MCA 5141 – Machine Learning Lab
Week – 3

Exercise 1

1. Write a user defined function 'myFnLinReg(x,y)' to perform Simple Linear Regression given one predictor attribute and one response attribute. The function should return the coefficients of the straight line.
2. Use mtcars data set and consider the attributes mpg and weight. Split data into train and test sets (80 %,20%). Put training data set to 'myFnLinReg(x,y)' to build a linear regression model to predict mpg given the weight of the car.
3. What is the mpg of a car, whose weight is 5.5?
4. Compute and print accuracy measures such as RMSE and R^2 for the test set.
5. Apply the stochastic gradient descent and mini batch gradient descent algorithms to enhance the accuracy and visualize the cost function.

Exercise 2

1. Use the boston.csv dataset and determine the best 5 features to predict 'MEDV'.
2. Using sklearn.linear_model, find the multiple regression model for the boston.csv dataset using the best 3 features. (from sklearn.linear_model import LinearRegression)
3. Find the accuracy of the model using appropriate metrics using 80, 20 split for training and test.