

E1-313:TIPR-Assignment-3 Report

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Python version 3.6 is used to solve all problems.

1 Part-1:Fashion MNIST DataSet

Configuration Used:

- Learning Rate: 0.0001
- Batch-Size: 100
- Epoc: 30

These are used for all the experiment done as following.

1.1 Task-I/II: Results of Different No of Layers and Different Numbers of Neurons at each layer.

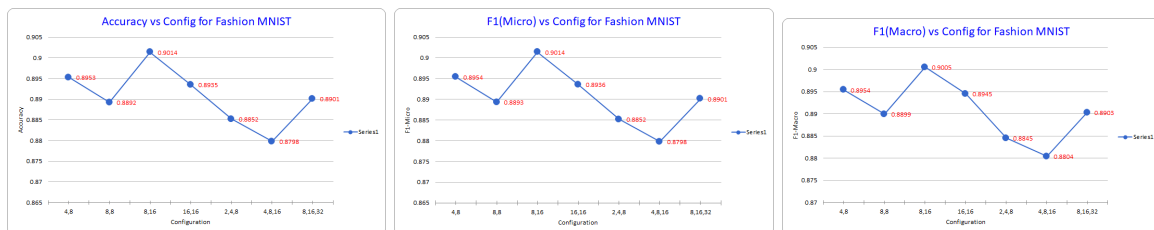


Fig 1:-Accuracy,F1-Score(Micro/Macro)in on Fashion MNIST Dataset for Different Convolution layers of different No Of Filters.

1.2 Task-III: Different Activation Functions

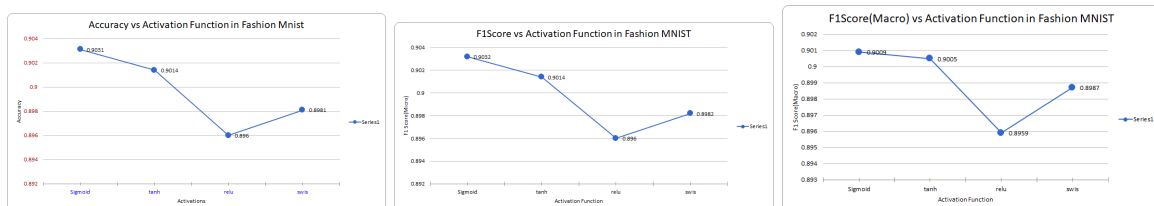


Fig 2:-Accuracy,F1-Score(Micro/Macro)in on Fashion MNIST Dataset for Different Activation Functions.

1.3 Task-IV:Different Initialization Techniques

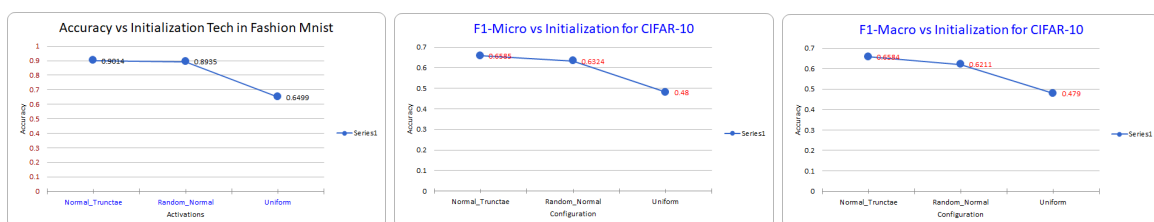


Fig 3:-Accuracy,F1-Score(Micro/Macro)in on Fashion MNIST Dataset for Different Initialisation Techniques.

1.4 Task-VI:t-SNE Visualisation of Embedding in 2D Space

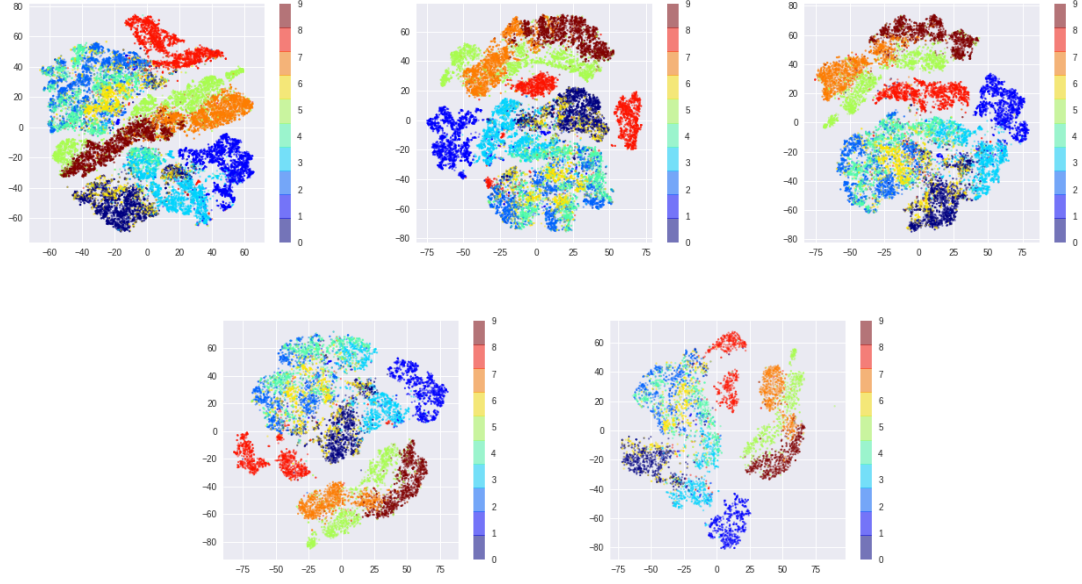


Fig 4:-TSNE 2D Visualisations of MNIST Data(Took 10-50 percent of the entire dataset in steps of 10Percent for training purpose and generate the embeddings.)

2 Part-2:CIFAR-10 DataSet

Configuration Used:

- Learning Rate: 0.0001
- Batch-Size: 500
- Epoc: 70

These are used for all the experiment done as following.

2.1 Task-I/II: Results of Different No of Layers and Different Numbers of Neurons at each layer.

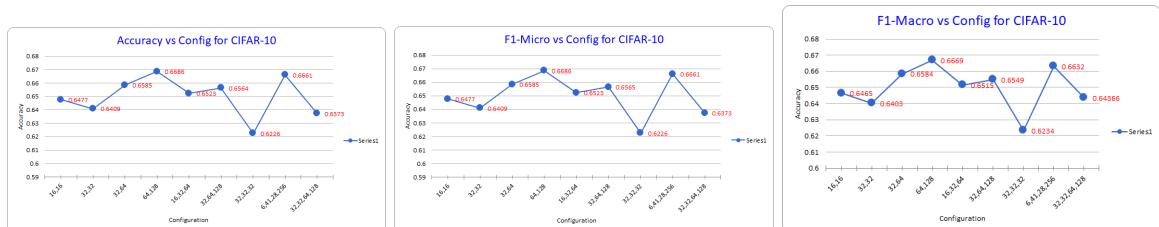


Fig 5:-Accuracy,F1-Score(Micro/Macro)in on CIFAR-10 Dataset for Different Convolution layers of different No Of Filters.

2.2 Task-III: Different Activation Functions

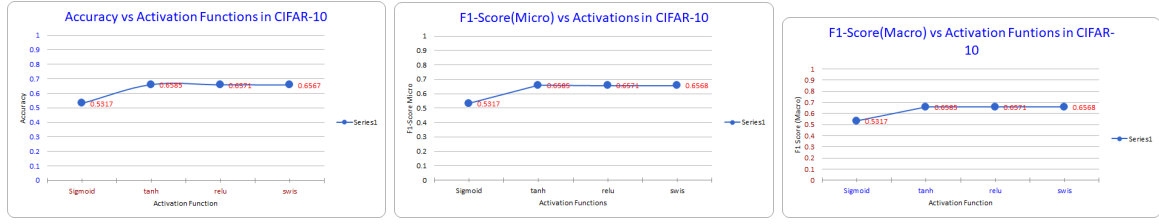


Fig 6:-Accuracy,F1-Score(Micro/Macro)in on CIFAR-10 Dataset for Different Activation Functions.

2.3 Task-IV:Different Initialization Techniques

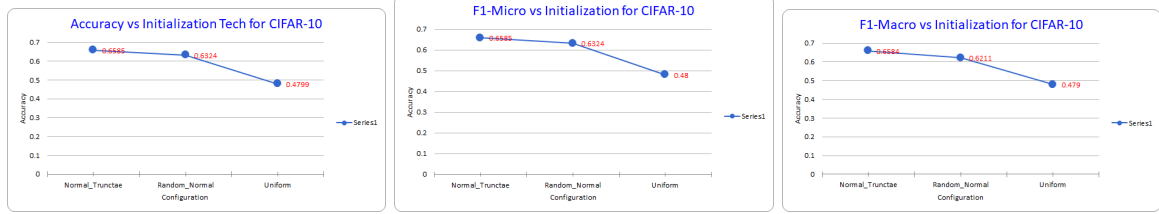


Fig 7:-Accuracy,F1-Score(Micro/Macro)in on CIFAR-10 Dataset for Different Initialisation Techniques.

2.4 Task-VI:t-SNE Visualisation of Embedding in 2D Space

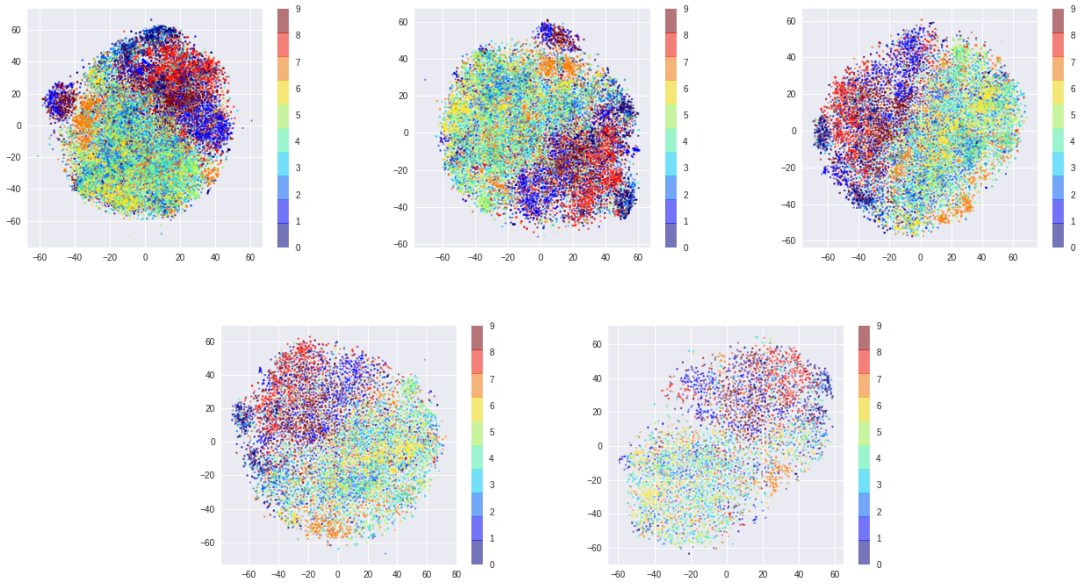


Fig 8:-TSNE 2D Visualisations of CIFAR-10 Data(Took 10-50 percent of the entire dataset in steps of 10Percent for training purpose and generate the embeddings.)

3 Task-VII:Comparison with Keras MLP

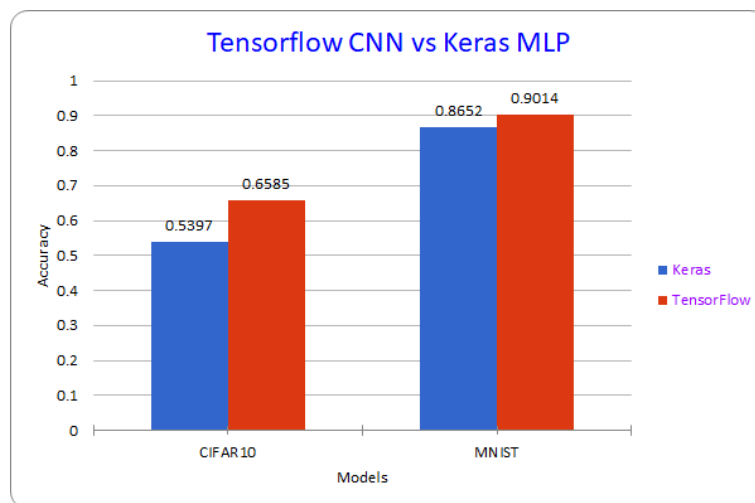


Fig 9:-Comparison of Accuracy by Our Tensorflow code and Keras MLP Code.

Please Note:-In the Final Run Script I consider `--filter-config` as [A,B] format rather [A B].