## Batch 100, alpha 5e-5, raw data,

Loading Train Filenames and Label Data...Done in 0.72 seconds

Loading Test Filenames and Label Data...Done in 0.34 seconds

Initializing input data normalization.

|========================================================================================|

| Epoch | Iteration | Time Elapsed | Mini-batch | Mini-batch | Base Learning |

| | | (hh:mm:ss) | Accuracy | Loss | Rate |

|========================================================================================|

| 1 | 1 | 00:00:00 | 6.00% | 14.6025 | 5.0000e-05 |

| 1 | 50 | 00:00:05 | 13.00% | 8.3597 | 5.0000e-05 |

| 1 | 100 | 00:00:10 | 31.00% | 4.2186 | 5.0000e-05 |

| 1 | 150 | 00:00:15 | 31.00% | 2.9807 | 5.0000e-05 |

| 2 | 200 | 00:00:21 | 47.00% | 2.1895 | 5.0000e-05 |

| 2 | 250 | 00:00:27 | 42.00% | 2.0679 | 5.0000e-05 |

| 2 | 300 | 00:00:32 | 48.00% | 1.8435 | 5.0000e-05 |

| 3 | 350 | 00:00:38 | 50.00% | 1.8056 | 5.0000e-05 |

| 3 | 400 | 00:00:44 | 61.00% | 1.3933 | 5.0000e-05 |

| 3 | 450 | 00:00:50 | 49.00% | 1.7505 | 5.0000e-05 |

| 4 | 500 | 00:00:56 | 60.00% | 1.6342 | 5.0000e-05 |

| 4 | 550 | 00:01:03 | 57.00% | 1.4649 | 5.0000e-05 |

| 4 | 600 | 00:01:10 | 54.00% | 1.4113 | 5.0000e-05 |

| 5 | 650 | 00:01:17 | 66.00% | 1.1762 | 5.0000e-05 |

| 5 | 700 | 00:01:24 | 65.00% | 1.1085 | 5.0000e-05 |

| 5 | 750 | 00:01:31 | 58.00% | 1.4891 | 5.0000e-05 |

| 6 | 800 | 00:01:38 | 67.00% | 1.1240 | 5.0000e-05 |

| 6 | 850 | 00:01:45 | 71.00% | 1.1069 | 5.0000e-05 |

| 6 | 900 | 00:01:52 | 73.00% | 0.9359 | 5.0000e-05 |

| 7 | 950 | 00:01:59 | 65.00% | 1.1618 | 5.0000e-05 |

| 7 | 1000 | 00:02:07 | 65.00% | 1.2308 | 5.0000e-05 |

| 7 | 1050 | 00:02:14 | 66.00% | 1.0472 | 5.0000e-05 |

| 8 | 1100 | 00:02:22 | 67.00% | 1.1897 | 5.0000e-05 |

| 8 | 1150 | 00:02:29 | 70.00% | 0.9409 | 5.0000e-05 |

| 8 | 1200 | 00:02:36 | 66.00% | 1.0919 | 5.0000e-05 |

| 9 | 1250 | 00:02:44 | 78.00% | 0.7267 | 5.0000e-05 |

| 9 | 1300 | 00:02:51 | 74.00% | 0.7264 | 5.0000e-05 |

| 9 | 1350 | 00:02:58 | 63.00% | 1.0485 | 5.0000e-05 |

| 10 | 1400 | 00:03:05 | 68.00% | 0.7965 | 5.0000e-05 |

| 10 | 1450 | 00:03:12 | 74.00% | 0.7009 | 5.0000e-05 |

| 10 | 1500 | 00:03:19 | 65.00% | 0.8680 | 5.0000e-05 |

| 10 | 1530 | 00:03:23 | 75.00% | 0.7798 | 5.0000e-05 |

|========================================================================================|

Trained in in 211.45 seconds

val\_acc = 0.7441

test\_acc = 0.7144

**test\_acc =**

**0.6931**

**val\_acc =**

**0.6982**

**train\_acc =**

**0.7662**

## Batch 100, alpha 5e-5, aug data,

Loading Train Filenames and Label Data...Done in 1.92 seconds

Loading Test Filenames and Label Data...Done in 1.54 seconds

Initializing input data normalization.

|========================================================================================|

| Epoch | Iteration | Time Elapsed | Mini-batch | Mini-batch | Base Learning |

| | | (hh:mm:ss) | Accuracy | Loss | Rate |

|========================================================================================|

| 1 | 1 | 00:00:00 | 1.00% | 15.5602 | 5.0000e-05 |

| 1 | 50 | 00:00:03 | 13.00% | 9.0513 | 5.0000e-05 |

| 1 | 100 | 00:00:05 | 11.00% | 4.6972 | 5.0000e-05 |

| 1 | 150 | 00:00:07 | 7.00% | 4.0568 | 5.0000e-05 |

| 1 | 200 | 00:00:09 | 3.00% | 3.8076 | 5.0000e-05 |

| 1 | 250 | 00:00:12 | 7.00% | 3.5550 | 5.0000e-05 |

| 1 | 300 | 00:00:14 | 9.00% | 3.3037 | 5.0000e-05 |

| 1 | 350 | 00:00:17 | 8.00% | 2.9401 | 5.0000e-05 |

| 1 | 400 | 00:00:19 | 9.00% | 3.1261 | 5.0000e-05 |

| 1 | 450 | 00:00:21 | 13.00% | 2.8152 | 5.0000e-05 |

| 1 | 500 | 00:00:24 | 9.00% | 3.1290 | 5.0000e-05 |

| 1 | 550 | 00:00:27 | 8.00% | 3.0805 | 5.0000e-05 |

| 1 | 600 | 00:00:29 | 6.00% | 2.9700 | 5.0000e-05 |

| 1 | 650 | 00:00:32 | 7.00% | 2.8976 | 5.0000e-05 |

| 1 | 700 | 00:00:34 | 14.00% | 3.0106 | 5.0000e-05 |

| 1 | 750 | 00:00:36 | 12.00% | 2.8919 | 5.0000e-05 |

| 2 | 800 | 00:00:39 | 14.00% | 2.8966 | 5.0000e-05 |

| 2 | 850 | 00:00:42 | 9.00% | 2.8351 | 5.0000e-05 |

| 2 | 900 | 00:00:44 | 8.00% | 2.9453 | 5.0000e-05 |

| 2 | 950 | 00:00:46 | 11.00% | 2.8819 | 5.0000e-05 |

| 2 | 1000 | 00:00:49 | 12.00% | 2.7296 | 5.0000e-05 |

| 2 | 1050 | 00:00:52 | 11.00% | 2.8730 | 5.0000e-05 |

| 2 | 1100 | 00:00:56 | 4.00% | 3.0355 | 5.0000e-05 |

| 2 | 1150 | 00:00:59 | 9.00% | 2.6914 | 5.0000e-05 |

| 2 | 1200 | 00:01:01 | 8.00% | 3.1344 | 5.0000e-05 |

| 2 | 1250 | 00:01:03 | 12.00% | 2.8529 | 5.0000e-05 |

| 2 | 1300 | 00:01:06 | 10.00% | 2.8266 | 5.0000e-05 |

| 2 | 1350 | 00:01:08 | 8.00% | 2.8031 | 5.0000e-05 |

| 2 | 1400 | 00:01:11 | 10.00% | 2.7887 | 5.0000e-05 |

| 2 | 1450 | 00:01:13 | 11.00% | 2.9673 | 5.0000e-05 |

| 2 | 1500 | 00:01:16 | 7.00% | 3.1337 | 5.0000e-05 |

| 3 | 1550 | 00:01:18 | 19.00% | 2.7567 | 5.0000e-05 |

| 3 | 1600 | 00:01:21 | 6.00% | 3.0758 | 5.0000e-05 |

| 3 | 1650 | 00:01:23 | 9.00% | 2.8890 | 5.0000e-05 |

| 3 | 1700 | 00:01:25 | 9.00% | 3.0174 | 5.0000e-05 |

| 3 | 1750 | 00:01:28 | 10.00% | 2.8182 | 5.0000e-05 |

| 3 | 1800 | 00:01:30 | 11.00% | 2.7864 | 5.0000e-05 |

| 3 | 1850 | 00:01:33 | 3.00% | 2.8561 | 5.0000e-05 |

| 3 | 1900 | 00:01:35 | 12.00% | 2.8069 | 5.0000e-05 |

| 3 | 1950 | 00:01:37 | 13.00% | 2.7802 | 5.0000e-05 |

| 3 | 2000 | 00:01:40 | 13.00% | 2.7084 | 5.0000e-05 |

| 3 | 2050 | 00:01:42 | 12.00% | 2.8919 | 5.0000e-05 |

| 3 | 2100 | 00:01:45 | 14.00% | 2.7526 | 5.0000e-05 |

| 3 | 2150 | 00:01:47 | 13.00% | 2.7555 | 5.0000e-05 |

| 3 | 2200 | 00:01:50 | 9.00% | 2.6999 | 5.0000e-05 |

| 3 | 2250 | 00:01:52 | 13.00% | 2.9328 | 5.0000e-05 |

| 4 | 2300 | 00:01:55 | 10.00% | 2.6792 | 5.0000e-05 |

| 4 | 2350 | 00:01:57 | 10.00% | 2.8996 | 5.0000e-05 |

| 4 | 2400 | 00:01:59 | 7.00% | 2.8409 | 5.0000e-05 |

| 4 | 2450 | 00:02:02 | 4.00% | 2.8422 | 5.0000e-05 |

| 4 | 2500 | 00:02:04 | 7.00% | 2.8271 | 5.0000e-05 |

| 4 | 2550 | 00:02:07 | 13.00% | 2.7849 | 5.0000e-05 |

| 4 | 2600 | 00:02:09 | 6.00% | 2.8296 | 5.0000e-05 |

| 4 | 2650 | 00:02:11 | 8.00% | 2.7566 | 5.0000e-05 |

| 4 | 2700 | 00:02:14 | 9.00% | 2.8426 | 5.0000e-05 |

| 4 | 2750 | 00:02:16 | 10.00% | 2.7830 | 5.0000e-05 |

| 4 | 2800 | 00:02:19 | 11.00% | 2.6906 | 5.0000e-05 |

| 4 | 2850 | 00:02:21 | 10.00% | 2.8114 | 5.0000e-05 |

| 4 | 2900 | 00:02:23 | 14.00% | 2.7667 | 5.0000e-05 |

| 4 | 2950 | 00:02:26 | 14.00% | 2.6509 | 5.0000e-05 |

| 4 | 3000 | 00:02:28 | 8.00% | 2.8046 | 5.0000e-05 |

| 4 | 3050 | 00:02:31 | 18.00% | 2.6228 | 5.0000e-05 |

| 5 | 3100 | 00:02:33 | 15.00% | 2.7920 | 5.0000e-05 |

| 5 | 3150 | 00:02:36 | 11.00% | 2.8184 | 5.0000e-05 |

| 5 | 3200 | 00:02:38 | 10.00% | 2.7060 | 5.0000e-05 |

| 5 | 3250 | 00:02:41 | 12.00% | 2.8839 | 5.0000e-05 |

| 5 | 3300 | 00:02:43 | 9.00% | 2.7885 | 5.0000e-05 |

| 5 | 3350 | 00:02:46 | 9.00% | 2.7969 | 5.0000e-05 |

| 5 | 3400 | 00:02:48 | 9.00% | 2.8306 | 5.0000e-05 |

| 5 | 3450 | 00:02:50 | 12.00% | 2.6942 | 5.0000e-05 |

| 5 | 3500 | 00:02:53 | 10.00% | 2.7860 | 5.0000e-05 |

| 5 | 3550 | 00:02:55 | 8.00% | 2.7296 | 5.0000e-05 |

| 5 | 3600 | 00:02:58 | 14.00% | 2.6486 | 5.0000e-05 |

| 5 | 3650 | 00:03:00 | 14.00% | 2.7494 | 5.0000e-05 |

| 5 | 3700 | 00:03:02 | 12.00% | 2.7429 | 5.0000e-05 |

| 5 | 3750 | 00:03:05 | 10.00% | 2.7761 | 5.0000e-05 |

| 5 | 3800 | 00:03:07 | 12.00% | 2.7782 | 5.0000e-05 |

| 6 | 3850 | 00:03:10 | 13.00% | 2.7439 | 5.0000e-05 |

| 6 | 3900 | 00:03:12 | 12.00% | 2.6178 | 5.0000e-05 |

| 6 | 3950 | 00:03:15 | 14.00% | 2.9618 | 5.0000e-05 |

| 6 | 4000 | 00:03:17 | 13.00% | 2.7940 | 5.0000e-05 |

| 6 | 4050 | 00:03:20 | 7.00% | 2.8648 | 5.0000e-05 |

| 6 | 4100 | 00:03:22 | 10.00% | 2.7766 | 5.0000e-05 |

| 6 | 4150 | 00:03:24 | 13.00% | 2.8576 | 5.0000e-05 |

| 6 | 4200 | 00:03:27 | 18.00% | 2.5998 | 5.0000e-05 |

| 6 | 4250 | 00:03:29 | 11.00% | 2.7987 | 5.0000e-05 |

| 6 | 4300 | 00:03:32 | 9.00% | 2.7895 | 5.0000e-05 |

| 6 | 4350 | 00:03:34 | 9.00% | 2.8209 | 5.0000e-05 |

| 6 | 4400 | 00:03:36 | 11.00% | 2.6058 | 5.0000e-05 |

| 6 | 4450 | 00:03:39 | 13.00% | 2.6540 | 5.0000e-05 |

| 6 | 4500 | 00:03:41 | 9.00% | 2.8420 | 5.0000e-05 |

| 6 | 4550 | 00:03:44 | 11.00% | 2.6213 | 5.0000e-05 |

| 7 | 4600 | 00:03:46 | 10.00% | 2.7576 | 5.0000e-05 |

| 7 | 4650 | 00:03:49 | 13.00% | 2.7695 | 5.0000e-05 |

| 7 | 4700 | 00:03:51 | 10.00% | 2.7796 | 5.0000e-05 |

| 7 | 4750 | 00:03:54 | 12.00% | 2.9672 | 5.0000e-05 |

| 7 | 4800 | 00:03:56 | 9.00% | 2.7802 | 5.0000e-05 |

| 7 | 4850 | 00:03:58 | 9.00% | 2.7580 | 5.0000e-05 |

| 7 | 4900 | 00:04:01 | 17.00% | 2.6530 | 5.0000e-05 |

| 7 | 4950 | 00:04:04 | 11.00% | 2.6534 | 5.0000e-05 |

| 7 | 5000 | 00:04:06 | 13.00% | 2.7389 | 5.0000e-05 |

| 7 | 5050 | 00:04:08 | 8.00% | 2.8029 | 5.0000e-05 |

| 7 | 5100 | 00:04:11 | 10.00% | 2.6210 | 5.0000e-05 |

| 7 | 5150 | 00:04:13 | 7.00% | 2.7667 | 5.0000e-05 |

| 7 | 5200 | 00:04:16 | 11.00% | 2.7409 | 5.0000e-05 |

| 7 | 5250 | 00:04:18 | 8.00% | 2.7751 | 5.0000e-05 |

| 7 | 5300 | 00:04:21 | 13.00% | 2.5065 | 5.0000e-05 |

| 7 | 5350 | 00:04:23 | 10.00% | 2.5017 | 5.0000e-05 |

| 8 | 5400 | 00:04:26 | 10.00% | 2.7460 | 5.0000e-05 |

| 8 | 5450 | 00:04:28 | 8.00% | 2.6943 | 5.0000e-05 |

| 8 | 5500 | 00:04:30 | 7.00% | 2.7266 | 5.0000e-05 |

| 8 | 5550 | 00:04:33 | 15.00% | 2.6877 | 5.0000e-05 |

| 8 | 5600 | 00:04:35 | 7.00% | 2.8226 | 5.0000e-05 |

| 8 | 5650 | 00:04:38 | 8.00% | 2.9136 | 5.0000e-05 |

| 8 | 5700 | 00:04:40 | 15.00% | 2.5896 | 5.0000e-05 |

| 8 | 5750 | 00:04:42 | 8.00% | 2.6846 | 5.0000e-05 |

| 8 | 5800 | 00:04:45 | 9.00% | 2.8714 | 5.0000e-05 |

| 8 | 5850 | 00:04:47 | 8.00% | 2.7820 | 5.0000e-05 |

| 8 | 5900 | 00:04:50 | 15.00% | 2.6548 | 5.0000e-05 |

| 8 | 5950 | 00:04:52 | 11.00% | 2.5728 | 5.0000e-05 |

| 8 | 6000 | 00:04:55 | 14.00% | 2.7061 | 5.0000e-05 |

| 8 | 6050 | 00:04:57 | 8.00% | 2.6954 | 5.0000e-05 |

| 8 | 6100 | 00:04:59 | 10.00% | 2.6739 | 5.0000e-05 |

| 9 | 6150 | 00:05:02 | 15.00% | 2.6418 | 5.0000e-05 |

| 9 | 6200 | 00:05:05 | 12.00% | 2.7345 | 5.0000e-05 |

| 9 | 6250 | 00:05:08 | 11.00% | 2.6743 | 5.0000e-05 |

| 9 | 6300 | 00:05:12 | 14.00% | 2.6174 | 5.0000e-05 |

| 9 | 6350 | 00:05:15 | 12.00% | 2.9079 | 5.0000e-05 |

| 9 | 6400 | 00:05:18 | 17.00% | 2.6288 | 5.0000e-05 |

| 9 | 6450 | 00:05:21 | 10.00% | 2.6158 | 5.0000e-05 |

| 9 | 6500 | 00:05:23 | 6.00% | 2.7650 | 5.0000e-05 |

| 9 | 6550 | 00:05:26 | 16.00% | 2.5188 | 5.0000e-05 |

| 9 | 6600 | 00:05:28 | 19.00% | 2.7221 | 5.0000e-05 |

| 9 | 6650 | 00:05:30 | 8.00% | 2.7242 | 5.0000e-05 |

| 9 | 6700 | 00:05:33 | 18.00% | 2.6511 | 5.0000e-05 |

| 9 | 6750 | 00:05:35 | 11.00% | 2.7737 | 5.0000e-05 |

| 9 | 6800 | 00:05:38 | 14.00% | 2.6445 | 5.0000e-05 |

| 9 | 6850 | 00:05:40 | 13.00% | 2.6008 | 5.0000e-05 |

| 10 | 6900 | 00:05:43 | 14.00% | 2.6145 | 5.0000e-05 |

| 10 | 6950 | 00:05:45 | 17.00% | 2.7263 | 5.0000e-05 |

| 10 | 7000 | 00:05:47 | 14.00% | 2.6262 | 5.0000e-05 |

| 10 | 7050 | 00:05:50 | 9.00% | 2.7191 | 5.0000e-05 |

| 10 | 7100 | 00:05:52 | 10.00% | 2.5575 | 5.0000e-05 |

| 10 | 7150 | 00:05:55 | 8.00% | 2.7923 | 5.0000e-05 |

| 10 | 7200 | 00:05:57 | 11.00% | 2.4975 | 5.0000e-05 |

| 10 | 7250 | 00:05:59 | 19.00% | 2.5207 | 5.0000e-05 |

| 10 | 7300 | 00:06:02 | 13.00% | 2.7681 | 5.0000e-05 |

| 10 | 7350 | 00:06:04 | 20.00% | 2.6373 | 5.0000e-05 |

| 10 | 7400 | 00:06:07 | 13.00% | 2.7126 | 5.0000e-05 |

| 10 | 7450 | 00:06:10 | 12.00% | 2.6997 | 5.0000e-05 |

| 10 | 7500 | 00:06:14 | 13.00% | 2.4945 | 5.0000e-05 |

| 10 | 7550 | 00:06:17 | 10.00% | 2.7251 | 5.0000e-05 |

| 10 | 7600 | 00:06:20 | 11.00% | 2.7282 | 5.0000e-05 |

| 10 | 7650 | 00:06:23 | 10.00% | 2.6266 | 5.0000e-05 |

|========================================================================================|

Trained in in 569.27 seconds

test\_acc =

0.1014

val\_acc =

0.1024

train\_acc =

0.1145

## Batch 200, alpha 5e-5, aug data,

Initializing input data normalization.

|========================================================================================|

| Epoch | Iteration | Time Elapsed | Mini-batch | Mini-batch | Base Learning |

| | | (hh:mm:ss) | Accuracy | Loss | Rate |

|========================================================================================|

| 1 | 1 | 00:00:00 | 6.00% | 14.8178 | 5.0000e-05 |

| 1 | 50 | 00:00:08 | 22.00% | 6.1514 | 5.0000e-05 |

| 2 | 100 | 00:00:17 | 28.50% | 3.5454 | 5.0000e-05 |

| 2 | 150 | 00:00:26 | 41.50% | 2.4122 | 5.0000e-05 |

| 3 | 200 | 00:00:35 | 56.00% | 1.4130 | 5.0000e-05 |

| 4 | 250 | 00:00:45 | 53.00% | 1.5284 | 5.0000e-05 |

| 4 | 300 | 00:00:54 | 61.50% | 1.3815 | 5.0000e-05 |

| 5 | 350 | 00:01:03 | 62.50% | 1.0913 | 5.0000e-05 |

| 6 | 400 | 00:01:15 | 59.00% | 1.1279 | 5.0000e-05 |

| 6 | 450 | 00:01:27 | 64.00% | 1.1507 | 5.0000e-05 |

| 7 | 500 | 00:01:38 | 72.00% | 0.9707 | 5.0000e-05 |

| 8 | 550 | 00:01:49 | 70.50% | 0.9262 | 5.0000e-05 |

| 8 | 600 | 00:02:00 | 70.50% | 0.9653 | 5.0000e-05 |

| 9 | 650 | 00:02:11 | 69.50% | 0.9021 | 5.0000e-05 |

| 10 | 700 | 00:02:22 | 67.00% | 1.1423 | 5.0000e-05 |

| 10 | 750 | 00:02:32 | 73.50% | 0.8038 | 5.0000e-05 |

| 10 | 760 | 00:02:35 | 64.50% | 1.0824 | 5.0000e-05 |

|========================================================================================|

Trained in in 161.57 seconds

val\_acc = 0.7065

## Batch 100, alpha 1e-4, aug data, skinny

Initializing input data normalization.

| 20 | 15150 | 04:06:16 | 57.00% | 1.0742 | 1.0000e-04 |

| 20 | 15200 | 04:07:04 | 56.00% | 1.0791 | 1.0000e-04 |

| 20 | 15250 | 04:07:51 | 51.00% | 1.1770 | 1.0000e-04 |

| 20 | 15300 | 04:08:39 | 59.00% | 1.0565 | 1.0000e-04 |

|========================================================================================|

Trained in in 15165.08 seconds

test\_acc =

0.5312

val\_acc =

0.5521

train\_acc =

0.6154

## Batch 100, alpha 5e-5, aug data, wide

| 19 | 13950 | 02:57:49 | 32.00% | 1.9477 | 1.0000e-05 |

| 19 | 14000 | 02:58:27 | 32.00% | 1.8701 | 1.0000e-05 |

| 19 | 14050 | 02:59:05 | 29.00% | 2.0177 | 1.0000e-05 |

| 19 | 14100 | 02:59:44 | 27.00% | 2.0692 | 1.0000e-05 |

| 19 | 14150 | 03:00:22 | 29.00% | 2.0101 | 1.0000e-05 |

| 19 | 14200 | 03:01:00 | 25.00% | 2.0097 | 1.0000e-05 |

| 19 | 14250 | 03:01:38 | 29.00% | 1.9529 | 1.0000e-05 |

| 19 | 14300 | 03:02:17 | 31.00% | 2.0608 | 1.0000e-05 |

| 19 | 14350 | 03:02:55 | 37.00% | 1.8522 | 1.0000e-05 |

| 19 | 14400 | 03:03:33 | 26.00% | 2.0258 | 1.0000e-05 |

| 19 | 14450 | 03:04:11 | 31.00% | 2.0428 | 1.0000e-05 |

| 19 | 14500 | 03:04:49 | 23.00% | 1.9243 | 1.0000e-05 |

| 20 | 14550 | 03:05:28 | 32.00% | 2.0528 | 1.0000e-05 |

| 20 | 14600 | 03:06:07 | 29.00% | 1.9440 | 1.0000e-05 |

| 20 | 14650 | 03:06:45 | 32.00% | 1.8509 | 1.0000e-05 |

| 20 | 14700 | 03:07:24 | 36.00% | 1.8626 | 1.0000e-05 |

| 20 | 14750 | 03:08:02 | 21.00% | 1.9454 | 1.0000e-05 |

| 20 | 14800 | 03:08:40 | 35.00% | 1.9730 | 1.0000e-05 |

| 20 | 14850 | 03:09:18 | 32.00% | 1.9892 | 1.0000e-05 |

| 20 | 14900 | 03:09:56 | 33.00% | 1.8298 | 1.0000e-05 |

| 20 | 14950 | 03:10:35 | 29.00% | 2.0461 | 1.0000e-05 |

| 20 | 15000 | 03:11:13 | 27.00% | 2.0458 | 1.0000e-05 |

| 20 | 15050 | 03:11:51 | 33.00% | 2.0690 | 1.0000e-05 |

| 20 | 15100 | 03:12:29 | 31.00% | 1.7112 | 1.0000e-05 |

| 20 | 15150 | 03:13:07 | 32.00% | 1.8755 | 1.0000e-05 |

| 20 | 15200 | 03:13:45 | 30.00% | 2.0063 | 1.0000e-05 |

| 20 | 15250 | 03:14:23 | 29.00% | 1.8456 | 1.0000e-05 |

| 20 | 15300 | 03:15:01 | 34.00% | 1.8278 | 1.0000e-05 |

|========================================================================================|

Trained in in 11971.55 seconds

val\_acc =

0.3353

train\_acc =

0.5012

## Batch 100, alpha 1e-5, aug data,

Loading Train Filenames and Label Data...Done in 0.40 seconds

Loading Test Filenames and Label Data...Done in 0.31 seconds

Initializing input data normalization.

|========================================================================================|

| Epoch | Iteration | Time Elapsed | Mini-batch | Mini-batch | Base Learning |

| | | (hh:mm:ss) | Accuracy | Loss | Rate |

|========================================================================================|

| 1 | 1 | 00:00:00 | 7.00% | 14.6819 | 1.0000e-05 |

| 1 | 50 | 00:00:08 | 12.00% | 12.7445 | 1.0000e-05 |

| 2 | 100 | 00:00:17 | 29.50% | 8.8656 | 1.0000e-05 |

| 2 | 150 | 00:00:25 | 44.00% | 6.8406 | 1.0000e-05 |

| 3 | 200 | 00:00:35 | 50.50% | 5.3767 | 1.0000e-05 |

| 4 | 250 | 00:00:44 | 48.00% | 5.4605 | 1.0000e-05 |

| 4 | 300 | 00:00:53 | 53.50% | 4.5048 | 1.0000e-05 |

| 5 | 350 | 00:01:03 | 54.00% | 3.9253 | 1.0000e-05 |

| 6 | 400 | 00:01:14 | 62.50% | 2.8721 | 1.0000e-05 |

| 6 | 450 | 00:01:25 | 60.00% | 3.1102 | 1.0000e-05 |

| 7 | 500 | 00:01:36 | 67.00% | 2.5315 | 1.0000e-05 |

| 8 | 550 | 00:01:47 | 66.00% | 2.2952 | 1.0000e-05 |

| 8 | 600 | 00:01:58 | 62.00% | 2.2782 | 1.0000e-05 |

| 9 | 650 | 00:02:09 | 64.50% | 2.0557 | 1.0000e-05 |

| 10 | 700 | 00:02:21 | 57.00% | 2.6117 | 1.0000e-05 |

| 10 | 750 | 00:02:32 | 68.00% | 1.7656 | 1.0000e-05 |

| 10 | 760 | 00:02:34 | 63.50% | 2.4352 | 1.0000e-05 |

|========================================================================================|

Trained in in 160.88 seconds

val\_acc = 0.6118

## Batch 400, alpha 1e-5, raw data,

Loading Train Filenames and Label Data...Done in 0.45 seconds

Loading Test Filenames and Label Data...Done in 0.36 seconds

Initializing input data normalization.

|========================================================================================|

| Epoch | Iteration | Time Elapsed | Mini-batch | Mini-batch | Base Learning |

| | | (hh:mm:ss) | Accuracy | Loss | Rate |

|========================================================================================|

| 1 | 1 | 00:00:00 | 5.50% | 14.6928 | 1.0000e-05 |

| 2 | 50 | 00:00:18 | 19.00% | 11.0972 | 1.0000e-05 |

| 3 | 100 | 00:00:38 | 41.50% | 6.9272 | 1.0000e-05 |

| 4 | 150 | 00:00:57 | 42.50% | 5.7556 | 1.0000e-05 |

| 6 | 200 | 00:01:20 | 52.50% | 4.1027 | 1.0000e-05 |

| 7 | 250 | 00:01:43 | 55.50% | 4.2804 | 1.0000e-05 |

| 8 | 300 | 00:02:05 | 54.00% | 4.1175 | 1.0000e-05 |

| 10 | 350 | 00:02:29 | 63.75% | 3.1110 | 1.0000e-05 |

| 10 | 380 | 00:02:43 | 61.25% | 2.7640 | 1.0000e-05 |

|========================================================================================|

Trained in in 169.72 seconds

val\_acc =

0.5806

## Batch 100, alpha 1e-5, raw data,

Initializing input data normalization.

|========================================================================================|

| Epoch | Iteration | Time Elapsed | Mini-batch | Mini-batch | Base Learning |

| | | (hh:mm:ss) | Accuracy | Loss | Rate |

|========================================================================================|

| 1 | 1 | 00:00:00 | 3.00% | 14.9766 | 1.0000e-05 |

| 1 | 50 | 00:00:05 | 18.00% | 12.0455 | 1.0000e-05 |

| 1 | 100 | 00:00:10 | 24.00% | 10.0620 | 1.0000e-05 |

| 1 | 150 | 00:00:15 | 31.00% | 8.3434 | 1.0000e-05 |

| 2 | 200 | 00:00:21 | 44.00% | 6.1772 | 1.0000e-05 |

| 2 | 250 | 00:00:26 | 53.00% | 4.5174 | 1.0000e-05 |

| 2 | 300 | 00:00:32 | 50.00% | 4.4953 | 1.0000e-05 |

| 3 | 350 | 00:00:39 | 58.00% | 3.9380 | 1.0000e-05 |

| 3 | 400 | 00:00:44 | 62.00% | 2.3412 | 1.0000e-05 |

| 3 | 450 | 00:00:50 | 60.00% | 2.7520 | 1.0000e-05 |

| 4 | 500 | 00:00:56 | 67.00% | 1.9928 | 1.0000e-05 |

| 4 | 550 | 00:01:03 | 68.00% | 2.1945 | 1.0000e-05 |

| 4 | 600 | 00:01:10 | 56.00% | 2.2011 | 1.0000e-05 |

| 5 | 650 | 00:01:18 | 69.00% | 2.1504 | 1.0000e-05 |

| 5 | 700 | 00:01:25 | 68.00% | 1.5315 | 1.0000e-05 |

| 5 | 750 | 00:01:32 | 63.00% | 2.0674 | 1.0000e-05 |

| 6 | 800 | 00:01:39 | 65.00% | 1.7109 | 1.0000e-05 |

| 6 | 850 | 00:01:46 | 68.00% | 1.1056 | 1.0000e-05 |

| 6 | 900 | 00:01:53 | 66.00% | 1.5817 | 1.0000e-05 |

| 7 | 950 | 00:02:00 | 71.00% | 1.2150 | 1.0000e-05 |

| 7 | 1000 | 00:02:07 | 70.00% | 1.1889 | 1.0000e-05 |

| 7 | 1050 | 00:02:14 | 70.00% | 1.1104 | 1.0000e-05 |

| 8 | 1100 | 00:02:22 | 71.00% | 1.1999 | 1.0000e-05 |

| 8 | 1150 | 00:02:28 | 62.00% | 1.2457 | 1.0000e-05 |

| 8 | 1200 | 00:02:35 | 69.00% | 1.0436 | 1.0000e-05 |

| 9 | 1250 | 00:02:43 | 68.00% | 0.8485 | 1.0000e-05 |

| 9 | 1300 | 00:02:50 | 79.00% | 0.8282 | 1.0000e-05 |

| 9 | 1350 | 00:02:56 | 77.00% | 0.8834 | 1.0000e-05 |

| 10 | 1400 | 00:03:02 | 69.00% | 1.1240 | 1.0000e-05 |

| 10 | 1450 | 00:03:08 | 77.00% | 0.8233 | 1.0000e-05 |

| 10 | 1500 | 00:03:14 | 71.00% | 0.8511 | 1.0000e-05 |

| 10 | 1530 | 00:03:17 | 78.00% | 0.6841 | 1.0000e-05 |

|========================================================================================|

Trained in in 205.25 seconds

val\_acc =

0.6782

## Batch 100, alpha 1e-4, raw data,

Initializing input data normalization.

|========================================================================================|

| Epoch | Iteration | Time Elapsed | Mini-batch | Mini-batch | Base Learning |

| | | (hh:mm:ss) | Accuracy | Loss | Rate |

|========================================================================================|

| 1 | 1 | 00:00:00 | 7.00% | 14.2506 | 1.0000e-04 |

| 1 | 50 | 00:00:04 | 7.00% | 14.2571 | 1.0000e-04 |

| 1 | 100 | 00:00:08 | 19.00% | 11.9244 | 1.0000e-04 |

| 1 | 150 | 00:00:12 | 37.00% | 2.8380 | 1.0000e-04 |

| 2 | 200 | 00:00:17 | 45.00% | 1.6254 | 1.0000e-04 |

| 2 | 250 | 00:00:22 | 49.00% | 1.5223 | 1.0000e-04 |

| 2 | 300 | 00:00:26 | 51.00% | 1.1376 | 1.0000e-04 |

| 3 | 350 | 00:00:31 | 50.00% | 1.2877 | 1.0000e-04 |

| 3 | 400 | 00:00:36 | 60.00% | 1.0614 | 1.0000e-04 |

| 3 | 450 | 00:00:40 | 68.00% | 0.9094 | 1.0000e-04 |

| 4 | 500 | 00:00:45 | 66.00% | 0.9397 | 1.0000e-04 |

| 4 | 550 | 00:00:50 | 57.00% | 1.0110 | 1.0000e-04 |

| 4 | 600 | 00:00:56 | 57.00% | 1.0330 | 1.0000e-04 |

| 5 | 650 | 00:01:02 | 67.00% | 0.7813 | 1.0000e-04 |

| 5 | 700 | 00:01:08 | 68.00% | 0.7502 | 1.0000e-04 |

| 5 | 750 | 00:01:13 | 69.00% | 0.7368 | 1.0000e-04 |

| 6 | 800 | 00:01:19 | 65.00% | 0.7918 | 1.0000e-04 |

| 6 | 850 | 00:01:25 | 70.00% | 0.7202 | 1.0000e-04 |

| 6 | 900 | 00:01:31 | 73.00% | 0.6435 | 1.0000e-04 |

| 7 | 950 | 00:01:37 | 71.00% | 0.6380 | 1.0000e-04 |

| 7 | 1000 | 00:01:42 | 67.00% | 0.8285 | 1.0000e-04 |

| 7 | 1050 | 00:01:48 | 70.00% | 0.7230 | 1.0000e-04 |

| 8 | 1100 | 00:01:54 | 74.00% | 0.6023 | 1.0000e-04 |

| 8 | 1150 | 00:01:59 | 75.00% | 0.5387 | 1.0000e-04 |

| 8 | 1200 | 00:02:05 | 73.00% | 0.6342 | 1.0000e-04 |

| 9 | 1250 | 00:02:11 | 70.00% | 0.6798 | 1.0000e-04 |

| 9 | 1300 | 00:02:16 | 78.00% | 0.6322 | 1.0000e-04 |

| 9 | 1350 | 00:02:22 | 72.00% | 0.6283 | 1.0000e-04 |

| 10 | 1400 | 00:02:28 | 76.00% | 0.5321 | 1.0000e-04 |

| 10 | 1450 | 00:02:34 | 79.00% | 0.5089 | 1.0000e-04 |

| 10 | 1500 | 00:02:39 | 70.00% | 0.6651 | 1.0000e-04 |

| 10 | 1530 | 00:02:42 | 71.00% | 0.6594 | 1.0000e-04 |

|========================================================================================|

Trained in in 168.70 seconds

val\_acc = 0.7324

## Batch 200, alpha 1e-4, raw data,

Initializing input data normalization.

|========================================================================================|

| Epoch | Iteration | Time Elapsed | Mini-batch | Mini-batch | Base Learning |

| | | (hh:mm:ss) | Accuracy | Loss | Rate |

|========================================================================================|

| 1 | 1 | 00:00:00 | 5.00% | 14.7693 | 1.0000e-04 |

| 1 | 50 | 00:00:08 | 8.50% | 14.3119 | 1.0000e-04 |

| 2 | 100 | 00:00:16 | 12.50% | 13.1728 | 1.0000e-04 |

| 2 | 150 | 00:00:23 | 13.50% | 6.9003 | 1.0000e-04 |

| 3 | 200 | 00:00:32 | 40.00% | 1.6639 | 1.0000e-04 |

| 4 | 250 | 00:00:40 | 60.00% | 1.2130 | 1.0000e-04 |

| 4 | 300 | 00:00:48 | 55.50% | 1.1135 | 1.0000e-04 |

| 5 | 350 | 00:00:56 | 60.00% | 1.0056 | 1.0000e-04 |

| 6 | 400 | 00:01:04 | 59.50% | 0.9226 | 1.0000e-04 |

| 6 | 450 | 00:01:12 | 66.00% | 0.8231 | 1.0000e-04 |

| 7 | 500 | 00:01:21 | 63.50% | 0.8250 | 1.0000e-04 |

| 8 | 550 | 00:01:29 | 74.00% | 0.6725 | 1.0000e-04 |

| 8 | 600 | 00:01:37 | 72.00% | 0.7158 | 1.0000e-04 |

| 9 | 650 | 00:01:46 | 76.50% | 0.6919 | 1.0000e-04 |

| 10 | 700 | 00:01:56 | 66.50% | 0.7575 | 1.0000e-04 |

| 10 | 750 | 00:02:05 | 69.50% | 0.6873 | 1.0000e-04 |

| 10 | 760 | 00:02:07 | 67.00% | 0.7694 | 1.0000e-04 |

|========================================================================================|

Trained in in 133.83 seconds

val\_acc =

0.7029

## Batch 400, alpha 1e-4, raw data,

## Batch 100, alpha 1e-4, aug data,

## Batch 200, alpha 1e-4, aug data,

## Batch 400, alpha 1e-4, aug data,