Report

Yaozhong Huang

Qianqian Gu

Yihe Chen

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To run the program, you need to use the command-line:

----------Set Up----------

cd your_directroy/242project4_final/CSC242_Project4/src

javac $(find . -name "*.java")

*this step is necessary to compile the .java files

**Before the start, make sure that you are in the correct directory.

----------Linear Classifier----------

Run the command and the output will provide the regression model

For each graph, we plot 10000 steps of weights update.

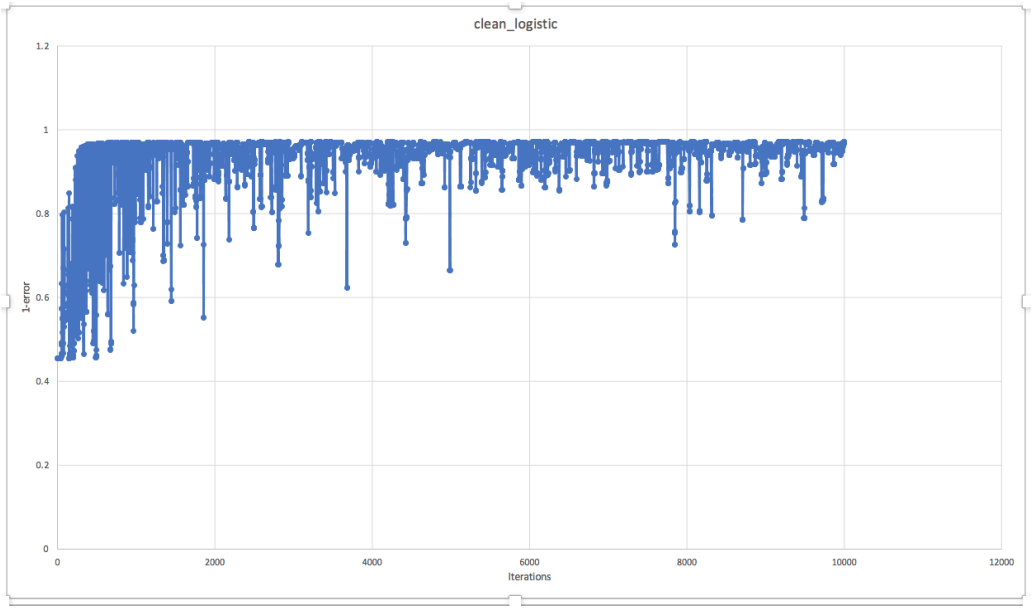
Fixed Learning rate alpha is set to 0.95 for non-decaying tests, and 0 for decaying case.

In the output, we also showed the fixed learning rate, the number of updates and the updated accuracy after each step.

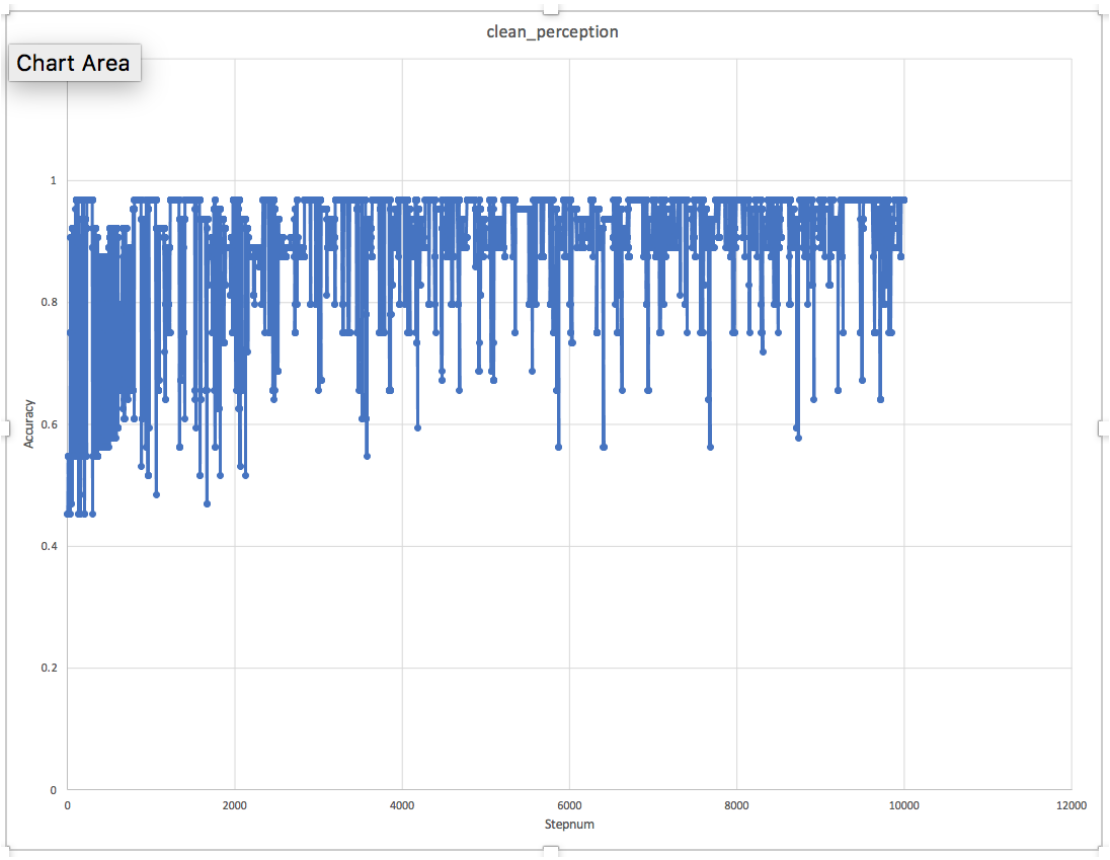
All graphs are generated by excel with data resulted in command line

Dataset: earthquake-clean.data.txt

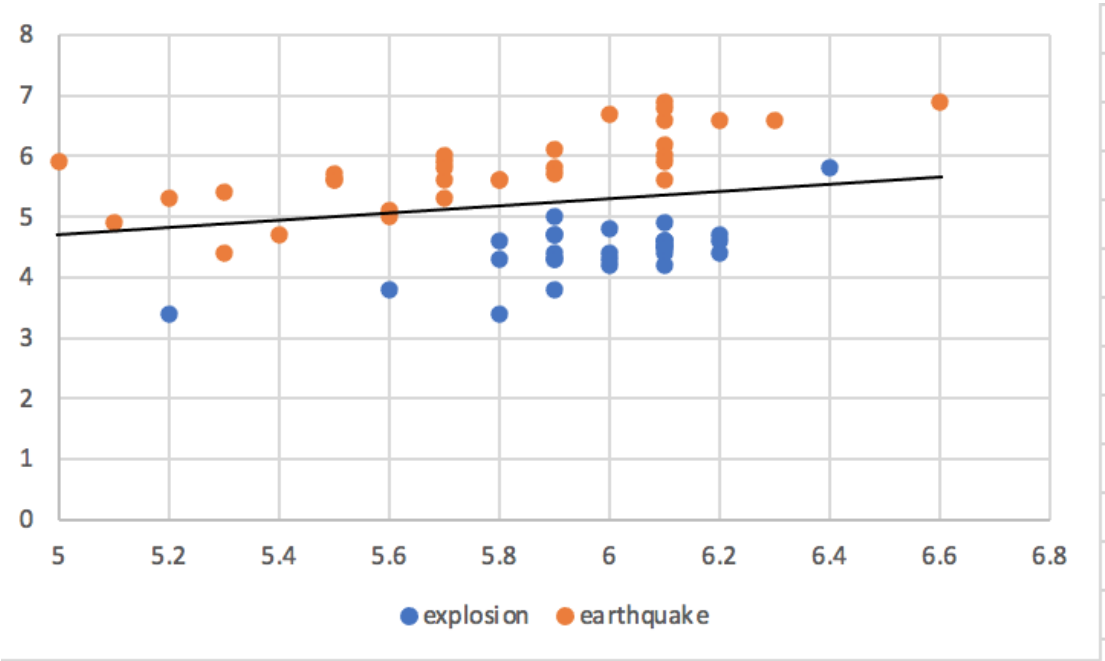
Command: java learn.lc.test.LCEarthquakeClean



Command: java learn.lc.test.PCEarthquakeClean

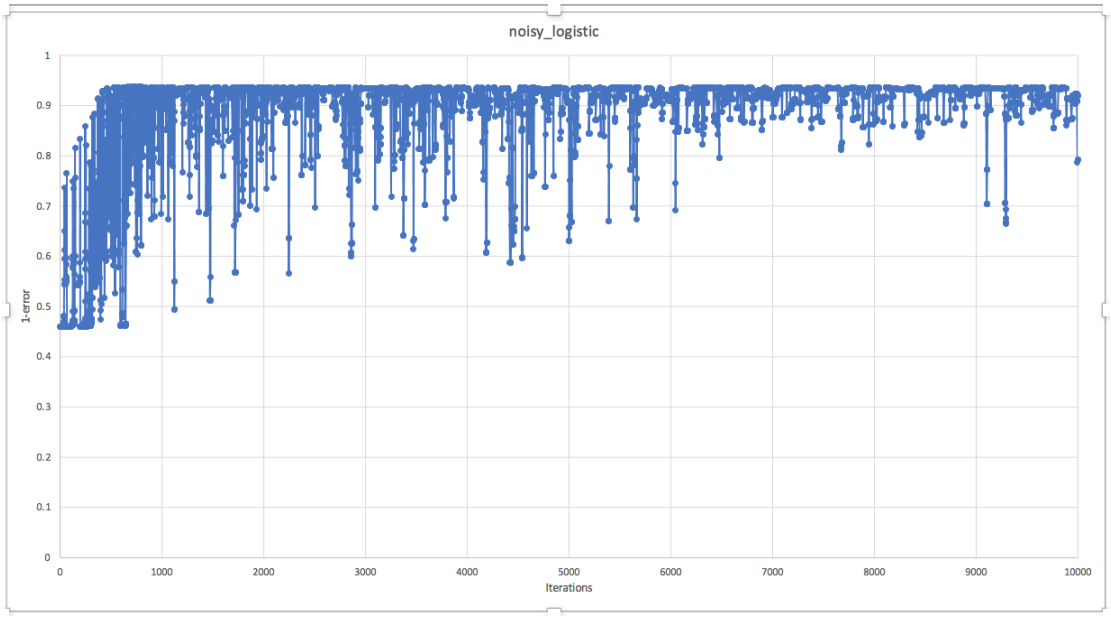


Classification

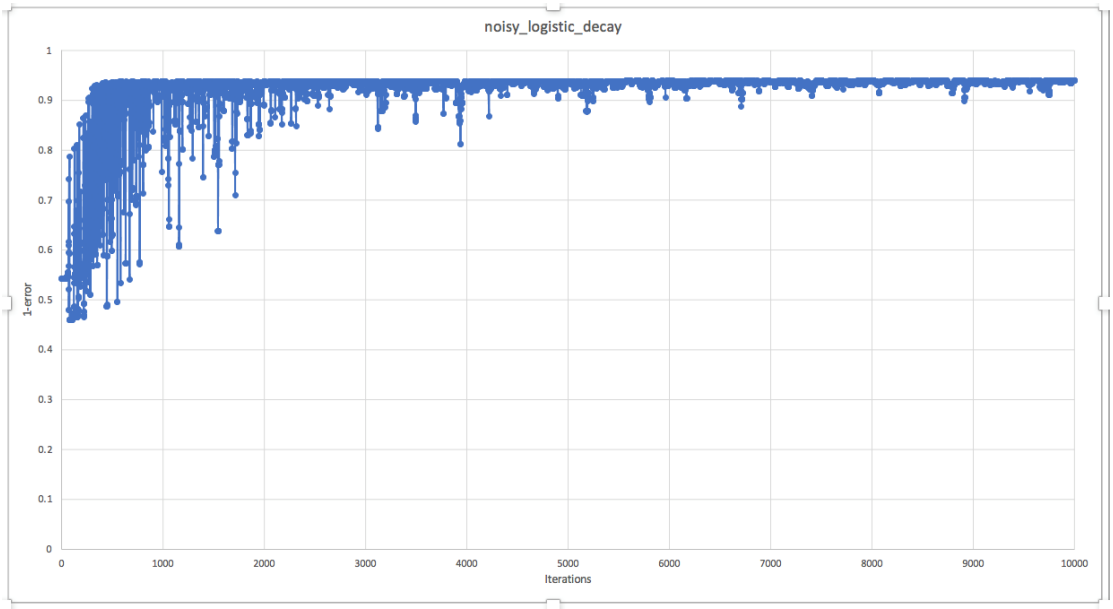


Dataset: earthquake-noisy.data.txt

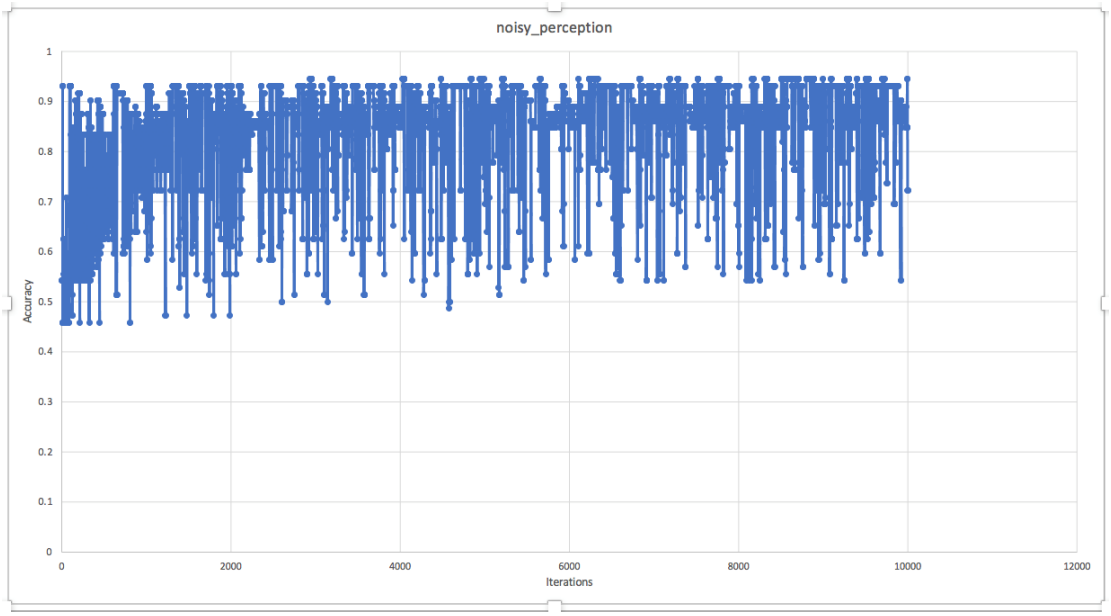
Command: java learn.lc.test.LCEarthquakeNoisy



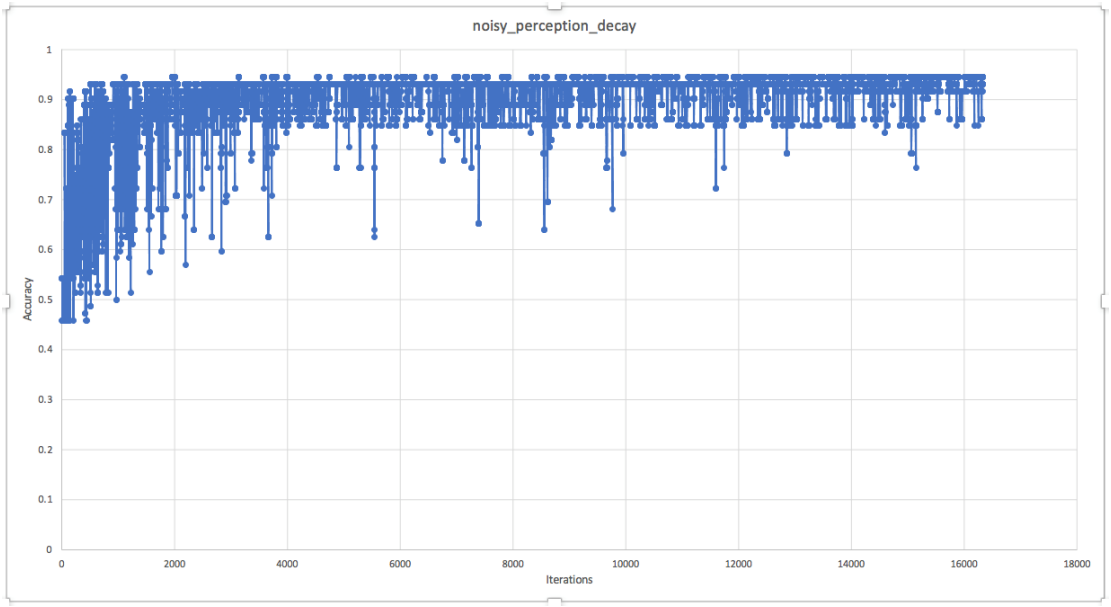
Command: java learn.lc.test.LCEarthquakeNoisyDecaying



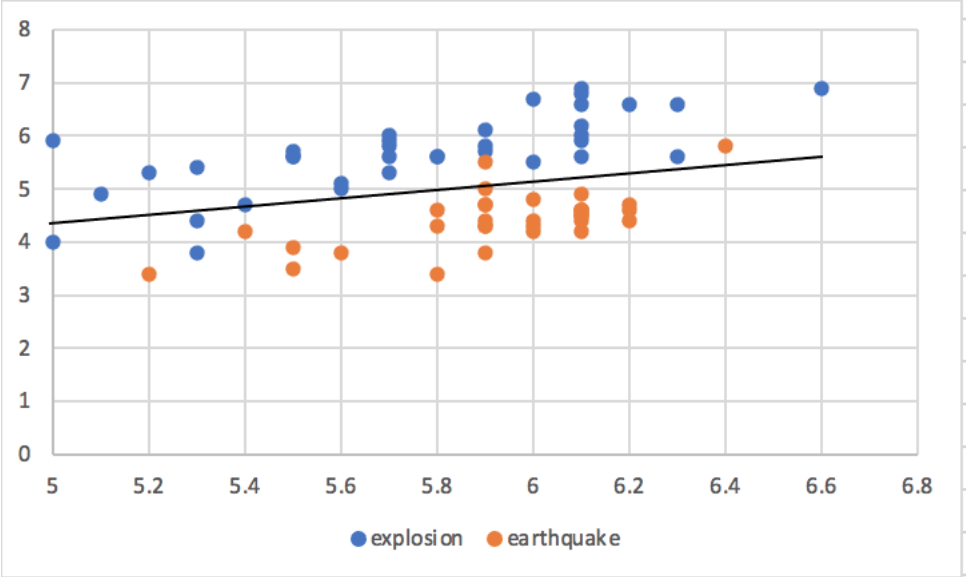
Command: java learn.lc.test.PCEarthquakeCleanNoisy



Command: java learn.lc.test.PCEarthquakeCleanNoisyDecaying

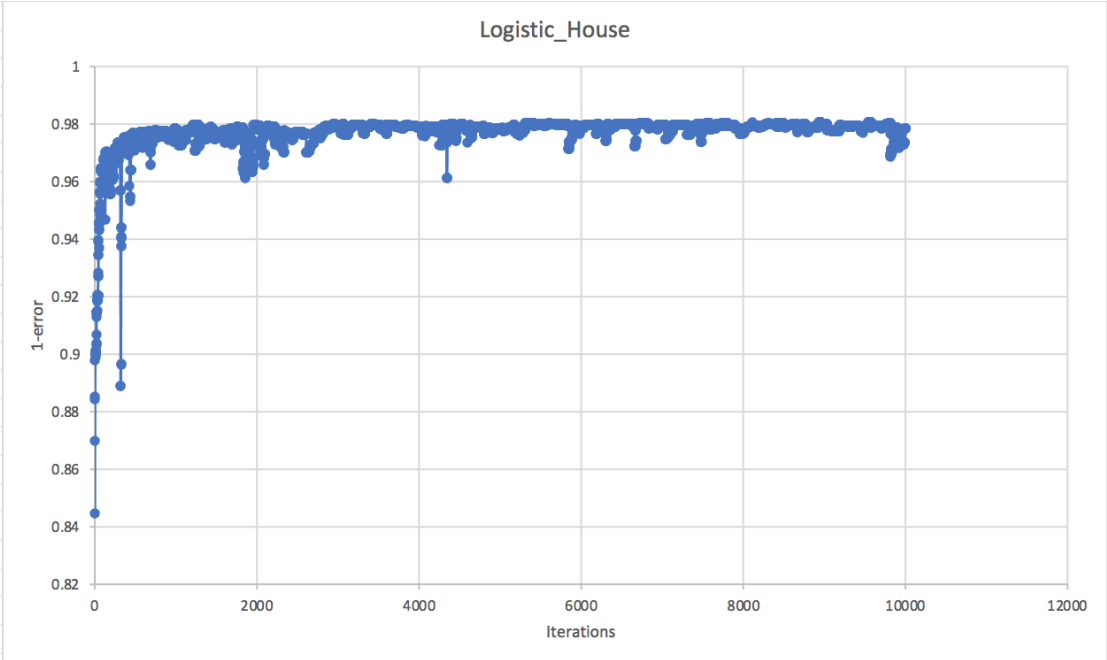


Classification

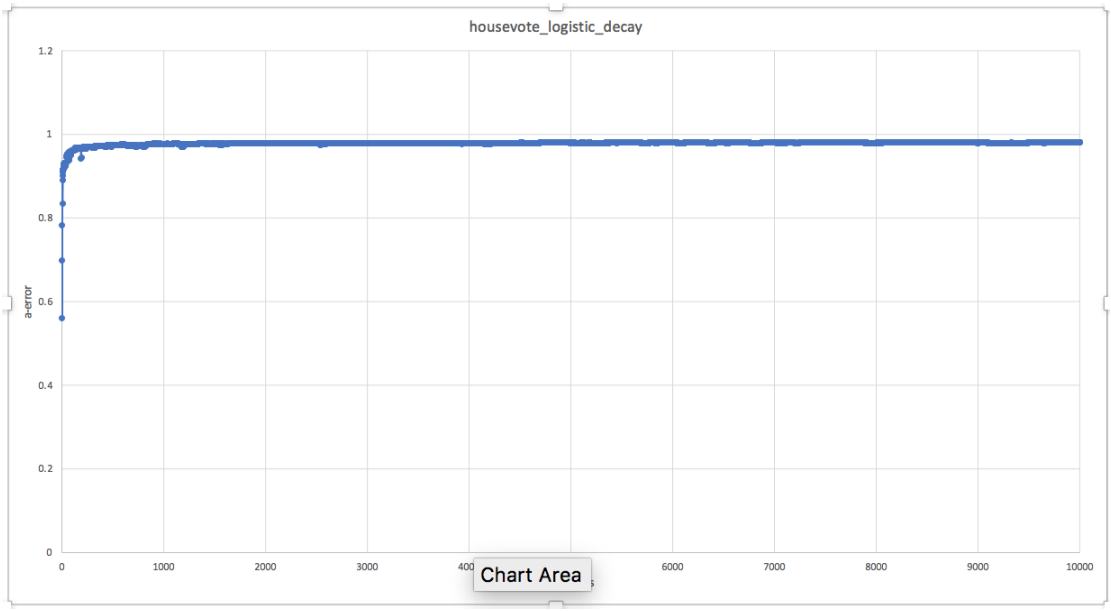


Dataset: house-votes

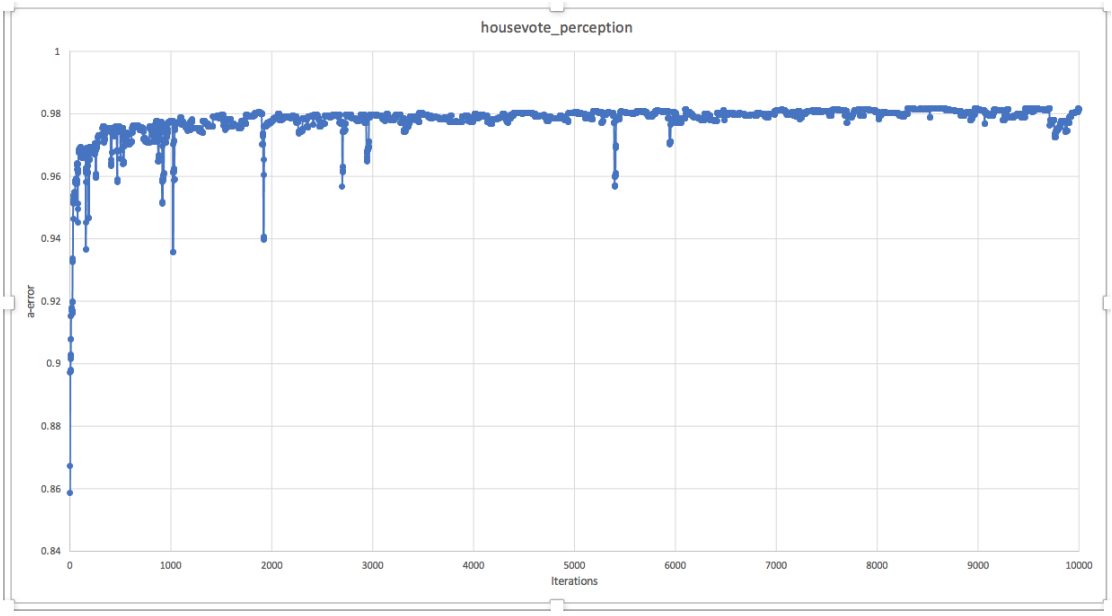
Command: java learn.lc.test.LCHouse



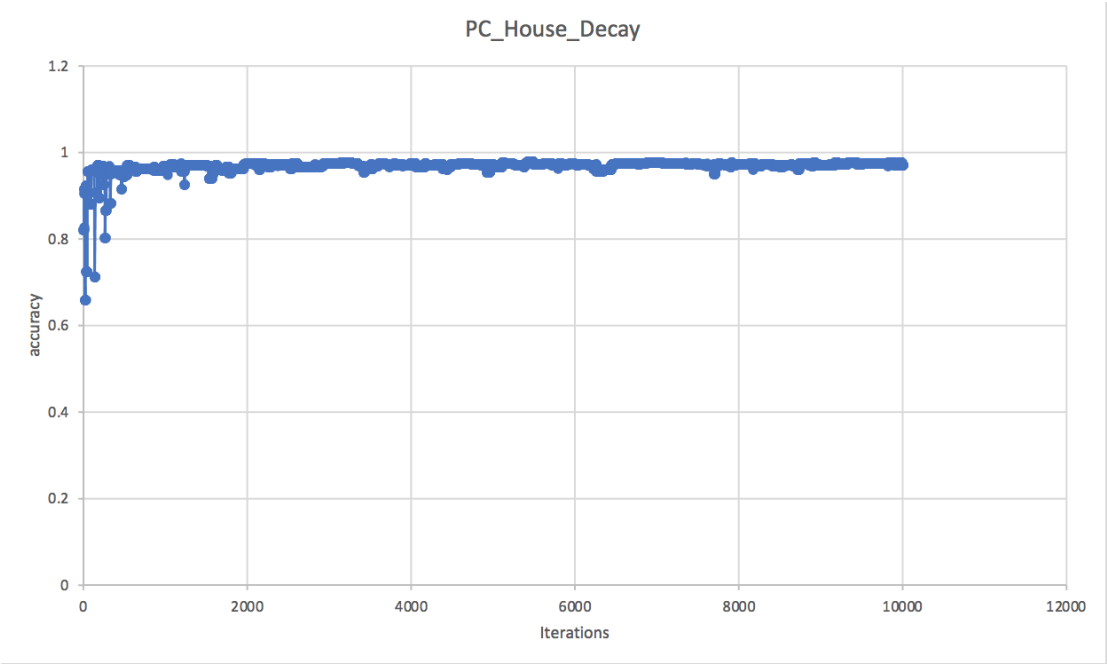
Command: java learn.lc.test.LCHouseDecaying



Command: java learn.lc.test.PCHouse



Command: java learn.lc.test.PCHouseDecaying



Since the house-votes dataset are more than two-dimensional, we are not able to plot the graph for the classification.

---------Neural Networks----------

We implemented the methods in learn.nn.core