CSE 643 – Artificial Intelligence

Practice Assignment 1 (optional) **10-Nov-2021**

Download scikit-learn library for Python and all its related libraries from https://scikit-learn.org/stable/ .

1. Build a univariate and multivariate linear regression for these chocolates data and predict the function coefficients.

   In the Univariate data, UGive is the number of chocolates that you give me and is the input variable x. Based on this the IGive is the number of chocolates that I give you and is the output y. Now you have to build a ML program using sklearn (scikit library) for Univariate Linear Regression. Find the coefficients w_0 and w_1.

   In the Multivariate data, the number of chocolates that I give (output y) is dependent on two input variables UGive (variable x_1) that is the number of chocolates that you give me, and on Age (variable x_2) (some of the age categories only). Build a multivariate linear regression based on this data and find the coefficients of w_0, w_1 and w_2.

2. Build an ANN for the Iris dataset. The dataset has attributes (x_1…x_4): sepal_length, sepal_width, petal_length, petal_width. The output attribute is the species (y) that should be predicted. Now modify the data so that class Iris-Setosa is marked 1 and rest as 0. Learn the coefficients for predicting whether a test instance of petal width and length is of type setosa species or not. You can divide the data into training set (90%) and test set (10%).

You need to submit a PDF of your program along with screenshots for the working of your program.