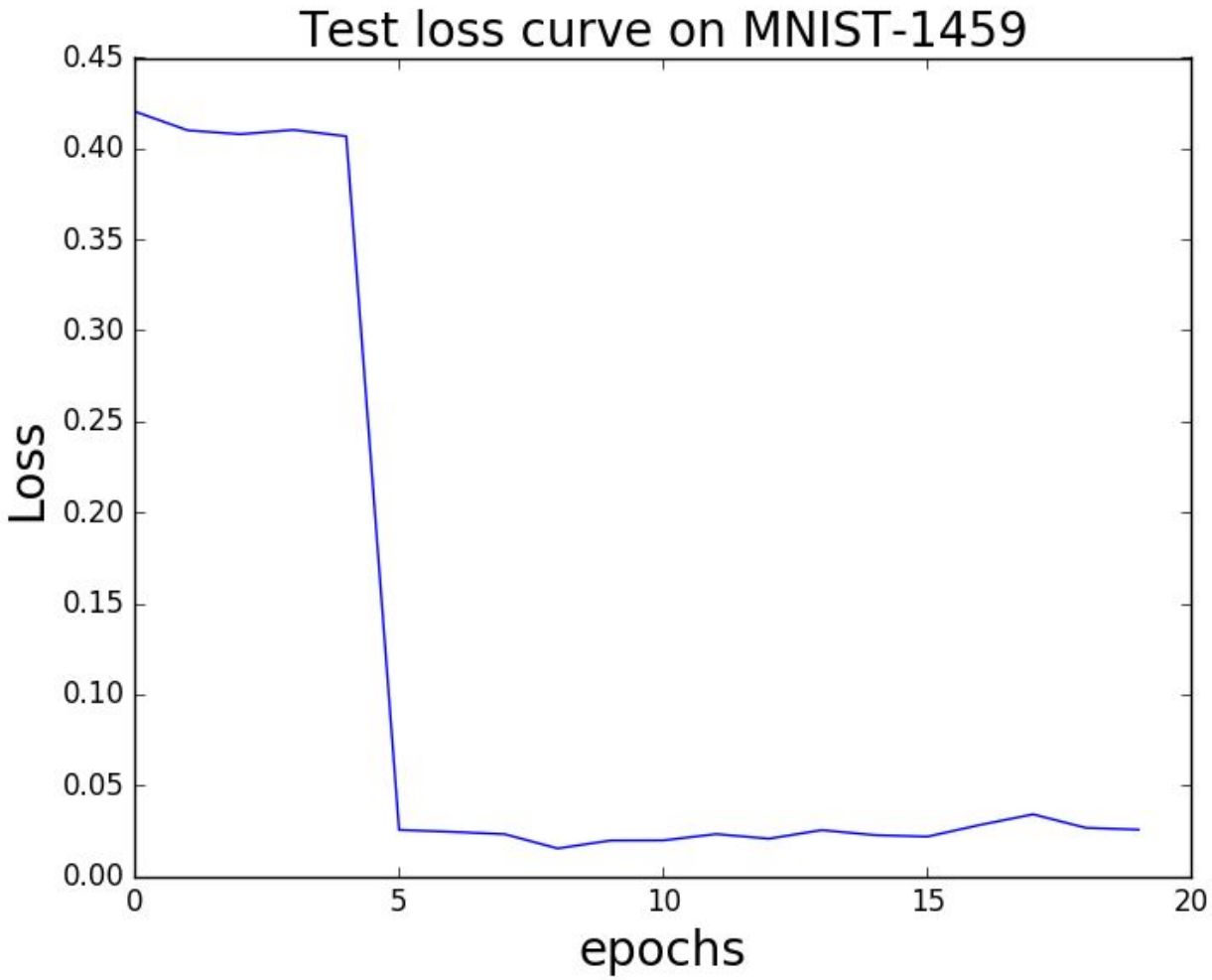
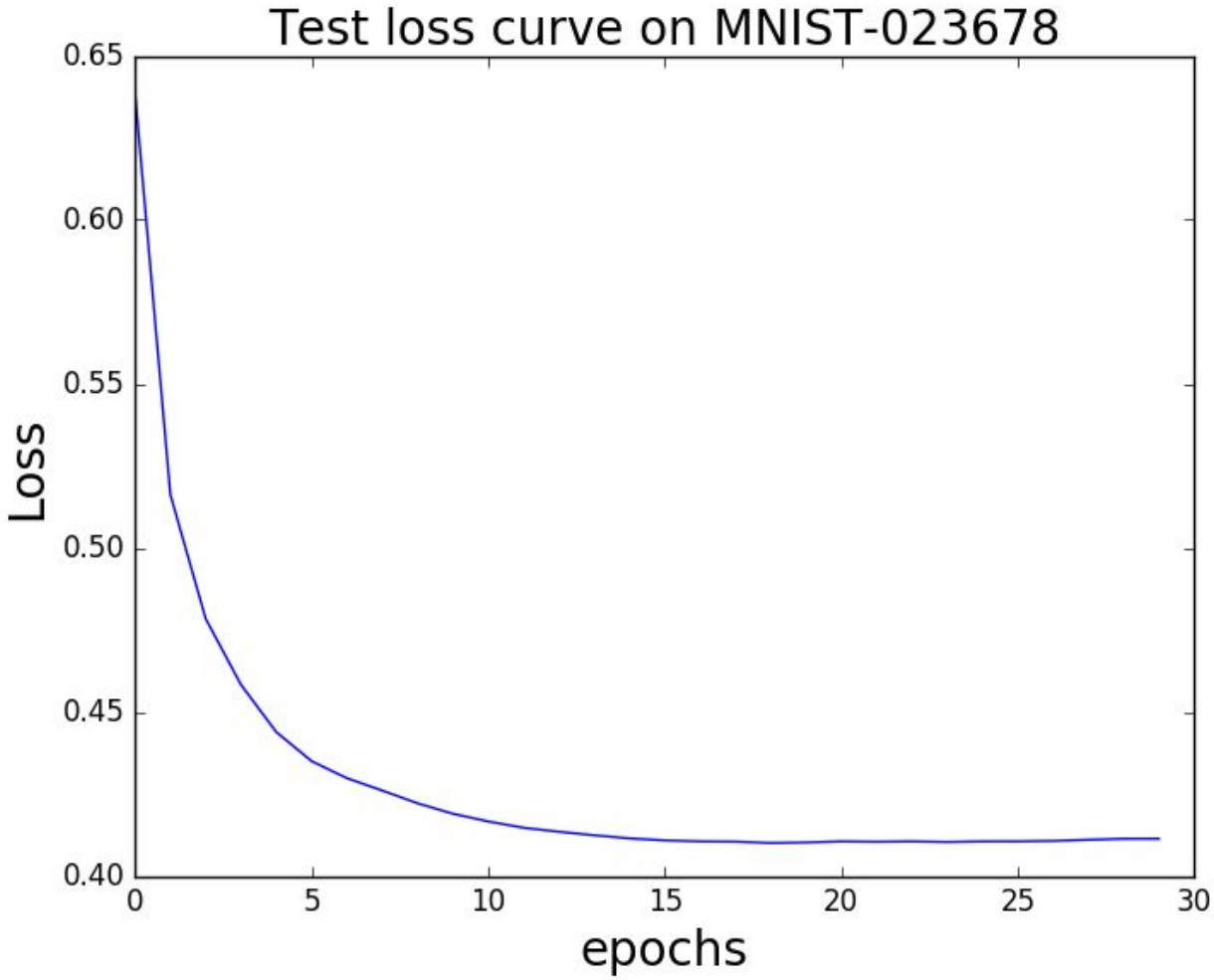
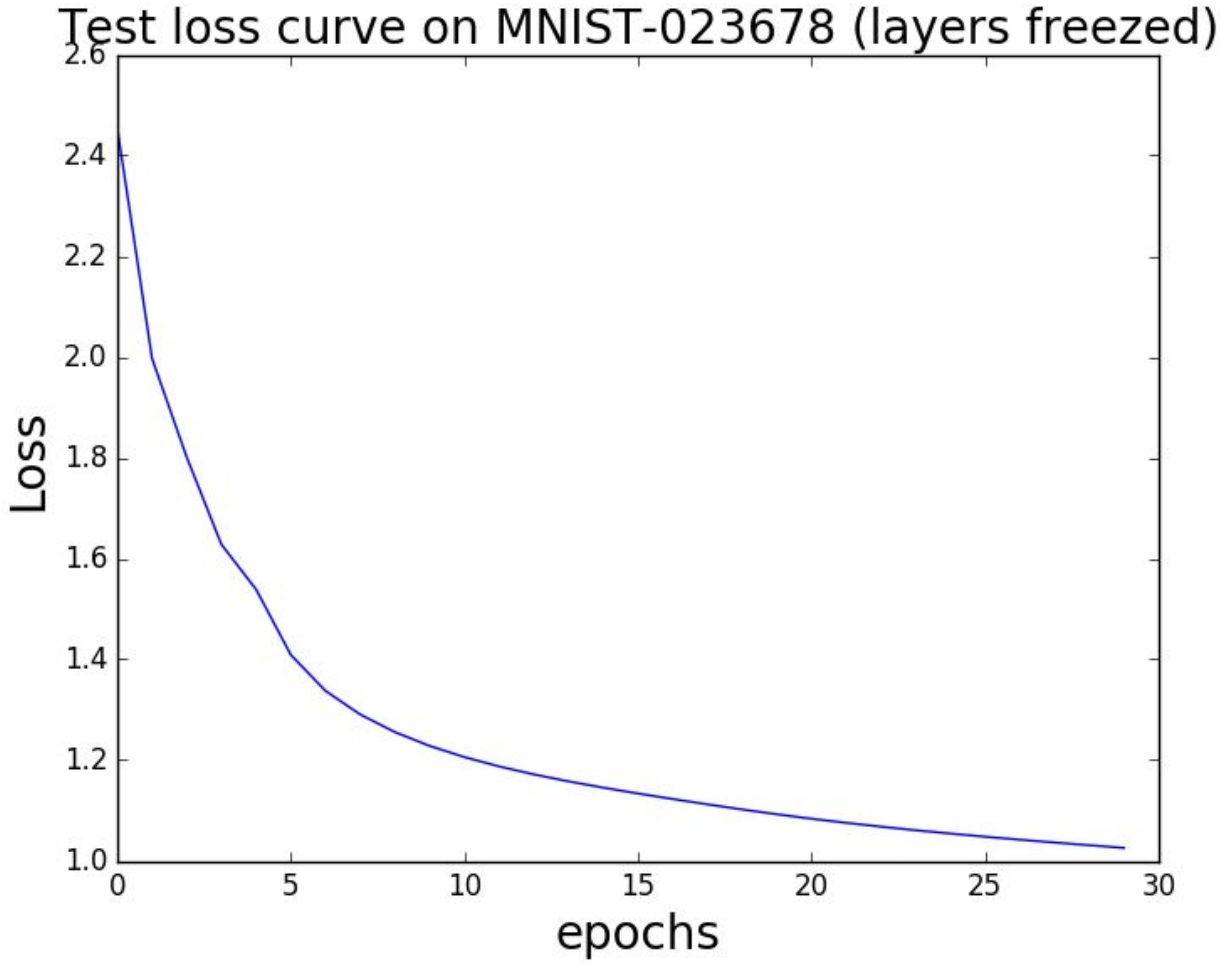
CSE - 527
Homework 6

Submitted by - Naveen Kumar Rai
Student Id - 111207633


Test loss curve on MNIST-1459
Loss
epochs
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0
5
10
15
20


Test loss curve on MNIST-023678
Loss
epochs
0.65
0.60
0.55
0.50
0.45
0.40
0
5
10
15
20
25
30

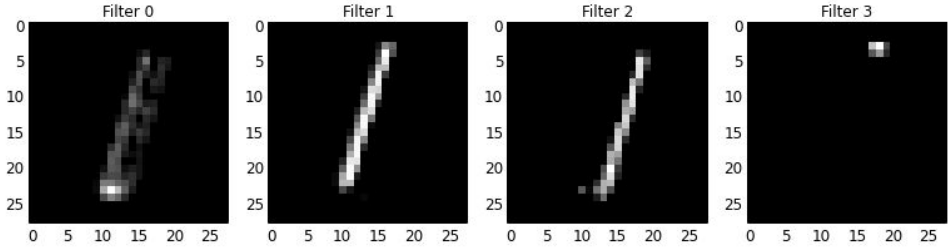

Test loss curve on MNIST-023678 (layers freezed)
Loss
epochs
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0
5
10
15
20
25
30

Filter maps and activations

:
```
import math

with tf.Session() as sess:
    saver.restore(sess, "./my_model_1459.ckpt")
    getActivations(tf.get_default_graph().get_tensor_by_name("conv/conv2d/Relu:0"), X_1459_test[0])
    #getActivations(tf.get_default_graph().get_tensor_by_name("conv/conv2d_2/Relu:0"), X_1459_test[0])
    #getActivations(tf.get_default_graph().get_tensor_by_name("pool3/max_pooling2d/MaxPool:0"), X_1459_test[0])
```

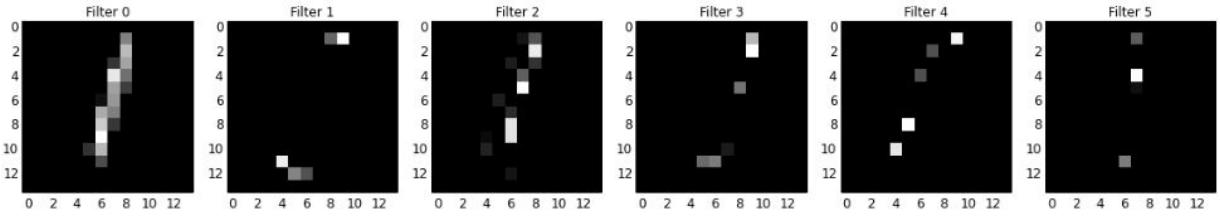
```
INFO:tensorflow:Restoring parameters from ./my_model_1459.ckpt
```

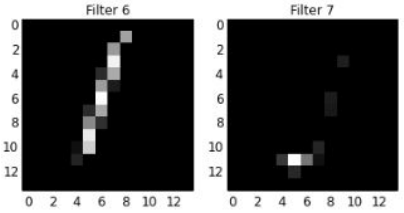



```
import math

with tf.Session() as sess:
    saver.restore(sess, "./my_model_1459.ckpt")
    #getActivations(tf.get_default_graph().get_tensor_by_name("conv/conv2d/Relu:0"), X_1459_test[0])
    getActivations(tf.get_default_graph().get_tensor_by_name("conv/conv2d_2/Relu:0"), X_1459_test[0])
    #getActivations(tf.get_default_graph().get_tensor_by_name("pool3/max_pooling2d/MaxPool:0"), X_1459_test[0])
```

```
INFO:tensorflow:Restoring parameters from ./my_model_1459.ckpt
```

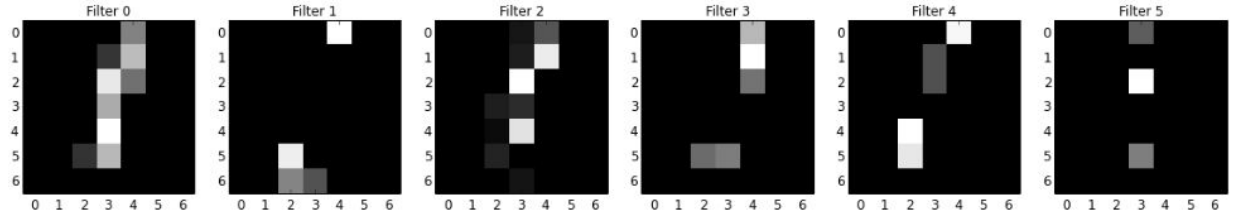


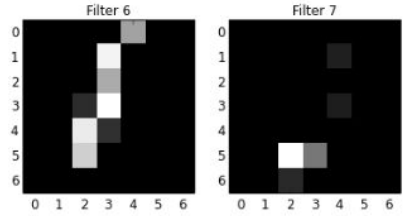


```
import math

with tf.Session() as sess:
    saver.restore(sess, "./my_model_1459.ckpt")
    #getActivations(tf.get_default_graph().get_tensor_by_name("conv/conv2d/Relu:0"), X_1459_test[0])
    #getActivations(tf.get_default_graph().get_tensor_by_name("conv/conv2d_2/Relu:0"), X_1459_test[0])
    getActivations(tf.get_default_graph().get_tensor_by_name("pool3/max_pooling2d/MaxPool:0"), X_1459_test[0])
```

```
INFO:tensorflow:Restoring parameters from ./my_model_1459.ckpt
```

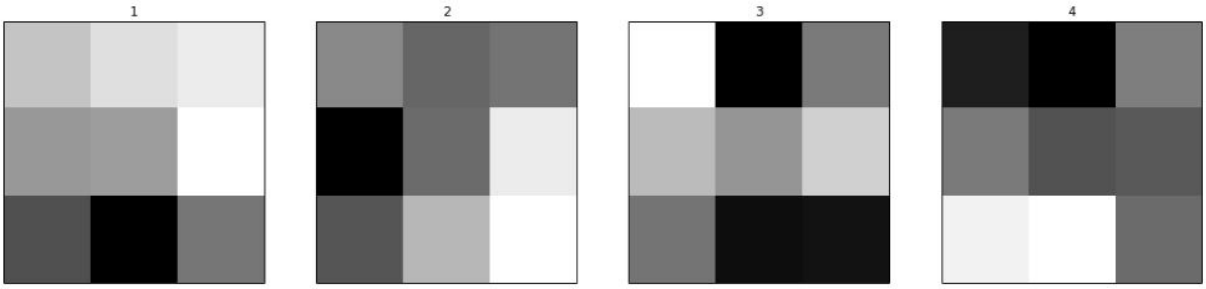




Visualize the convolution kernels

```
with tf.Session() as sess:
    saver.restore(sess, "./my_model_1459.ckpt")
    plotConvLayerWeights("conv2d", sess)
    #plotConvLayerWeights("conv2d_1", sess)
```

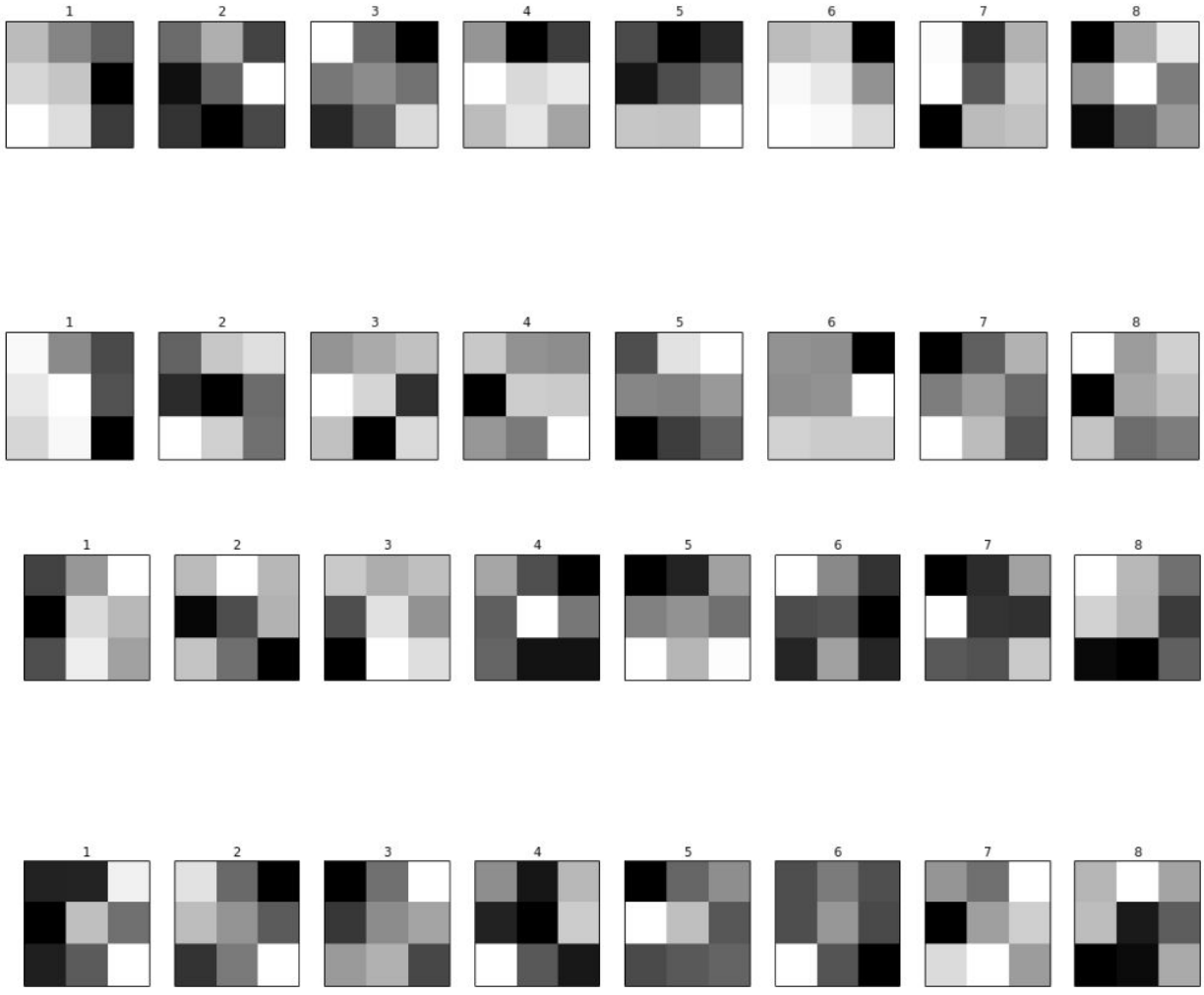
```
INFO:tensorflow:Restoring parameters from ./my_model_1459.ckpt
(3, 3, 1, 4)
```



Visualize the convolution kernels

```
with tf.Session() as sess:
    saver.restore(sess, "./my_model_1459.ckpt")
    #plotConvLayerWeights("conv2d", sess)
    plotConvLayerWeights("conv2d_1", sess)
```

```
INFO:tensorflow:Restoring parameters from ./my_model_1459.ckpt
(3, 3, 4, 8)
```



Show the Execution Graph

```
reset_graph()

# restore the graph of 1459
restore_saver = tf.train.import_meta_graph("./my_model_1459.ckpt.meta")
show_graph(tf.get_default_graph())
```