ML report

20170517

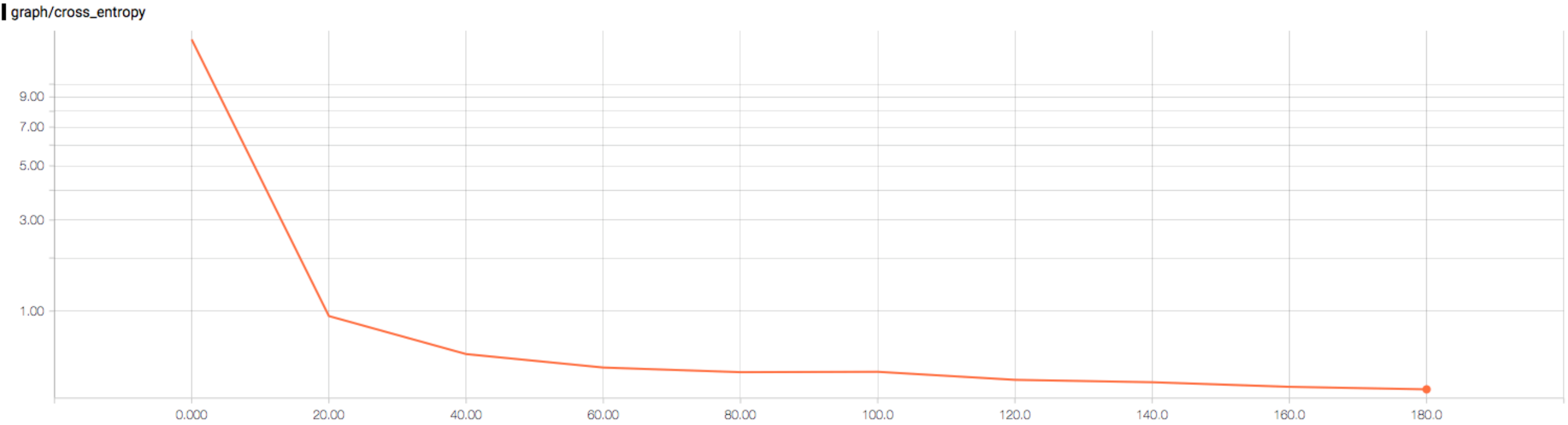
Edited by GC & 定堯

Due to last time we didn’t do well on CNN.
We reproduce the program and this time it seems good.

Also, we implement auto-encoder and do comparison between CNN and fully-connected network.

- This time we still use Kaggle's dataset.
- We divide the data into 420 batches.(Each one is 100 images)
- We do regulation by divide data with 255.

The improvement of CNN



We did two mistake last time:

1. The usage of cross_entropy is being mistaken
2. We mistaken the result of softmax , then we gathered a wrong answer.

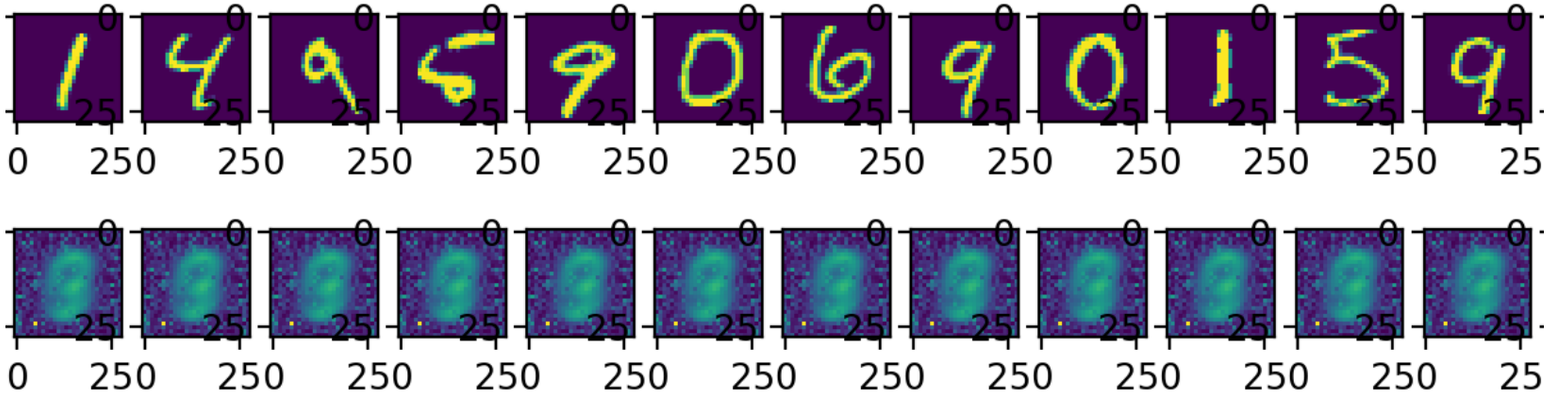
MNIST_result.csv 0.96486

19 hours ago by GC WhiteShadow

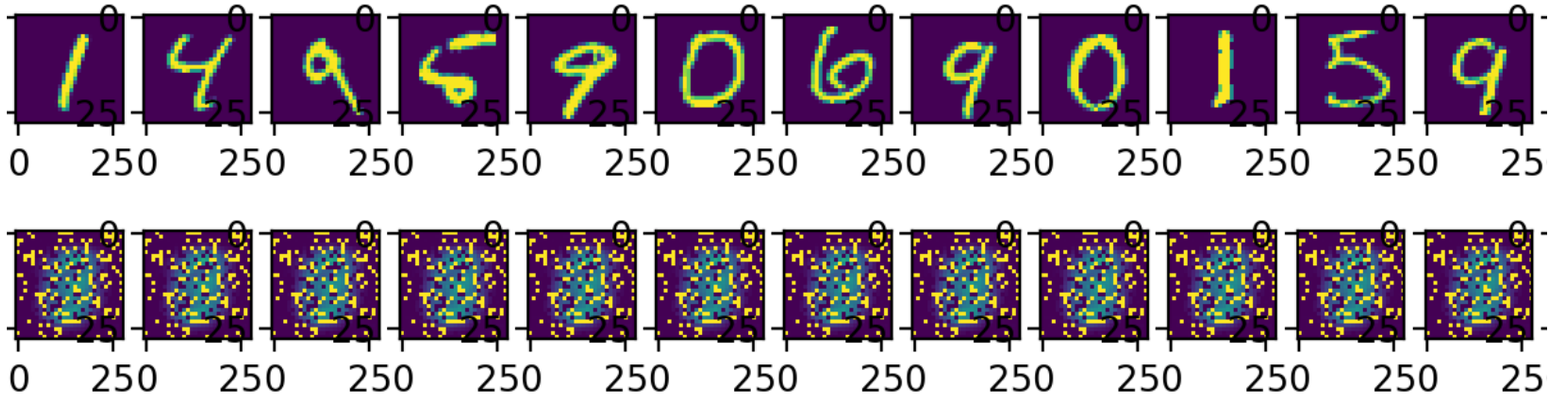
CNN reproduce

the result of the reproduce CNN on Kaggle
Much better than last time

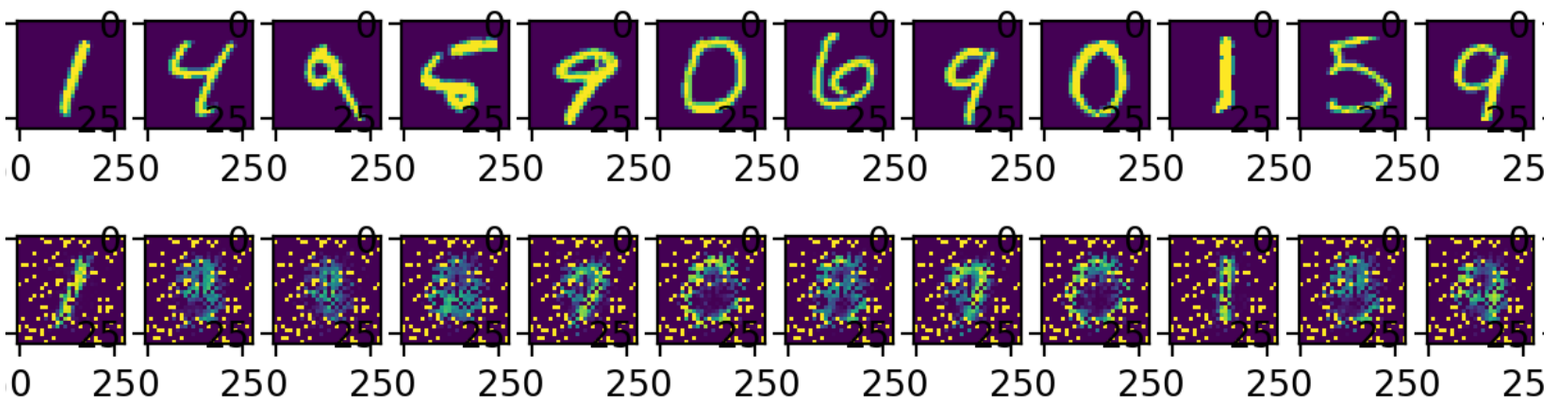
We try several combination of dimension.
And get the following result.



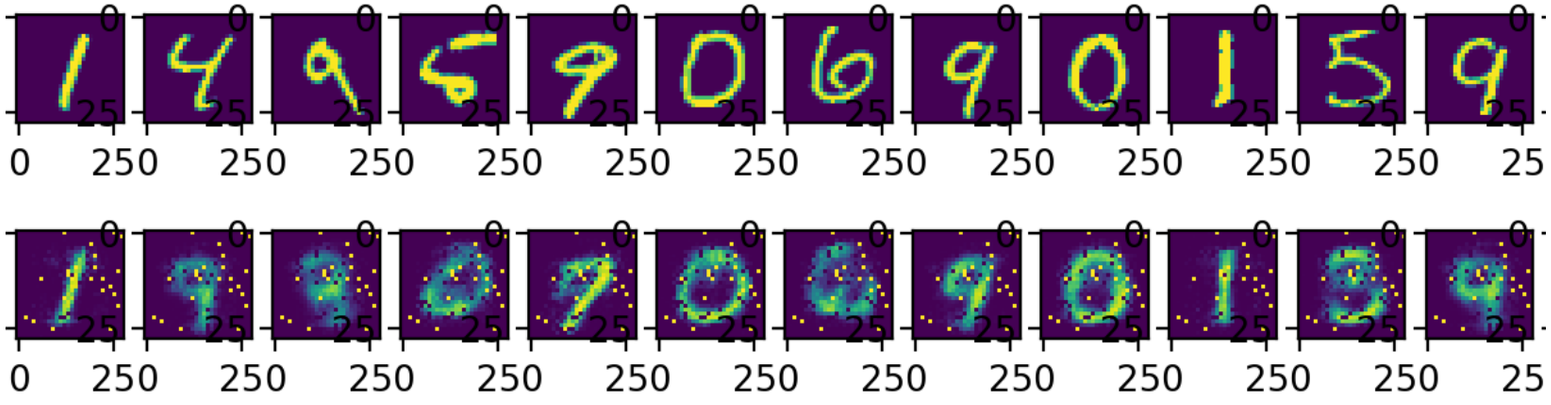
784 > 2



784 > 300 > 100 > 5

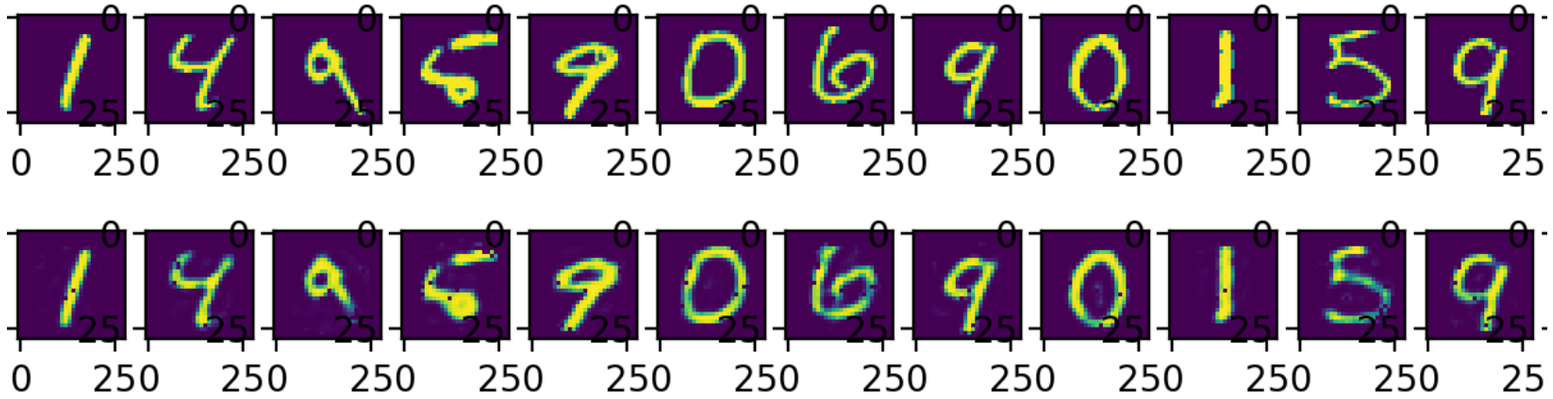


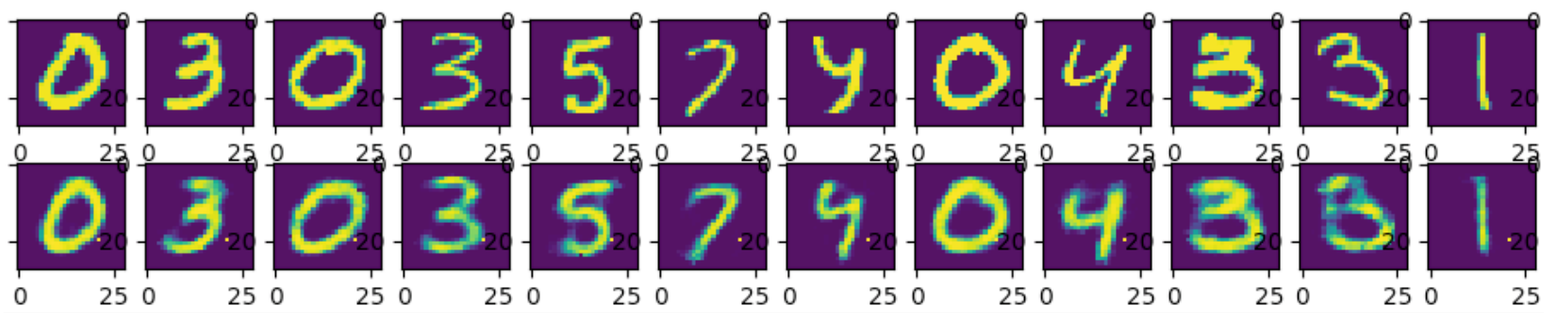
784 > 1000 > 500 > 250 > 125



784 > 300 > 100 > 50

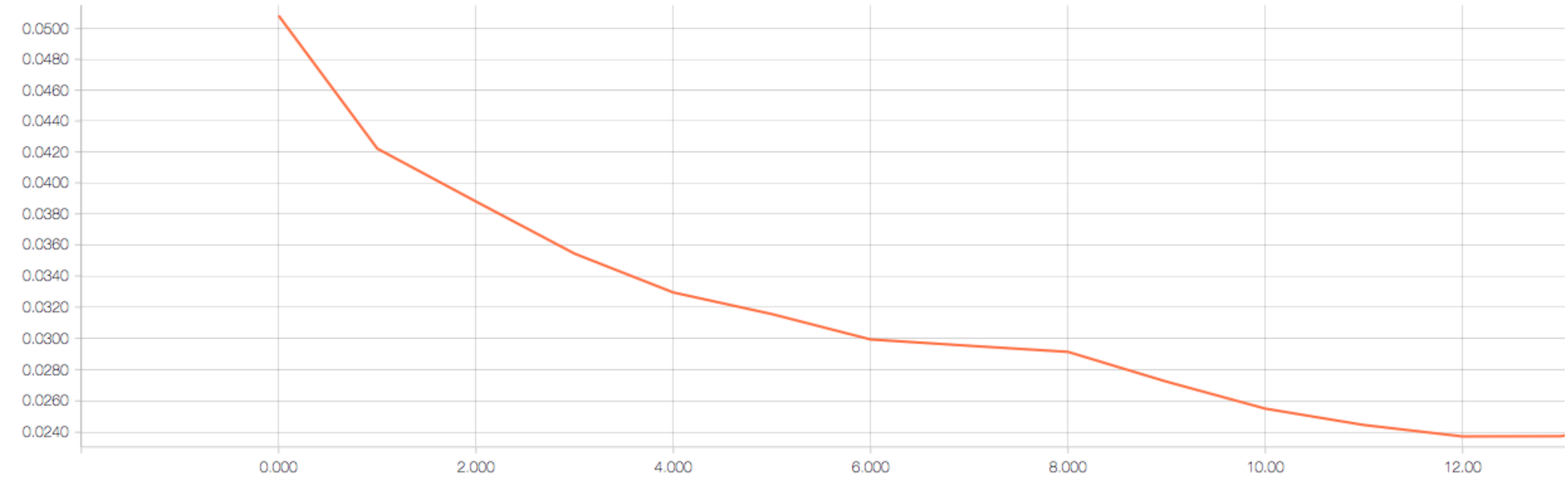
784 > 100



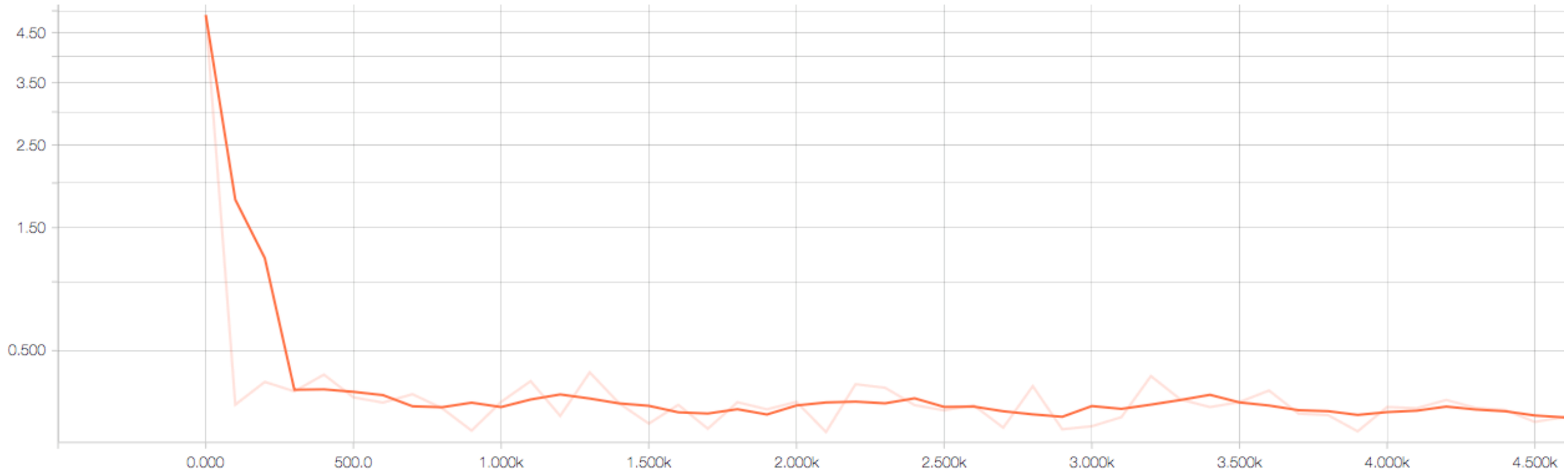


784 > 128 > 64 > 32

Because auto-encoder is used to decrease dimension to make it easier to training, we make the code to run prediction on Kaggle.



cost



cross entropy

MNIST_result.csv **0.96243**

an hour ago by GC WhiteShadow

Auto-encoder

The result of the implementation of auto-encoder gets the above score. Although we get a quite good score, the score still not better than the one of CNN. Hence we'll need some effort on it in the future.

The result might be better with convolutional auto-encoder with denoising technique.