Homework 4: Optimization Methods

Description

In this homework you will practice how to implement different optimization methods using Tensorflow (Undergraduate student) or Numpy (Graduate student).

- To implement and understand each optimization methods.

Instruction

In this homework, you need to fill the block of code only in **UG_twoLayersNN.py** (Undergrad) and **G_twoLayersNN.py** (Grad). You need to fill the block of code for each method:

- Naïve Update
- Momentum Update
- Nestrove Update
- AdaGrad Update
- RMSProb Update
- Adam Update

Record losses every 100 iterations for each update method.

Note:

- In each file there are comments that walk you through the implementation and explanations in each block of code that you have to fill in.
- Points for each block of code is also given in the comment.
- Don't put any print function in your answer.
- Comment your codes.
- Edit/Add any source code outside **TODO** block is not allow.

Submission

- Your submission will contain **1 python file** and **a report**.
- In the report, plot the line chart to compare the loss of each optimization methods, and describes your chart. You can use excel or other tools to plot the chart.
- **Zip** file named via the following convention:
  <SU-EMAIL>_<FIRST-Name>_HW4.zip
  Ex. kpugdeet_Krittaphat_HW4.zip
- Upload zip file to blackboard before 11:59PM (EST Time) 10/27/2017