

DL Assignment-Week 1 Report

Akash Bankar (23CS60R65)

1. DNN

Accuracy on test data: 0.939622641509434

Classification Report :

precision recall f1-score support

0	0.92	0.95	0.93	484
1	0.95	0.93	0.94	576
accuracy				0.94 1060

macro avg 0.94 0.94 0.94 1060

weighted avg 0.94 0.94 0.94 1060

Precision : 0.9539007092198581

Recall : 0.9340277777777778

F1-Score : 0.943859649122807

Confusion Matrix : [[458 26]

[38 538]]

Hyperparameters Used -

```
self.fc1 = nn.Linear(X_train.shape[1], 128)
self.fc2 = nn.Linear(128, 64)
self.fc3 = nn.Linear(64, 2)
```

2. CNN

Accuracy on Test Data 82.36

Classification Report :

precision recall f1-score support

0	0.82	0.80	0.81	498
1	0.83	0.84	0.83	562
accuracy			0.82	1060

macro avg 0.82 0.82 0.82 1060
weighted avg 0.82 0.82 0.82 1060

Precision : 0.8283712784588442

Recall : 0.8416370106761566

F1-Score : 0.8349514563106797

Confusion Matrix : [[400 98]

[89 473]]

Hyperparameters Used -

```
self.conv_1 = nn.Conv1d(1, 128, 28, stride = 28)
self.activation_1 = nn.ReLU()

self.conv_2 = nn.Conv1d(128, 256, 28, stride = 28)
self.activation_2 = nn.ReLU()

self.flatten = nn.Flatten()
```

3. LSTM

Accuracy on Test Data 81.70

Classification Report :

precision recall f1-score support

0	0.77	0.86	0.82	498
1	0.86	0.78	0.82	562
accuracy			0.82	1060

macro avg 0.82 0.82 0.82 1060
weighted avg 0.82 0.82 0.82 1060

Precision : 0.8636363636363636
Recall : 0.7775800711743772
F1-Score : 0.8183520599250936
Confusion Matrix : $\begin{bmatrix} 429 & 69 \\ 125 & 437 \end{bmatrix}$

Hyperparameters Used -

hidden_size=128, num_layers=2