```
C:\Python35\python.exe M:/ce888/ce888-assignment2/n+
1_denoising_auto-encoder_mnist.py
Using TensorFlow backend.
Train on 60000 samples, validate on 10000 samples
Epoch 1/21
2018-04-15 17:10:55.662911: W C:\tf_jenkins\home\workspace
\rel-win\M\windows\PY\35\tensorflow\core\platform\
cpu_feature_guard.cc:45] The TensorFlow library wasn't
compiled to use AVX instructions, but these are available
on your machine and could speed up CPU computations.
2018-04-15 17:10:55.663182: W C:\tf_jenkins\home\workspace
\rel-win\M\windows\PY\35\tensorflow\core\platform\
cpu_feature_guard.cc:45] The TensorFlow library wasn't
compiled to use AVX2 instructions, but these are available
 on your machine and could speed up CPU computations.
60000/60000 [==============================] - 146s - loss
: 0.1445 - val_loss: 0.0958
Epoch 2/21
60000/60000 [==============================] - 152s - loss
: 0.0871 - val_loss: 0.0835
Epoch 3/21
60000/60000 [==============================] - 141s - loss
: 0.0807 - val_loss: 0.0778
Epoch 4/21
60000/60000 [==============================] - 141s - loss
: 0.0778 - val_loss: 0.0765
Epoch 5/21
60000/60000 [==============================] - 134s - loss
: 0.0760 - val_loss: 0.0742
Epoch 6/21
60000/60000 [==============================] - 138s - loss
: 0.0747 - val_loss: 0.0737
Epoch 7/21
60000/60000 [==============================] - 149s - loss
: 0.0737 - val_loss: 0.0724
Epoch 8/21
60000/60000 [==============================] - 146s - loss
: 0.0729 - val_loss: 0.0723
Epoch 9/21
60000/60000 [==============================] - 150s - loss
: 0.0723 - val_loss: 0.0706
Epoch 10/21
60000/60000 [==============================] - 149s - loss
: 0.0717 - val_loss: 0.0713
Epoch 11/21
```

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27 60000/60000 [==============================] - 149s - loss
   : 0.0712 - val_loss: 0.0703
28 Epoch 12/21
29 60000/60000 [==============================] - 154s - loss
   : 0.0707 - val_loss: 0.0697
30 Epoch 13/21
31 60000/60000 [==============================] - 167s - loss
   : 0.0704 - val_loss: 0.0701
32 Epoch 14/21
33 60000/60000 [==============================] - 159s - loss
   : 0.0701 - val_loss: 0.0692
34 Epoch 15/21
35 60000/60000 [==============================] - 146s - loss
   : 0.0698 - val_loss: 0.0703
36 Epoch 16/21
37 60000/60000 [==============================] - 145s - loss
   : 0.0696 - val_loss: 0.0692
38 Epoch 17/21
39 60000/60000 [==============================] - 134s - loss
   : 0.0694 - val_loss: 0.0689
40 Epoch 18/21
41 60000/60000 [==============================] - 133s - loss
   : 0.0692 - val_loss: 0.0688
42 Epoch 19/21
43 60000/60000 [==============================] - 133s - loss
   : 0.0690 - val_loss: 0.0680
44 Epoch 20/21
45 60000/60000 [==============================] - 134s - loss
   : 0.0688 - val_loss: 0.0685
46 Epoch 21/21
47 60000/60000 [==============================] - 133s - loss
   : 0.0686 - val_loss: 0.0678
48 ================================================================
   ====
49 Epochs is : 21
50 ================================================================
   ====
51 The loss on x_test : 0.067760186815
52 The accuracy on x_test : 0.932239813185
53 ================================================================
   ====
54 The loss on x_train : 0.068236279021
55 The accuracy on x_train : 0.931763720979
56 ================================================================
   ====
```

```
The loss on x1_train : 0.068304220551
The accuracy on x1_train : 0.931695779449
================================================================
The loss on x2_train : 0.068280661895
The accuracy on x2_train : 0.931719338105
================================================================
The loss on x3_train : 0.068306740214
The accuracy on x3_train : 0.931693259786

Process finished with exit code 0

```