Assignment 6

11/28/2017

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**Problem 1:**

Since problem 1 uses a static eta or learning rate, it is important to set the right value for eta. If eta is too large, the increments won’t be precise enough to get close to an error of 0. On the other hand, if eta is too small you may never get close enough to the real answer if there aren’t enough iterations. We found that for small iterations such as 5 or so, you want a larger number than with 100 iterations around .1. This provides enough deltaw every iteration to get close to the value in only a few iterations. With larger iterations, eta can go as small as around .01 to provide a better estimate.

The incremental fashion of delta training is quite interesting. If you set your maximum iterations for batch fashion equal to the number of samples you have, the error found in both fashions will be the exact same. On top of this, the incremental fashion takes much less time (around 1% of the time batch fashion took at a sample size of 100) and has far fewer updates. For a sample size of 100 it takes around 1% of the time and does 100/(100^2) = 1% of the updates to w.

**Problem 2:**