

Train The Model

Team ID: PNT2022TMID28890

Project Name: A Novel Method For Handwritten Digit Recognition System

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Now, let us train our model with our image dataset.

Fit: functions used to train a deep learning neural network

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Fitting the model

# Fit the model
model.fit(X_train, y_train, validation_data=(X_test, y_test), epochs=5, batch_size=32)

Epoch 1/5
1875/1875 [=====] - 184s 98ms/step - loss: 0.2451 - accuracy: 0.9497 - val_loss: 0.0966 - val_accuracy: 0.9715
Epoch 2/5
1875/1875 [=====] - 183s 98ms/step - loss: 0.0694 - accuracy: 0.9785 - val_loss: 0.0971 - val_accuracy: 0.9714
Epoch 3/5
1875/1875 [=====] - 183s 98ms/step - loss: 0.0487 - accuracy: 0.9850 - val_loss: 0.0829 - val_accuracy: 0.9782
Epoch 4/5
1875/1875 [=====] - 177s 94ms/step - loss: 0.0382 - accuracy: 0.9877 - val_loss: 0.0881 - val_accuracy: 0.9769
```

Arguments:

steps_per_epoch : it specifies the total number of steps taken from the generator as soon as one epoch is finished and the next epoch has started. We can calculate the value of steps_per_epoch as the total number of samples in your dataset divided by the batch size.

Epochs: an integer and number of epochs we want to train our model for.

Validation_data :

- an inputs and targets list
- a generator
- inputs, targets, and sample_weights list which can be used to evaluate the loss and metrics for any model after any epoch has ended.

validation_steps:

only if the validation_data is a generator then only this argument can be used. It specifies the total number of steps taken from the generator before it is stopped at every epoch and its value is calculated as the total number of validation data points in your dataset divided by the validation batch size.