

Train on 646 samples, validate on 162 samples

Epoch 1/12

646/646 [=====] - 110s 171ms/step - loss: 0.7895 - acc: 0.7291 - val_loss: 0.1098 - val_acc: 0.9506

Epoch 2/12

646/646 [=====] - 107s 165ms/step - loss: 0.2623 - acc: 0.9195 - val_loss: 0.0831 - val_acc: 0.9630

Epoch 3/12

646/646 [=====] - 107s 166ms/step - loss: 0.1309 - acc: 0.9536 - val_loss: 0.0562 - val_acc: 0.9938

Epoch 4/12

646/646 [=====] - 109s 169ms/step - loss: 0.1470 - acc: 0.9520 - val_loss: 0.0242 - val_acc: 0.9815

Epoch 5/12

646/646 [=====] - 106s 163ms/step - loss: 0.1123 - acc: 0.9598 - val_loss: 0.0727 - val_acc: 0.9630

Epoch 6/12

646/646 [=====] - 108s 167ms/step - loss: 0.1236 - acc: 0.9598 - val_loss: 0.0727 - val_acc: 0.9753

Epoch 7/12

646/646 [=====] - 105s 162ms/step - loss: 0.0823 - acc: 0.9752 - val_loss: 0.0163 - val_acc: 0.9877

Epoch 8/12

646/646 [=====] - 103s 159ms/step - loss: 0.0565 - acc: 0.9768 -
val_loss: 0.0374 - val_acc: 0.9815

Epoch 9/12

646/646 [=====] - 103s 159ms/step - loss: 0.0743 - acc: 0.9783 -
val_loss: 0.0554 - val_acc: 0.9691

Epoch 10/12

646/646 [=====] - 103s 159ms/step - loss: 0.0601 - acc: 0.9814 -
val_loss: 0.0308 - val_acc: 0.9877

Epoch 11/12

646/646 [=====] - 103s 159ms/step - loss: 0.0366 - acc: 0.9907 -
val_loss: 0.0832 - val_acc: 0.9815

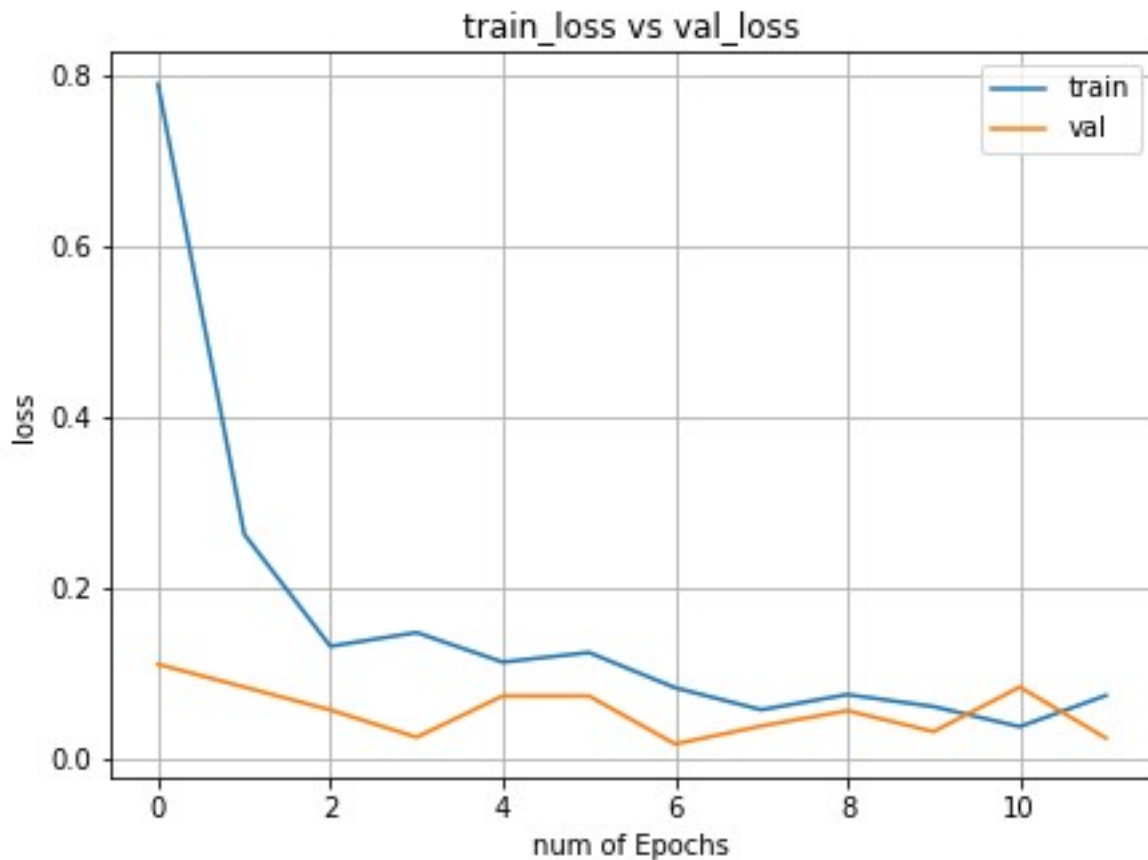
Epoch 12/12

646/646 [=====] - 103s 159ms/step - loss: 0.0733 - acc: 0.9768 -
val_loss: 0.0231 - val_acc: 0.9877

Training time: -1265.6245024204254

162/162 [=====] - 22s 134ms/step

[INFO] loss=0.0231, accuracy: 98.7654%

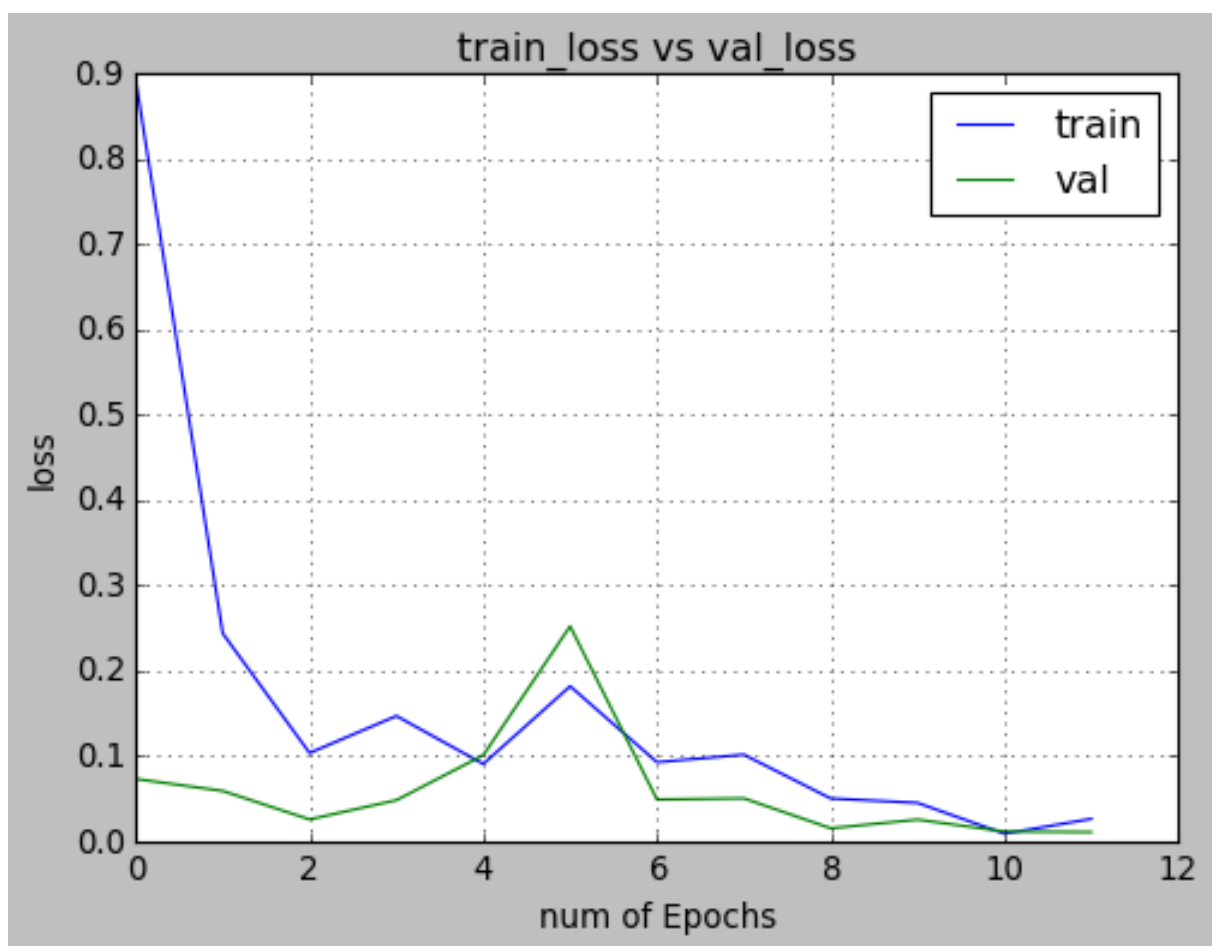


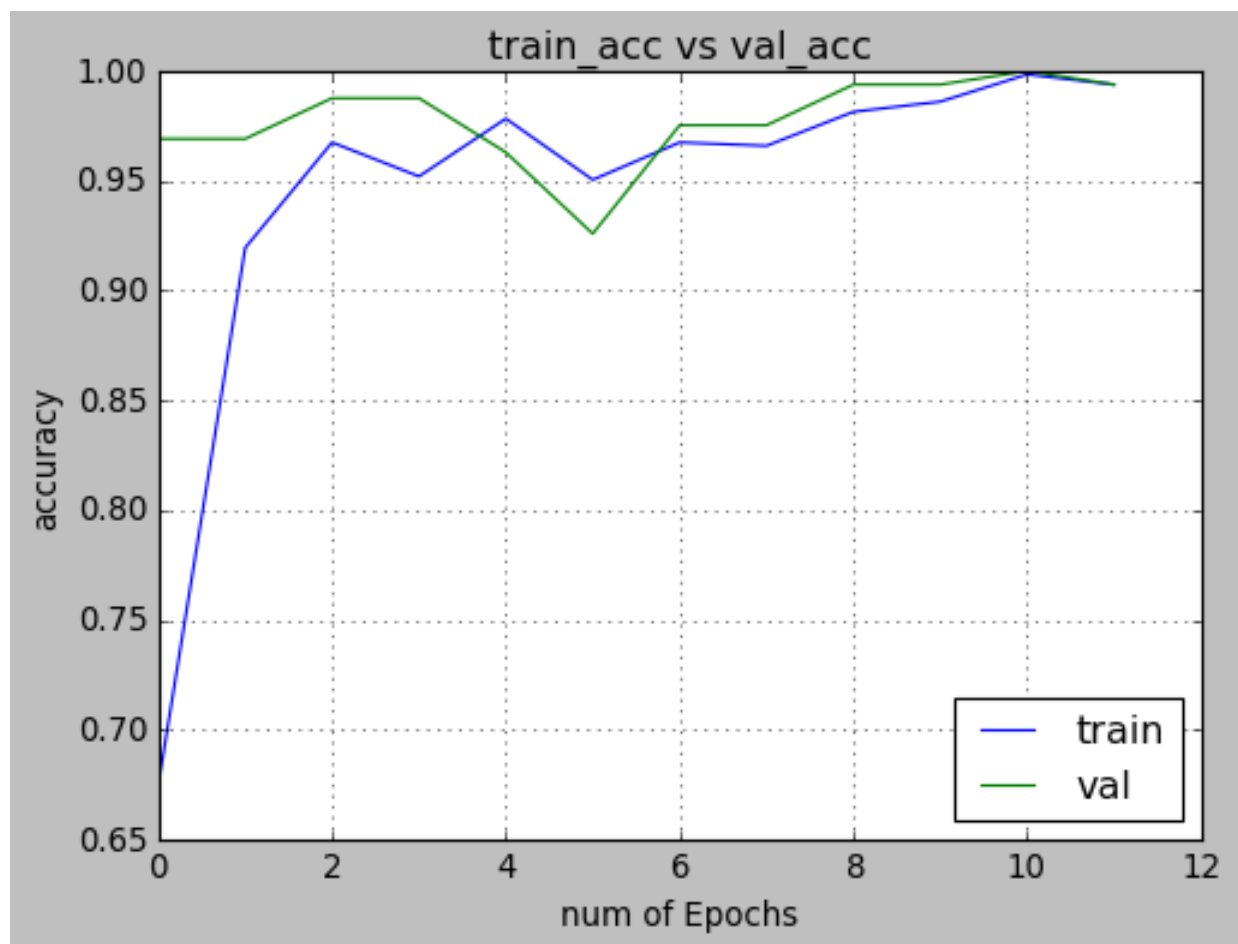
After the change

Train on 646 samples, validate on 162 samples

Epoch 1/12

646/646 [=====] - 106s 165ms/step - loss: 0.8911 - acc: 0.6749 -
val_loss: 0.0733 - val_acc: 0.9691
Epoch 2/12
646/646 [=====] - 102s 158ms/step - loss: 0.2437 - acc: 0.9195 -
val_loss: 0.0592 - val_acc: 0.9691
Epoch 3/12
646/646 [=====] - 103s 159ms/step - loss: 0.1037 - acc: 0.9675 -
val_loss: 0.0259 - val_acc: 0.9877
Epoch 4/12
646/646 [=====] - 100s 154ms/step - loss: 0.1470 - acc: 0.9520 -
val_loss: 0.0484 - val_acc: 0.9877
Epoch 5/12
646/646 [=====] - 99s 154ms/step - loss: 0.0908 - acc: 0.9783 -
val_loss: 0.1011 - val_acc: 0.9630
Epoch 6/12
646/646 [=====] - 99s 154ms/step - loss: 0.1819 - acc: 0.9505 -
val_loss: 0.2522 - val_acc: 0.9259
Epoch 7/12
646/646 [=====] - 102s 158ms/step - loss: 0.0929 - acc: 0.9675 -
val_loss: 0.0492 - val_acc: 0.9753
Epoch 8/12
646/646 [=====] - 102s 158ms/step - loss: 0.1017 - acc: 0.9659 -
val_loss: 0.0506 - val_acc: 0.9753
Epoch 9/12
646/646 [=====] - 102s 158ms/step - loss: 0.0504 - acc: 0.9814 -
val_loss: 0.0155 - val_acc: 0.9938
Epoch 10/12
646/646 [=====] - 101s 156ms/step - loss: 0.0452 - acc: 0.9861 -
val_loss: 0.0256 - val_acc: 0.9938
Epoch 11/12
646/646 [=====] - 99s 154ms/step - loss: 0.0091 - acc: 0.9985 -
val_loss: 0.0117 - val_acc: 1.0000
Epoch 12/12
646/646 [=====] - 102s 157ms/step - loss: 0.0265 - acc: 0.9938 -
val_loss: 0.0110 - val_acc: 0.9938
Training time: -1217.2664182186127
162/162 [=====] - 22s 133ms/step
[INFO] loss=0.0110, accuracy: 99.3827%





Two Class:

Train on 323 samples, validate on 81 samples

Epoch 1/12

323/323 [=====] - 54s 166ms/step - loss: 0.2806 - acc: 0.8731 - val_loss: 0.0776 - val_acc: 0.9877

Epoch 2/12

323/323 [=====] - 48s 150ms/step - loss: 0.2885 - acc: 0.9443 - val_loss: 0.0451 - val_acc: 0.9877

Epoch 3/12

323/323 [=====] - 48s 150ms/step - loss: 0.1431 - acc: 0.9659 - val_loss: 0.0553 - val_acc: 0.9877

Epoch 4/12

323/323 [=====] - 48s 149ms/step - loss: 0.2412 - acc: 0.9567 - val_loss: 9.3731e-04 - val_acc: 1.0000

Epoch 5/12

323/323 [=====] - 49s 151ms/step - loss: 0.0331 - acc: 0.9907 - val_loss: 0.0358 - val_acc: 0.9877

Epoch 6/12

323/323 [=====] - 48s 150ms/step - loss: 0.1480 - acc: 0.9783 -
val_loss: 0.0796 - val_acc: 0.9877
Epoch 7/12
323/323 [=====] - 48s 150ms/step - loss: 0.1091 - acc: 0.9690 -
val_loss: 0.0098 - val_acc: 1.0000
Epoch 8/12
323/323 [=====] - 48s 150ms/step - loss: 0.3829 - acc: 0.9288 -
val_loss: 0.1341 - val_acc: 0.9877
Epoch 9/12
323/323 [=====] - 50s 153ms/step - loss: 0.2138 - acc: 0.9690 -
val_loss: 0.0017 - val_acc: 1.0000
Epoch 10/12
323/323 [=====] - 53s 165ms/step - loss: 0.0399 - acc: 0.9876 -
val_loss: 0.0143 - val_acc: 0.9877
Epoch 11/12
323/323 [=====] - 52s 161ms/step - loss: 0.0761 - acc: 0.9783 -
val_loss: 0.0029 - val_acc: 1.0000
Epoch 12/12
323/323 [=====] - 53s 165ms/step - loss: 0.0450 - acc: 0.9907 -
val_loss: 0.0248 - val_acc: 0.9877
Training time: -601.0501410961151
81/81 [=====] - 11s 140ms/step
[INFO] loss=0.0248, accuracy: 98.7654%



