1. **MNIST Data:**

step 0, training accuracy 0.04

step 100, training accuracy 0.8

step 200, training accuracy 0.86

step 300, training accuracy 0.9

step 400, training accuracy 0.92

test accuracy 0.9474

Time for building convnet:

150401

**Accuracy Increased in each step and accuracy is more compared to fashion dataset.**

1. **Filter Size – 16, 36 & Final Layer – 128**

step 0, training accuracy 0.12

step 100, training accuracy 0.56

step 200, training accuracy 0.84

step 300, training accuracy 0.94

step 400, training accuracy 0.88

test accuracy 0.893

Time for building convnet:

33983

Took less time compared to Filter Sizes – 1, 64 & Final Layer – 64

Accuracy is more compared to MNIST Fashion Dataset

**Used “AdamOptimizer” for above cases.**

1. GradientDescentOptimizer ( Filter Size – 16, 36 & Final Layer – 128)

step 0, training accuracy 0.1

step 100, training accuracy 0.18

step 200, training accuracy 0.12

step 300, training accuracy 0.2

step 400, training accuracy 0.12

test accuracy 0.1735

Time for building convnet:

33762

1. AdagradOptimizer (Filter Size – 16, 36 & Final Layer – 1024)

step 0, training accuracy 0.2

step 100, training accuracy 0.16

step 200, training accuracy 0.1

step 300, training accuracy 0.08

step 400, training accuracy 0.1

test accuracy 0.1509

Time for building convnet:

36254

**Adam > Gradient Optimizers > Adagrad**