## Accomplishments

* Completed preliminary debugging of the python version of the RbmStack.
* Installed Ubuntu 14.04 + python numpy, scipy, pandas, cudamat, and CUDA 6.5 development tools on the server.
* Installed Anaconda 3.4.1 python numpy, scipy, pandas on laptop.
* Added cudamat support to portions of RbmStack to speed up run time.
* Profiled code execution and found an execution time improvement of about 2x relative to python alone.
* Ran cudamat RBM sample code and found an execution time improvement of about 350x relative to python alone.
* Created public github project glouma01/IS-2014 and uploaded some files.

## To Do

* Complete cudamat optimization of the RbmStack class.
* Convert my MnistAutoencoder experiment from last semester.
* Re-run all experiments in python.
* Review some of the SVM, LSTM and bidirectional LSTM papers more thoroughly.
* Check out other possible paper sources (ICML, KDD)
* Dataset (traceable to source), Problem (poses a learning problem based on a Dataset), Algorithm (standard API), Experiment(applies an Algorithm to solve a Problem)

## Setup procedure for machine learning computer

Download Ubuntu 14.04 ISO and burn image to DVD

Reboot the computer with the DVD in the drive and select boot from CD

Allow installation to erase all other installations

Install useful packages for python3:

* sudo apt-get install python3-numpy
* sudo apt-get install python3-scipy
* sudo apt-get install pandas

Install ssh-server to allow remote login:

* sudo apt-get install openssh-server
* sudo /etc/init.d/ssh restart

Download the CUDA 6.5 .deb file:

* cuda-repo-ubuntu1404\_6.5-14\_amd64.deb

Install CUDA:

* sudo dpkg -i cuda-repo-<distro>\_<version>\_<architecture>.deb
* sudo apt-get update
* sudo apt-get install cuda

Edit .bashrc to update environment variables (note that .bash\_profile might actually be the correct place to put these):

* export PATH=/usr/local/cuda-6.5/bin:$PATH
* export LD\_LIBRARY\_PATH=/usr/local/cuda-6.5/lib64:$LD\_LIBRARY\_PATH

Make ~/ML directory

Get and make cudamat:

* cd ~/ML
* git clone <https://github.com/cudamat/cudamat.git>
* cd cudamat
* make
* python3 test\_cudamat.py
* python3 test\_learn.py

Edit .bashrc to update environment variables:

* export PYTHONPATH=$PYTHONPATH:/home/mark/ML/cudamat