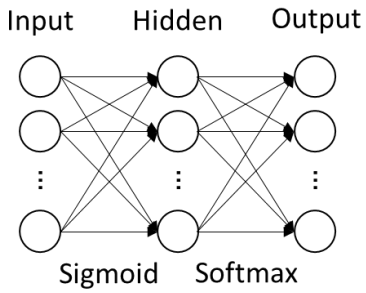
CS 7267- HW 4

In HW4, we are going to implement a neural network for the hand written digit classification problem with the MNIST data. Please use the the MNIST data for HW3, but experiment with only one fold.



The network includes three layers: input, hidden, and output layer.

Input layer: 28*28 nodes; the activation function to the hidden layer is "**sigmoid**"

Hidden layer: you can choose a number of nodes in the hidden layers; the activation function to the output layer is "**softmax**".

Output layer: The number of node in the output layer is 10, which is the number of classes in the MNIST data; The cost function is "**Mean Squared Error**".

To implement the network, you can download the source code at https://github.com/MichalDanielDobrzanski/DeepLearningPython35.

- Use the source, named "network.py" and "test.py". Improve the code for the network above.
- Do not use mnist_loader.py. You can load the data with your own code.

You have to submit the followings to D2L:

1. MS word file
   - Describe what you have done for the homework assignment.
   - **Clarify network design and hyper-parameters.**
   - **MUST include a Learning Curve.**
   - **MUST include an accuracy.**
2. Python source code file(s)
   - Must be well organized (comments, indentation, …)
   - You need to upload the “original python file (*.py)” and also its “PDF” version.
     - For the PDF file, you can just convert the source file to PDF. One way is to print the source file and save to “PDF”.

You have to submit the files SEPERATELY. DO NOT compress into a ZIP file.

Deadline:

The deadline is **11:59pm Friday, March 30, 2018**. Late assignments will be accepted up to 24 hours after the due date for 50% credit. Assignments submitted more than 24 hours late will not be accepted for credit.