Model: "sequential"

Layer (type)	Output Shape	Param #
conv2d (Conv2D)	(None, 126, 126, 32)	320
max_pooling2d (MaxPooling2D)	(None, 63, 63, 32)	0
dropout (Dropout)	(None, 63, 63, 32)	0
conv2d_1 (Conv2D)	(None, 61, 61, 64)	18,496
max_pooling2d_1 (MaxPooling2D)	(None, 30, 30, 64)	0
dropout_1 (Dropout)	(None, 30, 30, 64)	0
conv2d_2 (Conv2D)	(None, 28, 28, 128)	73,856
max_pooling2d_2 (MaxPooling2D)	(None, 14, 14, 128)	0
dropout_2 (Dropout)	(None, 14, 14, 128)	0
flatten (Flatten)	(None, 25088)	0
dense (Dense)	(None, 128)	3,211,392
dropout_3 (Dropout)	(None, 128)	0
dense_1 (Dense)	(None, 10)	1,290

Total params: 3,305,354 (12.61 MB)
Trainable params: 3,305,354 (12.61 MB)
Non-trainable params: 0 (0.00 B)

```
Epoch 1/20
c:\Users\aspk1\AppData\Local\Programs\Python\Python311\Lib\site-packages\keras\src\trainers\data_adapters\py_dataset_adapte
.py:121: UserWarning: Your `PyDataset` class should call `super().__init__(**kwargs)` in its constructor. `**kwargs` can in
lude `workers`, `use_multiprocessing`, `max_queue_size`. Do not pass these arguments to `fit()`, as they will be ignored.
  self._warn_if_super_not_called()
500/500 ━━━━━━━━━━━━━━━━━━━━ 125s 226ms/step - accuracy: 0.3583 - loss: 1.7627 - val_accuracy: 0.9650 - val_loss: 0.1594
Epoch 2/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 108s 216ms/step - accuracy: 0.8493 - loss: 0.4412 - val_accuracy: 0.9852 - val_loss: 0.0497
Epoch 4/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 103s 206ms/step - accuracy: 0.9371 - loss: 0.1925 - val_accuracy: 0.9958 - val_loss: 0.0229

Epoch 4/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 103s 206ms/step - accuracy: 0.9371 - loss: 0.1925 - val_accuracy: 0.9958 - val_loss: 0.0229
Epoch 5/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 102s 203ms/step - accuracy: 0.9462 - loss: 0.1669 - val_accuracy: 0.9912 - val_loss: 0.0229
Epoch 6/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 109s 218ms/step - accuracy: 0.9583 - loss: 0.1243 - val_accuracy: 0.9990 - val_loss: 0.0096
Epoch 7/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 103s 205ms/step - accuracy: 0.9658 - loss: 0.1109 - val_accuracy: 0.9965 - val_loss: 0.0155
Epoch 8/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 104s 207ms/step - accuracy: 0.9719 - loss: 0.0922 - val_accuracy: 0.9992 - val_loss: 0.0051
Epoch 9/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 106s 211ms/step - accuracy: 0.9708 - loss: 0.0893 - val_accuracy: 0.9950 - val_loss: 0.0128
Epoch 10/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 118s 234ms/step - accuracy: 0.9745 - loss: 0.0839 - val_accuracy: 0.9998 - val_loss: 0.0032
Epoch 11/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 105s 209ms/step - accuracy: 0.9796 - loss: 0.0658 - val_accuracy: 1.0000 - val_loss: 0.0022
Epoch 12/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 106s 211ms/step - accuracy: 0.9823 - loss: 0.0567 - val_accuracy: 1.0000 - val_loss: 0.0015
Epoch 13/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 103s 206ms/step - accuracy: 0.9797 - loss: 0.0697 - val_accuracy: 1.0000 - val_loss: 0.0020
Epoch 14/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 113s 226ms/step - accuracy: 0.9833 - loss: 0.0570 - val_accuracy: 0.9995 - val_loss: 0.0022
```

```
Epoch 14/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 113s 226ms/step - accuracy: 0.9833 - loss: 0.0570 - val_accuracy: 0.9995 - val_loss: 0.0022
Epoch 15/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 118s 236ms/step - accuracy: 0.9833 - loss: 0.0552 - val_accuracy: 0.9998 - val_loss: 0.0017
Epoch 16/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 105s 210ms/step - accuracy: 0.9833 - loss: 0.0590 - val_accuracy: 1.0000 - val_loss: 0.0022
Epoch 17/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 115s 229ms/step - accuracy: 0.9867 - loss: 0.0463 - val_accuracy: 1.0000 - val_loss: 5.4428e-04
Epoch 18/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 113s 225ms/step - accuracy: 0.9883 - loss: 0.0424 - val_accuracy: 1.0000 - val_loss: 9.5742e-04
Epoch 20/20
500/500 ━━━━━━━━━━━━━━━━━━━━ 107s 214ms/step - accuracy: 0.9874 - loss: 0.0421 - val_accuracy: 0.9992 - val_loss: 0.0021
125/125 - 7s - 54ms/step - accuracy: 0.9992 - loss: 0.0021
Test accuracy: 1.00
```