**Given Mnsit Dataset**

1.

Adagrad optimizer

Output:

step 0, training accuracy 0.06

step 100, training accuracy 0.4

step 200, training accuracy 0.48

step 300, training accuracy 0.64

step 400, training accuracy 0.64

test accuracy 0.6137

Time for building convnet:

103051

2.

Gradient descent optimizer

Output:

step 0, training accuracy 0.06

step 100, training accuracy 0.12

step 200, training accuracy 0.42

step 300, training accuracy 0.28

step 400, training accuracy 0.42

test accuracy 0.4124

Time for building convnet:

89724

3.

Adam optimizer

step 0, training accuracy 0.22

step 100, training accuracy 0.8

step 200, training accuracy 0.82

step 300, training accuracy 0.84

step 400, training accuracy 0.76

test accuracy 0.8089

Time for building convnet:

95280

4.

RMSprop optimizer

step 0, training accuracy 0.08

step 100, training accuracy 0.72

step 200, training accuracy 0.82

step 300, training accuracy 0.82

step 400, training accuracy 0.9

test accuracy 0.8245

Time for building convnet:

89534

**MNSIT Fashion Dataset**

1.

Gradient descent optimizer

Output:

step 0, training accuracy 0.12

step 100, training accuracy 0.1

step 200, training accuracy 0.16

step 300, training accuracy 0.12

step 400, training accuracy 0.2

test accuracy 0.1632

Time for building convnet:

33242

2.

Adagrad optimizer

Output:

step 0, training accuracy 0.08

step 100, training accuracy 0.14

step 200, training accuracy 0.18

step 300, training accuracy 0.06

step 400, training accuracy 0.1

test accuracy 0.1187

Time for building convnet:

34092

3.

Adam optimizer

Output:

step 0, training accuracy 0.08

step 100, training accuracy 0.64

step 200, training accuracy 0.78

step 300, training accuracy 0.86

step 400, training accuracy 0.9

test accuracy 0.8994

Time for building convnet:

39321

4.

Rms prop optimizer

Output:

step 0, training accuracy 0.18

step 100, training accuracy 0.12

step 200, training accuracy 0.64

step 300, training accuracy 0.66

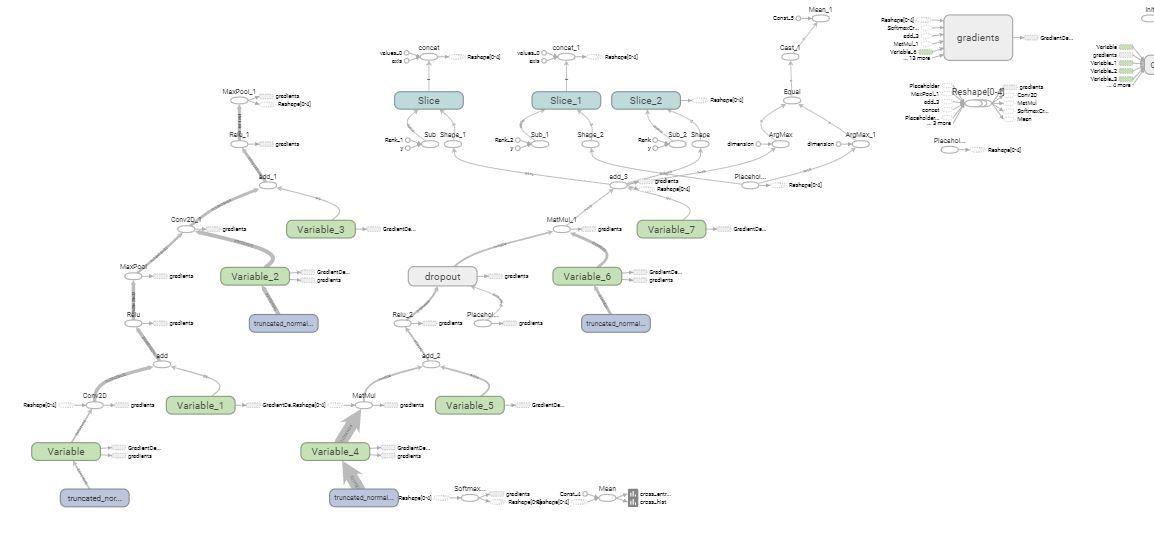
step 400, training accuracy 0.88

test accuracy 0.8594

Time for building convnet:

37602

**Tensorboard Graph**

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