A Novel Method for Handwritten Digit Recognition System

Observing the metrics

Project Id:PNT2022TMID51786

```
In [99]: # Test the model
         confusion_matrix(y_test,preds)
```

```
Out[99]: array([[ 978,    0,    0,    0,    0,    0,    0,    0,    2,    0],
                [   0, 1112,    2,    3,    0,    1,    1,    1,   15,    0],
                [   4,    0,  995,    2,    3,    0,    2,    3,   23,    0],
                [   0,    0,    2,  996,    0,    2,    0,    0,   10,    0],
                [   1,    0,    3,    0,  969,    0,    0,    0,    4,    5],
                [   2,    0,    0,   10,    0,  858,    2,    0,   15,    5],
                [   6,    1,    1,    0,    1,    1,  933,    0,   15,    0],
                [   0,    3,    8,    8,    5,    0,    0,  961,   29,   14],
                [   2,    0,    1,    0,    0,    0,    0,    1,  969,    1],
                [   7,    2,    0,    3,    7,    3,    0,    0,   24,  963]],
               dtype=int64)
```

```
In [23]: print(classification_report(y_test,preds))
```

```
              precision    recall  f1-score   support

           0       0.99      0.99      0.99       980
           1       1.00      0.99      0.99      1135
           2       0.99      0.99      0.99      1032
           3       0.99      0.99      0.99      1010
           4       0.99      0.99      0.99       982
           5       0.99      0.99      0.99       892
           6       0.99      0.99      0.99       958
           7       0.99      0.98      0.99      1028
           8       1.00      0.98      0.99       974
           9       0.99      0.97      0.98      1009

   micro avg       0.99      0.99      0.99     10000
   macro avg       0.99      0.99      0.99     10000
weighted avg       0.99      0.99      0.99     10000
 samples avg       0.99      0.99      0.99     10000
```