Report for Assignment 3

This code builds up on the modifications from the second assignment, adding more layers, and introducing transposed convolution layers. This assignment was faster to do than the previous one, since it didn't require too many modifications.

Once the concept was understood, the most difficulties were actually fitting the sizes because of typos or small errors.

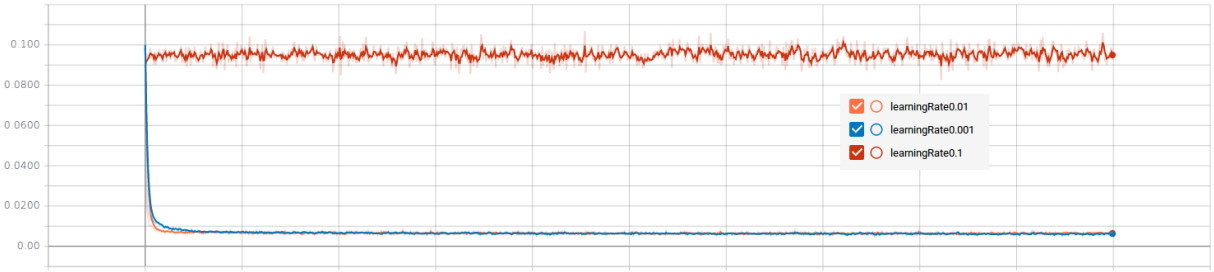
Again, the code for opening Tensorboard is:

```
tensorboard --logdir=/path-to-dir-with-files
```

Changing the learning rate

The following is the graph as outputted by Tensorboard for the three learning rates:

- 0.1
- 0.01
- 0.001



Picture 1: Plot of the three learning rates

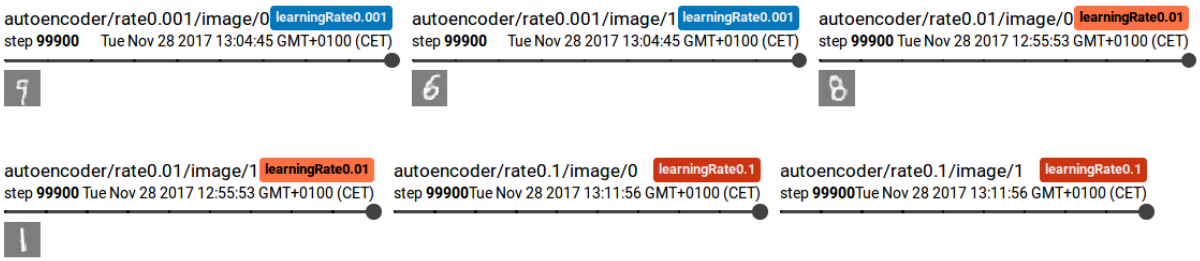
Low learning rates (0.01, 0.001) behave as expected, but 0.1 didn't really reduce the loss. The network didn't learn. I believe that is due to the Optimizer used (Adam).

Plot images

For simplicity, I decided to use Tensorboard functionality too for plotting the images. In order to do that, I added a summary every 100 iterations with the output of the network (reconstructed image).

That way, another tab appears in the browser with the images, saving different runs. Initially it only saves one image from the whole batch, but I modified it to store 2. You can then use the slider to see the progress throughout the session.

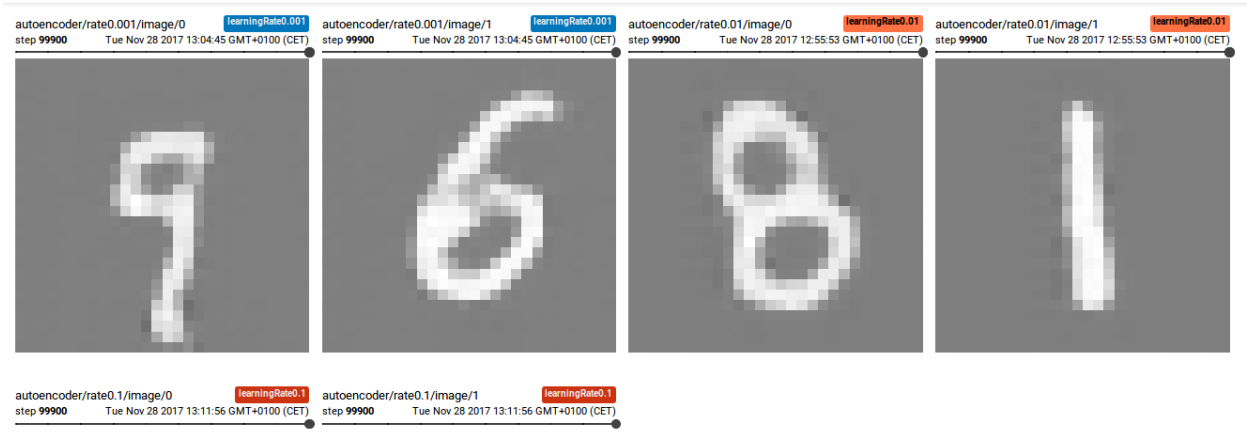
The following are the images in real size:



Picture 2: Reconstructed images, real size

Here you can once more notice how the learning rate = 0.1 did not work.

To improve visibility, you can also expand the pictures:



Picture 3: Reconstructed images