

Assignment 5:

Due Oct 26, 2016, 4pm by email to dalhousieml2016@gmail.com with subject line A5.

1. Go through the MNIST tutorial of Tensorflow at

<https://www.tensorflow.org/versions/r0.11/tutorials>

There are actually two tutorials, the MNIST for beginners and the MNSIT for experts. I recommend doing both as the first one contains some nice explanations of the basic neural networks that we studied so far, including the entropic loss function and the softmax output function. The tutorial for experts includes then an implementation of a convolutional network. You might want to take some fewer iterations so that you programs runs in a more reasonable time.

Plot the evolution of the training error and validation error during training into one graph.

2. Repeat the experiments with a low resolution version of the MNIST images that result from an averaging a square of 4x4 pixels, thus transforming the 28x28 images into 7x7 images. Implement this with a convolution operation and include this part of your code in the solution submission. Compare the performance to the previous performance.