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1 /Users/snehamishra/PycharmProjects/Test/venv/bin/python /
  Users/snehamishra/Desktop/UMKC/Fall2018/Python/Python-
  DeepLearning_Fall2018/Mod2_Lab1/Source/DeepLearning_Lesson2
  /mod2_Lab1_2.1.py
2 Using TensorFlow backend.
3 /Users/snehamishra/Desktop/UMKC/Fall2018/Python/Python-
  DeepLearning_Fall2018/Mod2_Lab1/Source/DeepLearning_Lesson2
  /mod2_Lab1_2.1.py:26: UserWarning: Update your `Dense` call
    to the Keras 2 API: `Dense(input_shape=(784,), activation
    ="softmax", units=10, kernel_initializer="normal")`"
4   model.add(Dense(output_dim=10, input_shape=(784,), init='
    normal', activation='softmax'))
5
6 Layer (type)          Output Shape
7 Param #
8 =====
9 =====
10 dense_1 (Dense)      (None, 10)           7850
11 =====
12 =====
13 Total params: 7,850
14 Trainable params: 7,850
15 Non-trainable params: 0
16
17
18
19   128/60000 [.....] - ETA: 33s -
  loss: 2.3277 - acc: 0.1875
20   6400/60000 [==>.....] - ETA: 1s -
  loss: 2.1415 - acc: 0.2898
21   12672/60000 [=====>.....] - ETA: 0s -
  loss: 1.9549 - acc: 0.4142
22   18944/60000 [=====>.....] - ETA: 0s -
  loss: 1.8027 - acc: 0.4986
23   23040/60000 [=====>.....] - ETA: 0s -
  loss: 1.7192 - acc: 0.5375
24   27264/60000 [=====>.....] - ETA: 0s -

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24 loss: 1.6448 - acc: 0.5696
25 31488/60000 [=====>.....] - ETA: 0s -
    loss: 1.5815 - acc: 0.5955
26 35968/60000 [=====>.....] - ETA: 0s -
    loss: 1.5207 - acc: 0.6176
27 40320/60000 [=====>.....] - ETA: 0s -
    loss: 1.4679 - acc: 0.6358
28 45184/60000 [=====>.....] - ETA: 0s -
    loss: 1.4166 - acc: 0.6530
29 51456/60000 [=====>....] - ETA: 0s -
    loss: 1.3569 - acc: 0.6726
30 58368/60000 [=====>..] - ETA: 0s -
    loss: 1.2994 - acc: 0.6894
31 60000/60000 [=====] - 1s 11us/step
    - loss: 1.2872 - acc: 0.6926
32 Epoch 2/100
33
34 128/60000 [.....] - ETA: 1s -
    loss: 0.8616 - acc: 0.8047
35 6656/60000 [==>.....] - ETA: 0s -
    loss: 0.8298 - acc: 0.8223
36 11264/60000 [==>.....] - ETA: 0s -
    loss: 0.8110 - acc: 0.8266
37 15744/60000 [==>.....] - ETA: 0s -
    loss: 0.8010 - acc: 0.8278
38 20096/60000 [==>.....] - ETA: 0s -
    loss: 0.7917 - acc: 0.8282
39 22912/60000 [==>.....] - ETA: 0s -
    loss: 0.7844 - acc: 0.8304
40 26496/60000 [==>.....] - ETA: 0s -
    loss: 0.7767 - acc: 0.8321
41 31232/60000 [=====>.....] - ETA: 0s -
    loss: 0.7673 - acc: 0.8330
42 37248/60000 [=====>.....] - ETA: 0s -
    loss: 0.7551 - acc: 0.8350
43 42752/60000 [=====>.....] - ETA: 0s -
    loss: 0.7442 - acc: 0.8372
44 49408/60000 [=====>....] - ETA: 0s -
    loss: 0.7336 - acc: 0.8391
45 55808/60000 [=====>...] - ETA: 0s -
    loss: 0.7264 - acc: 0.8395
46 60000/60000 [=====] - 1s 10us/step
    - loss: 0.7190 - acc: 0.8409
47 Epoch 3/100
48
49 128/60000 [.....] - ETA: 1s -
    loss: 0.5776 - acc: 0.8359
50 7168/60000 [==>.....] - ETA: 0s -
    loss: 0.6247 - acc: 0.8523
51 14208/60000 [==>.....] - ETA: 0s -
```

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51 loss: 0.6224 - acc: 0.8518
52 19584/60000 [=====>.....] - ETA: 0s -
loss: 0.6234 - acc: 0.8522
53 24960/60000 [=====>.....] - ETA: 0s -
loss: 0.6191 - acc: 0.8531
54 31360/60000 [=====>.....] - ETA: 0s -
loss: 0.6110 - acc: 0.8556
55 36224/60000 [=====>.....] - ETA: 0s -
loss: 0.6059 - acc: 0.8572
56 40448/60000 [=====>.....] - ETA: 0s -
loss: 0.6045 - acc: 0.8568
57 44800/60000 [=====>.....] - ETA: 0s -
loss: 0.6011 - acc: 0.8570
58 49024/60000 [=====>.....] - ETA: 0s -
loss: 0.5976 - acc: 0.8572
59 52992/60000 [=====>....] - ETA: 0s -
loss: 0.5938 - acc: 0.8580
60 58880/60000 [=====>..] - ETA: 0s -
loss: 0.5890 - acc: 0.8593
61 60000/60000 [=====] - 1s 10us/
step - loss: 0.5887 - acc: 0.8591
62 Epoch 4/100
63
64 128/60000 [.....] - ETA: 1s -
loss: 0.6500 - acc: 0.8125
65 5504/60000 [=>.....] - ETA: 0s -
loss: 0.5502 - acc: 0.8621
66 10112/60000 [==>.....] - ETA: 0s -
loss: 0.5433 - acc: 0.8668
67 15360/60000 [==>.....] - ETA: 0s -
loss: 0.5379 - acc: 0.8680
68 22272/60000 [=====>.....] - ETA: 0s -
loss: 0.5376 - acc: 0.8671
69 28672/60000 [=====>.....] - ETA: 0s -
loss: 0.5346 - acc: 0.8679
70 34688/60000 [=====>.....] - ETA: 0s -
loss: 0.5311 - acc: 0.8685
71 41088/60000 [=====>.....] - ETA: 0s -
loss: 0.5311 - acc: 0.8680
72 48000/60000 [=====>.....] - ETA: 0s -
loss: 0.5294 - acc: 0.8681
73 55040/60000 [=====>...] - ETA: 0s -
loss: 0.5286 - acc: 0.8683
74 60000/60000 [=====] - 0s 8us/step
- loss: 0.5265 - acc: 0.8688
75 Epoch 5/100
76
77 128/60000 [.....] - ETA: 1s -
loss: 0.4791 - acc: 0.8750
78 6144/60000 [=>.....] - ETA: 0s -
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78 loss: 0.5060 - acc: 0.8695
79 12672/60000 [=====>.....] - ETA: 0s -
loss: 0.4996 - acc: 0.8731
80 18816/60000 [=====>.....] - ETA: 0s -
loss: 0.4977 - acc: 0.8740
81 24320/60000 [=====>.....] - ETA: 0s -
loss: 0.4969 - acc: 0.8742
82 28928/60000 [=====>.....] - ETA: 0s -
loss: 0.4921 - acc: 0.8753
83 33792/60000 [=====>.....] - ETA: 0s -
loss: 0.4916 - acc: 0.8750
84 39296/60000 [=====>.....] - ETA: 0s -
loss: 0.4901 - acc: 0.8756
85 44800/60000 [=====>.....] - ETA: 0s -
loss: 0.4903 - acc: 0.8749
86 50176/60000 [=====>.....] - ETA: 0s -
loss: 0.4885 - acc: 0.8755
87 56448/60000 [=====>..] - ETA: 0s -
loss: 0.4882 - acc: 0.8752
88 60000/60000 [=====] - 1s 9us/step
- loss: 0.4886 - acc: 0.8750
89 Epoch 6/100
90
91 128/60000 [.....] - ETA: 0s -
loss: 0.4254 - acc: 0.9141
92 6912/60000 [=>.....] - ETA: 0s -
loss: 0.4755 - acc: 0.8773
93 12672/60000 [=====>.....] - ETA: 0s -
loss: 0.4740 - acc: 0.8767
94 18048/60000 [=====>.....] - ETA: 0s -
loss: 0.4742 - acc: 0.8764
95 23936/60000 [=====>.....] - ETA: 0s -
loss: 0.4724 - acc: 0.8773
96 30208/60000 [=====>.....] - ETA: 0s -
loss: 0.4710 - acc: 0.8776
97 37120/60000 [=====>.....] - ETA: 0s -
loss: 0.4677 - acc: 0.8789
98 43008/60000 [=====>.....] - ETA: 0s -
loss: 0.4653 - acc: 0.8793
99 49024/60000 [=====>.....] - ETA: 0s -
loss: 0.4652 - acc: 0.8793
100 55552/60000 [=====>..] - ETA: 0s -
loss: 0.4636 - acc: 0.8799
101 60000/60000 [=====] - 0s 8us/step
- loss: 0.4626 - acc: 0.8798
102 Epoch 7/100
103
104 128/60000 [.....] - ETA: 0s -
loss: 0.6097 - acc: 0.8359
105 7040/60000 [=>.....] - ETA: 0s -
```

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105 loss: 0.4567 - acc: 0.8781
106 12672/60000 [=====>.....] - ETA: 0s -
    loss: 0.4514 - acc: 0.8813
107 17920/60000 [=====>.....] - ETA: 0s -
    loss: 0.4446 - acc: 0.8840
108 24064/60000 [=====>.....] - ETA: 0s -
    loss: 0.4405 - acc: 0.8850
109 30464/60000 [=====>.....] - ETA: 0s -
    loss: 0.4416 - acc: 0.8843
110 37504/60000 [=====>.....] - ETA: 0s -
    loss: 0.4420 - acc: 0.8836
111 43520/60000 [=====>.....] - ETA: 0s -
    loss: 0.4425 - acc: 0.8832
112 49920/60000 [=====>.....] - ETA: 0s -
    loss: 0.4424 - acc: 0.8832
113 56960/60000 [=====>..] - ETA: 0s -
    loss: 0.4434 - acc: 0.8831
114 60000/60000 [=====] - 0s 8us/step
    - loss: 0.4434 - acc: 0.8833
115 Epoch 8/100
116
117 128/60000 [.....] - ETA: 0s -
    loss: 0.3498 - acc: 0.8984
118 6528/60000 [==>.....] - ETA: 0s -
    loss: 0.4365 - acc: 0.8830
119 11520/60000 [==>.....] - ETA: 0s -
    loss: 0.4316 - acc: 0.8871
120 17536/60000 [==>.....] - ETA: 0s -
    loss: 0.4328 - acc: 0.8869
121 24448/60000 [==>.....] - ETA: 0s -
    loss: 0.4297 - acc: 0.8878
122 30976/60000 [==>.....] - ETA: 0s -
    loss: 0.4300 - acc: 0.8871
123 36608/60000 [=====>.....] - ETA: 0s -
    loss: 0.4345 - acc: 0.8862
124 42496/60000 [=====>.....] - ETA: 0s -
    loss: 0.4327 - acc: 0.8863
125 49408/60000 [=====>.....] - ETA: 0s -
    loss: 0.4314 - acc: 0.8862
126 56448/60000 [=====>..] - ETA: 0s -
    loss: 0.4302 - acc: 0.8859
127 60000/60000 [=====] - 0s 8us/step
    - loss: 0.4284 - acc: 0.8864
128 Epoch 9/100
129
130 128/60000 [.....] - ETA: 0s -
    loss: 0.4136 - acc: 0.8906
131 6144/60000 [==>.....] - ETA: 0s -
    loss: 0.4045 - acc: 0.8940
132 11392/60000 [==>.....] - ETA: 0s -
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132 loss: 0.4123 - acc: 0.8919
133 17408/60000 [=====>.....] - ETA: 0s -
    loss: 0.4127 - acc: 0.8898
134 24320/60000 [=====>.....] - ETA: 0s -
    loss: 0.4214 - acc: 0.8872
135 31232/60000 [=====>.....] - ETA: 0s -
    loss: 0.4179 - acc: 0.8892
136 36608/60000 [=====>.....] - ETA: 0s -
    loss: 0.4199 - acc: 0.8887
137 42752/60000 [=====>.....] - ETA: 0s -
    loss: 0.4191 - acc: 0.8885
138 49664/60000 [=====>.....] - ETA: 0s -
    loss: 0.4178 - acc: 0.8883
139 56576/60000 [=====>..] - ETA: 0s -
    loss: 0.4167 - acc: 0.8884
140 60000/60000 [=====] - 0s 8us/step
    - loss: 0.4164 - acc: 0.8885
141 Epoch 10/100
142
143 128/60000 [.....] - ETA: 0s -
    loss: 0.3514 - acc: 0.9141
144 5120/60000 [=>.....] - ETA: 0s -
    loss: 0.4202 - acc: 0.8902
145 10496/60000 [==>.....] - ETA: 0s -
    loss: 0.4103 - acc: 0.8922
146 16384/60000 [==>.....] - ETA: 0s -
    loss: 0.4082 - acc: 0.8908
147 23296/60000 [==>.....] - ETA: 0s -
    loss: 0.4097 - acc: 0.8907
148 30208/60000 [=====>.....] - ETA: 0s -
    loss: 0.4078 - acc: 0.8917
149 35200/60000 [=====>.....] - ETA: 0s -
    loss: 0.4081 - acc: 0.8920
150 41216/60000 [=====>.....] - ETA: 0s -
    loss: 0.4079 - acc: 0.8917
151 47616/60000 [=====>.....] - ETA: 0s -
    loss: 0.4085 - acc: 0.8914
152 54144/60000 [=====>..] - ETA: 0s -
    loss: 0.4083 - acc: 0.8910
153 60000/60000 [=====] - 1s 8us/step
    - loss: 0.4063 - acc: 0.8913
154 Epoch 11/100
155
156 128/60000 [.....] - ETA: 0s -
    loss: 0.6225 - acc: 0.8281
157 5504/60000 [=>.....] - ETA: 0s -
    loss: 0.4035 - acc: 0.8928
158 11008/60000 [==>.....] - ETA: 0s -
    loss: 0.4065 - acc: 0.8914
159 17024/60000 [==>.....] - ETA: 0s -
```

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159 loss: 0.4054 - acc: 0.8924
160 23680/60000 [=====>.....] - ETA: 0s -
    loss: 0.4015 - acc: 0.8932
161 30080/60000 [=====>.....] - ETA: 0s -
    loss: 0.3991 - acc: 0.8933
162 35328/60000 [=====>.....] - ETA: 0s -
    loss: 0.3987 - acc: 0.8931
163 41344/60000 [=====>.....] - ETA: 0s -
    loss: 0.4002 - acc: 0.8924
164 48000/60000 [=====>.....] - ETA: 0s -
    loss: 0.4009 - acc: 0.8918
165 54400/60000 [=====>...] - ETA: 0s -
    loss: 0.3993 - acc: 0.8923
166 60000/60000 [=====] - 1s 8us/step
    - loss: 0.3978 - acc: 0.8931
167 Epoch 12/100
168
169 128/60000 [.....] - ETA: 0s -
    loss: 0.3440 - acc: 0.9297
170 5888/60000 [=>.....] - ETA: 0s -
    loss: 0.3807 - acc: 0.8952
171 12672/60000 [==>.....] - ETA: 0s -
    loss: 0.3881 - acc: 0.8955
172 19200/60000 [==>.....] - ETA: 0s -
    loss: 0.3850 - acc: 0.8957
173 24448/60000 [==>.....] - ETA: 0s -
    loss: 0.3866 - acc: 0.8953
174 29824/60000 [=====>.....] - ETA: 0s -
    loss: 0.3877 - acc: 0.8952
175 35840/60000 [=====>.....] - ETA: 0s -
    loss: 0.3872 - acc: 0.8959
176 42624/60000 [=====>.....] - ETA: 0s -
    loss: 0.3873 - acc: 0.8959
177 49280/60000 [=====>.....] - ETA: 0s -
    loss: 0.3882 - acc: 0.8952
178 54656/60000 [=====>...] - ETA: 0s -
    loss: 0.3886 - acc: 0.8955
179 60000/60000 [=====] - 1s 8us/step
    - loss: 0.3905 - acc: 0.8947
180 Epoch 13/100
181
182 128/60000 [.....] - ETA: 1s -
    loss: 0.4465 - acc: 0.8516
183 6656/60000 [=>.....] - ETA: 0s -
    loss: 0.3758 - acc: 0.8944
184 13568/60000 [==>.....] - ETA: 0s -
    loss: 0.3867 - acc: 0.8943
185 20096/60000 [==>.....] - ETA: 0s -
    loss: 0.3875 - acc: 0.8948
186 25344/60000 [==>.....] - ETA: 0s -
```

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186 loss: 0.3876 - acc: 0.8944
187 30720/60000 [=====>.....] - ETA: 0s -
    loss: 0.3849 - acc: 0.8955
188 36864/60000 [=====>.....] - ETA: 0s -
    loss: 0.3854 - acc: 0.8956
189 43648/60000 [=====>.....] - ETA: 0s -
    loss: 0.3855 - acc: 0.8955
190 49280/60000 [=====>.....] - ETA: 0s -
    loss: 0.3833 - acc: 0.8962
191 53120/60000 [=====>....] - ETA: 0s -
    loss: 0.3834 - acc: 0.8963
192 58112/60000 [=====>..] - ETA: 0s -
    loss: 0.3835 - acc: 0.8964
193 60000/60000 [=====] - 1s 9us/step
    - loss: 0.3841 - acc: 0.8962
194 Epoch 14/100
195
196 128/60000 [.....] - ETA: 1s -
    loss: 0.3038 - acc: 0.9062
197 6144/60000 [=>.....] - ETA: 0s -
    loss: 0.3778 - acc: 0.9027
198 12160/60000 [==>.....] - ETA: 0s -
    loss: 0.3771 - acc: 0.9005
199 17024/60000 [==>.....] - ETA: 0s -
    loss: 0.3789 - acc: 0.8995
200 21632/60000 [==>.....] - ETA: 0s -
    loss: 0.3785 - acc: 0.8988
201 22784/60000 [==>.....] - ETA: 0s -
    loss: 0.3801 - acc: 0.8978
202 27136/60000 [==>.....] - ETA: 0s -
    loss: 0.3797 - acc: 0.8976
203 32128/60000 [=====>.....] - ETA: 0s -
    loss: 0.3828 - acc: 0.8966
204 38912/60000 [=====>.....] - ETA: 0s -
    loss: 0.3810 - acc: 0.8970
205 45952/60000 [=====>.....] - ETA: 0s -
    loss: 0.3795 - acc: 0.8976
206 52992/60000 [=====>....] - ETA: 0s -
    loss: 0.3779 - acc: 0.8978
207 58496/60000 [=====>..] - ETA: 0s -
    loss: 0.3789 - acc: 0.8971
208 60000/60000 [=====] - 1s 10us/
    step - loss: 0.3785 - acc: 0.8973
209 Epoch 15/100
210
211 128/60000 [.....] - ETA: 1s -
    loss: 0.4301 - acc: 0.8750
212 4608/60000 [>.....] - ETA: 0s -
    loss: 0.3889 - acc: 0.8971
213 8960/60000 [=>.....] - ETA: 0s -
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213 loss: 0.3830 - acc: 0.8988
214 13824/60000 [=====>.....] - ETA: 0s -
    loss: 0.3782 - acc: 0.8987
215 18304/60000 [=====>.....] - ETA: 0s -
    loss: 0.3792 - acc: 0.8981
216 22656/60000 [=====>.....] - ETA: 0s -
    loss: 0.3787 - acc: 0.8978
217 27776/60000 [=====>.....] - ETA: 0s -
    loss: 0.3779 - acc: 0.8978
218 34688/60000 [=====>.....] - ETA: 0s -
    loss: 0.3768 - acc: 0.8978
219 41600/60000 [=====>.....] - ETA: 0s -
    loss: 0.3745 - acc: 0.8985
220 47744/60000 [=====>.....] - ETA: 0s -
    loss: 0.3759 - acc: 0.8975
221 54016/60000 [=====>...] - ETA: 0s -
    loss: 0.3759 - acc: 0.8974
222 60000/60000 [=====] - 1s 9us/step
    - loss: 0.3734 - acc: 0.8985
223 Epoch 16/100
224
225 128/60000 [.....] - ETA: 1s -
    loss: 0.3703 - acc: 0.9141
226 5632/60000 [=>.....] - ETA: 0s -
    loss: 0.3688 - acc: 0.8981
227 10240/60000 [==>.....] - ETA: 0s -
    loss: 0.3720 - acc: 0.8969
228 14592/60000 [==>.....] - ETA: 0s -
    loss: 0.3688 - acc: 0.8977
229 19072/60000 [==>.....] - ETA: 0s -
    loss: 0.3623 - acc: 0.9017
230 24064/60000 [==>.....] - ETA: 0s -
    loss: 0.3670 - acc: 0.8995
231 29696/60000 [==>.....] - ETA: 0s -
    loss: 0.3702 - acc: 0.8989
232 34688/60000 [==>.....] - ETA: 0s -
    loss: 0.3713 - acc: 0.8990
233 41088/60000 [=====>...] - ETA: 0s -
    loss: 0.3721 - acc: 0.8984
234 48128/60000 [=====>...] - ETA: 0s -
    loss: 0.3706 - acc: 0.8987
235 55168/60000 [=====>...] - ETA: 0s -
    loss: 0.3703 - acc: 0.8988
236 60000/60000 [=====] - 1s 9us/step
    - loss: 0.3689 - acc: 0.8992
237 Epoch 17/100
238
239 128/60000 [.....] - ETA: 0s -
    loss: 0.4940 - acc: 0.8359
240 6528/60000 [=>.....] - ETA: 0s -
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240 loss: 0.3808 - acc: 0.8934
241 12928/60000 [=====>.....] - ETA: 0s -
loss: 0.3730 - acc: 0.8965
242 19968/60000 [=====>.....] - ETA: 0s -
loss: 0.3718 - acc: 0.8970
243 25088/60000 [=====>.....] - ETA: 0s -
loss: 0.3684 - acc: 0.8984
244 29824/60000 [=====>.....] - ETA: 0s -
loss: 0.3699 - acc: 0.8980
245 36224/60000 [=====>.....] - ETA: 0s -
loss: 0.3665 - acc: 0.8997
246 43264/60000 [=====>.....] - ETA: 0s -
loss: 0.3661 - acc: 0.8998
247 50176/60000 [=====>.....] - ETA: 0s -
loss: 0.3650 - acc: 0.9000
248 55424/60000 [=====>...] - ETA: 0s -
loss: 0.3644 - acc: 0.9001
249 60000/60000 [=====] - 1s 8us/step
- loss: 0.3648 - acc: 0.9000
250 Epoch 18/100
251
252 128/60000 [.....] - ETA: 1s -
loss: 0.3551 - acc: 0.9219
253 4992/60000 [>.....] - ETA: 0s -
loss: 0.3608 - acc: 0.9024
254 9344/60000 [==>.....] - ETA: 0s -
loss: 0.3607 - acc: 0.8974
255 14080/60000 [=====>.....] - ETA: 0s -
loss: 0.3595 - acc: 0.8999
256 18944/60000 [=====>.....] - ETA: 0s -
loss: 0.3619 - acc: 0.9002
257 23168/60000 [=====>.....] - ETA: 0s -
loss: 0.3590 - acc: 0.9008
258 27776/60000 [=====>.....] - ETA: 0s -
loss: 0.3600 - acc: 0.9008
259 32640/60000 [=====>.....] - ETA: 0s -
loss: 0.3622 - acc: 0.9008
260 37120/60000 [=====>.....] - ETA: 0s -
loss: 0.3620 - acc: 0.9009
261 41728/60000 [=====>.....] - ETA: 0s -
loss: 0.3631 - acc: 0.9005
262 46336/60000 [=====>.....] - ETA: 0s -
loss: 0.3632 - acc: 0.9003
263 51840/60000 [=====>...] - ETA: 0s -
loss: 0.3622 - acc: 0.9002
264 57344/60000 [=====>...] - ETA: 0s -
loss: 0.3605 - acc: 0.9009
265 60000/60000 [=====] - 1s 11us/
step - loss: 0.3611 - acc: 0.9008
266 Epoch 19/100
```

```
267
268 128/60000 [.....] - ETA: 1s -
loss: 0.3354 - acc: 0.8750
269 7040/60000 [==>.....] - ETA: 0s -
loss: 0.3546 - acc: 0.9007
270 13568/60000 [====>.....] - ETA: 0s -
loss: 0.3534 - acc: 0.9029
271 19456/60000 [=====>.....] - ETA: 0s -
loss: 0.3543 - acc: 0.9027
272 24960/60000 [======>.....] - ETA: 0s -
loss: 0.3573 - acc: 0.9025
273 30720/60000 [======>.....] - ETA: 0s -
loss: 0.3577 - acc: 0.9027
274 37504/60000 [======>.....] - ETA: 0s -
loss: 0.3551 - acc: 0.9035
275 42880/60000 [======>.....] - ETA: 0s -
loss: 0.3556 - acc: 0.9029
276 46976/60000 [======>.....] - ETA: 0s -
loss: 0.3552 - acc: 0.9027
277 50816/60000 [======>.....] - ETA: 0s -
loss: 0.3555 - acc: 0.9025
278 55168/60000 [======>...] - ETA: 0s -
loss: 0.3551 - acc: 0.9026
279 60000/60000 [=====] - 1s 9us/step
- loss: 0.3576 - acc: 0.9017
280 Epoch 20/100
281
282 128/60000 [.....] - ETA: 1s -
loss: 0.3013 - acc: 0.9219
283 5248/60000 [>.....] - ETA: 0s -
loss: 0.3386 - acc: 0.9095
284 10496/60000 [==>.....] - ETA: 0s -
loss: 0.3441 - acc: 0.9056
285 16640/60000 [=====>.....] - ETA: 0s -
loss: 0.3547 - acc: 0.9010
286 22656/60000 [======>.....] - ETA: 0s -
loss: 0.3551 - acc: 0.9015
287 28800/60000 [======>.....] - ETA: 0s -
loss: 0.3530 - acc: 0.9024
288 33280/60000 [======>.....] - ETA: 0s -
loss: 0.3526 - acc: 0.9020
289 37632/60000 [======>.....] - ETA: 0s -
loss: 0.3543 - acc: 0.9021
290 42752/60000 [======>.....] - ETA: 0s -
loss: 0.3548 - acc: 0.9017
291 48768/60000 [======>.....] - ETA: 0s -
loss: 0.3549 - acc: 0.9019
292 54400/60000 [======>...] - ETA: 0s -
loss: 0.3562 - acc: 0.9021
293 59776/60000 [======>.] - ETA: 0s -
```

```
293 loss: 0.3546 - acc: 0.9022
294 60000/60000 [=====] - 1s 9us/step
    - loss: 0.3544 - acc: 0.9023
295 Epoch 21/100
296
297 128/60000 [.....] - ETA: 1s -
    loss: 0.4723 - acc: 0.8750
298 5888/60000 [=>.....] - ETA: 0s -
    loss: 0.3424 - acc: 0.8986
299 11392/60000 [====>.....] - ETA: 0s -
    loss: 0.3450 - acc: 0.9027
300 15872/60000 [=====>.....] - ETA: 0s -
    loss: 0.3433 - acc: 0.9022
301 20992/60000 [======>.....] - ETA: 0s -
    loss: 0.3480 - acc: 0.9015
302 27648/60000 [======>.....] - ETA: 0s -
    loss: 0.3494 - acc: 0.9015
303 34432/60000 [======>.....] - ETA: 0s -
    loss: 0.3496 - acc: 0.9017
304 39680/60000 [======>.....] - ETA: 0s -
    loss: 0.3522 - acc: 0.9017
305 45312/60000 [======>.....] - ETA: 0s -
    loss: 0.3521 - acc: 0.9019
306 51584/60000 [======>.....] - ETA: 0s -
    loss: 0.3520 - acc: 0.9020
307 57472/60000 [======>..] - ETA: 0s -
    loss: 0.3519 - acc: 0.9024
308 60000/60000 [=====] - 1s 9us/step
    - loss: 0.3515 - acc: 0.9028
309 Epoch 22/100
310
311 128/60000 [.....] - ETA: 1s -
    loss: 0.2092 - acc: 0.9531
312 4352/60000 [=>.....] - ETA: 0s -
    loss: 0.3376 - acc: 0.9090
313 8320/60000 [==>.....] - ETA: 0s -
    loss: 0.3563 - acc: 0.9077
314 13184/60000 [====>.....] - ETA: 0s -
    loss: 0.3605 - acc: 0.9055
315 19200/60000 [=====>.....] - ETA: 0s -
    loss: 0.3530 - acc: 0.9065
316 26112/60000 [======>.....] - ETA: 0s -
    loss: 0.3524 - acc: 0.9055
317 31488/60000 [======>.....] - ETA: 0s -
    loss: 0.3514 - acc: 0.9054
318 35584/60000 [======>.....] - ETA: 0s -
    loss: 0.3529 - acc: 0.9050
319 38528/60000 [======>.....] - ETA: 0s -
    loss: 0.3527 - acc: 0.9043
320 43264/60000 [======>.....] - ETA: 0s -
```

```
320 loss: 0.3515 - acc: 0.9038
321 48640/60000 [=====>.....] - ETA: 0s -
    loss: 0.3514 - acc: 0.9035
322 52864/60000 [=====>....] - ETA: 0s -
    loss: 0.3508 - acc: 0.9032
323 57600/60000 [=====>..] - ETA: 0s -
    loss: 0.3499 - acc: 0.9033
324 60000/60000 [=====] - 1s 10us/
    step - loss: 0.3488 - acc: 0.9037
325 Epoch 23/100
326
327 128/60000 [.....] - ETA: 1s -
    loss: 0.4127 - acc: 0.8672
328 7040/60000 [=>.....] - ETA: 0s -
    loss: 0.3473 - acc: 0.9044
329 12800/60000 [====>.....] - ETA: 0s -
    loss: 0.3460 - acc: 0.9053
330 17536/60000 [=====>.....] - ETA: 0s -
    loss: 0.3465 - acc: 0.9055
331 21504/60000 [=====>.....] - ETA: 0s -
    loss: 0.3495 - acc: 0.9047
332 27008/60000 [=====>.....] - ETA: 0s -
    loss: 0.3468 - acc: 0.9047
333 31104/60000 [=====>.....] - ETA: 0s -
    loss: 0.3474 - acc: 0.9037
334 34688/60000 [=====>.....] - ETA: 0s -
    loss: 0.3466 - acc: 0.9041
335 40064/60000 [=====>.....] - ETA: 0s -
    loss: 0.3473 - acc: 0.9037
336 46720/60000 [=====>.....] - ETA: 0s -
    loss: 0.3496 - acc: 0.9031
337 53760/60000 [=====>....] - ETA: 0s -
    loss: 0.3471 - acc: 0.9041
338 59648/60000 [=====>..] - ETA: 0s -
    loss: 0.3465 - acc: 0.9043
339 60000/60000 [=====] - 1s 9us/step
    - loss: 0.3463 - acc: 0.9044
340 Epoch 24/100
341
342 128/60000 [.....] - ETA: 1s -
    loss: 0.4287 - acc: 0.8906
343 4864/60000 [=>.....] - ETA: 0s -
    loss: 0.3307 - acc: 0.9083
344 9472/60000 [=>.....] - ETA: 0s -
    loss: 0.3384 - acc: 0.9061
345 13824/60000 [====>.....] - ETA: 0s -
    loss: 0.3448 - acc: 0.9036
346 18176/60000 [=====>.....] - ETA: 0s -
    loss: 0.3454 - acc: 0.9036
347 22656/60000 [=====>.....] - ETA: 0s -
```

```
347 loss: 0.3477 - acc: 0.9030
348 28544/60000 [=====>.....] - ETA: 0s -
    loss: 0.3458 - acc: 0.9038
349 34688/60000 [=====>.....] - ETA: 0s -
    loss: 0.3449 - acc: 0.9040
350 40320/60000 [=====>.....] - ETA: 0s -
    loss: 0.3422 - acc: 0.9047
351 45952/60000 [=====>.....] - ETA: 0s -
    loss: 0.3399 - acc: 0.9057
352 51840/60000 [=====>.....] - ETA: 0s -
    loss: 0.3430 - acc: 0.9049
353 56448/60000 [=====>..] - ETA: 0s -
    loss: 0.3441 - acc: 0.9045
354 60000/60000 [=====] - 1s 10us/
    step - loss: 0.3438 - acc: 0.9048
355 Epoch 25/100
356
357 128/60000 [.....] - ETA: 1s -
    loss: 0.4035 - acc: 0.9062
358 4224/60000 [>.....] - ETA: 0s -
    loss: 0.3369 - acc: 0.9025
359 10240/60000 [==>.....] - ETA: 0s -
    loss: 0.3384 - acc: 0.9044
360 17024/60000 [==>.....] - ETA: 0s -
    loss: 0.3496 - acc: 0.9027
361 22528/60000 [==>.....] - ETA: 0s -
    loss: 0.3480 - acc: 0.9030
362 28160/60000 [=====>.....] - ETA: 0s -
    loss: 0.3473 - acc: 0.9034
363 33408/60000 [=====>.....] - ETA: 0s -
    loss: 0.3445 - acc: 0.9045
364 37504/60000 [=====>.....] - ETA: 0s -
    loss: 0.3440 - acc: 0.9043
365 41856/60000 [=====>.....] - ETA: 0s -
    loss: 0.3435 - acc: 0.9044
366 46080/60000 [=====>.....] - ETA: 0s -
    loss: 0.3444 - acc: 0.9044
367 50432/60000 [=====>.....] - ETA: 0s -
    loss: 0.3427 - acc: 0.9051
368 55936/60000 [=====>..] - ETA: 0s -
    loss: 0.3421 - acc: 0.9050
369 60000/60000 [=====] - 1s 10us/
    step - loss: 0.3416 - acc: 0.9054
370 Epoch 26/100
371
372 128/60000 [.....] - ETA: 0s -
    loss: 0.3677 - acc: 0.8828
373 5760/60000 [>.....] - ETA: 0s -
    loss: 0.3235 - acc: 0.9104
374 11136/60000 [==>.....] - ETA: 0s -
```

```
374 loss: 0.3371 - acc: 0.9074
375 17536/60000 [=====>.....] - ETA: 0s -
loss: 0.3309 - acc: 0.9086
376 24576/60000 [=====>.....] - ETA: 0s -
loss: 0.3325 - acc: 0.9080
377 31616/60000 [=====>.....] - ETA: 0s -
loss: 0.3361 - acc: 0.9070
378 37888/60000 [=====>.....] - ETA: 0s -
loss: 0.3372 - acc: 0.9065
379 44416/60000 [=====>.....] - ETA: 0s -
loss: 0.3360 - acc: 0.9067
380 51456/60000 [=====>.....] - ETA: 0s -
loss: 0.3383 - acc: 0.9064
381 57728/60000 [=====>..] - ETA: 0s -
loss: 0.3394 - acc: 0.9058
382 60000/60000 [=====] - 0s 8us/step
- loss: 0.3395 - acc: 0.9057
383 Epoch 27/100
384
385 128/60000 [.....] - ETA: 1s -
loss: 0.2822 - acc: 0.9375
386 5760/60000 [=>.....] - ETA: 0s -
loss: 0.3311 - acc: 0.9097
387 11904/60000 [==>.....] - ETA: 0s -
loss: 0.3245 - acc: 0.9126
388 18816/60000 [=====>.....] - ETA: 0s -
loss: 0.3331 - acc: 0.9084
389 24320/60000 [=====>.....] - ETA: 0s -
loss: 0.3358 - acc: 0.9075
390 28672/60000 [=====>.....] - ETA: 0s -
loss: 0.3347 - acc: 0.9076
391 33024/60000 [=====>.....] - ETA: 0s -
loss: 0.3346 - acc: 0.9076
392 38400/60000 [=====>.....] - ETA: 0s -
loss: 0.3351 - acc: 0.9078
393 43776/60000 [=====>.....] - ETA: 0s -
loss: 0.3357 - acc: 0.9073
394 48256/60000 [=====>.....] - ETA: 0s -
loss: 0.3380 - acc: 0.9066
395 53760/60000 [=====>....] - ETA: 0s -
loss: 0.3375 - acc: 0.9067
396 60000/60000 [=====] - 1s 9us/step
- loss: 0.3375 - acc: 0.9063
397 Epoch 28/100
398
399 128/60000 [.....] - ETA: 0s -
loss: 0.2169 - acc: 0.9453
400 6528/60000 [=>.....] - ETA: 0s -
loss: 0.3321 - acc: 0.9104
401 11776/60000 [==>.....] - ETA: 0s -
```

```
401 loss: 0.3435 - acc: 0.9056
402 17280/60000 [=====>.....] - ETA: 0s -
loss: 0.3382 - acc: 0.9062
403 23936/60000 [=====>.....] - ETA: 0s -
loss: 0.3334 - acc: 0.9077
404 30464/60000 [=====>.....] - ETA: 0s -
loss: 0.3321 - acc: 0.9083
405 36096/60000 [=====>.....] - ETA: 0s -
loss: 0.3329 - acc: 0.9078
406 42112/60000 [=====>.....] - ETA: 0s -
loss: 0.3336 - acc: 0.9079
407 48256/60000 [=====>.....] - ETA: 0s -
loss: 0.3345 - acc: 0.9077
408 55296/60000 [=====>...] - ETA: 0s -
loss: 0.3353 - acc: 0.9070
409 60000/60000 [=====] - 0s 8us/step
- loss: 0.3357 - acc: 0.9068
410 Epoch 29/100
411
412 128/60000 [.....] - ETA: 1s -
loss: 0.3203 - acc: 0.9062
413 6144/60000 [==>.....] - ETA: 0s -
loss: 0.3255 - acc: 0.9084
414 12800/60000 [====>.....] - ETA: 0s -
loss: 0.3230 - acc: 0.9091
415 19328/60000 [=====>.....] - ETA: 0s -
loss: 0.3229 - acc: 0.9104
416 24448/60000 [=====>.....] - ETA: 0s -
loss: 0.3242 - acc: 0.9095
417 29824/60000 [=====>.....] - ETA: 0s -
loss: 0.3281 - acc: 0.9077
418 36224/60000 [=====>.....] - ETA: 0s -
loss: 0.3309 - acc: 0.9070
419 43136/60000 [=====>.....] - ETA: 0s -
loss: 0.3334 - acc: 0.9069
420 49536/60000 [=====>.....] - ETA: 0s -
loss: 0.3322 - acc: 0.9076
421 55552/60000 [=====>...] - ETA: 0s -
loss: 0.3348 - acc: 0.9073
422 60000/60000 [=====] - 0s 8us/step
- loss: 0.3339 - acc: 0.9072
423 Epoch 30/100
424
425 128/60000 [.....] - ETA: 1s -
loss: 0.2248 - acc: 0.9375
426 6528/60000 [==>.....] - ETA: 0s -
loss: 0.3160 - acc: 0.9115
427 13312/60000 [====>.....] - ETA: 0s -
loss: 0.3286 - acc: 0.9077
428 19072/60000 [=====>.....] - ETA: 0s -
```

```
428 loss: 0.3266 - acc: 0.9092
429 24704/60000 [=====>.....] - ETA: 0s -
    loss: 0.3312 - acc: 0.9082
430 30848/60000 [=====>.....] - ETA: 0s -
    loss: 0.3333 - acc: 0.9076
431 37504/60000 [=====>.....] - ETA: 0s -
    loss: 0.3337 - acc: 0.9073
432 43904/60000 [=====>.....] - ETA: 0s -
    loss: 0.3334 - acc: 0.9072
433 49152/60000 [=====>.....] - ETA: 0s -
    loss: 0.3348 - acc: 0.9069
434 54912/60000 [=====>...] - ETA: 0s -
    loss: 0.3330 - acc: 0.9068
435 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3321 - acc: 0.9074
436 Epoch 31/100
437
438 128/60000 [.....] - ETA: 0s -
    loss: 0.3736 - acc: 0.8828
439 6656/60000 [==>.....] - ETA: 0s -
    loss: 0.3218 - acc: 0.9109
440 11776/60000 [==>.....] - ETA: 0s -
    loss: 0.3311 - acc: 0.9102
441 17152/60000 [==>.....] - ETA: 0s -
    loss: 0.3304 - acc: 0.9093
442 23680/60000 [=====>.....] - ETA: 0s -
    loss: 0.3329 - acc: 0.9083
443 30592/60000 [=====>.....] - ETA: 0s -
    loss: 0.3312 - acc: 0.9079
444 37504/60000 [=====>.....] - ETA: 0s -
    loss: 0.3326 - acc: 0.9081
445 43136/60000 [=====>.....] - ETA: 0s -
    loss: 0.3307 - acc: 0.9084
446 48640/60000 [=====>.....] - ETA: 0s -
    loss: 0.3315 - acc: 0.9086
447 54912/60000 [=====>...] - ETA: 0s -
    loss: 0.3304 - acc: 0.9086
448 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3306 - acc: 0.9084
449 Epoch 32/100
450
451 128/60000 [.....] - ETA: 1s -
    loss: 0.3553 - acc: 0.8984
452 6784/60000 [==>.....] - ETA: 0s -
    loss: 0.3398 - acc: 0.9039
453 12288/60000 [==>.....] - ETA: 0s -
    loss: 0.3318 - acc: 0.9074
454 17664/60000 [==>.....] - ETA: 0s -
    loss: 0.3261 - acc: 0.9090
455 23936/60000 [==>.....] - ETA: 0s -
```

```
455 loss: 0.3260 - acc: 0.9106
456 30464/60000 [=====>.....] - ETA: 0s -
    loss: 0.3287 - acc: 0.9093
457 36992/60000 [=====>.....] - ETA: 0s -
    loss: 0.3274 - acc: 0.9096
458 42624/60000 [=====>.....] - ETA: 0s -
    loss: 0.3260 - acc: 0.9103
459 48896/60000 [=====>.....] - ETA: 0s -
    loss: 0.3281 - acc: 0.9090
460 55424/60000 [=====>...] - ETA: 0s -
    loss: 0.3290 - acc: 0.9087
461 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3290 - acc: 0.9087
462 Epoch 33/100
463
464 128/60000 [.....] - ETA: 1s -
    loss: 0.3167 - acc: 0.9375
465 5760/60000 [=>.....] - ETA: 0s -
    loss: 0.3386 - acc: 0.9068
466 10880/60000 [==>.....] - ETA: 0s -
    loss: 0.3325 - acc: 0.9083
467 16640/60000 [==>.....] - ETA: 0s -
    loss: 0.3304 - acc: 0.9070
468 23168/60000 [==>.....] - ETA: 0s -
    loss: 0.3276 - acc: 0.9076
469 29696/60000 [==>.....] - ETA: 0s -
    loss: 0.3276 - acc: 0.9082
470 35456/60000 [=====>.....] - ETA: 0s -
    loss: 0.3277 - acc: 0.9080
471 41472/60000 [=====>.....] - ETA: 0s -
    loss: 0.3283 - acc: 0.9076
472 48000/60000 [=====>...] - ETA: 0s -
    loss: 0.3277 - acc: 0.9080
473 54400/60000 [=====>...] - ETA: 0s -
    loss: 0.3300 - acc: 0.9076
474 60000/60000 [=====] - 1s 8us/step
    - loss: 0.3276 - acc: 0.9087
475 Epoch 34/100
476
477 128/60000 [.....] - ETA: 1s -
    loss: 0.2899 - acc: 0.8906
478 5632/60000 [=>.....] - ETA: 0s -
    loss: 0.3263 - acc: 0.9059
479 12544/60000 [==>.....] - ETA: 0s -
    loss: 0.3425 - acc: 0.9051
480 19584/60000 [==>.....] - ETA: 0s -
    loss: 0.3334 - acc: 0.9073
481 26496/60000 [==>.....] - ETA: 0s -
    loss: 0.3307 - acc: 0.9078
482 31872/60000 [==>.....] - ETA: 0s -
```

```
482 loss: 0.3247 - acc: 0.9097
483 37504/60000 [=====>.....] - ETA: 0s -
    loss: 0.3258 - acc: 0.9092
484 44416/60000 [=====>.....] - ETA: 0s -
    loss: 0.3257 - acc: 0.9092
485 51456/60000 [=====>....] - ETA: 0s -
    loss: 0.3265 - acc: 0.9089
486 57088/60000 [=====>..] - ETA: 0s -
    loss: 0.3267 - acc: 0.9091
487 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3262 - acc: 0.9094
488 Epoch 35/100
489
490 128/60000 [.....] - ETA: 1s -
    loss: 0.2526 - acc: 0.9375
491 6784/60000 [==>.....] - ETA: 0s -
    loss: 0.3240 - acc: 0.9088
492 13696/60000 [====>.....] - ETA: 0s -
    loss: 0.3175 - acc: 0.9125
493 19968/60000 [=====>.....] - ETA: 0s -
    loss: 0.3200 - acc: 0.9120
494 25216/60000 [=====>.....] - ETA: 0s -
    loss: 0.3201 - acc: 0.9124
495 30976/60000 [=====>.....] - ETA: 0s -
    loss: 0.3242 - acc: 0.9105
496 37504/60000 [=====>.....] - ETA: 0s -
    loss: 0.3241 - acc: 0.9106
497 44416/60000 [=====>.....] - ETA: 0s -
    loss: 0.3220 - acc: 0.9111
498 50560/60000 [=====>.....] - ETA: 0s -
    loss: 0.3217 - acc: 0.9109
499 56448/60000 [=====>..] - ETA: 0s -
    loss: 0.3233 - acc: 0.9101
500 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3249 - acc: 0.9095
501 Epoch 36/100
502
503 128/60000 [.....] - ETA: 0s -
    loss: 0.4115 - acc: 0.8828
504 7040/60000 [==>.....] - ETA: 0s -
    loss: 0.3358 - acc: 0.9055
505 13184/60000 [====>.....] - ETA: 0s -
    loss: 0.3337 - acc: 0.9064
506 18432/60000 [=====>.....] - ETA: 0s -
    loss: 0.3248 - acc: 0.9088
507 24064/60000 [=====>.....] - ETA: 0s -
    loss: 0.3287 - acc: 0.9080
508 30976/60000 [=====>.....] - ETA: 0s -
    loss: 0.3289 - acc: 0.9086
509 37888/60000 [=====>.....] - ETA: 0s -
```

```
509 loss: 0.3275 - acc: 0.9086
510 43776/60000 [=====>.....] - ETA: 0s -
    loss: 0.3257 - acc: 0.9090
511 49792/60000 [=====>.....] - ETA: 0s -
    loss: 0.3247 - acc: 0.9095
512 56192/60000 [=====>..] - ETA: 0s -
    loss: 0.3232 - acc: 0.9098
513 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3236 - acc: 0.9101
514 Epoch 37/100
515
516 128/60000 [.....] - ETA: 0s -
    loss: 0.2674 - acc: 0.9375
517 7040/60000 [==>.....] - ETA: 0s -
    loss: 0.3220 - acc: 0.9088
518 13056/60000 [====>.....] - ETA: 0s -
    loss: 0.3268 - acc: 0.9092
519 18432/60000 [=====>.....] - ETA: 0s -
    loss: 0.3263 - acc: 0.9089
520 24448/60000 [=====>.....] - ETA: 0s -
    loss: 0.3242 - acc: 0.9094
521 31360/60000 [=====>.....] - ETA: 0s -
    loss: 0.3243 - acc: 0.9088
522 38272/60000 [=====>.....] - ETA: 0s -
    loss: 0.3218 - acc: 0.9095
523 43648/60000 [=====>.....] - ETA: 0s -
    loss: 0.3225 - acc: 0.9093
524 49920/60000 [=====>.....] - ETA: 0s -
    loss: 0.3232 - acc: 0.9094
525 56832/60000 [=====>..] - ETA: 0s -
    loss: 0.3231 - acc: 0.9096
526 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3223 - acc: 0.9101
527 Epoch 38/100
528
529 128/60000 [.....] - ETA: 0s -
    loss: 0.2906 - acc: 0.8984
530 7040/60000 [==>.....] - ETA: 0s -
    loss: 0.3252 - acc: 0.9082
531 13056/60000 [====>.....] - ETA: 0s -
    loss: 0.3226 - acc: 0.9103
532 18560/60000 [=====>.....] - ETA: 0s -
    loss: 0.3236 - acc: 0.9096
533 24576/60000 [=====>.....] - ETA: 0s -
    loss: 0.3231 - acc: 0.9097
534 31488/60000 [=====>.....] - ETA: 0s -
    loss: 0.3233 - acc: 0.9095
535 38400/60000 [=====>.....] - ETA: 0s -
    loss: 0.3215 - acc: 0.9100
536 44416/60000 [=====>.....] - ETA: 0s -
```

```
536 loss: 0.3198 - acc: 0.9106
537 50432/60000 [=====>.....] - ETA: 0s -
loss: 0.3201 - acc: 0.9108
538 57344/60000 [=====>..] - ETA: 0s -
loss: 0.3212 - acc: 0.9105
539 60000/60000 [=====] - 0s 8us/step
- loss: 0.3212 - acc: 0.9106
540 Epoch 39/100
541
542    128/60000 [.....] - ETA: 0s -
loss: 0.2454 - acc: 0.9297
543 6400/60000 [==>.....] - ETA: 0s -
loss: 0.3069 - acc: 0.9164
544 12672/60000 [====>.....] - ETA: 0s -
loss: 0.3233 - acc: 0.9116
545 18176/60000 [=====>.....] - ETA: 0s -
loss: 0.3246 - acc: 0.9119
546 24064/60000 [=====>.....] - ETA: 0s -
loss: 0.3242 - acc: 0.9117
547 30976/60000 [=====>.....] - ETA: 0s -
loss: 0.3206 - acc: 0.9125
548 37888/60000 [=====>.....] - ETA: 0s -
loss: 0.3215 - acc: 0.9117
549 43776/60000 [=====>.....] - ETA: 0s -
loss: 0.3199 - acc: 0.9119
550 49792/60000 [=====>.....] - ETA: 0s -
loss: 0.3203 - acc: 0.9114
551 56832/60000 [=====>..] - ETA: 0s -
loss: 0.3206 - acc: 0.9112
552 60000/60000 [=====] - 0s 8us/step
- loss: 0.3200 - acc: 0.9111
553 Epoch 40/100
554
555    128/60000 [.....] - ETA: 0s -
loss: 0.3037 - acc: 0.8984
556 6528/60000 [==>.....] - ETA: 0s -
loss: 0.3067 - acc: 0.9144
557 12544/60000 [====>.....] - ETA: 0s -
loss: 0.3067 - acc: 0.9131
558 17792/60000 [=====>.....] - ETA: 0s -
loss: 0.3111 - acc: 0.9114
559 23808/60000 [=====>.....] - ETA: 0s -
loss: 0.3097 - acc: 0.9121
560 30720/60000 [=====>.....] - ETA: 0s -
loss: 0.3105 - acc: 0.9127
561 37632/60000 [=====>.....] - ETA: 0s -
loss: 0.3117 - acc: 0.9130
562 43648/60000 [=====>.....] - ETA: 0s -
loss: 0.3157 - acc: 0.9115
563 50048/60000 [=====>.....] - ETA: 0s -
```

```
563 loss: 0.3161 - acc: 0.9114
564 56576/60000 [=====>...] - ETA: 0s -
loss: 0.3181 - acc: 0.9112
565 60000/60000 [=====] - 0s 8us/step
- loss: 0.3190 - acc: 0.9111
566 Epoch 41/100
567
568 128/60000 [.....] - ETA: 1s -
loss: 0.2444 - acc: 0.9453
569 5632/60000 [=>.....] - ETA: 0s -
loss: 0.3255 - acc: 0.9130
570 10240/60000 [====>.....] - ETA: 0s -
loss: 0.3252 - acc: 0.9121
571 16128/60000 [=====>.....] - ETA: 0s -
loss: 0.3197 - acc: 0.9128
572 23040/60000 [=====>.....] - ETA: 0s -
loss: 0.3195 - acc: 0.9112
573 29952/60000 [=====>.....] - ETA: 0s -
loss: 0.3225 - acc: 0.9101
574 35968/60000 [=====>.....] - ETA: 0s -
loss: 0.3225 - acc: 0.9111
575 42240/60000 [=====>.....] - ETA: 0s -
loss: 0.3214 - acc: 0.9112
576 48640/60000 [=====>.....] - ETA: 0s -
loss: 0.3175 - acc: 0.9123
577 55168/60000 [=====>...] - ETA: 0s -
loss: 0.3175 - acc: 0.9120
578 60000/60000 [=====] - 0s 8us/step
- loss: 0.3179 - acc: 0.9117
579 Epoch 42/100
580
581 128/60000 [.....] - ETA: 1s -
loss: 0.3216 - acc: 0.9375
582 6144/60000 [=>.....] - ETA: 0s -
loss: 0.3159 - acc: 0.9100
583 12800/60000 [====>.....] - ETA: 0s -
loss: 0.3197 - acc: 0.9098
584 19584/60000 [=====>.....] - ETA: 0s -
loss: 0.3177 - acc: 0.9109
585 25088/60000 [=====>.....] - ETA: 0s -
loss: 0.3132 - acc: 0.9125
586 30336/60000 [=====>.....] - ETA: 0s -
loss: 0.3134 - acc: 0.9122
587 36352/60000 [=====>.....] - ETA: 0s -
loss: 0.3164 - acc: 0.9113
588 40960/60000 [=====>.....] - ETA: 0s -
loss: 0.3192 - acc: 0.9108
589 45440/60000 [=====>.....] - ETA: 0s -
loss: 0.3189 - acc: 0.9108
590 49664/60000 [=====>.....] - ETA: 0s -
```

```
590 loss: 0.3191 - acc: 0.9106
591 54144/60000 [=====>...] - ETA: 0s -
loss: 0.3177 - acc: 0.9111
592 58240/60000 [=====>.] - ETA: 0s -
loss: 0.3175 - acc: 0.9115
593 60000/60000 [=====] - 1s 10us/
step - loss: 0.3169 - acc: 0.9117
594 Epoch 43/100
595
596 128/60000 [.....] - ETA: 1s -
loss: 0.3647 - acc: 0.8750
597 5632/60000 [=>.....] - ETA: 0s -
loss: 0.3138 - acc: 0.9134
598 11264/60000 [==>.....] - ETA: 0s -
loss: 0.3178 - acc: 0.9142
599 17280/60000 [=====>.....] - ETA: 0s -
loss: 0.3161 - acc: 0.9145
600 24192/60000 [=====>.....] - ETA: 0s -
loss: 0.3147 - acc: 0.9138
601 31104/60000 [=====>.....] - ETA: 0s -
loss: 0.3159 - acc: 0.9130
602 36992/60000 [=====>.....] - ETA: 0s -
loss: 0.3131 - acc: 0.9141
603 43136/60000 [=====>.....] - ETA: 0s -
loss: 0.3139 - acc: 0.9137
604 49920/60000 [=====>.....] - ETA: 0s -
loss: 0.3141 - acc: 0.9132
605 56576/60000 [=====>...] - ETA: 0s -
loss: 0.3155 - acc: 0.9121
606 60000/60000 [=====] - 0s 8us/step
- loss: 0.3159 - acc: 0.9121
607 Epoch 44/100
608
609 128/60000 [.....] - ETA: 1s -
loss: 0.2590 - acc: 0.9375
610 4608/60000 [=>.....] - ETA: 0s -
loss: 0.3231 - acc: 0.9119
611 8960/60000 [==>.....] - ETA: 0s -
loss: 0.3209 - acc: 0.9122
612 13952/60000 [=====>.....] - ETA: 0s -
loss: 0.3229 - acc: 0.9108
613 19840/60000 [=====>.....] - ETA: 0s -
loss: 0.3189 - acc: 0.9128
614 26624/60000 [=====>.....] - ETA: 0s -
loss: 0.3150 - acc: 0.9140
615 31744/60000 [=====>.....] - ETA: 0s -
loss: 0.3148 - acc: 0.9135
616 38144/60000 [=====>.....] - ETA: 0s -
loss: 0.3140 - acc: 0.9137
617 45184/60000 [=====>.....] - ETA: 0s -
```

```
617 loss: 0.3132 - acc: 0.9134
618 52096/60000 [=====>....] - ETA: 0s -
loss: 0.3130 - acc: 0.9130
619 57216/60000 [=====>..] - ETA: 0s -
loss: 0.3141 - acc: 0.9127
620 60000/60000 [=====] - 1s 9us/step
- loss: 0.3149 - acc: 0.9126
621 Epoch 45/100
622
623 128/60000 [.....] - ETA: 1s -
loss: 0.2183 - acc: 0.9375
624 6400/60000 [==>.....] - ETA: 0s -
loss: 0.3049 - acc: 0.9163
625 13184/60000 [====>.....] - ETA: 0s -
loss: 0.3109 - acc: 0.9118
626 19840/60000 [=====>.....] - ETA: 0s -
loss: 0.3127 - acc: 0.9122
627 25344/60000 [=====>.....] - ETA: 0s -
loss: 0.3107 - acc: 0.9129
628 30080/60000 [=====>.....] - ETA: 0s -
loss: 0.3105 - acc: 0.9136
629 34560/60000 [=====>.....] - ETA: 0s -
loss: 0.3140 - acc: 0.9127
630 38912/60000 [=====>.....] - ETA: 0s -
loss: 0.3137 - acc: 0.9125
631 43392/60000 [=====>.....] - ETA: 0s -
loss: 0.3138 - acc: 0.9129
632 47744/60000 [=====>.....] - ETA: 0s -
loss: 0.3152 - acc: 0.9127
633 51840/60000 [=====>....] - ETA: 0s -
loss: 0.3154 - acc: 0.9121
634 56576/60000 [=====>..] - ETA: 0s -
loss: 0.3139 - acc: 0.9128
635 60000/60000 [=====] - 1s 10us/
step - loss: 0.3141 - acc: 0.9125
636 Epoch 46/100
637
638 128/60000 [.....] - ETA: 0s -
loss: 0.3988 - acc: 0.8828
639 5888/60000 [>.....] - ETA: 0s -
loss: 0.3162 - acc: 0.9107
640 11392/60000 [====>.....] - ETA: 0s -
loss: 0.3144 - acc: 0.9123
641 17792/60000 [=====>.....] - ETA: 0s -
loss: 0.3145 - acc: 0.9136
642 24832/60000 [=====>.....] - ETA: 0s -
loss: 0.3118 - acc: 0.9145
643 31744/60000 [=====>.....] - ETA: 0s -
loss: 0.3126 - acc: 0.9143
644 37504/60000 [=====>.....] - ETA: 0s -
```

```
644 loss: 0.3128 - acc: 0.9140
645 43520/60000 [=====>.....] - ETA: 0s -
loss: 0.3120 - acc: 0.9139
646 49792/60000 [=====>.....] - ETA: 0s -
loss: 0.3141 - acc: 0.9125
647 56704/60000 [=====>..] - ETA: 0s -
loss: 0.3145 - acc: 0.9122
648 60000/60000 [=====] - 0s 8us/step
- loss: 0.3132 - acc: 0.9128
649 Epoch 47/100
650
651 128/60000 [.....] - ETA: 1s -
loss: 0.2450 - acc: 0.9453
652 6016/60000 [=>.....] - ETA: 0s -
loss: 0.3079 - acc: 0.9156
653 11392/60000 [==>.....] - ETA: 0s -
loss: 0.3057 - acc: 0.9168
654 17408/60000 [=====>.....] - ETA: 0s -
loss: 0.3013 - acc: 0.9169
655 24064/60000 [=====>.....] - ETA: 0s -
loss: 0.3083 - acc: 0.9143
656 29568/60000 [=====>.....] - ETA: 0s -
loss: 0.3091 - acc: 0.9143
657 34560/60000 [=====>.....] - ETA: 0s -
loss: 0.3115 - acc: 0.9133
658 39168/60000 [=====>.....] - ETA: 0s -
loss: 0.3112 - acc: 0.9133
659 43008/60000 [=====>.....] - ETA: 0s -
loss: 0.3115 - acc: 0.9132
660 47616/60000 [=====>.....] - ETA: 0s -
loss: 0.3106 - acc: 0.9133
661 52096/60000 [=====>....] - ETA: 0s -
loss: 0.3120 - acc: 0.9132
662 56576/60000 [=====>..] - ETA: 0s -
loss: 0.3114 - acc: 0.9136
663 60000/60000 [=====] - 1s 10us/
step - loss: 0.3123 - acc: 0.9132
664 Epoch 48/100
665
666 128/60000 [.....] - ETA: 1s -
loss: 0.2972 - acc: 0.9219
667 5760/60000 [=>.....] - ETA: 0s -
loss: 0.2986 - acc: 0.9175
668 10880/60000 [==>.....] - ETA: 0s -
loss: 0.3079 - acc: 0.9141
669 15744/60000 [==>.....] - ETA: 0s -
loss: 0.3126 - acc: 0.9129
670 21888/60000 [=====>.....] - ETA: 0s -
loss: 0.3138 - acc: 0.9136
671 28928/60000 [=====>.....] - ETA: 0s -
```

```
671 loss: 0.3129 - acc: 0.9131
672 35456/60000 [=====>.....] - ETA: 0s -
loss: 0.3131 - acc: 0.9122
673 41600/60000 [=====>.....] - ETA: 0s -
loss: 0.3126 - acc: 0.9129
674 48000/60000 [=====>.....] - ETA: 0s -
loss: 0.3115 - acc: 0.9133
675 54912/60000 [=====>...] - ETA: 0s -
loss: 0.3109 - acc: 0.9138
676 60000/60000 [=====] - 0s 8us/step
- loss: 0.3114 - acc: 0.9137
677 Epoch 49/100
678
679 128/60000 [.....] - ETA: 1s -
loss: 0.3748 - acc: 0.8594
680 5888/60000 [=>.....] - ETA: 0s -
loss: 0.2928 - acc: 0.9205
681 11392/60000 [==>.....] - ETA: 0s -
loss: 0.2947 - acc: 0.9205
682 17792/60000 [=====>.....] - ETA: 0s -
loss: 0.3014 - acc: 0.9185
683 24704/60000 [=====>.....] - ETA: 0s -
loss: 0.3049 - acc: 0.9171
684 31616/60000 [=====>.....] - ETA: 0s -
loss: 0.3059 - acc: 0.9162
685 37376/60000 [=====>.....] - ETA: 0s -
loss: 0.3062 - acc: 0.9159
686 42496/60000 [=====>.....] - ETA: 0s -
loss: 0.3082 - acc: 0.9152
687 47872/60000 [=====>.....] - ETA: 0s -
loss: 0.3087 - acc: 0.9142
688 53376/60000 [=====>...] - ETA: 0s -
loss: 0.3109 - acc: 0.9138
689 58880/60000 [=====>.] - ETA: 0s -
loss: 0.3110 - acc: 0.9137
690 60000/60000 [=====] - 1s 9us/step
- loss: 0.3106 - acc: 0.9138
691 Epoch 50/100
692
693 128/60000 [.....] - ETA: 1s -
loss: 0.4126 - acc: 0.9062
694 5120/60000 [=>.....] - ETA: 0s -
loss: 0.3018 - acc: 0.9168
695 10624/60000 [==>.....] - ETA: 0s -
loss: 0.2986 - acc: 0.9175
696 17280/60000 [=====>.....] - ETA: 0s -
loss: 0.3035 - acc: 0.9157
697 23808/60000 [=====>.....] - ETA: 0s -
loss: 0.3055 - acc: 0.9156
698 29056/60000 [=====>.....] - ETA: 0s -
```

```
698 loss: 0.3086 - acc: 0.9152
699 34176/60000 [=====>.....] - ETA: 0s -
loss: 0.3071 - acc: 0.9155
700 40960/60000 [=====>.....] - ETA: 0s -
loss: 0.3082 - acc: 0.9155
701 48000/60000 [=====>.....] - ETA: 0s -
loss: 0.3075 - acc: 0.9147
702 54016/60000 [=====>...] - ETA: 0s -
loss: 0.3086 - acc: 0.9144
703 60000/60000 [=====] - 1s 8us/step
- loss: 0.3099 - acc: 0.9139
704 Epoch 51/100
705
706 128/60000 [.....] - ETA: 0s -
loss: 0.2624 - acc: 0.9453
707 6912/60000 [==>.....] - ETA: 0s -
loss: 0.3117 - acc: 0.9152
708 13824/60000 [====>.....] - ETA: 0s -
loss: 0.3180 - acc: 0.9133
709 19200/60000 [=====>.....] - ETA: 0s -
loss: 0.3150 - acc: 0.9152
710 24576/60000 [=====>.....] - ETA: 0s -
loss: 0.3135 - acc: 0.9149
711 31360/60000 [=====>.....] - ETA: 0s -
loss: 0.3124 - acc: 0.9149
712 37760/60000 [=====>.....] - ETA: 0s -
loss: 0.3117 - acc: 0.9148
713 44672/60000 [=====>.....] - ETA: 0s -
loss: 0.3097 - acc: 0.9151
714 50560/60000 [=====>.....] - ETA: 0s -
loss: 0.3095 - acc: 0.9146
715 56576/60000 [=====>...] - ETA: 0s -
loss: 0.3081 - acc: 0.9147
716 60000/60000 [=====] - 0s 8us/step
- loss: 0.3091 - acc: 0.9142
717 Epoch 52/100
718
719 128/60000 [.....] - ETA: 0s -
loss: 0.3299 - acc: 0.9297
720 7168/60000 [==>.....] - ETA: 0s -
loss: 0.2974 - acc: 0.9187
721 14208/60000 [====>.....] - ETA: 0s -
loss: 0.2999 - acc: 0.9181
722 20224/60000 [=====>.....] - ETA: 0s -
loss: 0.3017 - acc: 0.9170
723 25728/60000 [=====>.....] - ETA: 0s -
loss: 0.3042 - acc: 0.9171
724 31872/60000 [=====>.....] - ETA: 0s -
loss: 0.3037 - acc: 0.9166
725 38272/60000 [=====>.....] - ETA: 0s -
```

```
725 loss: 0.3038 - acc: 0.9157
726 45184/60000 [=====>.....] - ETA: 0s -
    loss: 0.3060 - acc: 0.9151
727 51072/60000 [=====>.....] - ETA: 0s -
    loss: 0.3061 - acc: 0.9148
728 57344/60000 [=====>..] - ETA: 0s -
    loss: 0.3072 - acc: 0.9147
729 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3084 - acc: 0.9144
730 Epoch 53/100
731
732 128/60000 [.....] - ETA: 1s -
    loss: 0.3138 - acc: 0.9141
733 7168/60000 [==>.....] - ETA: 0s -
    loss: 0.2821 - acc: 0.9217
734 14208/60000 [====>.....] - ETA: 0s -
    loss: 0.2999 - acc: 0.9167
735 20736/60000 [=====>.....] - ETA: 0s -
    loss: 0.3015 - acc: 0.9173
736 25984/60000 [=====>.....] - ETA: 0s -
    loss: 0.2997 - acc: 0.9173
737 31616/60000 [=====>.....] - ETA: 0s -
    loss: 0.3009 - acc: 0.9163
738 38528/60000 [=====>.....] - ETA: 0s -
    loss: 0.3028 - acc: 0.9163
739 44928/60000 [=====>.....] - ETA: 0s -
    loss: 0.3046 - acc: 0.9155
740 50688/60000 [=====>.....] - ETA: 0s -
    loss: 0.3063 - acc: 0.9151
741 56832/60000 [=====>..] - ETA: 0s -
    loss: 0.3070 - acc: 0.9147
742 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3077 - acc: 0.9148
743 Epoch 54/100
744
745 128/60000 [.....] - ETA: 1s -
    loss: 0.3803 - acc: 0.9062
746 7168/60000 [==>.....] - ETA: 0s -
    loss: 0.3172 - acc: 0.9104
747 14208/60000 [====>.....] - ETA: 0s -
    loss: 0.3144 - acc: 0.9127
748 20352/60000 [=====>.....] - ETA: 0s -
    loss: 0.3083 - acc: 0.9152
749 25728/60000 [=====>.....] - ETA: 0s -
    loss: 0.3071 - acc: 0.9148
750 31744/60000 [=====>.....] - ETA: 0s -
    loss: 0.3076 - acc: 0.9160
751 38656/60000 [=====>.....] - ETA: 0s -
    loss: 0.3077 - acc: 0.9158
752 45184/60000 [=====>.....] - ETA: 0s -
```

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752 loss: 0.3073 - acc: 0.9157
753 50944/60000 [=====>.....] - ETA: 0s -
    loss: 0.3098 - acc: 0.9144
754 57344/60000 [=====>..] - ETA: 0s -
    loss: 0.3072 - acc: 0.9146
755 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3070 - acc: 0.9147
756 Epoch 55/100
757
758    128/60000 [.....] - ETA: 0s -
    loss: 0.3596 - acc: 0.9062
759    7040/60000 [==>.....] - ETA: 0s -
    loss: 0.3080 - acc: 0.9135
760    13440/60000 [====>.....] - ETA: 0s -
    loss: 0.3046 - acc: 0.9128
761    18560/60000 [=====>.....] - ETA: 0s -
    loss: 0.3035 - acc: 0.9148
762    24448/60000 [=====>.....] - ETA: 0s -
    loss: 0.3058 - acc: 0.9147
763    31360/60000 [=====>.....] - ETA: 0s -
    loss: 0.3059 - acc: 0.9154
764    38400/60000 [=====>.....] - ETA: 0s -
    loss: 0.3060 - acc: 0.9146
765    44288/60000 [=====>.....] - ETA: 0s -
    loss: 0.3072 - acc: 0.9145
766    50176/60000 [=====>.....] - ETA: 0s -
    loss: 0.3062 - acc: 0.9150
767    57344/60000 [=====>..] - ETA: 0s -
    loss: 0.3059 - acc: 0.9148
768    60000/60000 [=====] - 0s 8us/step
    - loss: 0.3063 - acc: 0.9147
769 Epoch 56/100
770
771    128/60000 [.....] - ETA: 0s -
    loss: 0.3626 - acc: 0.8828
772    7168/60000 [==>.....] - ETA: 0s -
    loss: 0.2912 - acc: 0.9196
773    13568/60000 [====>.....] - ETA: 0s -
    loss: 0.3039 - acc: 0.9167
774    18816/60000 [=====>.....] - ETA: 0s -
    loss: 0.2997 - acc: 0.9179
775    24704/60000 [=====>.....] - ETA: 0s -
    loss: 0.3017 - acc: 0.9174
776    31104/60000 [=====>.....] - ETA: 0s -
    loss: 0.3022 - acc: 0.9169
777    38016/60000 [=====>.....] - ETA: 0s -
    loss: 0.3020 - acc: 0.9168
778    43648/60000 [=====>.....] - ETA: 0s -
    loss: 0.3033 - acc: 0.9154
779    49408/60000 [=====>.....] - ETA: 0s -
```

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779 loss: 0.3053 - acc: 0.9149
780 56320/60000 [=====>...] - ETA: 0s -
    loss: 0.3047 - acc: 0.9155
781 60000/60000 [=====] - 0s 8us/step
    - loss: 0.3056 - acc: 0.9154
782 Epoch 57/100
783
784    128/60000 [.....] - ETA: 0s -
    loss: 0.3018 - acc: 0.9141
785    7168/60000 [==>.....] - ETA: 0s -
    loss: 0.2999 - acc: 0.9164
786    13056/60000 [====>.....] - ETA: 0s -
    loss: 0.3007 - acc: 0.9148
787    18560/60000 [=====>.....] - ETA: 0s -
    loss: 0.3061 - acc: 0.9129
788    24576/60000 [=====>.....] - ETA: 0s -
    loss: 0.3062 - acc: 0.9141
789    31488/60000 [=====>.....] - ETA: 0s -
    loss: 0.3023 - acc: 0.9149
790    38400/60000 [=====>.....] - ETA: 0s -
    loss: 0.3040 - acc: 0.9146
791    44288/60000 [=====>.....] - ETA: 0s -
    loss: 0.3038 - acc: 0.9146
792    50432/60000 [=====>.....] - ETA: 0s -
    loss: 0.3040 - acc: 0.9149
793    56576/60000 [=====>...] - ETA: 0s -
    loss: 0.3043 - acc: 0.9149
794    60000/60000 [=====] - 0s 8us/step
    - loss: 0.3049 - acc: 0.9149
795 Epoch 58/100
796
797    128/60000 [.....] - ETA: 0s -
    loss: 0.3780 - acc: 0.8828
798    7040/60000 [==>.....] - ETA: 0s -
    loss: 0.3114 - acc: 0.9104
799    12928/60000 [====>.....] - ETA: 0s -
    loss: 0.3059 - acc: 0.9128
800    18304/60000 [=====>.....] - ETA: 0s -
    loss: 0.3069 - acc: 0.9147
801    24192/60000 [=====>.....] - ETA: 0s -
    loss: 0.3072 - acc: 0.9146
802    30848/60000 [=====>.....] - ETA: 0s -
    loss: 0.3065 - acc: 0.9152
803    37376/60000 [=====>.....] - ETA: 0s -
    loss: 0.3053 - acc: 0.9157
804    42880/60000 [=====>.....] - ETA: 0s -
    loss: 0.3054 - acc: 0.9158
805    48768/60000 [=====>.....] - ETA: 0s -
    loss: 0.3037 - acc: 0.9157
806    54656/60000 [=====>...] - ETA: 0s -
```

```
806 loss: 0.3035 - acc: 0.9157
807 60000/60000 [=====] - 0s 8us/step
     - loss: 0.3043 - acc: 0.9154
808 Epoch 59/100
809
810 128/60000 [.....] - ETA: 1s -
     loss: 0.2703 - acc: 0.9531
811 5632/60000 [=>.....] - ETA: 0s -
     loss: 0.3077 - acc: 0.9119
812 10624/60000 [====>.....] - ETA: 0s -
     loss: 0.3046 - acc: 0.9149
813 16512/60000 [=====>.....] - ETA: 0s -
     loss: 0.3017 - acc: 0.9152
814 22528/60000 [======>.....] - ETA: 0s -
     loss: 0.3044 - acc: 0.9140
815 29184/60000 [======>.....] - ETA: 0s -
     loss: 0.3022 - acc: 0.9146
816 35200/60000 [======>.....] - ETA: 0s -
     loss: 0.3042 - acc: 0.9144
817 41600/60000 [======>.....] - ETA: 0s -
     loss: 0.3062 - acc: 0.9143
818 48384/60000 [======>.....] - ETA: 0s -
     loss: 0.3048 - acc: 0.9152
819 54656/60000 [======>....] - ETA: 0s -
     loss: 0.3039 - acc: 0.9151
820 60000/60000 [=====] - 0s 8us/step
     - loss: 0.3037 - acc: 0.9153
821 Epoch 60/100
822
823 128/60000 [.....] - ETA: 1s -
     loss: 0.2236 - acc: 0.9375
824 4864/60000 [=>.....] - ETA: 0s -
     loss: 0.3196 - acc: 0.9118
825 9856/60000 [==>.....] - ETA: 0s -
     loss: 0.3077 - acc: 0.9162
826 15872/60000 [====>.....] - ETA: 0s -
     loss: 0.3096 - acc: 0.9141
827 22400/60000 [======>.....] - ETA: 0s -
     loss: 0.3101 - acc: 0.9139
828 28800/60000 [======>.....] - ETA: 0s -
     loss: 0.3063 - acc: 0.9152
829 34432/60000 [======>.....] - ETA: 0s -
     loss: 0.3056 - acc: 0.9145
830 40448/60000 [======>.....] - ETA: 0s -
     loss: 0.3053 - acc: 0.9145
831 47104/60000 [======>.....] - ETA: 0s -
     loss: 0.3026 - acc: 0.9158
832 53120/60000 [======>....] - ETA: 0s -
     loss: 0.3024 - acc: 0.9159
833 58624/60000 [======>..] - ETA: 0s -
```

```
833 loss: 0.3038 - acc: 0.9152
834 60000/60000 [=====] - 1s 9us/step
     - loss: 0.3031 - acc: 0.9155
835 Epoch 61/100
836
837    128/60000 [.....] - ETA: 1s -
     loss: 0.3641 - acc: 0.8906
838    6400/60000 [==>.....] - ETA: 0s -
     loss: 0.3024 - acc: 0.9159
839    13056/60000 [====>.....] - ETA: 0s -
     loss: 0.3045 - acc: 0.9149
840    19712/60000 [=====>.....] - ETA: 0s -
     loss: 0.3015 - acc: 0.9161
841    25856/60000 [======>.....] - ETA: 0s -
     loss: 0.2990 - acc: 0.9177
842    30720/60000 [======>.....] - ETA: 0s -
     loss: 0.3002 - acc: 0.9174
843    35968/60000 [======>.....] - ETA: 0s -
     loss: 0.3017 - acc: 0.9173
844    42624/60000 [======>.....] - ETA: 0s -
     loss: 0.3040 - acc: 0.9162
845    49280/60000 [======>.....] - ETA: 0s -
     loss: 0.3036 - acc: 0.9158
846    54784/60000 [======>....] - ETA: 0s -
     loss: 0.3034 - acc: 0.9157
847    60000/60000 [=====] - 1s 8us/step
     - loss: 0.3026 - acc: 0.9160
848 Epoch 62/100
849
850    128/60000 [.....] - ETA: 1s -
     loss: 0.3520 - acc: 0.9062
851    6912/60000 [==>.....] - ETA: 0s -
     loss: 0.2961 - acc: 0.9161
852    13568/60000 [====>.....] - ETA: 0s -
     loss: 0.3018 - acc: 0.9147
853    18816/60000 [=====>.....] - ETA: 0s -
     loss: 0.3036 - acc: 0.9152
854    24192/60000 [======>.....] - ETA: 0s -
     loss: 0.3023 - acc: 0.9160
855    30464/60000 [======>.....] - ETA: 0s -
     loss: 0.3041 - acc: 0.9155
856    37248/60000 [======>.....] - ETA: 0s -
     loss: 0.3027 - acc: 0.9159
857    44160/60000 [======>.....] - ETA: 0s -
     loss: 0.3025 - acc: 0.9160
858    50048/60000 [======>....] - ETA: 0s -
     loss: 0.3018 - acc: 0.9164
859    55424/60000 [======>....] - ETA: 0s -
     loss: 0.3024 - acc: 0.9164
860    60000/60000 [=====] - 0s 8us/step
```

```
860  - loss: 0.3020 - acc: 0.9162
861 Epoch 63/100
862
863  128/60000 [.....] - ETA: 1s -
loss: 0.3431 - acc: 0.9219
864 6784/60000 [==>.....] - ETA: 0s -
loss: 0.3178 - acc: 0.9120
865 12800/60000 [=====>.....] - ETA: 0s -
loss: 0.3012 - acc: 0.9161
866 18304/60000 [=====>.....] - ETA: 0s -
loss: 0.3029 - acc: 0.9152
867 23680/60000 [=====>.....] - ETA: 0s -
loss: 0.3032 - acc: 0.9166
868 29824/60000 [=====>.....] - ETA: 0s -
loss: 0.3010 - acc: 0.9170
869 36096/60000 [=====>.....] - ETA: 0s -
loss: 0.3023 - acc: 0.9166
870 42624/60000 [=====>.....] - ETA: 0s -
loss: 0.3019 - acc: 0.9164
871 48512/60000 [=====>.....] - ETA: 0s -
loss: 0.3012 - acc: 0.9163
872 52864/60000 [=====>.....] - ETA: 0s -
loss: 0.3022 - acc: 0.9160
873 58112/60000 [=====>..] - ETA: 0s -
loss: 0.3014 - acc: 0.9160
874 60000/60000 [=====] - 1s 9us/step
- loss: 0.3014 - acc: 0.9160
875 Epoch 64/100
876
877 128/60000 [.....] - ETA: 1s -
loss: 0.2369 - acc: 0.9141
878 6656/60000 [==>.....] - ETA: 0s -
loss: 0.2916 - acc: 0.9162
879 12032/60000 [=====>.....] - ETA: 0s -
loss: 0.3008 - acc: 0.9146
880 17664/60000 [=====>.....] - ETA: 0s -
loss: 0.2984 - acc: 0.9159
881 24320/60000 [=====>.....] - ETA: 0s -
loss: 0.3014 - acc: 0.9149
882 31104/60000 [=====>.....] - ETA: 0s -
loss: 0.3023 - acc: 0.9153
883 36992/60000 [=====>.....] - ETA: 0s -
loss: 0.3007 - acc: 0.9158
884 43136/60000 [=====>.....] - ETA: 0s -
loss: 0.3002 - acc: 0.9163
885 50048/60000 [=====>.....] - ETA: 0s -
loss: 0.3003 - acc: 0.9163
886 56064/60000 [=====>..] - ETA: 0s -
loss: 0.3012 - acc: 0.9160
887 60000/60000 [=====] - 0s 8us/step
```

```
887 - loss: 0.3009 - acc: 0.9162
888 Epoch 65/100
889
890 128/60000 [.....] - ETA: 1s -
loss: 0.2891 - acc: 0.9062
891 5376/60000 [=>.....] - ETA: 0s -
loss: 0.3188 - acc: 0.9103
892 10240/60000 [====>.....] - ETA: 0s -
loss: 0.3165 - acc: 0.9124
893 15872/60000 [=====>.....] - ETA: 0s -
loss: 0.3105 - acc: 0.9138
894 22272/60000 [=====>.....] - ETA: 0s -
loss: 0.3092 - acc: 0.9144
895 28672/60000 [=====>.....] - ETA: 0s -
loss: 0.3073 - acc: 0.9139
896 34560/60000 [=====>.....] - ETA: 0s -
loss: 0.3063 - acc: 0.9146
897 40704/60000 [=====>.....] - ETA: 0s -
loss: 0.3037 - acc: 0.9154
898 47488/60000 [=====>.....] - ETA: 0s -
loss: 0.3006 - acc: 0.9163
899 53376/60000 [=====>....] - ETA: 0s -
loss: 0.3012 - acc: 0.9161
900 58880/60000 [=====>..] - ETA: 0s -
loss: 0.3003 - acc: 0.9163
901 60000/60000 [=====] - 1s 9us/step
- loss: 0.3004 - acc: 0.9163
902 Epoch 66/100
903
904 128/60000 [.....] - ETA: 1s -
loss: 0.2626 - acc: 0.9219
905 6400/60000 [=>.....] - ETA: 0s -
loss: 0.3202 - acc: 0.9152
906 13056/60000 [====>.....] - ETA: 0s -
loss: 0.3090 - acc: 0.9143
907 19584/60000 [=====>.....] - ETA: 0s -
loss: 0.3030 - acc: 0.9156
908 24832/60000 [=====>.....] - ETA: 0s -
loss: 0.3039 - acc: 0.9162
909 30336/60000 [=====>.....] - ETA: 0s -
loss: 0.3005 - acc: 0.9163
910 37248/60000 [=====>.....] - ETA: 0s -
loss: 0.3010 - acc: 0.9165
911 44032/60000 [=====>.....] - ETA: 0s -
loss: 0.2998 - acc: 0.9163
912 49408/60000 [=====>.....] - ETA: 0s -
loss: 0.3004 - acc: 0.9161
913 55296/60000 [=====>...] - ETA: 0s -
loss: 0.2994 - acc: 0.9164
914 60000/60000 [=====] - 0s 8us/step
```

```
914 - loss: 0.2998 - acc: 0.9165
915 Epoch 67/100
916
917 128/60000 [.....] - ETA: 1s -
loss: 0.1915 - acc: 0.9531
918 6912/60000 [==>.....] - ETA: 0s -
loss: 0.3077 - acc: 0.9177
919 12672/60000 [=====>.....] - ETA: 0s -
loss: 0.3034 - acc: 0.9175
920 17280/60000 [=====>.....] - ETA: 0s -
loss: 0.3050 - acc: 0.9166
921 21760/60000 [=====>.....] - ETA: 0s -
loss: 0.3019 - acc: 0.9175
922 27648/60000 [=====>.....] - ETA: 0s -
loss: 0.2987 - acc: 0.9185
923 34560/60000 [=====>.....] - ETA: 0s -
loss: 0.2999 - acc: 0.9173
924 41600/60000 [=====>.....] - ETA: 0s -
loss: 0.3022 - acc: 0.9163
925 47488/60000 [=====>.....] - ETA: 0s -
loss: 0.3001 - acc: 0.9164
926 52608/60000 [=====>....] - ETA: 0s -
loss: 0.2998 - acc: 0.9163
927 58752/60000 [=====>..] - ETA: 0s -
loss: 0.2998 - acc: 0.9164
928 60000/60000 [=====] - 1s 9us/step
- loss: 0.2993 - acc: 0.9165
929 Epoch 68/100
930
931 128/60000 [.....] - ETA: 1s -
loss: 0.2450 - acc: 0.9219
932 6272/60000 [==>.....] - ETA: 0s -
loss: 0.2996 - acc: 0.9157
933 12544/60000 [=====>.....] - ETA: 0s -
loss: 0.3036 - acc: 0.9151
934 17536/60000 [=====>.....] - ETA: 0s -
loss: 0.3027 - acc: 0.9146
935 22656/60000 [=====>.....] - ETA: 0s -
loss: 0.3027 - acc: 0.9137
936 29184/60000 [=====>.....] - ETA: 0s -
loss: 0.3039 - acc: 0.9143
937 35712/60000 [=====>.....] - ETA: 0s -
loss: 0.3027 - acc: 0.9150
938 41472/60000 [=====>.....] - ETA: 0s -
loss: 0.3005 - acc: 0.9163
939 46976/60000 [=====>.....] - ETA: 0s -
loss: 0.2988 - acc: 0.9167
940 53248/60000 [=====>....] - ETA: 0s -
loss: 0.2985 - acc: 0.9167
941 59776/60000 [=====>..] - ETA: 0s -
```

```
941 loss: 0.2991 - acc: 0.9166
942 60000/60000 [=====] - 1s 8us/step
    - loss: 0.2988 - acc: 0.9167
943 Epoch 69/100
944
945 128/60000 [.....] - ETA: 1s -
    loss: 0.2054 - acc: 0.9219
946 5120/60000 [=>.....] - ETA: 0s -
    loss: 0.2804 - acc: 0.9166
947 10496/60000 [====>.....] - ETA: 0s -
    loss: 0.2952 - acc: 0.9143
948 17152/60000 [=====>.....] - ETA: 0s -
    loss: 0.2970 - acc: 0.9149
949 24064/60000 [======>.....] - ETA: 0s -
    loss: 0.2981 - acc: 0.9155
950 28928/60000 [======>.....] - ETA: 0s -
    loss: 0.2957 - acc: 0.9163
951 34560/60000 [======>.....] - ETA: 0s -
    loss: 0.2978 - acc: 0.9164
952 41344/60000 [======>.....] - ETA: 0s -
    loss: 0.2982 - acc: 0.9164
953 47232/60000 [======>.....] - ETA: 0s -
    loss: 0.2961 - acc: 0.9168
954 50944/60000 [======>.....] - ETA: 0s -
    loss: 0.2977 - acc: 0.9168
955 56064/60000 [======>..] - ETA: 0s -
    loss: 0.2986 - acc: 0.9166
956 60000/60000 [=====] - 1s 9us/step
    - loss: 0.2983 - acc: 0.9169
957 Epoch 70/100
958
959 128/60000 [.....] - ETA: 1s -
    loss: 0.2503 - acc: 0.9375
960 7040/60000 [=>.....] - ETA: 0s -
    loss: 0.3021 - acc: 0.9146
961 13568/60000 [====>.....] - ETA: 0s -
    loss: 0.3040 - acc: 0.9165
962 20480/60000 [======>.....] - ETA: 0s -
    loss: 0.2994 - acc: 0.9172
963 25600/60000 [======>.....] - ETA: 0s -
    loss: 0.2976 - acc: 0.9174
964 30720/60000 [======>.....] - ETA: 0s -
    loss: 0.2984 - acc: 0.9174
965 36864/60000 [======>.....] - ETA: 0s -
    loss: 0.2988 - acc: 0.9174
966 43136/60000 [======>.....] - ETA: 0s -
    loss: 0.2979 - acc: 0.9174
967 49408/60000 [======>.....] - ETA: 0s -
    loss: 0.2974 - acc: 0.9171
968 54912/60000 [======>..] - ETA: 0s -
```

```
968 loss: 0.2985 - acc: 0.9170
969 60000/60000 [=====] - 1s 8us/
    step - loss: 0.2979 - acc: 0.9169
970 Epoch 71/100
971
972 128/60000 [.....] - ETA: 1s -
    loss: 0.2447 - acc: 0.9219
973 5632/60000 [=>.....] - ETA: 0s -
    loss: 0.2760 - acc: 0.9256
974 10752/60000 [====>.....] - ETA: 0s -
    loss: 0.2782 - acc: 0.9261
975 15488/60000 [=====>.....] - ETA: 0s -
    loss: 0.2865 - acc: 0.9230
976 20096/60000 [======>.....] - ETA: 0s -
    loss: 0.2934 - acc: 0.9205
977 25728/60000 [======>.....] - ETA: 0s -
    loss: 0.2938 - acc: 0.9197
978 31360/60000 [======>.....] - ETA: 0s -
    loss: 0.2915 - acc: 0.9199
979 36224/60000 [======>.....] - ETA: 0s -
    loss: 0.2911 - acc: 0.9196
980 42368/60000 [======>.....] - ETA: 0s -
    loss: 0.2940 - acc: 0.9187
981 49152/60000 [======>.....] - ETA: 0s -
    loss: 0.2954 - acc: 0.9177
982 55936/60000 [======>....] - ETA: 0s -
    loss: 0.2963 - acc: 0.9176
983 60000/60000 [=====] - 1s 9us/
    step - loss: 0.2974 - acc: 0.9171
984 Epoch 72/100
985
986 128/60000 [.....] - ETA: 1s -
    loss: 0.2633 - acc: 0.9375
987 5888/60000 [=>.....] - ETA: 0s -
    loss: 0.2878 - acc: 0.9178
988 10752/60000 [====>.....] - ETA: 0s -
    loss: 0.2958 - acc: 0.9155
989 16512/60000 [=====>.....] - ETA: 0s -
    loss: 0.2958 - acc: 0.9158
990 19072/60000 [======>.....] - ETA: 0s -
    loss: 0.2925 - acc: 0.9171
991 21376/60000 [======>.....] - ETA: 0s -
    loss: 0.2944 - acc: 0.9168
992 24448/60000 [======>.....] - ETA: 0s -
    loss: 0.2959 - acc: 0.9166
993 29056/60000 [======>.....] - ETA: 0s -
    loss: 0.2943 - acc: 0.9172
994 34304/60000 [======>.....] - ETA: 0s -
    loss: 0.2920 - acc: 0.9183
995 40960/60000 [======>.....] - ETA: 0s -
```

```
995 loss: 0.2940 - acc: 0.9183
996 44032/60000 [=====>.....] - ETA: 0s -
loss: 0.2934 - acc: 0.9181
997 48512/60000 [=====>.....] - ETA: 0s -
loss: 0.2942 - acc: 0.9177
998 54528/60000 [=====>...] - ETA: 0s -
loss: 0.2955 - acc: 0.9173
999 60000/60000 [=====] - 1s 11us/
step - loss: 0.2969 - acc: 0.9173
1000 Epoch 73/100
1001
1002 128/60000 [.....] - ETA: 0s -
loss: 0.2801 - acc: 0.9219
1003 6656/60000 [==>.....] - ETA: 0s -
loss: 0.2956 - acc: 0.9199
1004 12160/60000 [====>.....] - ETA: 0s -
loss: 0.2934 - acc: 0.9168
1005 16640/60000 [=====>.....] - ETA: 0s -
loss: 0.2945 - acc: 0.9164
1006 20864/60000 [=====>.....] - ETA: 0s -
loss: 0.2942 - acc: 0.9166
1007 24960/60000 [=====>.....] - ETA: 0s -
loss: 0.2929 - acc: 0.9165
1008 29568/60000 [=====>.....] - ETA: 0s -
loss: 0.2896 - acc: 0.9185
1009 35584/60000 [=====>.....] - ETA: 0s -
loss: 0.2908 - acc: 0.9190
1010 41984/60000 [=====>.....] - ETA: 0s -
loss: 0.2933 - acc: 0.9189
1011 48768/60000 [=====>.....] - ETA: 0s -
loss: 0.2948 - acc: 0.9186
1012 55552/60000 [=====>...] - ETA: 0s -
loss: 0.2955 - acc: 0.9182
1013 60000/60000 [=====] - 1s 9us/
step - loss: 0.2965 - acc: 0.9176
1014 Epoch 74/100
1015
1016 128/60000 [.....] - ETA: 1s -
loss: 0.2389 - acc: 0.9375
1017 4736/60000 [==>.....] - ETA: 0s -
loss: 0.2843 - acc: 0.9242
1018 9216/60000 [==>.....] - ETA: 0s -
loss: 0.2908 - acc: 0.9225
1019 14592/60000 [=====>.....] - ETA: 0s -
loss: 0.2860 - acc: 0.9217
1020 19968/60000 [=====>.....] - ETA: 0s -
loss: 0.2888 - acc: 0.9203
1021 25472/60000 [=====>.....] - ETA: 0s -
loss: 0.2890 - acc: 0.9201
1022 31872/60000 [=====>.....] - ETA: 0s -
```

```
1022 loss: 0.2927 - acc: 0.9184
1023 38784/60000 [=====>.....] - ETA: 0s -
    loss: 0.2932 - acc: 0.9182
1024 45440/60000 [=====>.....] - ETA: 0s -
    loss: 0.2912 - acc: 0.9190
1025 49792/60000 [=====>.....] - ETA: 0s -
    loss: 0.2916 - acc: 0.9187
1026 54144/60000 [=====>...] - ETA: 0s -
    loss: 0.2942 - acc: 0.9181
1027 58880/60000 [=====>..] - ETA: 0s -
    loss: 0.2955 - acc: 0.9176
1028 60000/60000 [=====] - 1s 10us/
    step - loss: 0.2961 - acc: 0.9174
1029 Epoch 75/100
1030
1031 128/60000 [.....] - ETA: 1s -
    loss: 0.1996 - acc: 0.9453
1032 6016/60000 [==>.....] - ETA: 0s -
    loss: 0.2749 - acc: 0.9229
1033 12672/60000 [====>.....] - ETA: 0s -
    loss: 0.2893 - acc: 0.9198
1034 17920/60000 [=====>.....] - ETA: 0s -
    loss: 0.2903 - acc: 0.9191
1035 23424/60000 [=====>.....] - ETA: 0s -
    loss: 0.2943 - acc: 0.9177
1036 30336/60000 [=====>.....] - ETA: 0s -
    loss: 0.2954 - acc: 0.9173
1037 37248/60000 [=====>.....] - ETA: 0s -
    loss: 0.2935 - acc: 0.9177
1038 43264/60000 [=====>.....] - ETA: 0s -
    loss: 0.2954 - acc: 0.9176
1039 49152/60000 [=====>.....] - ETA: 0s -
    loss: 0.2945 - acc: 0.9179
1040 55680/60000 [=====>...] - ETA: 0s -
    loss: 0.2961 - acc: 0.9171
1041 60000/60000 [=====] - 0s 8us/
    step - loss: 0.2956 - acc: 0.9174
1042 Epoch 76/100
1043
1044 128/60000 [.....] - ETA: 0s -
    loss: 0.2801 - acc: 0.9297
1045 6656/60000 [==>.....] - ETA: 0s -
    loss: 0.2978 - acc: 0.9141
1046 12288/60000 [====>.....] - ETA: 0s -
    loss: 0.2980 - acc: 0.9154
1047 17664/60000 [=====>.....] - ETA: 0s -
    loss: 0.3020 - acc: 0.9145
1048 23808/60000 [=====>.....] - ETA: 0s -
    loss: 0.3031 - acc: 0.9139
1049 29568/60000 [=====>.....] - ETA: 0s -
```

```
1049 loss: 0.3026 - acc: 0.9143
1050 34944/60000 [=====>.....] - ETA: 0s -
loss: 0.2999 - acc: 0.9160
1051 39552/60000 [=====>.....] - ETA: 0s -
loss: 0.2993 - acc: 0.9166
1052 44800/60000 [=====>.....] - ETA: 0s -
loss: 0.2995 - acc: 0.9167
1053 50176/60000 [=====>.....] - ETA: 0s -
loss: 0.2980 - acc: 0.9168
1054 55680/60000 [=====>...] - ETA: 0s -
loss: 0.2973 - acc: 0.9172
1055 60000/60000 [=====] - 1s 9us/
step - loss: 0.2952 - acc: 0.9176
1056 Epoch 77/100
1057
1058    128/60000 [.....] - ETA: 1s -
loss: 0.2241 - acc: 0.9453
1059 6400/60000 [==>.....] - ETA: 0s -
loss: 0.2897 - acc: 0.9198
1060 13312/60000 [====>.....] - ETA: 0s -
loss: 0.2935 - acc: 0.9205
1061 20352/60000 [=====>.....] - ETA: 0s -
loss: 0.2964 - acc: 0.9189
1062 25728/60000 [=====>.....] - ETA: 0s -
loss: 0.2951 - acc: 0.9181
1063 31360/60000 [=====>.....] - ETA: 0s -
loss: 0.2967 - acc: 0.9176
1064 37760/60000 [=====>.....] - ETA: 0s -
loss: 0.2975 - acc: 0.9174
1065 44672/60000 [=====>.....] - ETA: 0s -
loss: 0.2972 - acc: 0.9174
1066 51328/60000 [=====>.....] - ETA: 0s -
loss: 0.2947 - acc: 0.9181
1067 57344/60000 [=====>...] - ETA: 0s -
loss: 0.2951 - acc: 0.9178
1068 60000/60000 [=====] - 0s 8us/
step - loss: 0.2948 - acc: 0.9180
1069 Epoch 78/100
1070
1071    128/60000 [.....] - ETA: 0s -
loss: 0.2590 - acc: 0.9141
1072 6016/60000 [==>.....] - ETA: 0s -
loss: 0.2963 - acc: 0.9190
1073 12416/60000 [====>.....] - ETA: 0s -
loss: 0.2922 - acc: 0.9180
1074 17920/60000 [=====>.....] - ETA: 0s -
loss: 0.2967 - acc: 0.9162
1075 22784/60000 [=====>.....] - ETA: 0s -
loss: 0.3020 - acc: 0.9146
1076 28416/60000 [=====>.....] - ETA: 0s -
```

```
1076 loss: 0.2996 - acc: 0.9158
1077 35328/60000 [=====>.....] - ETA: 0s -
loss: 0.2977 - acc: 0.9162
1078 42240/60000 [=====>.....] - ETA: 0s -
loss: 0.2975 - acc: 0.9170
1079 48256/60000 [=====>.....] - ETA: 0s -
loss: 0.2958 - acc: 0.9181
1080 54528/60000 [=====>...] - ETA: 0s -
loss: 0.2952 - acc: 0.9181
1081 60000/60000 [=====] - 0s 8us/
step - loss: 0.2943 - acc: 0.9181
1082 Epoch 79/100
1083
1084 128/60000 [.....] - ETA: 0s -
loss: 0.3956 - acc: 0.8516
1085 4864/60000 [=>.....] - ETA: 0s -
loss: 0.2962 - acc: 0.9153
1086 9344/60000 [==>.....] - ETA: 0s -
loss: 0.2917 - acc: 0.9172
1087 13824/60000 [==>.....] - ETA: 0s -
loss: 0.2896 - acc: 0.9179
1088 18432/60000 [==>.....] - ETA: 0s -
loss: 0.2883 - acc: 0.9187
1089 23936/60000 [==>.....] - ETA: 0s -
loss: 0.2865 - acc: 0.9190
1090 29952/60000 [==>.....] - ETA: 0s -
loss: 0.2894 - acc: 0.9189
1091 36096/60000 [=====>.....] - ETA: 0s -
loss: 0.2930 - acc: 0.9179
1092 42368/60000 [=====>.....] - ETA: 0s -
loss: 0.2941 - acc: 0.9179
1093 49152/60000 [=====>.....] - ETA: 0s -
loss: 0.2934 - acc: 0.9181
1094 56064/60000 [=====>..] - ETA: 0s -
loss: 0.2931 - acc: 0.9181
1095 60000/60000 [=====] - 1s 9us/
step - loss: 0.2940 - acc: 0.9181
1096 Epoch 80/100
1097
1098 128/60000 [.....] - ETA: 1s -
loss: 0.3920 - acc: 0.8672
1099 6272/60000 [=>.....] - ETA: 0s -
loss: 0.3125 - acc: 0.9126
1100 12800/60000 [==>.....] - ETA: 0s -
loss: 0.2986 - acc: 0.9180
1101 19456/60000 [==>.....] - ETA: 0s -
loss: 0.2968 - acc: 0.9171
1102 24576/60000 [==>.....] - ETA: 0s -
loss: 0.2967 - acc: 0.9173
1103 29696/60000 [==>.....] - ETA: 0s -
```

```
1103 loss: 0.2972 - acc: 0.9171
1104 36224/60000 [=====>.....] - ETA: 0s -
loss: 0.2959 - acc: 0.9178
1105 43136/60000 [=====>.....] - ETA: 0s -
loss: 0.2958 - acc: 0.9178
1106 50048/60000 [=====>.....] - ETA: 0s -
loss: 0.2958 - acc: 0.9176
1107 55040/60000 [=====>...] - ETA: 0s -
loss: 0.2955 - acc: 0.9177
1108 59776/60000 [=====>..] - ETA: 0s -
loss: 0.2937 - acc: 0.9182
1109 60000/60000 [=====] - 1s 9us/
step - loss: 0.2936 - acc: 0.9183
1110 Epoch 81/100
1111
1112 128/60000 [.....] - ETA: 1s -
loss: 0.3314 - acc: 0.8906
1113 5632/60000 [=>.....] - ETA: 0s -
loss: 0.2952 - acc: 0.9197
1114 10880/60000 [==>.....] - ETA: 0s -
loss: 0.2927 - acc: 0.9192
1115 16256/60000 [==>.....] - ETA: 0s -
loss: 0.2866 - acc: 0.9202
1116 20864/60000 [==>.....] - ETA: 0s -
loss: 0.2902 - acc: 0.9196
1117 25728/60000 [==>.....] - ETA: 0s -
loss: 0.2932 - acc: 0.9189
1118 32384/60000 [=====>.....] - ETA: 0s -
loss: 0.2938 - acc: 0.9197
1119 39168/60000 [=====>.....] - ETA: 0s -
loss: 0.2943 - acc: 0.9190
1120 45184/60000 [=====>.....] - ETA: 0s -
loss: 0.2919 - acc: 0.9193
1121 51328/60000 [=====>.....] - ETA: 0s -
loss: 0.2918 - acc: 0.9193
1122 57984/60000 [=====>...] - ETA: 0s -
loss: 0.2931 - acc: 0.9186
1123 60000/60000 [=====] - 1s 9us/
step - loss: 0.2932 - acc: 0.9185
1124 Epoch 82/100
1125
1126 128/60000 [.....] - ETA: 0s -
loss: 0.1870 - acc: 0.9688
1127 6400/60000 [=>.....] - ETA: 0s -
loss: 0.2951 - acc: 0.9177
1128 11648/60000 [==>.....] - ETA: 0s -
loss: 0.2984 - acc: 0.9160
1129 17280/60000 [==>.....] - ETA: 0s -
loss: 0.2976 - acc: 0.9161
1130 23936/60000 [==>.....] - ETA: 0s -
```

```
1130 loss: 0.2930 - acc: 0.9183
1131 30720/60000 [=====>.....] - ETA: 0s -
loss: 0.2895 - acc: 0.9196
1132 36224/60000 [=====>.....] - ETA: 0s -
loss: 0.2907 - acc: 0.9195
1133 40832/60000 [=====>.....] - ETA: 0s -
loss: 0.2920 - acc: 0.9191
1134 45440/60000 [=====>.....] - ETA: 0s -
loss: 0.2937 - acc: 0.9187
1135 49792/60000 [=====>.....] - ETA: 0s -
loss: 0.2940 - acc: 0.9189
1136 54144/60000 [=====>...] - ETA: 0s -
loss: 0.2925 - acc: 0.9187
1137 58624/60000 [=====>..] - ETA: 0s -
loss: 0.2927 - acc: 0.9183
1138 60000/60000 [=====] - 1s 10us/
step - loss: 0.2928 - acc: 0.9184
1139 Epoch 83/100
1140
1141 128/60000 [.....] - ETA: 1s -
loss: 0.3108 - acc: 0.9297
1142 4480/60000 [=>.....] - ETA: 0s -
loss: 0.3070 - acc: 0.9138
1143 8832/60000 [==>.....] - ETA: 0s -
loss: 0.2947 - acc: 0.9175
1144 13440/60000 [==>.....] - ETA: 0s -
loss: 0.2945 - acc: 0.9176
1145 18048/60000 [==>.....] - ETA: 0s -
loss: 0.2926 - acc: 0.9188
1146 23424/60000 [==>.....] - ETA: 0s -
loss: 0.2938 - acc: 0.9187
1147 28672/60000 [==>.....] - ETA: 0s -
loss: 0.2942 - acc: 0.9179
1148 35584/60000 [==>.....] - ETA: 0s -
loss: 0.2907 - acc: 0.9191
1149 41600/60000 [=====>.....] - ETA: 0s -
loss: 0.2917 - acc: 0.9188
1150 47744/60000 [=====>.....] - ETA: 0s -
loss: 0.2922 - acc: 0.9182
1151 53888/60000 [=====>...] - ETA: 0s -
loss: 0.2925 - acc: 0.9184
1152 58752/60000 [=====>..] - ETA: 0s -
loss: 0.2931 - acc: 0.9180
1153 60000/60000 [=====] - 1s 10us/
step - loss: 0.2925 - acc: 0.9183
1154 Epoch 84/100
1155
1156 128/60000 [.....] - ETA: 1s -
loss: 0.2411 - acc: 0.9297
1157 5120/60000 [=>.....] - ETA: 0s -
```

```
1157 loss: 0.3025 - acc: 0.9156
1158 10368/60000 [=====>.....] - ETA: 0s -
loss: 0.3003 - acc: 0.9178
1159 15744/60000 [=====>.....] - ETA: 0s -
loss: 0.2931 - acc: 0.9183
1160 21376/60000 [=====>.....] - ETA: 0s -
loss: 0.2924 - acc: 0.9181
1161 28288/60000 [=====>.....] - ETA: 0s -
loss: 0.2921 - acc: 0.9178
1162 33536/60000 [=====>.....] - ETA: 0s -
loss: 0.2889 - acc: 0.9192
1163 37760/60000 [=====>.....] - ETA: 0s -
loss: 0.2870 - acc: 0.9198
1164 42880/60000 [=====>.....] - ETA: 0s -
loss: 0.2879 - acc: 0.9194
1165 49280/60000 [=====>.....] - ETA: 0s -
loss: 0.2882 - acc: 0.9194
1166 55680/60000 [=====>....] - ETA: 0s -
loss: 0.2899 - acc: 0.9191
1167 60000/60000 [=====] - 1s 9us/
step - loss: 0.2921 - acc: 0.9186
1168 Epoch 85/100
1169
1170 128/60000 [.....] - ETA: 1s -
loss: 0.2253 - acc: 0.9141
1171 5504/60000 [=>.....] - ETA: 0s -
loss: 0.3124 - acc: 0.9095
1172 10496/60000 [==>.....] - ETA: 0s -
loss: 0.2962 - acc: 0.9146
1173 16512/60000 [=====>.....] - ETA: 0s -
loss: 0.2914 - acc: 0.9177
1174 22656/60000 [=====>.....] - ETA: 0s -
loss: 0.2886 - acc: 0.9184
1175 28288/60000 [=====>.....] - ETA: 0s -
loss: 0.2854 - acc: 0.9195
1176 34176/60000 [=====>.....] - ETA: 0s -
loss: 0.2878 - acc: 0.9191
1177 40448/60000 [=====>.....] - ETA: 0s -
loss: 0.2884 - acc: 0.9190
1178 47232/60000 [=====>.....] - ETA: 0s -
loss: 0.2897 - acc: 0.9190
1179 54144/60000 [=====>....] - ETA: 0s -
loss: 0.2915 - acc: 0.9187
1180 59904/60000 [=====>.] - ETA: 0s -
loss: 0.2916 - acc: 0.9187
1181 60000/60000 [=====] - 1s 9us/
step - loss: 0.2917 - acc: 0.9187
1182 Epoch 86/100
1183
1184 128/60000 [.....] - ETA: 1s -
```

```
1184 loss: 0.2890 - acc: 0.9062
1185 5376/60000 [=>.....] - ETA: 0s -
loss: 0.2891 - acc: 0.9167
1186 11008/60000 [====>.....] - ETA: 0s -
loss: 0.2972 - acc: 0.9159
1187 16512/60000 [=====>.....] - ETA: 0s -
loss: 0.2968 - acc: 0.9163
1188 22016/60000 [=====>.....] - ETA: 0s -
loss: 0.2948 - acc: 0.9173
1189 26368/60000 [=====>.....] - ETA: 0s -
loss: 0.2909 - acc: 0.9182
1190 30848/60000 [=====>.....] - ETA: 0s -
loss: 0.2912 - acc: 0.9182
1191 36864/60000 [=====>.....] - ETA: 0s -
loss: 0.2904 - acc: 0.9181
1192 43776/60000 [=====>.....] - ETA: 0s -
loss: 0.2916 - acc: 0.9182
1193 49792/60000 [=====>.....] - ETA: 0s -
loss: 0.2911 - acc: 0.9186
1194 56064/60000 [=====>..] - ETA: 0s -
loss: 0.2907 - acc: 0.9187
1195 60000/60000 [=====] - 1s 9us/
step - loss: 0.2914 - acc: 0.9186
1196 Epoch 87/100
1197
1198 128/60000 [.....] - ETA: 0s -
loss: 0.1885 - acc: 0.9297
1199 7168/60000 [=>.....] - ETA: 0s -
loss: 0.2925 - acc: 0.9184
1200 14208/60000 [====>.....] - ETA: 0s -
loss: 0.2863 - acc: 0.9203
1201 19840/60000 [=====>.....] - ETA: 0s -
loss: 0.2893 - acc: 0.9192
1202 25088/60000 [=====>.....] - ETA: 0s -
loss: 0.2924 - acc: 0.9182
1203 29568/60000 [=====>.....] - ETA: 0s -
loss: 0.2897 - acc: 0.9187
1204 34816/60000 [=====>.....] - ETA: 0s -
loss: 0.2914 - acc: 0.9185
1205 40320/60000 [=====>.....] - ETA: 0s -
loss: 0.2916 - acc: 0.9183
1206 45312/60000 [=====>.....] - ETA: 0s -
loss: 0.2901 - acc: 0.9185
1207 49536/60000 [=====>.....] - ETA: 0s -
loss: 0.2900 - acc: 0.9188
1208 54656/60000 [=====>..] - ETA: 0s -
loss: 0.2896 - acc: 0.9191
1209 60000/60000 [=====] - 1s 9us/
step - loss: 0.2910 - acc: 0.9188
1210 Epoch 88/100
```

```
1211
1212 128/60000 [.....] - ETA: 1s -
    loss: 0.3050 - acc: 0.8984
1213 5248/60000 [=>.....] - ETA: 0s -
    loss: 0.3184 - acc: 0.9110
1214 10112/60000 [====>.....] - ETA: 0s -
    loss: 0.3099 - acc: 0.9125
1215 16256/60000 [=====>.....] - ETA: 0s -
    loss: 0.2990 - acc: 0.9161
1216 22016/60000 [=====>.....] - ETA: 0s -
    loss: 0.2963 - acc: 0.9174
1217 27008/60000 [=====>.....] - ETA: 0s -
    loss: 0.2930 - acc: 0.9186
1218 32000/60000 [=====>.....] - ETA: 0s -
    loss: 0.2925 - acc: 0.9189
1219 38016/60000 [=====>.....] - ETA: 0s -
    loss: 0.2924 - acc: 0.9191
1220 44672/60000 [=====>.....] - ETA: 0s -
    loss: 0.2912 - acc: 0.9193
1221 50944/60000 [=====>.....] - ETA: 0s -
    loss: 0.2920 - acc: 0.9188
1222 56704/60000 [=====>..] - ETA: 0s -
    loss: 0.2913 - acc: 0.9188
1223 60000/60000 [=====] - 1s 9us/
    step - loss: 0.2907 - acc: 0.9191
1224 Epoch 89/100
1225
1226 128/60000 [.....] - ETA: 1s -
    loss: 0.2415 - acc: 0.9453
1227 5888/60000 [=>.....] - ETA: 0s -
    loss: 0.2926 - acc: 0.9193
1228 11904/60000 [====>.....] - ETA: 0s -
    loss: 0.2920 - acc: 0.9202
1229 17664/60000 [=====>.....] - ETA: 0s -
    loss: 0.2891 - acc: 0.9210
1230 23168/60000 [=====>.....] - ETA: 0s -
    loss: 0.2896 - acc: 0.9192
1231 27392/60000 [=====>.....] - ETA: 0s -
    loss: 0.2904 - acc: 0.9200
1232 32768/60000 [=====>.....] - ETA: 0s -
    loss: 0.2924 - acc: 0.9193
1233 38656/60000 [=====>.....] - ETA: 0s -
    loss: 0.2934 - acc: 0.9186
1234 44800/60000 [=====>.....] - ETA: 0s -
    loss: 0.2935 - acc: 0.9188
1235 50048/60000 [=====>.....] - ETA: 0s -
    loss: 0.2927 - acc: 0.9187
1236 55680/60000 [=====>..] - ETA: 0s -
    loss: 0.2912 - acc: 0.9191
1237 60000/60000 [=====] - 1s 9us/
```

```
1237 step - loss: 0.2903 - acc: 0.9192
1238 Epoch 90/100
1239
1240    128/60000 [.....] - ETA: 1s -
    loss: 0.2236 - acc: 0.9219
1241    5888/60000 [=>.....] - ETA: 0s -
    loss: 0.2938 - acc: 0.9193
1242    10496/60000 [====>.....] - ETA: 0s -
    loss: 0.2896 - acc: 0.9209
1243    14592/60000 [=====>.....] - ETA: 0s -
    loss: 0.2927 - acc: 0.9187
1244    20096/60000 [=====>.....] - ETA: 0s -
    loss: 0.2978 - acc: 0.9175
1245    26240/60000 [=====>.....] - ETA: 0s -
    loss: 0.2928 - acc: 0.9184
1246    31872/60000 [=====>.....] - ETA: 0s -
    loss: 0.2900 - acc: 0.9194
1247    37120/60000 [=====>.....] - ETA: 0s -
    loss: 0.2893 - acc: 0.9195
1248    42752/60000 [=====>.....] - ETA: 0s -
    loss: 0.2907 - acc: 0.9188
1249    49024/60000 [=====>.....] - ETA: 0s -
    loss: 0.2905 - acc: 0.9188
1250    55168/60000 [=====>....] - ETA: 0s -
    loss: 0.2895 - acc: 0.9192
1251    59392/60000 [=====>..] - ETA: 0s -
    loss: 0.2895 - acc: 0.9191
1252    60000/60000 [=====] - 1s 9us/
step - loss: 0.2900 - acc: 0.9191
1253 Epoch 91/100
1254
1255    128/60000 [.....] - ETA: 1s -
    loss: 0.3748 - acc: 0.9141
1256    5248/60000 [=>.....] - ETA: 0s -
    loss: 0.2850 - acc: 0.9251
1257    11392/60000 [====>.....] - ETA: 0s -
    loss: 0.2798 - acc: 0.9208
1258    17536/60000 [=====>.....] - ETA: 0s -
    loss: 0.2833 - acc: 0.9203
1259    23680/60000 [=====>.....] - ETA: 0s -
    loss: 0.2831 - acc: 0.9190
1260    28544/60000 [=====>.....] - ETA: 0s -
    loss: 0.2866 - acc: 0.9189
1261    33792/60000 [=====>.....] - ETA: 0s -
    loss: 0.2898 - acc: 0.9181
1262    40192/60000 [=====>.....] - ETA: 0s -
    loss: 0.2895 - acc: 0.9190
1263    46720/60000 [=====>.....] - ETA: 0s -
    loss: 0.2889 - acc: 0.9189
1264    52096/60000 [=====>....] - ETA: 0s -
```

```
1264 loss: 0.2889 - acc: 0.9193
1265 57600/60000 [=====>..] - ETA: 0s -
loss: 0.2892 - acc: 0.9194
1266 60000/60000 [=====] - 1s 9us/
step - loss: 0.2897 - acc: 0.9193
1267 Epoch 92/100
1268
1269    128/60000 [.....] - ETA: 1s -
loss: 0.2988 - acc: 0.9141
1270    6400/60000 [=>.....] - ETA: 0s -
loss: 0.2931 - acc: 0.9189
1271    12032/60000 [====>.....] - ETA: 0s -
loss: 0.2935 - acc: 0.9195
1272    16256/60000 [=====>.....] - ETA: 0s -
loss: 0.2877 - acc: 0.9210
1273    20864/60000 [=====>.....] - ETA: 0s -
loss: 0.2937 - acc: 0.9201
1274    25856/60000 [=====>.....] - ETA: 0s -
loss: 0.2937 - acc: 0.9192
1275    31232/60000 [=====>.....] - ETA: 0s -
loss: 0.2945 - acc: 0.9186
1276    37888/60000 [=====>.....] - ETA: 0s -
loss: 0.2912 - acc: 0.9194
1277    43648/60000 [=====>.....] - ETA: 0s -
loss: 0.2921 - acc: 0.9189
1278    49792/60000 [=====>.....] - ETA: 0s -
loss: 0.2894 - acc: 0.9195
1279    56064/60000 [=====>..] - ETA: 0s -
loss: 0.2896 - acc: 0.9195
1280    60000/60000 [=====] - 1s 9us/
step - loss: 0.2893 - acc: 0.9195
1281 Epoch 93/100
1282
1283    128/60000 [.....] - ETA: 0s -
loss: 0.3006 - acc: 0.9219
1284    5632/60000 [=>.....] - ETA: 0s -
loss: 0.2736 - acc: 0.9222
1285    10496/60000 [====>.....] - ETA: 0s -
loss: 0.2885 - acc: 0.9196
1286    15872/60000 [=====>.....] - ETA: 0s -
loss: 0.2963 - acc: 0.9187
1287    22400/60000 [=====>.....] - ETA: 0s -
loss: 0.2899 - acc: 0.9198
1288    28928/60000 [=====>.....] - ETA: 0s -
loss: 0.2935 - acc: 0.9187
1289    34048/60000 [=====>.....] - ETA: 0s -
loss: 0.2925 - acc: 0.9189
1290    39808/60000 [=====>.....] - ETA: 0s -
loss: 0.2915 - acc: 0.9192
1291    46208/60000 [=====>.....] - ETA: 0s -
```

```
1291 loss: 0.2928 - acc: 0.9188
1292 52608/60000 [=====>....] - ETA: 0s -
loss: 0.2920 - acc: 0.9187
1293 58112/60000 [=====>..] - ETA: 0s -
loss: 0.2902 - acc: 0.9191
1294 60000/60000 [=====] - 1s 9us/
step - loss: 0.2891 - acc: 0.9193
1295 Epoch 94/100
1296
1297    128/60000 [.....] - ETA: 1s -
loss: 0.3161 - acc: 0.9141
1298 6272/60000 [==>.....] - ETA: 0s -
loss: 0.2914 - acc: 0.9211
1299 12672/60000 [====>.....] - ETA: 0s -
loss: 0.2891 - acc: 0.9212
1300 17792/60000 [=====>.....] - ETA: 0s -
loss: 0.2893 - acc: 0.9190
1301 19328/60000 [=====>.....] - ETA: 0s -
loss: 0.2901 - acc: 0.9187
1302 21888/60000 [=====>.....] - ETA: 0s -
loss: 0.2918 - acc: 0.9184
1303 25344/60000 [=====>.....] - ETA: 0s -
loss: 0.2912 - acc: 0.9187
1304 28160/60000 [=====>.....] - ETA: 0s -
loss: 0.2917 - acc: 0.9188
1305 32512/60000 [=====>.....] - ETA: 0s -
loss: 0.2923 - acc: 0.9189
1306 36864/60000 [=====>.....] - ETA: 0s -
loss: 0.2899 - acc: 0.9194
1307 40960/60000 [=====>.....] - ETA: 0s -
loss: 0.2897 - acc: 0.9189
1308 44928/60000 [=====>.....] - ETA: 0s -
loss: 0.2902 - acc: 0.9188
1309 50560/60000 [=====>.....] - ETA: 0s -
loss: 0.2915 - acc: 0.9184
1310 56448/60000 [=====>..] - ETA: 0s -
loss: 0.2900 - acc: 0.9191
1311 60000/60000 [=====] - 1s 12us/
step - loss: 0.2888 - acc: 0.9193
1312 Epoch 95/100
1313
1314    128/60000 [.....] - ETA: 1s -
loss: 0.3105 - acc: 0.9062
1315 6016/60000 [==>.....] - ETA: 0s -
loss: 0.3040 - acc: 0.9132
1316 9600/60000 [==>.....] - ETA: 0s -
loss: 0.2931 - acc: 0.9156
1317 14208/60000 [=====>.....] - ETA: 0s -
loss: 0.2880 - acc: 0.9187
1318 19712/60000 [=====>.....] - ETA: 0s -
```

```
1318 loss: 0.2861 - acc: 0.9199
1319 25728/60000 [=====>.....] - ETA: 0s -
loss: 0.2822 - acc: 0.9207
1320 31488/60000 [=====>.....] - ETA: 0s -
loss: 0.2816 - acc: 0.9212
1321 35584/60000 [=====>.....] - ETA: 0s -
loss: 0.2815 - acc: 0.9217
1322 40448/60000 [=====>.....] - ETA: 0s -
loss: 0.2816 - acc: 0.9220
1323 46720/60000 [=====>.....] - ETA: 0s -
loss: 0.2833 - acc: 0.9211
1324 52224/60000 [=====>.....] - ETA: 0s -
loss: 0.2849 - acc: 0.9209
1325 57856/60000 [=====>..] - ETA: 0s -
loss: 0.2877 - acc: 0.9196
1326 60000/60000 [=====] - 1s 10us/
step - loss: 0.2884 - acc: 0.9195
1327 Epoch 96/100
1328
1329 128/60000 [.....] - ETA: 1s -
loss: 0.2778 - acc: 0.9141
1330 7040/60000 [==>.....] - ETA: 0s -
loss: 0.2796 - acc: 0.9250
1331 13824/60000 [====>.....] - ETA: 0s -
loss: 0.2913 - acc: 0.9193
1332 20096/60000 [=====>.....] - ETA: 0s -
loss: 0.2862 - acc: 0.9206
1333 25472/60000 [=====>.....] - ETA: 0s -
loss: 0.2889 - acc: 0.9201
1334 30720/60000 [=====>.....] - ETA: 0s -
loss: 0.2881 - acc: 0.9199
1335 36096/60000 [=====>.....] - ETA: 0s -
loss: 0.2889 - acc: 0.9194
1336 41600/60000 [=====>.....] - ETA: 0s -
loss: 0.2891 - acc: 0.9194
1337 46336/60000 [=====>.....] - ETA: 0s -
loss: 0.2909 - acc: 0.9187
1338 51712/60000 [=====>.....] - ETA: 0s -
loss: 0.2908 - acc: 0.9185
1339 57472/60000 [=====>..] - ETA: 0s -
loss: 0.2902 - acc: 0.9190
1340 60000/60000 [=====] - 1s 9us/
step - loss: 0.2881 - acc: 0.9195
1341 Epoch 97/100
1342
1343 128/60000 [.....] - ETA: 0s -
loss: 0.2956 - acc: 0.9219
1344 7040/60000 [==>.....] - ETA: 0s -
loss: 0.2933 - acc: 0.9199
1345 13440/60000 [====>.....] - ETA: 0s -
```

```
1345 loss: 0.2945 - acc: 0.9199
1346 16768/60000 [=====>.....] - ETA: 0s -
loss: 0.2907 - acc: 0.9196
1347 21376/60000 [=====>.....] - ETA: 0s -
loss: 0.2867 - acc: 0.9206
1348 26368/60000 [=====>.....] - ETA: 0s -
loss: 0.2868 - acc: 0.9211
1349 31104/60000 [=====>.....] - ETA: 0s -
loss: 0.2883 - acc: 0.9201
1350 35200/60000 [=====>.....] - ETA: 0s -
loss: 0.2867 - acc: 0.9203
1351 40064/60000 [=====>.....] - ETA: 0s -
loss: 0.2864 - acc: 0.9203
1352 46464/60000 [=====>.....] - ETA: 0s -
loss: 0.2848 - acc: 0.9207
1353 52992/60000 [=====>....] - ETA: 0s -
loss: 0.2851 - acc: 0.9202
1354 58752/60000 [=====>....] - ETA: 0s -
loss: 0.2878 - acc: 0.9197
1355 60000/60000 [=====] - 1s 10us/
step - loss: 0.2879 - acc: 0.9196
1356 Epoch 98/100
1357
1358 128/60000 [.....] - ETA: 1s -
loss: 0.5002 - acc: 0.8750
1359 5888/60000 [=>.....] - ETA: 0s -
loss: 0.3144 - acc: 0.9132
1360 11008/60000 [==>.....] - ETA: 0s -
loss: 0.3010 - acc: 0.9176
1361 16128/60000 [=====>.....] - ETA: 0s -
loss: 0.2928 - acc: 0.9177
1362 20992/60000 [=====>.....] - ETA: 0s -
loss: 0.2852 - acc: 0.9201
1363 26368/60000 [=====>.....] - ETA: 0s -
loss: 0.2868 - acc: 0.9192
1364 32896/60000 [=====>.....] - ETA: 0s -
loss: 0.2868 - acc: 0.9199
1365 39424/60000 [=====>.....] - ETA: 0s -
loss: 0.2875 - acc: 0.9197
1366 44672/60000 [=====>.....] - ETA: 0s -
loss: 0.2872 - acc: 0.9197
1367 49664/60000 [=====>.....] - ETA: 0s -
loss: 0.2874 - acc: 0.9198
1368 55680/60000 [=====>...] - ETA: 0s -
loss: 0.2872 - acc: 0.9200
1369 60000/60000 [=====] - 1s 9us/
step - loss: 0.2876 - acc: 0.9197
1370 Epoch 99/100
1371
1372 128/60000 [.....] - ETA: 1s -
```

```
1372 loss: 0.1934 - acc: 0.9453
1373 6400/60000 [==>.....] - ETA: 0s -
loss: 0.2823 - acc: 0.9248
1374 11648/60000 [====>.....] - ETA: 0s -
loss: 0.2808 - acc: 0.9245
1375 16768/60000 [=====>.....] - ETA: 0s -
loss: 0.2821 - acc: 0.9230
1376 22400/60000 [=====>.....] - ETA: 0s -
loss: 0.2804 - acc: 0.9237
1377 28928/60000 [=====>.....] - ETA: 0s -
loss: 0.2802 - acc: 0.9233
1378 35584/60000 [=====>.....] - ETA: 0s -
loss: 0.2831 - acc: 0.9214
1379 41088/60000 [=====>.....] - ETA: 0s -
loss: 0.2839 - acc: 0.9209
1380 46720/60000 [=====>.....] - ETA: 0s -
loss: 0.2852 - acc: 0.9205
1381 52992/60000 [=====>.....] - ETA: 0s -
loss: 0.2863 - acc: 0.9202
1382 59136/60000 [=====>..] - ETA: 0s -
loss: 0.2870 - acc: 0.9197
1383 60000/60000 [=====] - 1s 9us/
step - loss: 0.2872 - acc: 0.9198
1384 Epoch 100/100
1385
1386 128/60000 [.....] - ETA: 1s -
loss: 0.3056 - acc: 0.9375
1387 6016/60000 [==>.....] - ETA: 0s -
loss: 0.2781 - acc: 0.9267
1388 10496/60000 [====>.....] - ETA: 0s -
loss: 0.2717 - acc: 0.9274
1389 15616/60000 [=====>.....] - ETA: 0s -
loss: 0.2798 - acc: 0.9234
1390 22016/60000 [=====>.....] - ETA: 0s -
loss: 0.2853 - acc: 0.9224
1391 28288/60000 [=====>.....] - ETA: 0s -
loss: 0.2839 - acc: 0.9221
1392 33664/60000 [=====>.....] - ETA: 0s -
loss: 0.2840 - acc: 0.9218
1393 39424/60000 [=====>.....] - ETA: 0s -
loss: 0.2849 - acc: 0.9212
1394 45952/60000 [=====>.....] - ETA: 0s -
loss: 0.2861 - acc: 0.9206
1395 52096/60000 [=====>..] - ETA: 0s -
loss: 0.2873 - acc: 0.9202
1396 56448/60000 [=====>..] - ETA: 0s -
loss: 0.2878 - acc: 0.9199
1397 60000/60000 [=====] - 1s 9us/
step - loss: 0.2870 - acc: 0.9201
1398
```

```
1399 32/10000 [.....] - ETA: 8s
1400 4992/10000 [======>.....] - ETA: 0s
1401 9472/10000 [=======>...] - ETA: 0s
1402 10000/10000 [======] - 0s 14us/
    step
1403 Summary: Loss over the test dataset: 0.28, Accuracy: 0.92
1404
1405 Process finished with exit code 0
1406
```