy: 0.9859
Epoch 691/1200
469/469 - loss: 0.0922 - accuracy: 0.9719 - val_loss: 0.0411 - val_accuracy: 0.9857
Epoch 692/1200
469/469 - loss: 0.0903 - accuracy: 0.9731 - val_loss: 0.0412 - val_accuracy: 0.9860
Epoch 693/1200
469/469 - loss: 0.0899 - accuracy: 0.9730 - val_loss: 0.0411 - val_accuracy: 0.9861
Epoch 694/1200
469/469 - loss: 0.0909 - accuracy: 0.9720 - val_loss: 0.0410 - val_accuracy: 0.9859
Epoch 695/1200
469/469 - loss: 0.0914 - accuracy: 0.9718 - val_loss: 0.0410 - val_accuracy: 0.9860
Epoch 696/1200
469/469 - loss: 0.0907 - accuracy: 0.9732 - val_loss: 0.0410 - val_accuracy: 0.9859
Epoch 697/1200
469/469 - loss: 0.0899 - accuracy: 0.9728 - val_loss: 0.0409 - val_accuracy: 0.9859
Epoch 698/1200
469/469 - loss: 0.0898 - accuracy: 0.9727 - val_loss: 0.0409 - val_accuracy: 0.9859
Epoch 699/1200
469/469 - loss: 0.0878 - accuracy: 0.9740 - val_loss: 0.0408 - val_accuracy: 0.9858
Epoch 700/1200
469/469 - loss: 0.0887 - accuracy: 0.9732 - val_loss: 0.0408 - val_accuracy: 0.9859
Epoch 701/1200
469/469 - loss: 0.0920 - accuracy: 0.9714 - val_loss: 0.0407 - val_accuracy: 0.9859
Epoch 702/1200
469/469 - loss: 0.0915 - accuracy: 0.9724 - val_loss: 0.0407 - val_accuracy: 0.9858
Epoch 703/1200
469/469 - loss: 0.0910 - accuracy: 0.9719 - val_loss: 0.0407 - val_accuracy: 0.9858
Epoch 704/1200
469/469 - loss: 0.0907 - accuracy: 0.9727 - val_loss: 0.0406 - val_accuracy: 0.9858
Epoch 705/1200
469/469 - loss: 0.0879 - accuracy: 0.9735 - val_loss: 0.0406 - val_accuracy: 0.9858
Epoch 706/1200
469/469 - loss: 0.0883 - accuracy: 0.9732 - val_loss: 0.0406 - val_accuracy: 0.9859
Epoch 707/1200
469/469 - loss: 0.0872 - accuracy: 0.9743 - val_loss: 0.0405 - val_accuracy: 0.9860
Epoch 708/1200
469/469 - loss: 0.0900 - accuracy: 0.9734 - val_loss: 0.0405 - val_accuracy: 0.9861
Epoch 709/1200
469/469 - loss: 0.0891 - accuracy: 0.9729 - val_loss: 0.0405 - val_accuracy: 0.9861
Epoch 710/1200
469/469 - loss: 0.0878 - accuracy: 0.9740 - val_loss: 0.0404 - val_accuracy: 0.9860
Epoch 711/1200
469/469 - loss: 0.0891 - accuracy: 0.9724 - val_loss: 0.0405 - val_accuracy: 0.9860
Epoch 712/1200
469/469 - loss: 0.0898 - accuracy: 0.9729 - val_loss: 0.0404 - val_accuracy: 0.9860
Epoch 713/1200
469/469 - loss: 0.0884 - accuracy: 0.9736 - val_loss: 0.0404 - val_accuracy: 0.9860
Epoch 714/1200
469/469 - loss: 0.0899 - accuracy: 0.9727 - val_loss: 0.0405 - val_accuracy: 0.9860
Epoch 715/1200
469/469 - loss: 0.0901 - accuracy: 0.9726 - val_loss: 0.0404 - val_accuracy: 0.9859

Epoch 716/1200
469/469 - loss: 0.0896 - accuracy: 0.9726 - val_loss: 0.0404 - val_accuracy: 0.9859
Epoch 717/1200
469/469 - loss: 0.0903 - accuracy: 0.9726 - val_loss: 0.0403 - val_accuracy: 0.9859
Epoch 718/1200
469/469 - loss: 0.0876 - accuracy: 0.9738 - val_loss: 0.0402 - val_accuracy: 0.9859
Epoch 719/1200
469/469 - loss: 0.0880 - accuracy: 0.9735 - val_loss: 0.0403 - val_accuracy: 0.9859
Epoch 720/1200
469/469 - loss: 0.0885 - accuracy: 0.9729 - val_loss: 0.0403 - val_accuracy: 0.9859
Epoch 721/1200
469/469 - loss: 0.0892 - accuracy: 0.9723 - val_loss: 0.0403 - val_accuracy: 0.9859
Epoch 722/1200
469/469 - loss: 0.0888 - accuracy: 0.9737 - val_loss: 0.0402 - val_accuracy: 0.9859
Epoch 723/1200
469/469 - loss: 0.0890 - accuracy: 0.9729 - val_loss: 0.0401 - val_accuracy: 0.9859
Epoch 724/1200
469/469 - loss: 0.0891 - accuracy: 0.9731 - val_loss: 0.0401 - val_accuracy: 0.9859
Epoch 725/1200
469/469 - loss: 0.0890 - accuracy: 0.9734 - val_loss: 0.0400 - val_accuracy: 0.9860
Epoch 726/1200
469/469 - loss: 0.0889 - accuracy: 0.9732 - val_loss: 0.0401 - val_accuracy: 0.9859
Epoch 727/1200
469/469 - loss: 0.0869 - accuracy: 0.9736 - val_loss: 0.0400 - val_accuracy: 0.9859
Epoch 728/1200
469/469 - loss: 0.0884 - accuracy: 0.9726 - val_loss: 0.0400 - val_accuracy: 0.9860
Epoch 729/1200
469/469 - loss: 0.0881 - accuracy: 0.9729 - val_loss: 0.0400 - val_accuracy: 0.9860
Epoch 730/1200
469/469 - loss: 0.0872 - accuracy: 0.9739 - val_loss: 0.0400 - val_accuracy: 0.9860
Epoch 731/1200
469/469 - loss: 0.0875 - accuracy: 0.9737 - val_loss: 0.0399 - val_accuracy: 0.9860
Epoch 732/1200
469/469 - loss: 0.0876 - accuracy: 0.9739 - val_loss: 0.0398 - val_accuracy: 0.9858
Epoch 733/1200
469/469 - loss: 0.0874 - accuracy: 0.9738 - val_loss: 0.0398 - val_accuracy: 0.9859
Epoch 734/1200
469/469 - loss: 0.0888 - accuracy: 0.9733 - val_loss: 0.0398 - val_accuracy: 0.9859
Epoch 735/1200
469/469 - loss: 0.0888 - accuracy: 0.9724 - val_loss: 0.0399 - val_accuracy: 0.9859
Epoch 736/1200
469/469 - loss: 0.0893 - accuracy: 0.9739 - val_loss: 0.0398 - val_accuracy: 0.9859
Epoch 737/1200
469/469 - loss: 0.0887 - accuracy: 0.9729 - val_loss: 0.0398 - val_accuracy: 0.9859
Epoch 738/1200
469/469 - loss: 0.0852 - accuracy: 0.9740 - val_loss: 0.0398 - val_accuracy: 0.9859
Epoch 739/1200
469/469 - loss: 0.0893 - accuracy: 0.9734 - val_loss: 0.0398 - val_accuracy: 0.9859
Epoch 740/1200
469/469 - loss: 0.0890 - accuracy: 0.9724 - val_loss: 0.0397 - val_accuracy: 0.9859
Epoch 741/1200
469/469 - loss: 0.0881 - accuracy: 0.9740 - val_loss: 0.0396 - val_accuracy: 0.9859
Epoch 742/1200

469/469 - loss: 0.0879 - accuracy: 0.9732 - val_loss: 0.0396 - val_accuracy: 0.9859
Epoch 743/1200
469/469 - loss: 0.0873 - accuracy: 0.9736 - val_loss: 0.0396 - val_accuracy: 0.9860
Epoch 744/1200
469/469 - loss: 0.0866 - accuracy: 0.9741 - val_loss: 0.0396 - val_accuracy: 0.9859
Epoch 745/1200
469/469 - loss: 0.0876 - accuracy: 0.9741 - val_loss: 0.0396 - val_accuracy: 0.9859
Epoch 746/1200
469/469 - loss: 0.0873 - accuracy: 0.9737 - val_loss: 0.0395 - val_accuracy: 0.9861
Epoch 747/1200
469/469 - loss: 0.0883 - accuracy: 0.9734 - val_loss: 0.0395 - val_accuracy: 0.9859
Epoch 748/1200
469/469 - loss: 0.0860 - accuracy: 0.9739 - val_loss: 0.0394 - val_accuracy: 0.9860
Epoch 749/1200
469/469 - loss: 0.0866 - accuracy: 0.9735 - val_loss: 0.0394 - val_accuracy: 0.9859
Epoch 750/1200
469/469 - loss: 0.0862 - accuracy: 0.9740 - val_loss: 0.0393 - val_accuracy: 0.9859
Epoch 751/1200
469/469 - loss: 0.0874 - accuracy: 0.9734 - val_loss: 0.0393 - val_accuracy: 0.9860
Epoch 752/1200
469/469 - loss: 0.0874 - accuracy: 0.9733 - val_loss: 0.0393 - val_accuracy: 0.9861
Epoch 753/1200
469/469 - loss: 0.0879 - accuracy: 0.9735 - val_loss: 0.0393 - val_accuracy: 0.9859
Epoch 754/1200
469/469 - loss: 0.0867 - accuracy: 0.9736 - val_loss: 0.0393 - val_accuracy: 0.9859
Epoch 755/1200
469/469 - loss: 0.0853 - accuracy: 0.9744 - val_loss: 0.0392 - val_accuracy: 0.9859
Epoch 756/1200
469/469 - loss: 0.0885 - accuracy: 0.9732 - val_loss: 0.0392 - val_accuracy: 0.9859
Epoch 757/1200
469/469 - loss: 0.0871 - accuracy: 0.9740 - val_loss: 0.0391 - val_accuracy: 0.9864
Epoch 758/1200
469/469 - loss: 0.0839 - accuracy: 0.9749 - val_loss: 0.0391 - val_accuracy: 0.9861
Epoch 759/1200
469/469 - loss: 0.0862 - accuracy: 0.9733 - val_loss: 0.0391 - val_accuracy: 0.9859
Epoch 760/1200
469/469 - loss: 0.0862 - accuracy: 0.9742 - val_loss: 0.0390 - val_accuracy: 0.9863
Epoch 761/1200
469/469 - loss: 0.0850 - accuracy: 0.9740 - val_loss: 0.0391 - val_accuracy: 0.9861
Epoch 762/1200
469/469 - loss: 0.0852 - accuracy: 0.9742 - val_loss: 0.0390 - val_accuracy: 0.9862
Epoch 763/1200
469/469 - loss: 0.0877 - accuracy: 0.9740 - val_loss: 0.0390 - val_accuracy: 0.9861
Epoch 764/1200
469/469 - loss: 0.0854 - accuracy: 0.9738 - val_loss: 0.0390 - val_accuracy: 0.9860
Epoch 765/1200
469/469 - loss: 0.0857 - accuracy: 0.9740 - val_loss: 0.0390 - val_accuracy: 0.9860
Epoch 766/1200
469/469 - loss: 0.0864 - accuracy: 0.9737 - val_loss: 0.0389 - val_accuracy: 0.9862
Epoch 767/1200
469/469 - loss: 0.0855 - accuracy: 0.9742 - val_loss: 0.0389 - val_accuracy: 0.9859
Epoch 768/1200
469/469 - loss: 0.0849 - accuracy: 0.9741 - val_loss: 0.0389 - val_accuracy: 0.9860

Epoch 769/1200
469/469 - loss: 0.0876 - accuracy: 0.9735 - val_loss: 0.0389 - val_accuracy: 0.9861
Epoch 770/1200
469/469 - loss: 0.0854 - accuracy: 0.9747 - val_loss: 0.0389 - val_accuracy: 0.9861
Epoch 771/1200
469/469 - loss: 0.0843 - accuracy: 0.9742 - val_loss: 0.0388 - val_accuracy: 0.9861
Epoch 772/1200
469/469 - loss: 0.0854 - accuracy: 0.9745 - val_loss: 0.0388 - val_accuracy: 0.9860
Epoch 773/1200
469/469 - loss: 0.0855 - accuracy: 0.9738 - val_loss: 0.0388 - val_accuracy: 0.9863
Epoch 774/1200
469/469 - loss: 0.0849 - accuracy: 0.9745 - val_loss: 0.0387 - val_accuracy: 0.9861
Epoch 775/1200
469/469 - loss: 0.0841 - accuracy: 0.9740 - val_loss: 0.0387 - val_accuracy: 0.9862
Epoch 776/1200
469/469 - loss: 0.0861 - accuracy: 0.9736 - val_loss: 0.0387 - val_accuracy: 0.9862
Epoch 777/1200
469/469 - loss: 0.0855 - accuracy: 0.9743 - val_loss: 0.0387 - val_accuracy: 0.9861
Epoch 778/1200
469/469 - loss: 0.0848 - accuracy: 0.9747 - val_loss: 0.0387 - val_accuracy: 0.9862
Epoch 779/1200
469/469 - loss: 0.0856 - accuracy: 0.9743 - val_loss: 0.0387 - val_accuracy: 0.9861
Epoch 780/1200
469/469 - loss: 0.0843 - accuracy: 0.9747 - val_loss: 0.0387 - val_accuracy: 0.9861
Epoch 781/1200
469/469 - loss: 0.0852 - accuracy: 0.9750 - val_loss: 0.0386 - val_accuracy: 0.9864
Epoch 782/1200
469/469 - loss: 0.0853 - accuracy: 0.9735 - val_loss: 0.0386 - val_accuracy: 0.9862
Epoch 783/1200
469/469 - loss: 0.0855 - accuracy: 0.9750 - val_loss: 0.0385 - val_accuracy: 0.9862
Epoch 784/1200
469/469 - loss: 0.0836 - accuracy: 0.9748 - val_loss: 0.0385 - val_accuracy: 0.9863
Epoch 785/1200
469/469 - loss: 0.0869 - accuracy: 0.9741 - val_loss: 0.0385 - val_accuracy: 0.9862
Epoch 786/1200
469/469 - loss: 0.0861 - accuracy: 0.9742 - val_loss: 0.0385 - val_accuracy: 0.9862
Epoch 787/1200
469/469 - loss: 0.0832 - accuracy: 0.9748 - val_loss: 0.0384 - val_accuracy: 0.9863
Epoch 788/1200
469/469 - loss: 0.0840 - accuracy: 0.9747 - val_loss: 0.0385 - val_accuracy: 0.9864
Epoch 789/1200
469/469 - loss: 0.0836 - accuracy: 0.9747 - val_loss: 0.0384 - val_accuracy: 0.9865
Epoch 790/1200
469/469 - loss: 0.0853 - accuracy: 0.9737 - val_loss: 0.0384 - val_accuracy: 0.9864
Epoch 791/1200
469/469 - loss: 0.0848 - accuracy: 0.9740 - val_loss: 0.0384 - val_accuracy: 0.9864
Epoch 792/1200
469/469 - loss: 0.0847 - accuracy: 0.9747 - val_loss: 0.0383 - val_accuracy: 0.9865
Epoch 793/1200
469/469 - loss: 0.0827 - accuracy: 0.9752 - val_loss: 0.0383 - val_accuracy: 0.9863
Epoch 794/1200
469/469 - loss: 0.0845 - accuracy: 0.9740 - val_loss: 0.0382 - val_accuracy: 0.9864
Epoch 795/1200

469/469 - loss: 0.0853 - accuracy: 0.9748 - val_loss: 0.0382 - val_accuracy: 0.9863
Epoch 796/1200
469/469 - loss: 0.0848 - accuracy: 0.9738 - val_loss: 0.0382 - val_accuracy: 0.9865
Epoch 797/1200
469/469 - loss: 0.0847 - accuracy: 0.9743 - val_loss: 0.0382 - val_accuracy: 0.9865
Epoch 798/1200
469/469 - loss: 0.0862 - accuracy: 0.9742 - val_loss: 0.0382 - val_accuracy: 0.9865
Epoch 799/1200
469/469 - loss: 0.0846 - accuracy: 0.9752 - val_loss: 0.0382 - val_accuracy: 0.9863
Epoch 800/1200
469/469 - loss: 0.0852 - accuracy: 0.9737 - val_loss: 0.0382 - val_accuracy: 0.9863
Epoch 801/1200
469/469 - loss: 0.0827 - accuracy: 0.9746 - val_loss: 0.0382 - val_accuracy: 0.9865
Epoch 802/1200
469/469 - loss: 0.0823 - accuracy: 0.9748 - val_loss: 0.0382 - val_accuracy: 0.9864
Epoch 803/1200
469/469 - loss: 0.0828 - accuracy: 0.9751 - val_loss: 0.0382 - val_accuracy: 0.9864
Epoch 804/1200
469/469 - loss: 0.0830 - accuracy: 0.9752 - val_loss: 0.0381 - val_accuracy: 0.9863
Epoch 805/1200
469/469 - loss: 0.0842 - accuracy: 0.9746 - val_loss: 0.0381 - val_accuracy: 0.9864
Epoch 806/1200
469/469 - loss: 0.0841 - accuracy: 0.9748 - val_loss: 0.0380 - val_accuracy: 0.9864
Epoch 807/1200
469/469 - loss: 0.0841 - accuracy: 0.9744 - val_loss: 0.0381 - val_accuracy: 0.9865
Epoch 808/1200
469/469 - loss: 0.0831 - accuracy: 0.9747 - val_loss: 0.0380 - val_accuracy: 0.9865
Epoch 809/1200
469/469 - loss: 0.0826 - accuracy: 0.9757 - val_loss: 0.0379 - val_accuracy: 0.9864
Epoch 810/1200
469/469 - loss: 0.0822 - accuracy: 0.9753 - val_loss: 0.0379 - val_accuracy: 0.9864
Epoch 811/1200
469/469 - loss: 0.0816 - accuracy: 0.9750 - val_loss: 0.0378 - val_accuracy: 0.9864
Epoch 812/1200
469/469 - loss: 0.0842 - accuracy: 0.9743 - val_loss: 0.0379 - val_accuracy: 0.9864
Epoch 813/1200
469/469 - loss: 0.0833 - accuracy: 0.9750 - val_loss: 0.0378 - val_accuracy: 0.9865
Epoch 814/1200
469/469 - loss: 0.0831 - accuracy: 0.9745 - val_loss: 0.0378 - val_accuracy: 0.9865
Epoch 815/1200
469/469 - loss: 0.0830 - accuracy: 0.9750 - val_loss: 0.0378 - val_accuracy: 0.9865
Epoch 816/1200
469/469 - loss: 0.0832 - accuracy: 0.9754 - val_loss: 0.0378 - val_accuracy: 0.9865
Epoch 817/1200
469/469 - loss: 0.0822 - accuracy: 0.9755 - val_loss: 0.0379 - val_accuracy: 0.9866
Epoch 818/1200
469/469 - loss: 0.0825 - accuracy: 0.9748 - val_loss: 0.0377 - val_accuracy: 0.9865
Epoch 819/1200
469/469 - loss: 0.0842 - accuracy: 0.9746 - val_loss: 0.0378 - val_accuracy: 0.9866
Epoch 820/1200
469/469 - loss: 0.0821 - accuracy: 0.9753 - val_loss: 0.0377 - val_accuracy: 0.9866
Epoch 821/1200
469/469 - loss: 0.0824 - accuracy: 0.9752 - val_loss: 0.0377 - val_accuracy: 0.9866

Epoch 822/1200
469/469 - loss: 0.0822 - accuracy: 0.9752 - val_loss: 0.0376 - val_accuracy: 0.9866
Epoch 823/1200
469/469 - loss: 0.0842 - accuracy: 0.9745 - val_loss: 0.0376 - val_accuracy: 0.9866
Epoch 824/1200
469/469 - loss: 0.0827 - accuracy: 0.9749 - val_loss: 0.0375 - val_accuracy: 0.9867
Epoch 825/1200
469/469 - loss: 0.0836 - accuracy: 0.9742 - val_loss: 0.0375 - val_accuracy: 0.9866
Epoch 826/1200
469/469 - loss: 0.0828 - accuracy: 0.9753 - val_loss: 0.0375 - val_accuracy: 0.9865
Epoch 827/1200
469/469 - loss: 0.0823 - accuracy: 0.9754 - val_loss: 0.0376 - val_accuracy: 0.9864
Epoch 828/1200
469/469 - loss: 0.0836 - accuracy: 0.9751 - val_loss: 0.0375 - val_accuracy: 0.9865
Epoch 829/1200
469/469 - loss: 0.0808 - accuracy: 0.9757 - val_loss: 0.0375 - val_accuracy: 0.9865
Epoch 830/1200
469/469 - loss: 0.0829 - accuracy: 0.9749 - val_loss: 0.0374 - val_accuracy: 0.9867
Epoch 831/1200
469/469 - loss: 0.0835 - accuracy: 0.9752 - val_loss: 0.0374 - val_accuracy: 0.9867
Epoch 832/1200
469/469 - loss: 0.0808 - accuracy: 0.9754 - val_loss: 0.0374 - val_accuracy: 0.9864
Epoch 833/1200
469/469 - loss: 0.0843 - accuracy: 0.9744 - val_loss: 0.0374 - val_accuracy: 0.9866
Epoch 834/1200
469/469 - loss: 0.0837 - accuracy: 0.9744 - val_loss: 0.0373 - val_accuracy: 0.9869
Epoch 835/1200
469/469 - loss: 0.0844 - accuracy: 0.9745 - val_loss: 0.0374 - val_accuracy: 0.9867
Epoch 836/1200
469/469 - loss: 0.0811 - accuracy: 0.9754 - val_loss: 0.0373 - val_accuracy: 0.9867
Epoch 837/1200
469/469 - loss: 0.0810 - accuracy: 0.9745 - val_loss: 0.0373 - val_accuracy: 0.9867
Epoch 838/1200
469/469 - loss: 0.0835 - accuracy: 0.9748 - val_loss: 0.0373 - val_accuracy: 0.9871
Epoch 839/1200
469/469 - loss: 0.0837 - accuracy: 0.9742 - val_loss: 0.0373 - val_accuracy: 0.9871
Epoch 840/1200
469/469 - loss: 0.0826 - accuracy: 0.9750 - val_loss: 0.0373 - val_accuracy: 0.9868
Epoch 841/1200
469/469 - loss: 0.0833 - accuracy: 0.9744 - val_loss: 0.0372 - val_accuracy: 0.9868
Epoch 842/1200
469/469 - loss: 0.0805 - accuracy: 0.9756 - val_loss: 0.0371 - val_accuracy: 0.9871
Epoch 843/1200
469/469 - loss: 0.0820 - accuracy: 0.9742 - val_loss: 0.0371 - val_accuracy: 0.9870
Epoch 844/1200
469/469 - loss: 0.0829 - accuracy: 0.9747 - val_loss: 0.0371 - val_accuracy: 0.9868
Epoch 845/1200
469/469 - loss: 0.0805 - accuracy: 0.9758 - val_loss: 0.0371 - val_accuracy: 0.9869
Epoch 846/1200
469/469 - loss: 0.0812 - accuracy: 0.9755 - val_loss: 0.0370 - val_accuracy: 0.9869
Epoch 847/1200
469/469 - loss: 0.0815 - accuracy: 0.9750 - val_loss: 0.0370 - val_accuracy: 0.9872
Epoch 848/1200

469/469 - loss: 0.0786 - accuracy: 0.9760 - val_loss: 0.0370 - val_accuracy: 0.9872
Epoch 849/1200
469/469 - loss: 0.0808 - accuracy: 0.9751 - val_loss: 0.0370 - val_accuracy: 0.9870
Epoch 850/1200
469/469 - loss: 0.0830 - accuracy: 0.9747 - val_loss: 0.0370 - val_accuracy: 0.9874
Epoch 851/1200
469/469 - loss: 0.0821 - accuracy: 0.9758 - val_loss: 0.0370 - val_accuracy: 0.9874
Epoch 852/1200
469/469 - loss: 0.0823 - accuracy: 0.9748 - val_loss: 0.0369 - val_accuracy: 0.9876
Epoch 853/1200
469/469 - loss: 0.0831 - accuracy: 0.9753 - val_loss: 0.0370 - val_accuracy: 0.9871
Epoch 854/1200
469/469 - loss: 0.0807 - accuracy: 0.9758 - val_loss: 0.0370 - val_accuracy: 0.9873
Epoch 855/1200
469/469 - loss: 0.0819 - accuracy: 0.9752 - val_loss: 0.0369 - val_accuracy: 0.9874
Epoch 856/1200
469/469 - loss: 0.0814 - accuracy: 0.9753 - val_loss: 0.0368 - val_accuracy: 0.9873
Epoch 857/1200
469/469 - loss: 0.0823 - accuracy: 0.9758 - val_loss: 0.0368 - val_accuracy: 0.9872
Epoch 858/1200
469/469 - loss: 0.0804 - accuracy: 0.9761 - val_loss: 0.0368 - val_accuracy: 0.9874
Epoch 859/1200
469/469 - loss: 0.0820 - accuracy: 0.9749 - val_loss: 0.0368 - val_accuracy: 0.9875
Epoch 860/1200
469/469 - loss: 0.0805 - accuracy: 0.9753 - val_loss: 0.0368 - val_accuracy: 0.9873
Epoch 861/1200
469/469 - loss: 0.0812 - accuracy: 0.9758 - val_loss: 0.0368 - val_accuracy: 0.9874
Epoch 862/1200
469/469 - loss: 0.0809 - accuracy: 0.9758 - val_loss: 0.0368 - val_accuracy: 0.9872
Epoch 863/1200
469/469 - loss: 0.0810 - accuracy: 0.9753 - val_loss: 0.0368 - val_accuracy: 0.9872
Epoch 864/1200
469/469 - loss: 0.0812 - accuracy: 0.9751 - val_loss: 0.0367 - val_accuracy: 0.9873
Epoch 865/1200
469/469 - loss: 0.0791 - accuracy: 0.9754 - val_loss: 0.0368 - val_accuracy: 0.9874
Epoch 866/1200
469/469 - loss: 0.0794 - accuracy: 0.9761 - val_loss: 0.0367 - val_accuracy: 0.9873
Epoch 867/1200
469/469 - loss: 0.0808 - accuracy: 0.9751 - val_loss: 0.0367 - val_accuracy: 0.9875
Epoch 868/1200
469/469 - loss: 0.0801 - accuracy: 0.9756 - val_loss: 0.0366 - val_accuracy: 0.9874
Epoch 869/1200
469/469 - loss: 0.0809 - accuracy: 0.9751 - val_loss: 0.0366 - val_accuracy: 0.9874
Epoch 870/1200
469/469 - loss: 0.0799 - accuracy: 0.9759 - val_loss: 0.0366 - val_accuracy: 0.9874
Epoch 871/1200
469/469 - loss: 0.0812 - accuracy: 0.9752 - val_loss: 0.0366 - val_accuracy: 0.9872
Epoch 872/1200
469/469 - loss: 0.0799 - accuracy: 0.9756 - val_loss: 0.0365 - val_accuracy: 0.9873
Epoch 873/1200
469/469 - loss: 0.0804 - accuracy: 0.9752 - val_loss: 0.0365 - val_accuracy: 0.9874
Epoch 874/1200
469/469 - loss: 0.0791 - accuracy: 0.9760 - val_loss: 0.0365 - val_accuracy: 0.9873

Epoch 875/1200
469/469 - loss: 0.0793 - accuracy: 0.9763 - val_loss: 0.0365 - val_accuracy: 0.9876
Epoch 876/1200
469/469 - loss: 0.0817 - accuracy: 0.9755 - val_loss: 0.0365 - val_accuracy: 0.9872
Epoch 877/1200
469/469 - loss: 0.0796 - accuracy: 0.9763 - val_loss: 0.0364 - val_accuracy: 0.9874
Epoch 878/1200
469/469 - loss: 0.0784 - accuracy: 0.9764 - val_loss: 0.0364 - val_accuracy: 0.9878
Epoch 879/1200
469/469 - loss: 0.0808 - accuracy: 0.9762 - val_loss: 0.0363 - val_accuracy: 0.9879
Epoch 880/1200
469/469 - loss: 0.0804 - accuracy: 0.9758 - val_loss: 0.0363 - val_accuracy: 0.9877
Epoch 881/1200
469/469 - loss: 0.0800 - accuracy: 0.9761 - val_loss: 0.0364 - val_accuracy: 0.9873
Epoch 882/1200
469/469 - loss: 0.0805 - accuracy: 0.9749 - val_loss: 0.0364 - val_accuracy: 0.9873
Epoch 883/1200
469/469 - loss: 0.0791 - accuracy: 0.9757 - val_loss: 0.0363 - val_accuracy: 0.9875
Epoch 884/1200
469/469 - loss: 0.0810 - accuracy: 0.9759 - val_loss: 0.0363 - val_accuracy: 0.9877
Epoch 885/1200
469/469 - loss: 0.0828 - accuracy: 0.9758 - val_loss: 0.0363 - val_accuracy: 0.9876
Epoch 886/1200
469/469 - loss: 0.0802 - accuracy: 0.9758 - val_loss: 0.0363 - val_accuracy: 0.9878
Epoch 887/1200
469/469 - loss: 0.0795 - accuracy: 0.9761 - val_loss: 0.0362 - val_accuracy: 0.9879
Epoch 888/1200
469/469 - loss: 0.0804 - accuracy: 0.9755 - val_loss: 0.0362 - val_accuracy: 0.9876
Epoch 889/1200
469/469 - loss: 0.0778 - accuracy: 0.9766 - val_loss: 0.0362 - val_accuracy: 0.9878
Epoch 890/1200
469/469 - loss: 0.0787 - accuracy: 0.9755 - val_loss: 0.0361 - val_accuracy: 0.9877
Epoch 891/1200
469/469 - loss: 0.0793 - accuracy: 0.9764 - val_loss: 0.0361 - val_accuracy: 0.9878
Epoch 892/1200
469/469 - loss: 0.0805 - accuracy: 0.9761 - val_loss: 0.0361 - val_accuracy: 0.9879
Epoch 893/1200
469/469 - loss: 0.0791 - accuracy: 0.9763 - val_loss: 0.0361 - val_accuracy: 0.9879
Epoch 894/1200
469/469 - loss: 0.0797 - accuracy: 0.9757 - val_loss: 0.0361 - val_accuracy: 0.9880
Epoch 895/1200
469/469 - loss: 0.0783 - accuracy: 0.9767 - val_loss: 0.0361 - val_accuracy: 0.9876
Epoch 896/1200
469/469 - loss: 0.0787 - accuracy: 0.9767 - val_loss: 0.0361 - val_accuracy: 0.9879
Epoch 897/1200
469/469 - loss: 0.0786 - accuracy: 0.9761 - val_loss: 0.0360 - val_accuracy: 0.9879
Epoch 898/1200
469/469 - loss: 0.0791 - accuracy: 0.9765 - val_loss: 0.0359 - val_accuracy: 0.9879
Epoch 899/1200
469/469 - loss: 0.0797 - accuracy: 0.9765 - val_loss: 0.0359 - val_accuracy: 0.9879
Epoch 900/1200
469/469 - loss: 0.0787 - accuracy: 0.9762 - val_loss: 0.0360 - val_accuracy: 0.9878
Epoch 901/1200

469/469 - loss: 0.0801 - accuracy: 0.9757 - val_loss: 0.0359 - val_accuracy: 0.9879
Epoch 902/1200
469/469 - loss: 0.0778 - accuracy: 0.9761 - val_loss: 0.0359 - val_accuracy: 0.9881
Epoch 903/1200
469/469 - loss: 0.0790 - accuracy: 0.9758 - val_loss: 0.0359 - val_accuracy: 0.9878
Epoch 904/1200
469/469 - loss: 0.0786 - accuracy: 0.9758 - val_loss: 0.0359 - val_accuracy: 0.9880
Epoch 905/1200
469/469 - loss: 0.0800 - accuracy: 0.9765 - val_loss: 0.0358 - val_accuracy: 0.9880
Epoch 906/1200
469/469 - loss: 0.0802 - accuracy: 0.9761 - val_loss: 0.0359 - val_accuracy: 0.9879
Epoch 907/1200
469/469 - loss: 0.0802 - accuracy: 0.9761 - val_loss: 0.0358 - val_accuracy: 0.9877
Epoch 908/1200
469/469 - loss: 0.0781 - accuracy: 0.9758 - val_loss: 0.0357 - val_accuracy: 0.9881
Epoch 909/1200
469/469 - loss: 0.0772 - accuracy: 0.9762 - val_loss: 0.0358 - val_accuracy: 0.9878
Epoch 910/1200
469/469 - loss: 0.0793 - accuracy: 0.9758 - val_loss: 0.0357 - val_accuracy: 0.9878
Epoch 911/1200
469/469 - loss: 0.0794 - accuracy: 0.9761 - val_loss: 0.0357 - val_accuracy: 0.9878
Epoch 912/1200
469/469 - loss: 0.0774 - accuracy: 0.9770 - val_loss: 0.0357 - val_accuracy: 0.9878
Epoch 913/1200
469/469 - loss: 0.0796 - accuracy: 0.9760 - val_loss: 0.0356 - val_accuracy: 0.9879
Epoch 914/1200
469/469 - loss: 0.0785 - accuracy: 0.9767 - val_loss: 0.0356 - val_accuracy: 0.9880
Epoch 915/1200
469/469 - loss: 0.0791 - accuracy: 0.9763 - val_loss: 0.0355 - val_accuracy: 0.9882
Epoch 916/1200
469/469 - loss: 0.0780 - accuracy: 0.9768 - val_loss: 0.0355 - val_accuracy: 0.9882
Epoch 917/1200
469/469 - loss: 0.0805 - accuracy: 0.9756 - val_loss: 0.0355 - val_accuracy: 0.9880
Epoch 918/1200
469/469 - loss: 0.0790 - accuracy: 0.9762 - val_loss: 0.0355 - val_accuracy: 0.9878
Epoch 919/1200
469/469 - loss: 0.0784 - accuracy: 0.9757 - val_loss: 0.0355 - val_accuracy: 0.9881
Epoch 920/1200
469/469 - loss: 0.0790 - accuracy: 0.9765 - val_loss: 0.0355 - val_accuracy: 0.9880
Epoch 921/1200
469/469 - loss: 0.0789 - accuracy: 0.9759 - val_loss: 0.0356 - val_accuracy: 0.9875
Epoch 922/1200
469/469 - loss: 0.0795 - accuracy: 0.9761 - val_loss: 0.0356 - val_accuracy: 0.9876
Epoch 923/1200
469/469 - loss: 0.0792 - accuracy: 0.9760 - val_loss: 0.0356 - val_accuracy: 0.9881
Epoch 924/1200
469/469 - loss: 0.0782 - accuracy: 0.9769 - val_loss: 0.0356 - val_accuracy: 0.9877
Epoch 925/1200
469/469 - loss: 0.0776 - accuracy: 0.9766 - val_loss: 0.0354 - val_accuracy: 0.9880
Epoch 926/1200
469/469 - loss: 0.0791 - accuracy: 0.9767 - val_loss: 0.0355 - val_accuracy: 0.9880
Epoch 927/1200
469/469 - loss: 0.0794 - accuracy: 0.9764 - val_loss: 0.0354 - val_accuracy: 0.9882

Epoch 928/1200
469/469 - loss: 0.0787 - accuracy: 0.9768 - val_loss: 0.0354 - val_accuracy: 0.9881
Epoch 929/1200
469/469 - loss: 0.0768 - accuracy: 0.9768 - val_loss: 0.0354 - val_accuracy: 0.9883
Epoch 930/1200
469/469 - loss: 0.0773 - accuracy: 0.9772 - val_loss: 0.0353 - val_accuracy: 0.9880
Epoch 931/1200
469/469 - loss: 0.0770 - accuracy: 0.9765 - val_loss: 0.0353 - val_accuracy: 0.9881
Epoch 932/1200
469/469 - loss: 0.0787 - accuracy: 0.9760 - val_loss: 0.0353 - val_accuracy: 0.9880
Epoch 933/1200
469/469 - loss: 0.0752 - accuracy: 0.9774 - val_loss: 0.0353 - val_accuracy: 0.9881
Epoch 934/1200
469/469 - loss: 0.0777 - accuracy: 0.9766 - val_loss: 0.0353 - val_accuracy: 0.9880
Epoch 935/1200
469/469 - loss: 0.0780 - accuracy: 0.9764 - val_loss: 0.0353 - val_accuracy: 0.9878
Epoch 936/1200
469/469 - loss: 0.0764 - accuracy: 0.9765 - val_loss: 0.0351 - val_accuracy: 0.9880
Epoch 937/1200
469/469 - loss: 0.0775 - accuracy: 0.9765 - val_loss: 0.0352 - val_accuracy: 0.9882
Epoch 938/1200
469/469 - loss: 0.0778 - accuracy: 0.9765 - val_loss: 0.0352 - val_accuracy: 0.9881
Epoch 939/1200
469/469 - loss: 0.0758 - accuracy: 0.9765 - val_loss: 0.0352 - val_accuracy: 0.9880
Epoch 940/1200
469/469 - loss: 0.0772 - accuracy: 0.9766 - val_loss: 0.0352 - val_accuracy: 0.9880
Epoch 941/1200
469/469 - loss: 0.0767 - accuracy: 0.9766 - val_loss: 0.0352 - val_accuracy: 0.9878
Epoch 942/1200
469/469 - loss: 0.0752 - accuracy: 0.9772 - val_loss: 0.0352 - val_accuracy: 0.9880
Epoch 943/1200
469/469 - loss: 0.0778 - accuracy: 0.9770 - val_loss: 0.0352 - val_accuracy: 0.9878
Epoch 944/1200
469/469 - loss: 0.0756 - accuracy: 0.9768 - val_loss: 0.0351 - val_accuracy: 0.9881
Epoch 945/1200
469/469 - loss: 0.0775 - accuracy: 0.9766 - val_loss: 0.0351 - val_accuracy: 0.9883
Epoch 946/1200
469/469 - loss: 0.0794 - accuracy: 0.9760 - val_loss: 0.0351 - val_accuracy: 0.9883
Epoch 947/1200
469/469 - loss: 0.0778 - accuracy: 0.9762 - val_loss: 0.0351 - val_accuracy: 0.9882
Epoch 948/1200
469/469 - loss: 0.0748 - accuracy: 0.9773 - val_loss: 0.0350 - val_accuracy: 0.9884
Epoch 949/1200
469/469 - loss: 0.0777 - accuracy: 0.9764 - val_loss: 0.0350 - val_accuracy: 0.9883
Epoch 950/1200
469/469 - loss: 0.0756 - accuracy: 0.9778 - val_loss: 0.0351 - val_accuracy: 0.9880
Epoch 951/1200
469/469 - loss: 0.0785 - accuracy: 0.9766 - val_loss: 0.0350 - val_accuracy: 0.9883
Epoch 952/1200
469/469 - loss: 0.0757 - accuracy: 0.9775 - val_loss: 0.0351 - val_accuracy: 0.9881
Epoch 953/1200
469/469 - loss: 0.0767 - accuracy: 0.9769 - val_loss: 0.0350 - val_accuracy: 0.9881
Epoch 954/1200

469/469 - loss: 0.0779 - accuracy: 0.9765 - val_loss: 0.0349 - val_accuracy: 0.9882
Epoch 955/1200
469/469 - loss: 0.0768 - accuracy: 0.9770 - val_loss: 0.0349 - val_accuracy: 0.9882
Epoch 956/1200
469/469 - loss: 0.0747 - accuracy: 0.9779 - val_loss: 0.0349 - val_accuracy: 0.9883
Epoch 957/1200
469/469 - loss: 0.0754 - accuracy: 0.9779 - val_loss: 0.0349 - val_accuracy: 0.9880
Epoch 958/1200
469/469 - loss: 0.0764 - accuracy: 0.9767 - val_loss: 0.0349 - val_accuracy: 0.9883
Epoch 959/1200
469/469 - loss: 0.0752 - accuracy: 0.9772 - val_loss: 0.0348 - val_accuracy: 0.9883
Epoch 960/1200
469/469 - loss: 0.0767 - accuracy: 0.9768 - val_loss: 0.0348 - val_accuracy: 0.9883
Epoch 961/1200
469/469 - loss: 0.0786 - accuracy: 0.9763 - val_loss: 0.0348 - val_accuracy: 0.9884
Epoch 962/1200
469/469 - loss: 0.0778 - accuracy: 0.9770 - val_loss: 0.0347 - val_accuracy: 0.9883
Epoch 963/1200
469/469 - loss: 0.0757 - accuracy: 0.9773 - val_loss: 0.0347 - val_accuracy: 0.9885
Epoch 964/1200
469/469 - loss: 0.0776 - accuracy: 0.9764 - val_loss: 0.0347 - val_accuracy: 0.9884
Epoch 965/1200
469/469 - loss: 0.0774 - accuracy: 0.9771 - val_loss: 0.0347 - val_accuracy: 0.9882
Epoch 966/1200
469/469 - loss: 0.0744 - accuracy: 0.9772 - val_loss: 0.0348 - val_accuracy: 0.9883
Epoch 967/1200
469/469 - loss: 0.0756 - accuracy: 0.9766 - val_loss: 0.0348 - val_accuracy: 0.9883
Epoch 968/1200
469/469 - loss: 0.0762 - accuracy: 0.9772 - val_loss: 0.0346 - val_accuracy: 0.9884
Epoch 969/1200
469/469 - loss: 0.0762 - accuracy: 0.9773 - val_loss: 0.0346 - val_accuracy: 0.9883
Epoch 970/1200
469/469 - loss: 0.0763 - accuracy: 0.9770 - val_loss: 0.0347 - val_accuracy: 0.9883
Epoch 971/1200
469/469 - loss: 0.0762 - accuracy: 0.9767 - val_loss: 0.0346 - val_accuracy: 0.9885
Epoch 972/1200
469/469 - loss: 0.0751 - accuracy: 0.9772 - val_loss: 0.0346 - val_accuracy: 0.9884
Epoch 973/1200
469/469 - loss: 0.0747 - accuracy: 0.9776 - val_loss: 0.0345 - val_accuracy: 0.9884
Epoch 974/1200
469/469 - loss: 0.0787 - accuracy: 0.9761 - val_loss: 0.0345 - val_accuracy: 0.9883
Epoch 975/1200
469/469 - loss: 0.0762 - accuracy: 0.9765 - val_loss: 0.0345 - val_accuracy: 0.9884
Epoch 976/1200
469/469 - loss: 0.0762 - accuracy: 0.9775 - val_loss: 0.0345 - val_accuracy: 0.9885
Epoch 977/1200
469/469 - loss: 0.0763 - accuracy: 0.9770 - val_loss: 0.0345 - val_accuracy: 0.9885
Epoch 978/1200
469/469 - loss: 0.0772 - accuracy: 0.9768 - val_loss: 0.0345 - val_accuracy: 0.9883
Epoch 979/1200
469/469 - loss: 0.0767 - accuracy: 0.9775 - val_loss: 0.0346 - val_accuracy: 0.9881
Epoch 980/1200
469/469 - loss: 0.0753 - accuracy: 0.9772 - val_loss: 0.0345 - val_accuracy: 0.9884

Epoch 981/1200
469/469 - loss: 0.0748 - accuracy: 0.9772 - val_loss: 0.0345 - val_accuracy: 0.9882
Epoch 982/1200
469/469 - loss: 0.0761 - accuracy: 0.9774 - val_loss: 0.0344 - val_accuracy: 0.9885
Epoch 983/1200
469/469 - loss: 0.0740 - accuracy: 0.9772 - val_loss: 0.0344 - val_accuracy: 0.9887
Epoch 984/1200
469/469 - loss: 0.0764 - accuracy: 0.9776 - val_loss: 0.0344 - val_accuracy: 0.9886
Epoch 985/1200
469/469 - loss: 0.0761 - accuracy: 0.9776 - val_loss: 0.0344 - val_accuracy: 0.9883
Epoch 986/1200
469/469 - loss: 0.0768 - accuracy: 0.9766 - val_loss: 0.0344 - val_accuracy: 0.9883
Epoch 987/1200
469/469 - loss: 0.0751 - accuracy: 0.9771 - val_loss: 0.0344 - val_accuracy: 0.9884
Epoch 988/1200
469/469 - loss: 0.0774 - accuracy: 0.9768 - val_loss: 0.0343 - val_accuracy: 0.9883
Epoch 989/1200
469/469 - loss: 0.0748 - accuracy: 0.9770 - val_loss: 0.0342 - val_accuracy: 0.9886
Epoch 990/1200
469/469 - loss: 0.0731 - accuracy: 0.9774 - val_loss: 0.0341 - val_accuracy: 0.9887
Epoch 991/1200
469/469 - loss: 0.0771 - accuracy: 0.9779 - val_loss: 0.0342 - val_accuracy: 0.9883
Epoch 992/1200
469/469 - loss: 0.0758 - accuracy: 0.9770 - val_loss: 0.0341 - val_accuracy: 0.9885
Epoch 993/1200
469/469 - loss: 0.0744 - accuracy: 0.9772 - val_loss: 0.0341 - val_accuracy: 0.9886
Epoch 994/1200
469/469 - loss: 0.0741 - accuracy: 0.9777 - val_loss: 0.0342 - val_accuracy: 0.9884
Epoch 995/1200
469/469 - loss: 0.0774 - accuracy: 0.9766 - val_loss: 0.0342 - val_accuracy: 0.9884
Epoch 996/1200
469/469 - loss: 0.0765 - accuracy: 0.9769 - val_loss: 0.0342 - val_accuracy: 0.9885
Epoch 997/1200
469/469 - loss: 0.0751 - accuracy: 0.9772 - val_loss: 0.0341 - val_accuracy: 0.9885
Epoch 998/1200
469/469 - loss: 0.0767 - accuracy: 0.9770 - val_loss: 0.0341 - val_accuracy: 0.9883
Epoch 999/1200
469/469 - loss: 0.0774 - accuracy: 0.9767 - val_loss: 0.0341 - val_accuracy: 0.9886
Epoch 1000/1200
469/469 - loss: 0.0741 - accuracy: 0.9776 - val_loss: 0.0341 - val_accuracy: 0.9883
Epoch 1001/1200
469/469 - loss: 0.0740 - accuracy: 0.9776 - val_loss: 0.0340 - val_accuracy: 0.9884
Epoch 1002/1200
469/469 - loss: 0.0762 - accuracy: 0.9774 - val_loss: 0.0341 - val_accuracy: 0.9883
Epoch 1003/1200
469/469 - loss: 0.0731 - accuracy: 0.9781 - val_loss: 0.0340 - val_accuracy: 0.9885
Epoch 1004/1200
469/469 - loss: 0.0762 - accuracy: 0.9771 - val_loss: 0.0340 - val_accuracy: 0.9886
Epoch 1005/1200
469/469 - loss: 0.0751 - accuracy: 0.9775 - val_loss: 0.0339 - val_accuracy: 0.9886
Epoch 1006/1200
469/469 - loss: 0.0750 - accuracy: 0.9775 - val_loss: 0.0339 - val_accuracy: 0.9886
Epoch 1007/1200

469/469 - loss: 0.0743 - accuracy: 0.9777 - val_loss: 0.0339 - val_accuracy: 0.9886
Epoch 1008/1200
469/469 - loss: 0.0744 - accuracy: 0.9771 - val_loss: 0.0338 - val_accuracy: 0.9885
Epoch 1009/1200
469/469 - loss: 0.0742 - accuracy: 0.9772 - val_loss: 0.0339 - val_accuracy: 0.9885
Epoch 1010/1200
469/469 - loss: 0.0764 - accuracy: 0.9774 - val_loss: 0.0339 - val_accuracy: 0.9885
Epoch 1011/1200
469/469 - loss: 0.0749 - accuracy: 0.9779 - val_loss: 0.0339 - val_accuracy: 0.9884
Epoch 1012/1200
469/469 - loss: 0.0750 - accuracy: 0.9776 - val_loss: 0.0339 - val_accuracy: 0.9883
Epoch 1013/1200
469/469 - loss: 0.0737 - accuracy: 0.9780 - val_loss: 0.0339 - val_accuracy: 0.9883
Epoch 1014/1200
469/469 - loss: 0.0732 - accuracy: 0.9780 - val_loss: 0.0338 - val_accuracy: 0.9885
Epoch 1015/1200
469/469 - loss: 0.0758 - accuracy: 0.9769 - val_loss: 0.0339 - val_accuracy: 0.9884
Epoch 1016/1200
469/469 - loss: 0.0768 - accuracy: 0.9764 - val_loss: 0.0339 - val_accuracy: 0.9882
Epoch 1017/1200
469/469 - loss: 0.0741 - accuracy: 0.9778 - val_loss: 0.0338 - val_accuracy: 0.9884
Epoch 1018/1200
469/469 - loss: 0.0735 - accuracy: 0.9783 - val_loss: 0.0337 - val_accuracy: 0.9886
Epoch 1019/1200
469/469 - loss: 0.0747 - accuracy: 0.9771 - val_loss: 0.0338 - val_accuracy: 0.9884
Epoch 1020/1200
469/469 - loss: 0.0732 - accuracy: 0.9780 - val_loss: 0.0337 - val_accuracy: 0.9885
Epoch 1021/1200
469/469 - loss: 0.0730 - accuracy: 0.9774 - val_loss: 0.0337 - val_accuracy: 0.9887
Epoch 1022/1200
469/469 - loss: 0.0738 - accuracy: 0.9769 - val_loss: 0.0337 - val_accuracy: 0.9883
Epoch 1023/1200
469/469 - loss: 0.0745 - accuracy: 0.9779 - val_loss: 0.0336 - val_accuracy: 0.9888
Epoch 1024/1200
469/469 - loss: 0.0727 - accuracy: 0.9779 - val_loss: 0.0337 - val_accuracy: 0.9887
Epoch 1025/1200
469/469 - loss: 0.0727 - accuracy: 0.9783 - val_loss: 0.0337 - val_accuracy: 0.9885
Epoch 1026/1200
469/469 - loss: 0.0739 - accuracy: 0.9774 - val_loss: 0.0336 - val_accuracy: 0.9887
Epoch 1027/1200
469/469 - loss: 0.0737 - accuracy: 0.9773 - val_loss: 0.0336 - val_accuracy: 0.9887
Epoch 1028/1200
469/469 - loss: 0.0750 - accuracy: 0.9776 - val_loss: 0.0336 - val_accuracy: 0.9886
Epoch 1029/1200
469/469 - loss: 0.0727 - accuracy: 0.9779 - val_loss: 0.0336 - val_accuracy: 0.9886
Epoch 1030/1200
469/469 - loss: 0.0725 - accuracy: 0.9779 - val_loss: 0.0336 - val_accuracy: 0.9886
Epoch 1031/1200
469/469 - loss: 0.0740 - accuracy: 0.9776 - val_loss: 0.0336 - val_accuracy: 0.9884
Epoch 1032/1200
469/469 - loss: 0.0754 - accuracy: 0.9779 - val_loss: 0.0335 - val_accuracy: 0.9888
Epoch 1033/1200
469/469 - loss: 0.0744 - accuracy: 0.9770 - val_loss: 0.0335 - val_accuracy: 0.9887

Epoch 1034/1200
469/469 - loss: 0.0760 - accuracy: 0.9772 - val_loss: 0.0336 - val_accuracy: 0.9887
Epoch 1035/1200
469/469 - loss: 0.0742 - accuracy: 0.9775 - val_loss: 0.0335 - val_accuracy: 0.9890
Epoch 1036/1200
469/469 - loss: 0.0745 - accuracy: 0.9773 - val_loss: 0.0335 - val_accuracy: 0.9887
Epoch 1037/1200
469/469 - loss: 0.0740 - accuracy: 0.9779 - val_loss: 0.0334 - val_accuracy: 0.9890
Epoch 1038/1200
469/469 - loss: 0.0733 - accuracy: 0.9776 - val_loss: 0.0334 - val_accuracy: 0.9887
Epoch 1039/1200
469/469 - loss: 0.0737 - accuracy: 0.9778 - val_loss: 0.0335 - val_accuracy: 0.9886
Epoch 1040/1200
469/469 - loss: 0.0726 - accuracy: 0.9779 - val_loss: 0.0335 - val_accuracy: 0.9885
Epoch 1041/1200
469/469 - loss: 0.0744 - accuracy: 0.9776 - val_loss: 0.0335 - val_accuracy: 0.9887
Epoch 1042/1200
469/469 - loss: 0.0708 - accuracy: 0.9783 - val_loss: 0.0334 - val_accuracy: 0.9886
Epoch 1043/1200
469/469 - loss: 0.0724 - accuracy: 0.9781 - val_loss: 0.0333 - val_accuracy: 0.9886
Epoch 1044/1200
469/469 - loss: 0.0734 - accuracy: 0.9780 - val_loss: 0.0334 - val_accuracy: 0.9886
Epoch 1045/1200
469/469 - loss: 0.0707 - accuracy: 0.9785 - val_loss: 0.0334 - val_accuracy: 0.9886
Epoch 1046/1200
469/469 - loss: 0.0739 - accuracy: 0.9780 - val_loss: 0.0333 - val_accuracy: 0.9886
Epoch 1047/1200
469/469 - loss: 0.0721 - accuracy: 0.9786 - val_loss: 0.0333 - val_accuracy: 0.9886
Epoch 1048/1200
469/469 - loss: 0.0712 - accuracy: 0.9781 - val_loss: 0.0333 - val_accuracy: 0.9886
Epoch 1049/1200
469/469 - loss: 0.0735 - accuracy: 0.9780 - val_loss: 0.0333 - val_accuracy: 0.9886
Epoch 1050/1200
469/469 - loss: 0.0746 - accuracy: 0.9781 - val_loss: 0.0333 - val_accuracy: 0.9886
Epoch 1051/1200
469/469 - loss: 0.0721 - accuracy: 0.9777 - val_loss: 0.0333 - val_accuracy: 0.9886
Epoch 1052/1200
469/469 - loss: 0.0736 - accuracy: 0.9780 - val_loss: 0.0333 - val_accuracy: 0.9885
Epoch 1053/1200
469/469 - loss: 0.0727 - accuracy: 0.9781 - val_loss: 0.0333 - val_accuracy: 0.9886
Epoch 1054/1200
469/469 - loss: 0.0704 - accuracy: 0.9785 - val_loss: 0.0332 - val_accuracy: 0.9886
Epoch 1055/1200
469/469 - loss: 0.0725 - accuracy: 0.9783 - val_loss: 0.0332 - val_accuracy: 0.9890
Epoch 1056/1200
469/469 - loss: 0.0707 - accuracy: 0.9787 - val_loss: 0.0332 - val_accuracy: 0.9888
Epoch 1057/1200
469/469 - loss: 0.0730 - accuracy: 0.9780 - val_loss: 0.0332 - val_accuracy: 0.9888
Epoch 1058/1200
469/469 - loss: 0.0743 - accuracy: 0.9778 - val_loss: 0.0332 - val_accuracy: 0.9887
Epoch 1059/1200
469/469 - loss: 0.0705 - accuracy: 0.9791 - val_loss: 0.0331 - val_accuracy: 0.9887
Epoch 1060/1200

469/469 - loss: 0.0735 - accuracy: 0.9779 - val_loss: 0.0331 - val_accuracy: 0.9889
Epoch 1061/1200
469/469 - loss: 0.0733 - accuracy: 0.9772 - val_loss: 0.0331 - val_accuracy: 0.9886
Epoch 1062/1200
469/469 - loss: 0.0737 - accuracy: 0.9780 - val_loss: 0.0330 - val_accuracy: 0.9888
Epoch 1063/1200
469/469 - loss: 0.0735 - accuracy: 0.9770 - val_loss: 0.0330 - val_accuracy: 0.9888
Epoch 1064/1200
469/469 - loss: 0.0732 - accuracy: 0.9775 - val_loss: 0.0329 - val_accuracy: 0.9888
Epoch 1065/1200
469/469 - loss: 0.0705 - accuracy: 0.9784 - val_loss: 0.0330 - val_accuracy: 0.9886
Epoch 1066/1200
469/469 - loss: 0.0723 - accuracy: 0.9782 - val_loss: 0.0330 - val_accuracy: 0.9888
Epoch 1067/1200
469/469 - loss: 0.0720 - accuracy: 0.9785 - val_loss: 0.0330 - val_accuracy: 0.9886
Epoch 1068/1200
469/469 - loss: 0.0712 - accuracy: 0.9780 - val_loss: 0.0329 - val_accuracy: 0.9886
Epoch 1069/1200
469/469 - loss: 0.0725 - accuracy: 0.9782 - val_loss: 0.0329 - val_accuracy: 0.9888
Epoch 1070/1200
469/469 - loss: 0.0728 - accuracy: 0.9780 - val_loss: 0.0330 - val_accuracy: 0.9885
Epoch 1071/1200
469/469 - loss: 0.0711 - accuracy: 0.9786 - val_loss: 0.0329 - val_accuracy: 0.9886
Epoch 1072/1200
469/469 - loss: 0.0719 - accuracy: 0.9772 - val_loss: 0.0329 - val_accuracy: 0.9886
Epoch 1073/1200
469/469 - loss: 0.0723 - accuracy: 0.9779 - val_loss: 0.0329 - val_accuracy: 0.9886
Epoch 1074/1200
469/469 - loss: 0.0713 - accuracy: 0.9783 - val_loss: 0.0329 - val_accuracy: 0.9889
Epoch 1075/1200
469/469 - loss: 0.0718 - accuracy: 0.9784 - val_loss: 0.0329 - val_accuracy: 0.9887
Epoch 1076/1200
469/469 - loss: 0.0714 - accuracy: 0.9786 - val_loss: 0.0329 - val_accuracy: 0.9885
Epoch 1077/1200
469/469 - loss: 0.0724 - accuracy: 0.9775 - val_loss: 0.0329 - val_accuracy: 0.9885
Epoch 1078/1200
469/469 - loss: 0.0733 - accuracy: 0.9778 - val_loss: 0.0329 - val_accuracy: 0.9885
Epoch 1079/1200
469/469 - loss: 0.0741 - accuracy: 0.9778 - val_loss: 0.0328 - val_accuracy: 0.9887
Epoch 1080/1200
469/469 - loss: 0.0720 - accuracy: 0.9784 - val_loss: 0.0328 - val_accuracy: 0.9886
Epoch 1081/1200
469/469 - loss: 0.0704 - accuracy: 0.9781 - val_loss: 0.0328 - val_accuracy: 0.9889
Epoch 1082/1200
469/469 - loss: 0.0714 - accuracy: 0.9782 - val_loss: 0.0328 - val_accuracy: 0.9885
Epoch 1083/1200
469/469 - loss: 0.0736 - accuracy: 0.9780 - val_loss: 0.0328 - val_accuracy: 0.9887
Epoch 1084/1200
469/469 - loss: 0.0721 - accuracy: 0.9783 - val_loss: 0.0328 - val_accuracy: 0.9885
Epoch 1085/1200
469/469 - loss: 0.0716 - accuracy: 0.9785 - val_loss: 0.0328 - val_accuracy: 0.9887
Epoch 1086/1200
469/469 - loss: 0.0710 - accuracy: 0.9781 - val_loss: 0.0328 - val_accuracy: 0.9885

Epoch 1087/1200
469/469 - loss: 0.0739 - accuracy: 0.9777 - val_loss: 0.0327 - val_accuracy: 0.9885
Epoch 1088/1200
469/469 - loss: 0.0718 - accuracy: 0.9782 - val_loss: 0.0327 - val_accuracy: 0.9885
Epoch 1089/1200
469/469 - loss: 0.0718 - accuracy: 0.9783 - val_loss: 0.0327 - val_accuracy: 0.9885
Epoch 1090/1200
469/469 - loss: 0.0716 - accuracy: 0.9778 - val_loss: 0.0326 - val_accuracy: 0.9888
Epoch 1091/1200
469/469 - loss: 0.0705 - accuracy: 0.9786 - val_loss: 0.0326 - val_accuracy: 0.9888
Epoch 1092/1200
469/469 - loss: 0.0709 - accuracy: 0.9786 - val_loss: 0.0325 - val_accuracy: 0.9887
Epoch 1093/1200
469/469 - loss: 0.0754 - accuracy: 0.9771 - val_loss: 0.0325 - val_accuracy: 0.9887
Epoch 1094/1200
469/469 - loss: 0.0707 - accuracy: 0.9785 - val_loss: 0.0326 - val_accuracy: 0.9885
Epoch 1095/1200
469/469 - loss: 0.0718 - accuracy: 0.9780 - val_loss: 0.0326 - val_accuracy: 0.9885
Epoch 1096/1200
469/469 - loss: 0.0717 - accuracy: 0.9784 - val_loss: 0.0325 - val_accuracy: 0.9886
Epoch 1097/1200
469/469 - loss: 0.0718 - accuracy: 0.9784 - val_loss: 0.0325 - val_accuracy: 0.9887
Epoch 1098/1200
469/469 - loss: 0.0702 - accuracy: 0.9784 - val_loss: 0.0325 - val_accuracy: 0.9888
Epoch 1099/1200
469/469 - loss: 0.0721 - accuracy: 0.9783 - val_loss: 0.0325 - val_accuracy: 0.9887
Epoch 1100/1200
469/469 - loss: 0.0691 - accuracy: 0.9793 - val_loss: 0.0325 - val_accuracy: 0.9885
Epoch 1101/1200
469/469 - loss: 0.0691 - accuracy: 0.9789 - val_loss: 0.0324 - val_accuracy: 0.9888
Epoch 1102/1200
469/469 - loss: 0.0701 - accuracy: 0.9786 - val_loss: 0.0324 - val_accuracy: 0.9888
Epoch 1103/1200
469/469 - loss: 0.0700 - accuracy: 0.9793 - val_loss: 0.0324 - val_accuracy: 0.9887
Epoch 1104/1200
469/469 - loss: 0.0707 - accuracy: 0.9798 - val_loss: 0.0324 - val_accuracy: 0.9885
Epoch 1105/1200
469/469 - loss: 0.0701 - accuracy: 0.9789 - val_loss: 0.0323 - val_accuracy: 0.9888
Epoch 1106/1200
469/469 - loss: 0.0724 - accuracy: 0.9780 - val_loss: 0.0324 - val_accuracy: 0.9887
Epoch 1107/1200
469/469 - loss: 0.0694 - accuracy: 0.9789 - val_loss: 0.0323 - val_accuracy: 0.9888
Epoch 1108/1200
469/469 - loss: 0.0724 - accuracy: 0.9786 - val_loss: 0.0323 - val_accuracy: 0.9891
Epoch 1109/1200
469/469 - loss: 0.0715 - accuracy: 0.9789 - val_loss: 0.0323 - val_accuracy: 0.9889
Epoch 1110/1200
469/469 - loss: 0.0727 - accuracy: 0.9779 - val_loss: 0.0323 - val_accuracy: 0.9888
Epoch 1111/1200
469/469 - loss: 0.0704 - accuracy: 0.9789 - val_loss: 0.0323 - val_accuracy: 0.9887
Epoch 1112/1200
469/469 - loss: 0.0696 - accuracy: 0.9793 - val_loss: 0.0323 - val_accuracy: 0.9887
Epoch 1113/1200

469/469 - loss: 0.0707 - accuracy: 0.9779 - val_loss: 0.0322 - val_accuracy: 0.9887
Epoch 1114/1200
469/469 - loss: 0.0721 - accuracy: 0.9781 - val_loss: 0.0322 - val_accuracy: 0.9888
Epoch 1115/1200
469/469 - loss: 0.0695 - accuracy: 0.9789 - val_loss: 0.0322 - val_accuracy: 0.9890
Epoch 1116/1200
469/469 - loss: 0.0718 - accuracy: 0.9787 - val_loss: 0.0322 - val_accuracy: 0.9891
Epoch 1117/1200
469/469 - loss: 0.0690 - accuracy: 0.9794 - val_loss: 0.0323 - val_accuracy: 0.9889
Epoch 1118/1200
469/469 - loss: 0.0709 - accuracy: 0.9791 - val_loss: 0.0322 - val_accuracy: 0.9892
Epoch 1119/1200
469/469 - loss: 0.0702 - accuracy: 0.9785 - val_loss: 0.0322 - val_accuracy: 0.9891
Epoch 1120/1200
469/469 - loss: 0.0676 - accuracy: 0.9791 - val_loss: 0.0322 - val_accuracy: 0.9890
Epoch 1121/1200
469/469 - loss: 0.0706 - accuracy: 0.9789 - val_loss: 0.0322 - val_accuracy: 0.9889
Epoch 1122/1200
469/469 - loss: 0.0714 - accuracy: 0.9778 - val_loss: 0.0322 - val_accuracy: 0.9889
Epoch 1123/1200
469/469 - loss: 0.0701 - accuracy: 0.9790 - val_loss: 0.0322 - val_accuracy: 0.9888
Epoch 1124/1200
469/469 - loss: 0.0719 - accuracy: 0.9781 - val_loss: 0.0322 - val_accuracy: 0.9889
Epoch 1125/1200
469/469 - loss: 0.0714 - accuracy: 0.9790 - val_loss: 0.0321 - val_accuracy: 0.9891
Epoch 1126/1200
469/469 - loss: 0.0712 - accuracy: 0.9780 - val_loss: 0.0322 - val_accuracy: 0.9889
Epoch 1127/1200
469/469 - loss: 0.0730 - accuracy: 0.9780 - val_loss: 0.0322 - val_accuracy: 0.9888
Epoch 1128/1200
469/469 - loss: 0.0715 - accuracy: 0.9789 - val_loss: 0.0321 - val_accuracy: 0.9889
Epoch 1129/1200
469/469 - loss: 0.0714 - accuracy: 0.9781 - val_loss: 0.0321 - val_accuracy: 0.9888
Epoch 1130/1200
469/469 - loss: 0.0718 - accuracy: 0.9786 - val_loss: 0.0321 - val_accuracy: 0.9889
Epoch 1131/1200
469/469 - loss: 0.0694 - accuracy: 0.9790 - val_loss: 0.0321 - val_accuracy: 0.9890
Epoch 1132/1200
469/469 - loss: 0.0702 - accuracy: 0.9787 - val_loss: 0.0321 - val_accuracy: 0.9888
Epoch 1133/1200
469/469 - loss: 0.0696 - accuracy: 0.9787 - val_loss: 0.0320 - val_accuracy: 0.9892
Epoch 1134/1200
469/469 - loss: 0.0708 - accuracy: 0.9791 - val_loss: 0.0320 - val_accuracy: 0.9889
Epoch 1135/1200
469/469 - loss: 0.0714 - accuracy: 0.9790 - val_loss: 0.0320 - val_accuracy: 0.9894
Epoch 1136/1200
469/469 - loss: 0.0693 - accuracy: 0.9791 - val_loss: 0.0320 - val_accuracy: 0.9893
Epoch 1137/1200
469/469 - loss: 0.0691 - accuracy: 0.9790 - val_loss: 0.0321 - val_accuracy: 0.9889
Epoch 1138/1200
469/469 - loss: 0.0682 - accuracy: 0.9797 - val_loss: 0.0320 - val_accuracy: 0.9894
Epoch 1139/1200
469/469 - loss: 0.0699 - accuracy: 0.9792 - val_loss: 0.0320 - val_accuracy: 0.9891

Epoch 1140/1200
469/469 - loss: 0.0713 - accuracy: 0.9788 - val_loss: 0.0320 - val_accuracy: 0.9891
Epoch 1141/1200
469/469 - loss: 0.0699 - accuracy: 0.9789 - val_loss: 0.0320 - val_accuracy: 0.9892
Epoch 1142/1200
469/469 - loss: 0.0687 - accuracy: 0.9793 - val_loss: 0.0320 - val_accuracy: 0.9892
Epoch 1143/1200
469/469 - loss: 0.0700 - accuracy: 0.9789 - val_loss: 0.0319 - val_accuracy: 0.9893
Epoch 1144/1200
469/469 - loss: 0.0701 - accuracy: 0.9787 - val_loss: 0.0320 - val_accuracy: 0.9891
Epoch 1145/1200
469/469 - loss: 0.0710 - accuracy: 0.9789 - val_loss: 0.0319 - val_accuracy: 0.9890
Epoch 1146/1200
469/469 - loss: 0.0696 - accuracy: 0.9791 - val_loss: 0.0318 - val_accuracy: 0.9891
Epoch 1147/1200
469/469 - loss: 0.0671 - accuracy: 0.9797 - val_loss: 0.0318 - val_accuracy: 0.9892
Epoch 1148/1200
469/469 - loss: 0.0722 - accuracy: 0.9783 - val_loss: 0.0318 - val_accuracy: 0.9891
Epoch 1149/1200
469/469 - loss: 0.0684 - accuracy: 0.9791 - val_loss: 0.0319 - val_accuracy: 0.9893
Epoch 1150/1200
469/469 - loss: 0.0703 - accuracy: 0.9795 - val_loss: 0.0319 - val_accuracy: 0.9890
Epoch 1151/1200
469/469 - loss: 0.0695 - accuracy: 0.9797 - val_loss: 0.0318 - val_accuracy: 0.9892
Epoch 1152/1200
469/469 - loss: 0.0696 - accuracy: 0.9788 - val_loss: 0.0318 - val_accuracy: 0.9891
Epoch 1153/1200
469/469 - loss: 0.0709 - accuracy: 0.9782 - val_loss: 0.0319 - val_accuracy: 0.9890
Epoch 1154/1200
469/469 - loss: 0.0692 - accuracy: 0.9786 - val_loss: 0.0318 - val_accuracy: 0.9892
Epoch 1155/1200
469/469 - loss: 0.0685 - accuracy: 0.9797 - val_loss: 0.0318 - val_accuracy: 0.9892
Epoch 1156/1200
469/469 - loss: 0.0689 - accuracy: 0.9799 - val_loss: 0.0317 - val_accuracy: 0.9892
Epoch 1157/1200
469/469 - loss: 0.0691 - accuracy: 0.9791 - val_loss: 0.0317 - val_accuracy: 0.9894
Epoch 1158/1200
469/469 - loss: 0.0672 - accuracy: 0.9794 - val_loss: 0.0317 - val_accuracy: 0.9893
Epoch 1159/1200
469/469 - loss: 0.0707 - accuracy: 0.9786 - val_loss: 0.0316 - val_accuracy: 0.9894
Epoch 1160/1200
469/469 - loss: 0.0679 - accuracy: 0.9801 - val_loss: 0.0316 - val_accuracy: 0.9893
Epoch 1161/1200
469/469 - loss: 0.0706 - accuracy: 0.9787 - val_loss: 0.0316 - val_accuracy: 0.9893
Epoch 1162/1200
469/469 - loss: 0.0671 - accuracy: 0.9794 - val_loss: 0.0317 - val_accuracy: 0.9892
Epoch 1163/1200
469/469 - loss: 0.0695 - accuracy: 0.9781 - val_loss: 0.0316 - val_accuracy: 0.9895
Epoch 1164/1200
469/469 - loss: 0.0682 - accuracy: 0.9796 - val_loss: 0.0316 - val_accuracy: 0.9894
Epoch 1165/1200
469/469 - loss: 0.0702 - accuracy: 0.9793 - val_loss: 0.0317 - val_accuracy: 0.9891
Epoch 1166/1200

469/469 - loss: 0.0689 - accuracy: 0.9793 - val_loss: 0.0316 - val_accuracy: 0.9893
Epoch 1167/1200
469/469 - loss: 0.0699 - accuracy: 0.9787 - val_loss: 0.0315 - val_accuracy: 0.9892
Epoch 1168/1200
469/469 - loss: 0.0677 - accuracy: 0.9792 - val_loss: 0.0316 - val_accuracy: 0.9891
Epoch 1169/1200
469/469 - loss: 0.0692 - accuracy: 0.9789 - val_loss: 0.0315 - val_accuracy: 0.9893
Epoch 1170/1200
469/469 - loss: 0.0681 - accuracy: 0.9790 - val_loss: 0.0316 - val_accuracy: 0.9893
Epoch 1171/1200
469/469 - loss: 0.0685 - accuracy: 0.9795 - val_loss: 0.0316 - val_accuracy: 0.9892
Epoch 1172/1200
469/469 - loss: 0.0667 - accuracy: 0.9801 - val_loss: 0.0316 - val_accuracy: 0.9894
Epoch 1173/1200
469/469 - loss: 0.0663 - accuracy: 0.9800 - val_loss: 0.0316 - val_accuracy: 0.9891
Epoch 1174/1200
469/469 - loss: 0.0686 - accuracy: 0.9790 - val_loss: 0.0316 - val_accuracy: 0.9892
Epoch 1175/1200
469/469 - loss: 0.0692 - accuracy: 0.9785 - val_loss: 0.0316 - val_accuracy: 0.9891
Epoch 1176/1200
469/469 - loss: 0.0687 - accuracy: 0.9794 - val_loss: 0.0317 - val_accuracy: 0.9892
Epoch 1177/1200
469/469 - loss: 0.0696 - accuracy: 0.9784 - val_loss: 0.0316 - val_accuracy: 0.9891
Epoch 1178/1200
469/469 - loss: 0.0686 - accuracy: 0.9796 - val_loss: 0.0315 - val_accuracy: 0.9892
Epoch 1179/1200
469/469 - loss: 0.0679 - accuracy: 0.9788 - val_loss: 0.0315 - val_accuracy: 0.9890
Epoch 1180/1200
469/469 - loss: 0.0698 - accuracy: 0.9790 - val_loss: 0.0315 - val_accuracy: 0.9892
Epoch 1181/1200
469/469 - loss: 0.0673 - accuracy: 0.9794 - val_loss: 0.0314 - val_accuracy: 0.9893
Epoch 1182/1200
469/469 - loss: 0.0689 - accuracy: 0.9786 - val_loss: 0.0315 - val_accuracy: 0.9890
Epoch 1183/1200
469/469 - loss: 0.0691 - accuracy: 0.9793 - val_loss: 0.0314 - val_accuracy: 0.9891
Epoch 1184/1200
469/469 - loss: 0.0670 - accuracy: 0.9792 - val_loss: 0.0314 - val_accuracy: 0.9891
Epoch 1185/1200
469/469 - loss: 0.0692 - accuracy: 0.9792 - val_loss: 0.0314 - val_accuracy: 0.9891
Epoch 1186/1200
469/469 - loss: 0.0715 - accuracy: 0.9788 - val_loss: 0.0313 - val_accuracy: 0.9895
Epoch 1187/1200
469/469 - loss: 0.0671 - accuracy: 0.9799 - val_loss: 0.0313 - val_accuracy: 0.9893
Epoch 1188/1200
469/469 - loss: 0.0679 - accuracy: 0.9794 - val_loss: 0.0313 - val_accuracy: 0.9894
Epoch 1189/1200
469/469 - loss: 0.0678 - accuracy: 0.9786 - val_loss: 0.0313 - val_accuracy: 0.9892
Epoch 1190/1200
469/469 - loss: 0.0691 - accuracy: 0.9791 - val_loss: 0.0313 - val_accuracy: 0.9892
Epoch 1191/1200
469/469 - loss: 0.0682 - accuracy: 0.9798 - val_loss: 0.0313 - val_accuracy: 0.9892
Epoch 1192/1200
469/469 - loss: 0.0682 - accuracy: 0.9793 - val_loss: 0.0313 - val_accuracy: 0.9894

Epoch 1193/1200
469/469 - loss: 0.0667 - accuracy: 0.9797 - val_loss: 0.0313 - val_accuracy: 0.9893
Epoch 1194/1200
469/469 - loss: 0.0693 - accuracy: 0.9789 - val_loss: 0.0313 - val_accuracy: 0.9894
Epoch 1195/1200
469/469 - loss: 0.0685 - accuracy: 0.9787 - val_loss: 0.0313 - val_accuracy: 0.9894
Epoch 1196/1200
469/469 - loss: 0.0688 - accuracy: 0.9790 - val_loss: 0.0313 - val_accuracy: 0.9894
Epoch 1197/1200
469/469 - loss: 0.0683 - accuracy: 0.9799 - val_loss: 0.0313 - val_accuracy: 0.9895
Epoch 1198/1200
469/469 - loss: 0.0680 - accuracy: 0.9796 - val_loss: 0.0312 - val_accuracy: 0.9894
Epoch 1199/1200
469/469 - loss: 0.0681 - accuracy: 0.9794 - val_loss: 0.0313 - val_accuracy: 0.9895
Epoch 1200/1200
469/469 - loss: 0.0694 - accuracy: 0.9794 - val_loss: 0.0312 - val_accuracy: 0.9895