Simplified Visual Bits – 7/9

Joel Jurik

Progress

- Parallelized program to make it ~4x faster
- Fixed a few bugs
- Made other optimizations
  - If the error is greater than .5, than the signs of the weights and the sign of the threshold can be switched in order to create an error less than .5

Problem

- When boosting the error should gradually decrease.
- However, currently the error sometimes increases and sometimes decreases.

Why this could happen

- There is a bug in my program
- There are not enough weights
  - Only using about 50,000 so far due to the time it takes
- There is not enough variation in the weights
  - Tried Gaussian distribution with mean 0 and standard deviation of 1
  - Tried uniform distribution from -1000 to +1000

Why this could happen

- Usually, the best weights classify 58% of the descriptors correctly.
- The absolute best weights I have seen classified 61% of the descriptors correctly.

Plan

- Solve the problem discussed previously
- Make program even faster by calling C++ code
- Instead of using AdaBoost, use GentleBoost
- Create script in order to train final classifier (using LibSVM)
- Create script to test the images