CS 6364 Homework 6

September 25, 2019

Deadline for the first submission: **Oct-10-2019**.
All assignments **MUST** have your name, student ID, course name/number at the beginning of your documents.
Your homework **MUST** be submitted via Blackboard with file format and name convention as follows:

HW#_Name_writeup.**pdf** (for writing part)
HW#_Name_code.**zip** (for coding part)

If you have any questions, please contact me.

Q1 (Regression) Implement a neural network to train a regression model for the Boston housing data set

https://towardsdatascience.com/linear-regression-on-boston-housing-dataset-f409b7e4a155

Split the dataset to a training set (70% samples) and a testing set (30% samples). Report the root mean squared errors (RMSE) on the testing sets.

- You have to use PyTorch deep learning library.
- Two hidden layers: the first hidden layer must contain 16 units using ReLU activation function; the second layer must contain 32 units using tanh activation function.

Q2 (Classification): Implement a neural network to train a classification model for the Titantic dataset:

https://blog.goodaudience.com/machine-learning-using-logistic-regression-in-python-with-code-ab3c7f5f3bed.

Split the dataset to a training set (80% samples) and a testing set (20% samples). Report the overall classification accuracies on the training and testing sets and report the precision, recall, and F-measure scores for each of the two classes on the testing sets.

- You have to use PyTorch deep learning library.
- Two hidden layers: the first hidden layer must contain 5 units using ReLU activation function; the second layer must contain 3 units using tanh activation function.