

REPORT

SMAI Assignment 5

Tasks:

Play with your neural network to report the best performing architecture for the given task. Also, include the activation function, loss function used in the report.

The best performing architecture for the given task is as follows:

Activation Function: **ReLU**

Number of Hidden Layers: **2**

Number of Neurons in the hidden layer = **400**

Learning Rate: **0.001**

Loss Function: **Cross Entropy**

Best Accuracy: 88.72 %

Contrast the effect of using different activation functions on the validation data. Use ReLU, Sigmoid & Tanh as activation functions in the hidden layers.

Activation Function: **ReLU**

Number of Hidden Layers: **2**

Number of Neurons in the hidden layer = **400**

Learning Rate: **0.001**

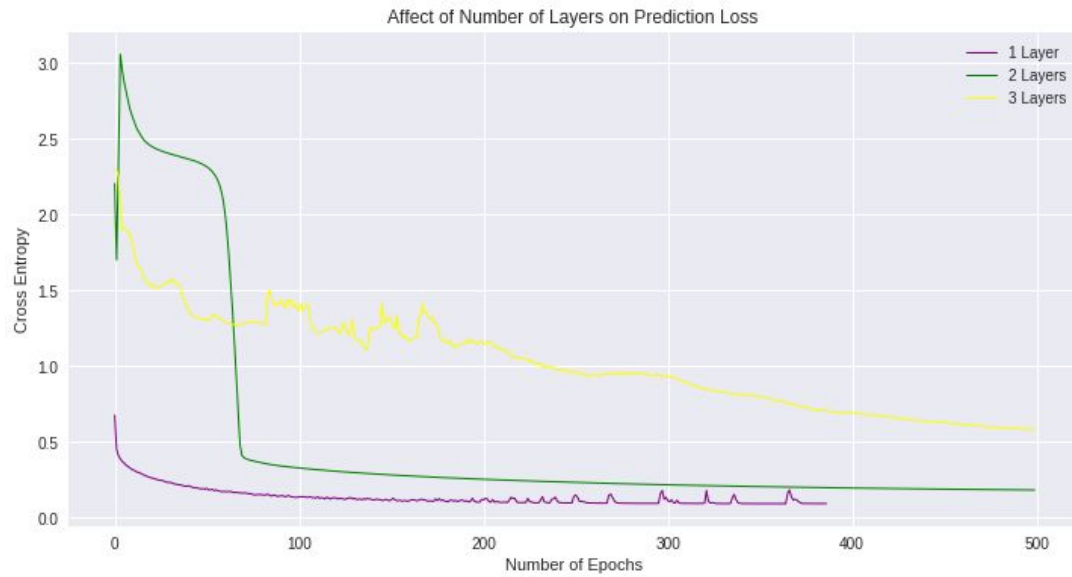
Loss Function: **Cross Entropy**

Sigmoid Training accuracy: 86.5 %

Relu Training accuracy: 88.72 %

Tanh Training accuracy: 86.55 %

Report how the number of layers affects the performances of the model. Plot number of layers vs prediction loss graph.



Show how error is dependent on the number of epochs with appropriate plots.

Architecture:

Activation Function: **Sigmoid**

Number of Hidden Layers: **1**

Number of Neurons in the hidden layer = **100**

Learning Rate: **0.001**

Loss Function: **Cross Entropy**

