

EXPERIMENT 2

Downloading data from <https://storage.googleapis.com/tensorflow/tf-keras-datasets/mnist.npz>

11490434/11490434 — 1s 0us/step

Training data shape: (60000, 28, 28)

Testing data shape: (10000, 28, 28)

/usr/local/lib/python3.12/dist-packages/keras/src/layers/convolutional/base_conv.py:113: UserWarning: Do not pass an `input_shape`/`input_dim` argument to a layer.
super().__init__(activity_regularizer=activity_regularizer, **kwargs)

Model: "sequential"

Layer (type)	Output Shape	Param #
conv2d (Conv2D)	(None, 26, 26, 32)	320
max_pooling2d (MaxPooling2D)	(None, 13, 13, 32)	0
conv2d_1 (Conv2D)	(None, 11, 11, 64)	18,496
max_pooling2d_1 (MaxPooling2D)	(None, 5, 5, 64)	0
flatten (Flatten)	(None, 1600)	0
dense (Dense)	(None, 128)	204,928
dense_1 (Dense)	(None, 10)	1,290

Total params: 225,034 (879.04 KB)

Trainable params: 225,034 (879.04 KB)

Non-trainable params: 0 (0.00 B)

Epoch 1/5

844/844 — 42s 48ms/step - accuracy: 0.8909 - loss: 0.3657 - val_accuracy: 0.9827 - val_loss: 0.0578

Epoch 2/5

844/844 — 39s 46ms/step - accuracy: 0.9833 - loss: 0.0526 - val_accuracy: 0.9873 - val_loss: 0.0459

Epoch 3/5

844/844 — 39s 46ms/step - accuracy: 0.9894 - loss: 0.0338 - val_accuracy: 0.9890 - val_loss: 0.0389

Epoch 4/5

844/844 — 39s 47ms/step - accuracy: 0.9918 - loss: 0.0254 - val_accuracy: 0.9873 - val_loss: 0.0554

Epoch 5/5

844/844 — 41s 47ms/step - accuracy: 0.9940 - loss: 0.0188 - val_accuracy: 0.9908 - val_loss: 0.0341

Test Accuracy: 99.11%

Test Loss: 0.0289

1/1 — 0s 138ms/step

Pred: 7

Pred: 2

Pred: 1

Pred: 0

Pred: 4

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Pred: 1

Pred: 4

Pred: 9

Pred: 5

Pred: 9

