

NOTE SOME FIGURE WHICH ARE MISSING DUE TO TECHNICAL ERRORS IN LATEX ARE IN FOLDER WITH NAME MENTION

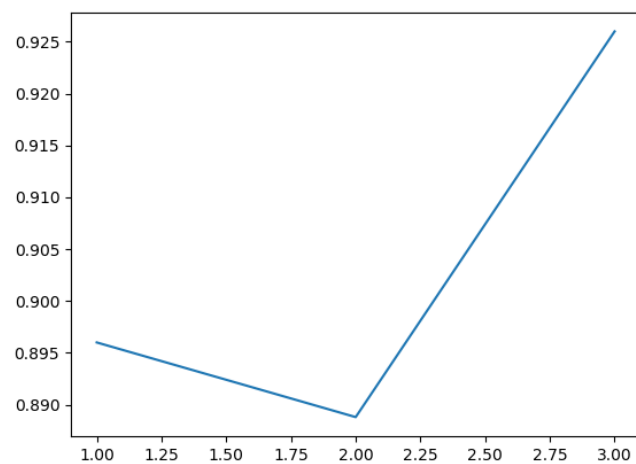
REPORT— TIPR ASSIGNMENT

SWYAM PRAKASH SINGH

March 2019

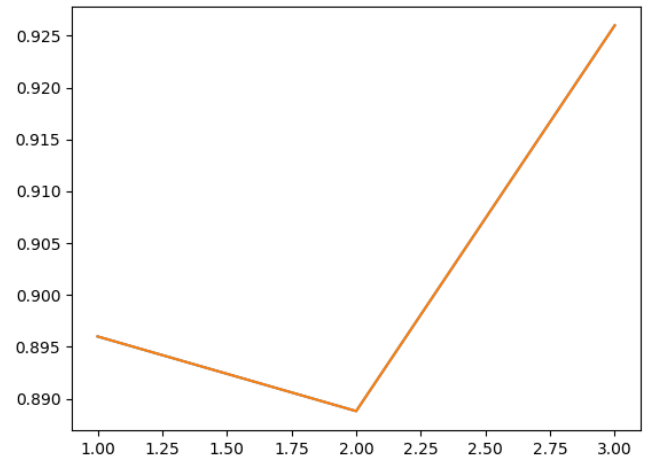
1 TASK 1

1.1 TASK 1.11 ACCURACY ON LAYERS



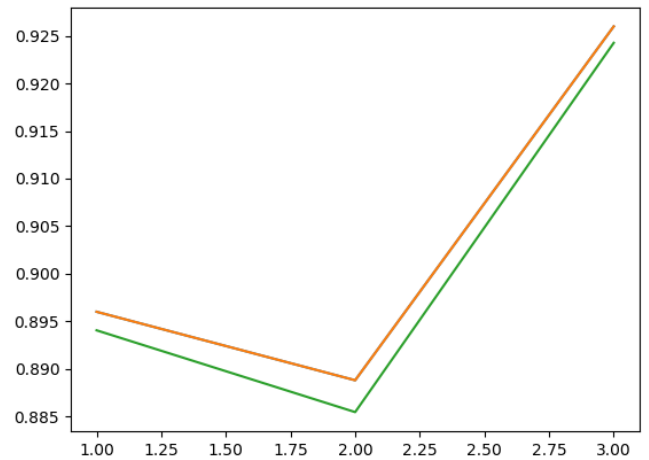
accuracy vs layer_count.pngaccuracyvslayer_count.png

1.2 TASK 1.12 F-score(micro) ON LAYERS



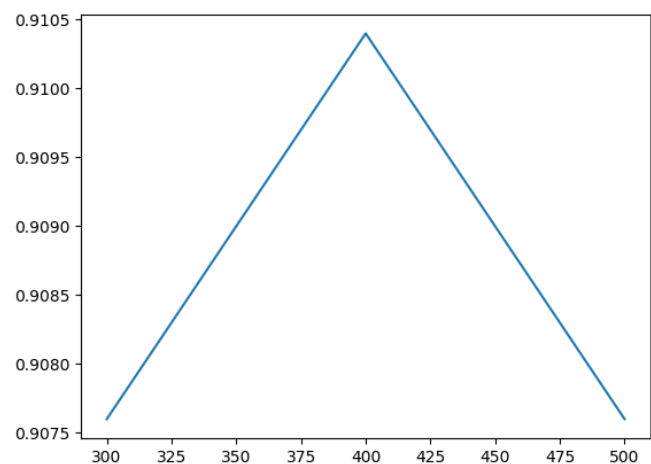
micro vs layer_{count}.png

1.3 TASK 1.13 F-score(macro) ON LAYERS



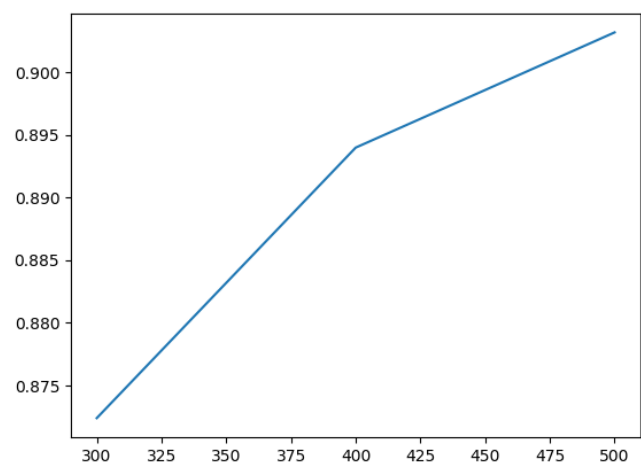
macro vs layer_{count}.png

1.4 TASK 1.21 ACCURACY ON LAYERS CONTAINING 1 HIDDEN LAYER WITH 300,400,500



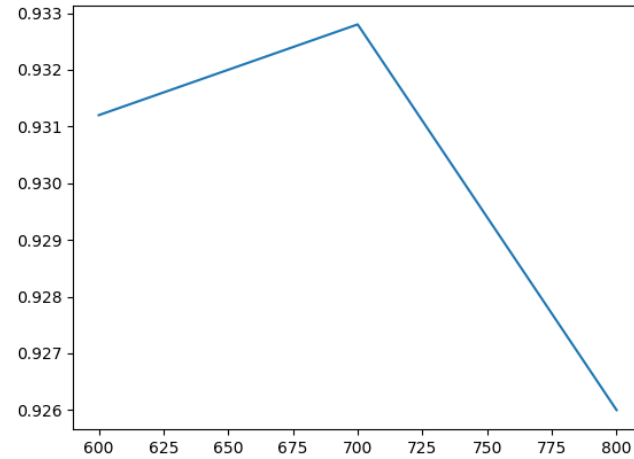
accuracy vs layer_count.pngaccuracyvslayer_count.png

1.5 TASK 1.22 ACCURACY ON LAYERS CONTAINING 2 WITH SECOND HIDDEN LAYER HAVE 100 NODES WHILE FIRST HIDDEN LAYER WITH 300,400,500



accuracy vs layer_count.pngaccuracyvslayer_count.png

1.6 TASK 1.23 ACCURACY ON LAYERS CONTAINING 3 WITH FIRST AND THIRD HIDDEN LAYER HAVE 1500 and 100 NODES WHILE second HIDDEN LAYER WITH 600,700,800



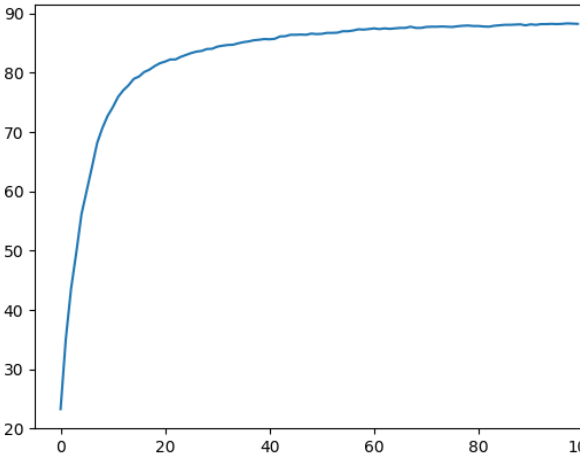
accuracy vs layer_count.png

1.7 TASK 1.31 PERFORMANCE ON DIFFERENT ACTIVATION FUNCTIONS

TANH

task_1_3 tanh vs layer_count.png

tanh vs layer_count.png
tanh vs layer_count.png
RELU



relu vs layer_count = 2.png
relu vs layer_count = 2.png
SIGMOID

task_1_3 sigmoid vs layer_count=2.png

sigmoid vs layer_count = 2.png
sigmoid vs layer_count = 2.png
SWISH

task_1_3 swish vs layer_count=2.png

swish vs layer_count = 2.pngswishvslayer_count = 2.png

1.8 TASK 1.4

NEURAL NETWORK HAS HIDDEN NODES 1500,800,100 using UNIFORM initialization and RELU "XAVIER" is 92.32 percent accurate with 100 epoch and learning rate 0.00009

NEURAL NETWORK HAS HIDDEN NODES 1500,800,100 using GAUSSIAN initialization and RELU "XAVIER" is 93.08 percent accurate with 100 epoch and learning rate 0.00009

1.9 TASK 1.5 with kera

best accuracy with programmed nn is 1500,700,100 as hidden layer nodes is **93.33** with 100 epochs with learning rate 0.00009

best accuracy with kera is 1500,700,100 as hidden layer nodes is **93.00** with 100 epochs with learning rate 0.00009

2 TASK3

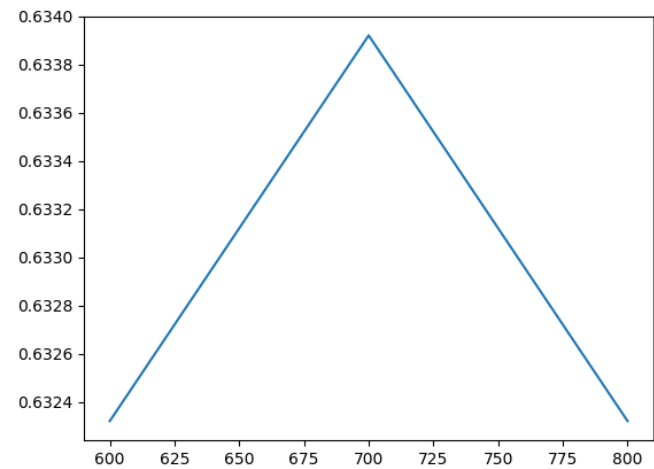
2.1 6

for dolphin my bayes and knn are classifying near 90-95 percent where most of time nn classifier perform most of time to 100 percent accuracy

for pubmed my bayes and knn are 33 percent and 35 percent while sklearn perform upto 37 percent ,neural network perform upto 39.76 to 41 percent accuracy

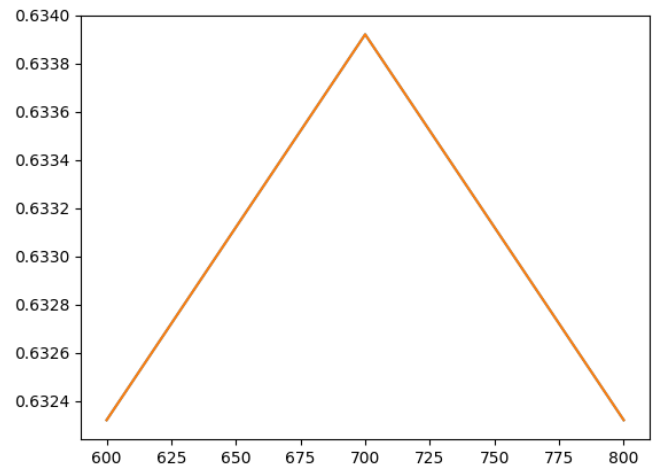
3 TASK2

3.1 TASK 1.11 ACCURACY ON LAYERS



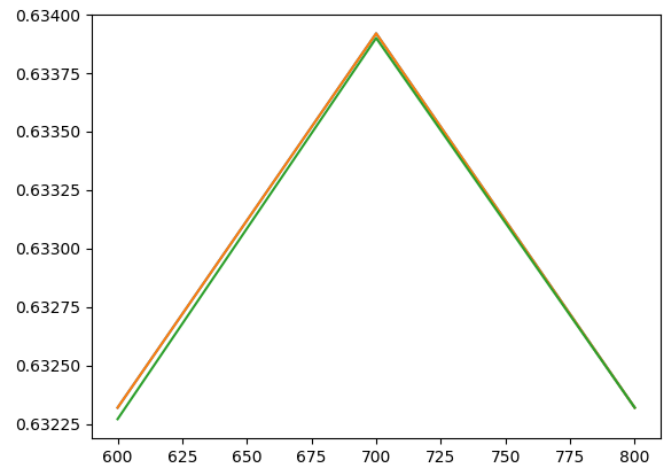
accuracy vs layer_{count}.pngaccuracyvs_{layer}count.png

3.2 TASK 1.12 F-score(micro) ON LAYERS



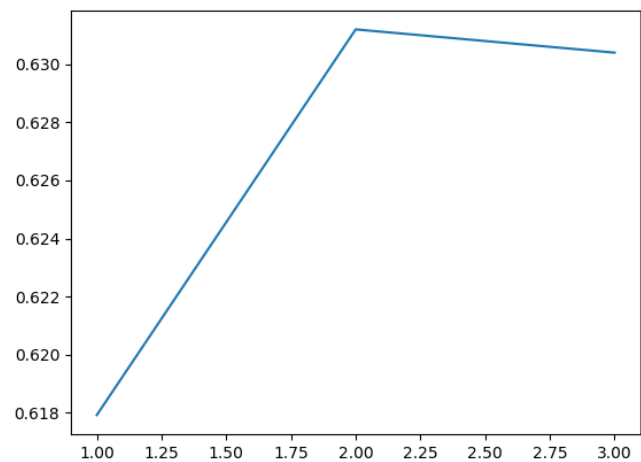
micro vs layer_count.png

3.3 TASK 1.13 F-score(macro) ON LAYERS



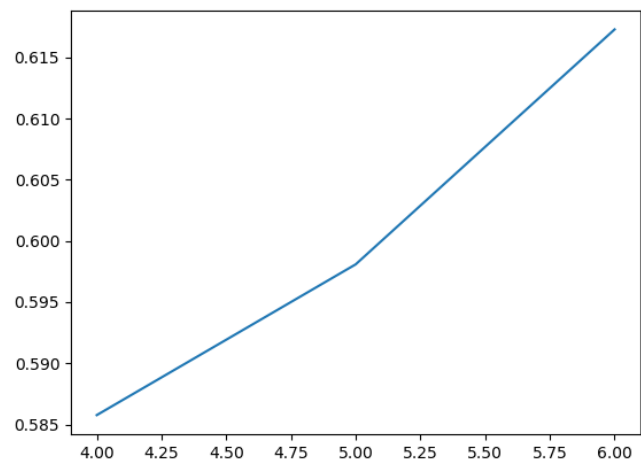
macro vs layer_count.png

3.4 TASK 1.21 ACCURACY ON LAYERS CONTAINING 1 HIDDEN LAYER WITH 300,400,500



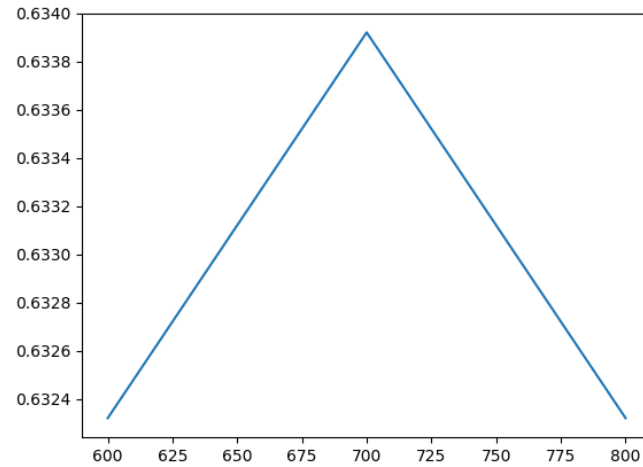
accuracy vs layer_count.png

3.5 TASK 1.22 ACCURACY ON LAYERS CONTAINING 2 WITH SECOND HIDDEN LAYER HAVE 100 NODES WHILE FIRST HIDDEN LAYER WITH 300,400,500



accuracy vs layer_count.png

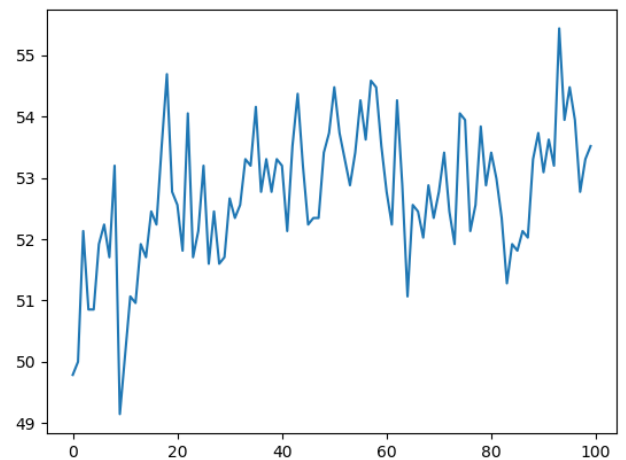
3.6 TASK 1.23 ACCURACY ON LAYERS CONTAINING 3 WITH FIRST AND THIRD HIDDEN LAYER HAVE 1500 and 100 NODES WHILE second HIDDEN LAYER WITH 600,700,800



accuracy vs layer_count.png

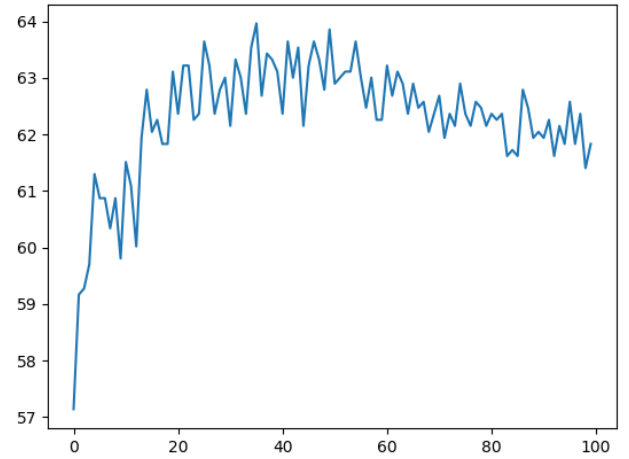
3.7 TASK 1.31 PERFORMANCE ON DIFFERENT ACTIVATION FUNCTIONS

TANH

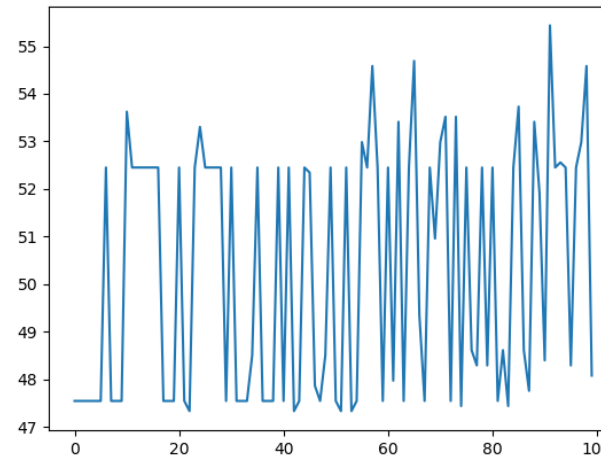


tanh vs layer_count.png

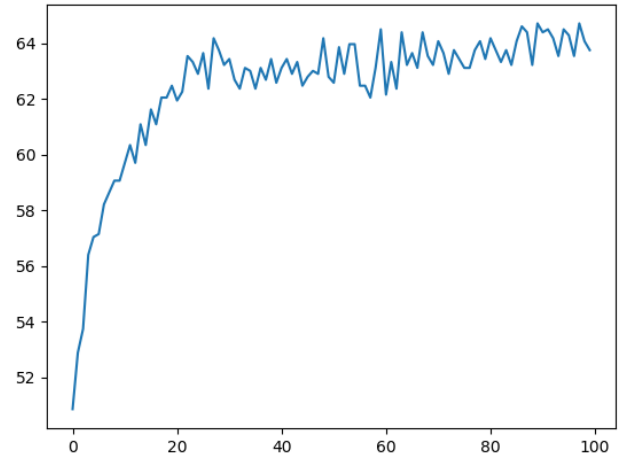
RELU



relu vs layer_{count}.png
SIGMOID



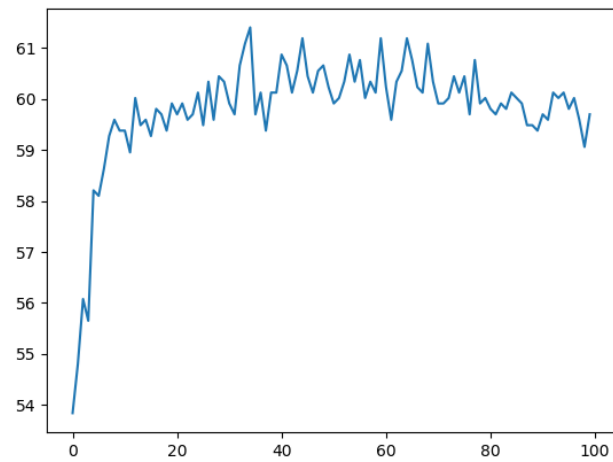
sigmoid vs layer_{count}.png
SWISH



swish vs layer_{count}.pngswishvslayer_{count}.png

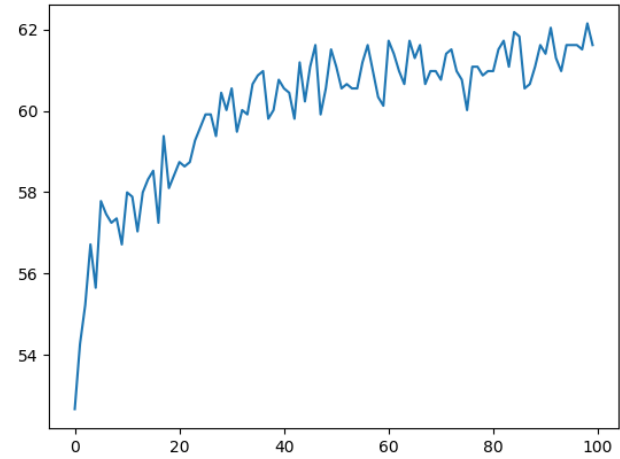
3.8 TASK 1.4

NEURAL NETWORK HAS HIDDEN NODES 1500,800,100 using UNIFORM initialization and RELU "XAVIER" is 59.32 percent accurate with 100 epoch and learning rate 0.00009



uniform vs layer_{count}.pnguniformvslayer_{count}.png

NEURAL NETWORK HAS HIDDEN NODES 1500,800,100 using GAUSSIAN initialization and RELU "XAVIER" is 62.68 percent accurate with 100 epoch and learning rate 0.00009



gaussian vs layer_{count}.pnggaussianvslayer_{count}.png

3.9 TASK 1.5 with kera

best accuracy with programmed nn is 1500,700,100 as hidden layer nodes is **62.33** with 100 epochs with learning rate 0.00009

best accuracy with kera is 1500,700,100 as hidden layer nodes is **65.00** with 100 epochs with learning rate 0.00009