**CS 459 – Introduction to Machine learning**

**Assignment No. 02**

**Due on 22nd May 2023**

Choose suitable dataset having more than 5 features to solve multiclassification problem

Divide the data set into training, testing and cross validation set and perform the following experiments using logistic regression and neural network (NN).

1. Train the logistic regression model using different no of features and plot error vs no of features used.
2. Train the models using different values of regularization parameter (both logistic regression and NN) and plot the error vs regularization parameter.
3. Train the models on varying the number of examples in the training set (for example m =10, 20, 40, ….) and plot error vs no of training examples.

Identify high bias and high variance problems by analyzing the above graphs and discuss which factors help in reducing these issues.