READ ME

Homework 2

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Files:

hw2\_V0.py

hw2\_V1.py

hw2\_V2.py

hw2\_kernel.py

hw1p4i.py

hw1p4ii.py

hw1p4iii.py

Classifier functions for HW part i:

to run: go to command prompt. Change directory to folder where python files are saved. Type the following line of code to run algorithm:

**python hw2p4i.py M k T**

M= training set size, must be integer < 10000

k=selection of index for which input test value of X to use, must be integer <= 10000-M. Since selection of y-test and x-test are randomized with each call to V0, V1, and V2, the value of y-test[k] will not be the same between V0, V1, and V2.

T= T from perceptron algorithm definition

returns guess y\_hat and the actual value of y\_test(k).

Performance functions for HW part ii:

to run: go to command prompt. Change directory to folder where python files are saved. Type the following line of code to run algorithm:

**python hw2p4ii.py M T**

M= training set size, must be integer < 9000 (algorithm use test size of 1000)

T= T from perceptron algorithm definition, must be an integer

returns error rate for test on 1000 test values for V0, V1, and V2

Classifier functions for HW part iii:

to run: go to command prompt. Change directory to folder where python files are saved. Type the following line of code to run algorithm:

**python hw2p4iii.py M k T**

M= training set size, must be integer < 10000

k=selection of index for which input test value of X to use, must be integer <= 10000-M. Since selection of y-test and x-test are randomized with each call to V0, V1, and V2, the value of y-test[k] will not be the same between V0, V1, and V2.

T= T from perceptron algorithm definition

returns guess y\_hat and the actual value of y\_test(k).

Perceptron implemented with degree of 5.