

```
1 /usr/local/bin/python3.8 "/Users/surajvaddi/Desktop/TarPrint Full Journey/Machine Learning Code/Neural-Network-NO-test.py"
2 2020-09-03 19:42:06.552209: I tensorflow/core/platform/cpu_feature_guard.cc:142] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: AVX2 FMA
3 To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
4 2020-09-03 19:42:06.562182: I tensorflow/compiler/xla/service/service.cc:168] XLA service 0x7f95276e3490 initialized for platform Host (this does not guarantee that XLA will be used). Devices:
5 2020-09-03 19:42:06.562219: I tensorflow/compiler/xla/service/service.cc:176] StreamExecutor device (0): Host, Default Version
6 Epoch 1/350
7 136/136 [=====] - 0s 617us /step - loss: 1.4921 - accuracy: 0.4201
8 Epoch 2/350
9 136/136 [=====] - 0s 563us /step - loss: 0.8906 - accuracy: 0.7000
10 Epoch 3/350
11 136/136 [=====] - 0s 589us /step - loss: 0.6452 - accuracy: 0.7667
12 Epoch 4/350
13 136/136 [=====] - 0s 563us /step - loss: 0.5870 - accuracy: 0.7882
14 Epoch 5/350
15 136/136 [=====] - 0s 557us /step - loss: 0.5718 - accuracy: 0.7887
16 Epoch 6/350
17 136/136 [=====] - 0s 605us /step - loss: 0.5516 - accuracy: 0.7961
18 Epoch 7/350
19 136/136 [=====] - 0s 598us /step - loss: 0.5454 - accuracy: 0.8083
20 Epoch 8/350
21 136/136 [=====] - 0s 546us /step - loss: 0.5339 - accuracy: 0.8005
22 Epoch 9/350
23 136/136 [=====] - 0s 638us
```

```
23 /step - loss: 0.5157 - accuracy: 0.8167
24 Epoch 10/350
25 136/136 [=====] - 0s 686us
    /step - loss: 0.5065 - accuracy: 0.8157
26 Epoch 11/350
27 136/136 [=====] - 0s 805us
    /step - loss: 0.5084 - accuracy: 0.8093
28 Epoch 12/350
29 136/136 [=====] - 0s 631us
    /step - loss: 0.5059 - accuracy: 0.8098
30 Epoch 13/350
31 136/136 [=====] - 0s 586us
    /step - loss: 0.4854 - accuracy: 0.8235
32 Epoch 14/350
33 136/136 [=====] - 0s 640us
    /step - loss: 0.4999 - accuracy: 0.8113
34 Epoch 15/350
35 136/136 [=====] - 0s 591us
    /step - loss: 0.4699 - accuracy: 0.8279
36 Epoch 16/350
37 136/136 [=====] - 0s 554us
    /step - loss: 0.4679 - accuracy: 0.8289
38 Epoch 17/350
39 136/136 [=====] - 0s 645us
    /step - loss: 0.4592 - accuracy: 0.8294
40 Epoch 18/350
41 136/136 [=====] - 0s 612us
    /step - loss: 0.4513 - accuracy: 0.8353
42 Epoch 19/350
43 136/136 [=====] - 0s 554us
    /step - loss: 0.4633 - accuracy: 0.8299
44 Epoch 20/350
45 136/136 [=====] - 0s 628us
    /step - loss: 0.4504 - accuracy: 0.8309
46 Epoch 21/350
47 136/136 [=====] - 0s 564us
    /step - loss: 0.4434 - accuracy: 0.8363
48 Epoch 22/350
49 136/136 [=====] - 0s 536us
    /step - loss: 0.4536 - accuracy: 0.8314
50 Epoch 23/350
51 136/136 [=====] - 0s 623us
    /step - loss: 0.4416 - accuracy: 0.8402
52 Epoch 24/350
```

```
53 136/136 [=====] - 0s 599us
  /step - loss: 0.4351 - accuracy: 0.8446
54 Epoch 25/350
55 136/136 [=====] - 0s 572us
  /step - loss: 0.4458 - accuracy: 0.8333
56 Epoch 26/350
57 136/136 [=====] - 0s 639us
  /step - loss: 0.4327 - accuracy: 0.8392
58 Epoch 27/350
59 136/136 [=====] - 0s 575us
  /step - loss: 0.4317 - accuracy: 0.8407
60 Epoch 28/350
61 136/136 [=====] - 0s 537us
  /step - loss: 0.4454 - accuracy: 0.8343
62 Epoch 29/350
63 136/136 [=====] - 0s 676us
  /step - loss: 0.4311 - accuracy: 0.8446
64 Epoch 30/350
65 136/136 [=====] - 0s 622us
  /step - loss: 0.4402 - accuracy: 0.8397
66 Epoch 31/350
67 136/136 [=====] - 0s 560us
  /step - loss: 0.4349 - accuracy: 0.8363
68 Epoch 32/350
69 136/136 [=====] - 0s 611us
  /step - loss: 0.4207 - accuracy: 0.8431
70 Epoch 33/350
71 136/136 [=====] - 0s 554us
  /step - loss: 0.4433 - accuracy: 0.8417
72 Epoch 34/350
73 136/136 [=====] - 0s 609us
  /step - loss: 0.4405 - accuracy: 0.8333
74 Epoch 35/350
75 136/136 [=====] - 0s 617us
  /step - loss: 0.4246 - accuracy: 0.8417
76 Epoch 36/350
77 136/136 [=====] - 0s 555us
  /step - loss: 0.4192 - accuracy: 0.8471
78 Epoch 37/350
79 136/136 [=====] - 0s 666us
  /step - loss: 0.4197 - accuracy: 0.8441
80 Epoch 38/350
81 136/136 [=====] - 0s 564us
  /step - loss: 0.4185 - accuracy: 0.8417
```

```
82 Epoch 39/350
83 136/136 [=====] - 0s
    548us/step - loss: 0.4109 - accuracy: 0.8525
84 Epoch 40/350
85 136/136 [=====] - 0s
    696us/step - loss: 0.4096 - accuracy: 0.8461
86 Epoch 41/350
87 136/136 [=====] - 0s
    569us/step - loss: 0.4129 - accuracy: 0.8461
88 Epoch 42/350
89 136/136 [=====] - 0s
    556us/step - loss: 0.4111 - accuracy: 0.8495
90 Epoch 43/350
91 136/136 [=====] - 0s
    638us/step - loss: 0.4083 - accuracy: 0.8461
92 Epoch 44/350
93 136/136 [=====] - 0s
    556us/step - loss: 0.4324 - accuracy: 0.8475
94 Epoch 45/350
95 136/136 [=====] - 0s
    610us/step - loss: 0.4038 - accuracy: 0.8431
96 Epoch 46/350
97 136/136 [=====] - 0s
    599us/step - loss: 0.3997 - accuracy: 0.8515
98 Epoch 47/350
99 136/136 [=====] - 0s
    576us/step - loss: 0.4106 - accuracy: 0.8436
100 Epoch 48/350
101 136/136 [=====] - 0s
    709us/step - loss: 0.4145 - accuracy: 0.8490
102 Epoch 49/350
103 136/136 [=====] - 0s
    588us/step - loss: 0.3973 - accuracy: 0.8495
104 Epoch 50/350
105 136/136 [=====] - 0s
    555us/step - loss: 0.3929 - accuracy: 0.8534
106 Epoch 51/350
107 136/136 [=====] - 0s
    668us/step - loss: 0.3941 - accuracy: 0.8588
108 Epoch 52/350
109 136/136 [=====] - 0s
    562us/step - loss: 0.3953 - accuracy: 0.8529
110 Epoch 53/350
111 136/136 [=====] - 0s
```

```
111 553us/step - loss: 0.4066 - accuracy: 0.8431
112 Epoch 54/350
113 136/136 [=====] - 0s
    650us/step - loss: 0.3917 - accuracy: 0.8471
114 Epoch 55/350
115 136/136 [=====] - 0s
    604us/step - loss: 0.3835 - accuracy: 0.8554
116 Epoch 56/350
117 136/136 [=====] - 0s
    554us/step - loss: 0.3892 - accuracy: 0.8583
118 Epoch 57/350
119 136/136 [=====] - 0s
    666us/step - loss: 0.3862 - accuracy: 0.8510
120 Epoch 58/350
121 136/136 [=====] - 0s
    542us/step - loss: 0.3855 - accuracy: 0.8574
122 Epoch 59/350
123 136/136 [=====] - 0s
    573us/step - loss: 0.3879 - accuracy: 0.8583
124 Epoch 60/350
125 136/136 [=====] - 0s
    684us/step - loss: 0.3828 - accuracy: 0.8559
126 Epoch 61/350
127 136/136 [=====] - 0s
    596us/step - loss: 0.3927 - accuracy: 0.8456
128 Epoch 62/350
129 136/136 [=====] - 0s
    557us/step - loss: 0.3817 - accuracy: 0.8578
130 Epoch 63/350
131 136/136 [=====] - 0s
    617us/step - loss: 0.3834 - accuracy: 0.8520
132 Epoch 64/350
133 136/136 [=====] - 0s
    557us/step - loss: 0.3801 - accuracy: 0.8603
134 Epoch 65/350
135 136/136 [=====] - 0s
    609us/step - loss: 0.3850 - accuracy: 0.8505
136 Epoch 66/350
137 136/136 [=====] - 0s
    611us/step - loss: 0.3746 - accuracy: 0.8549
138 Epoch 67/350
139 136/136 [=====] - 0s
    575us/step - loss: 0.3647 - accuracy: 0.8667
140 Epoch 68/350
```

```
141 136/136 [=====] - 0s
    652us/step - loss: 0.3810 - accuracy: 0.8539
142 Epoch 69/350
143 136/136 [=====] - 0s
    562us/step - loss: 0.3715 - accuracy: 0.8637
144 Epoch 70/350
145 136/136 [=====] - 0s
    559us/step - loss: 0.4004 - accuracy: 0.8500
146 Epoch 71/350
147 136/136 [=====] - 0s
    643us/step - loss: 0.3662 - accuracy: 0.8642
148 Epoch 72/350
149 136/136 [=====] - 0s
    583us/step - loss: 0.3668 - accuracy: 0.8618
150 Epoch 73/350
151 136/136 [=====] - 0s
    597us/step - loss: 0.3598 - accuracy: 0.8642
152 Epoch 74/350
153 136/136 [=====] - 0s
    647us/step - loss: 0.3608 - accuracy: 0.8618
154 Epoch 75/350
155 136/136 [=====] - 0s
    581us/step - loss: 0.3677 - accuracy: 0.8662
156 Epoch 76/350
157 136/136 [=====] - 0s
    559us/step - loss: 0.3704 - accuracy: 0.8564
158 Epoch 77/350
159 136/136 [=====] - 0s
    650us/step - loss: 0.3455 - accuracy: 0.8642
160 Epoch 78/350
161 136/136 [=====] - 0s
    582us/step - loss: 0.3596 - accuracy: 0.8652
162 Epoch 79/350
163 136/136 [=====] - 0s
    580us/step - loss: 0.3647 - accuracy: 0.8618
164 Epoch 80/350
165 136/136 [=====] - 0s
    652us/step - loss: 0.3676 - accuracy: 0.8603
166 Epoch 81/350
167 136/136 [=====] - 0s
    581us/step - loss: 0.3671 - accuracy: 0.8647
168 Epoch 82/350
169 136/136 [=====] - 0s
    554us/step - loss: 0.3590 - accuracy: 0.8662
```

```
170 Epoch 83/350
171 136/136 [=====] - 0s
    651us/step - loss: 0.3556 - accuracy: 0.8662
172 Epoch 84/350
173 136/136 [=====] - 0s
    585us/step - loss: 0.3504 - accuracy: 0.8721
174 Epoch 85/350
175 136/136 [=====] - 0s
    584us/step - loss: 0.3386 - accuracy: 0.8721
176 Epoch 86/350
177 136/136 [=====] - 0s
    662us/step - loss: 0.3471 - accuracy: 0.8711
178 Epoch 87/350
179 136/136 [=====] - 0s
    566us/step - loss: 0.3546 - accuracy: 0.8672
180 Epoch 88/350
181 136/136 [=====] - 0s
    557us/step - loss: 0.3376 - accuracy: 0.8706
182 Epoch 89/350
183 136/136 [=====] - 0s
    656us/step - loss: 0.3397 - accuracy: 0.8721
184 Epoch 90/350
185 136/136 [=====] - 0s
    579us/step - loss: 0.3418 - accuracy: 0.8667
186 Epoch 91/350
187 136/136 [=====] - 0s
    583us/step - loss: 0.3257 - accuracy: 0.8775
188 Epoch 92/350
189 136/136 [=====] - 0s
    671us/step - loss: 0.3432 - accuracy: 0.8691
190 Epoch 93/350
191 136/136 [=====] - 0s
    561us/step - loss: 0.3444 - accuracy: 0.8716
192 Epoch 94/350
193 136/136 [=====] - 0s
    555us/step - loss: 0.3406 - accuracy: 0.8711
194 Epoch 95/350
195 136/136 [=====] - 0s
    660us/step - loss: 0.3438 - accuracy: 0.8642
196 Epoch 96/350
197 136/136 [=====] - 0s
    571us/step - loss: 0.3300 - accuracy: 0.8809
198 Epoch 97/350
199 136/136 [=====] - 0s
```

```
199 578us/step - loss: 0.3327 - accuracy: 0.8725
200 Epoch 98/350
201 136/136 [=====] - 0s
    669us/step - loss: 0.3375 - accuracy: 0.8779
202 Epoch 99/350
203 136/136 [=====] - 0s
    563us/step - loss: 0.3337 - accuracy: 0.8765
204 Epoch 100/350
205 136/136 [=====] - 0s
    559us/step - loss: 0.3442 - accuracy: 0.8691
206 Epoch 101/350
207 136/136 [=====] - 0s
    653us/step - loss: 0.3369 - accuracy: 0.8740
208 Epoch 102/350
209 136/136 [=====] - 0s
    571us/step - loss: 0.3334 - accuracy: 0.8721
210 Epoch 103/350
211 136/136 [=====] - 0s
    578us/step - loss: 0.3360 - accuracy: 0.8740
212 Epoch 104/350
213 136/136 [=====] - 0s
    653us/step - loss: 0.3436 - accuracy: 0.8721
214 Epoch 105/350
215 136/136 [=====] - 0s
    584us/step - loss: 0.3174 - accuracy: 0.8789
216 Epoch 106/350
217 136/136 [=====] - 0s
    542us/step - loss: 0.3256 - accuracy: 0.8799
218 Epoch 107/350
219 136/136 [=====] - 0s
    644us/step - loss: 0.3284 - accuracy: 0.8779
220 Epoch 108/350
221 136/136 [=====] - 0s
    570us/step - loss: 0.3202 - accuracy: 0.8794
222 Epoch 109/350
223 136/136 [=====] - 0s
    579us/step - loss: 0.3283 - accuracy: 0.8730
224 Epoch 110/350
225 136/136 [=====] - 0s
    654us/step - loss: 0.3430 - accuracy: 0.8696
226 Epoch 111/350
227 136/136 [=====] - 0s
    564us/step - loss: 0.3152 - accuracy: 0.8804
228 Epoch 112/350
```

```
229 136/136 [=====] - 0s
    556us/step - loss: 0.3297 - accuracy: 0.8779
230 Epoch 113/350
231 136/136 [=====] - 0s
    654us/step - loss: 0.3316 - accuracy: 0.8784
232 Epoch 114/350
233 136/136 [=====] - 0s
    577us/step - loss: 0.3115 - accuracy: 0.8819
234 Epoch 115/350
235 136/136 [=====] - 0s
    579us/step - loss: 0.3113 - accuracy: 0.8853
236 Epoch 116/350
237 136/136 [=====] - 0s
    612us/step - loss: 0.3228 - accuracy: 0.8770
238 Epoch 117/350
239 136/136 [=====] - 0s
    557us/step - loss: 0.3160 - accuracy: 0.8789
240 Epoch 118/350
241 136/136 [=====] - 0s
    613us/step - loss: 0.3096 - accuracy: 0.8750
242 Epoch 119/350
243 136/136 [=====] - 0s
    620us/step - loss: 0.3053 - accuracy: 0.8833
244 Epoch 120/350
245 136/136 [=====] - 0s
    558us/step - loss: 0.2999 - accuracy: 0.8828
246 Epoch 121/350
247 136/136 [=====] - 0s
    676us/step - loss: 0.3085 - accuracy: 0.8809
248 Epoch 122/350
249 136/136 [=====] - 0s
    572us/step - loss: 0.3110 - accuracy: 0.8824
250 Epoch 123/350
251 136/136 [=====] - 0s
    554us/step - loss: 0.3048 - accuracy: 0.8848
252 Epoch 124/350
253 136/136 [=====] - 0s
    658us/step - loss: 0.3160 - accuracy: 0.8770
254 Epoch 125/350
255 136/136 [=====] - 0s
    558us/step - loss: 0.3065 - accuracy: 0.8833
256 Epoch 126/350
257 136/136 [=====] - 0s
    581us/step - loss: 0.3253 - accuracy: 0.8789
```

```
258 Epoch 127/350
259 136/136 [=====] - 0s
    609us/step - loss: 0.2962 - accuracy: 0.8784
260 Epoch 128/350
261 136/136 [=====] - 0s
    554us/step - loss: 0.2993 - accuracy: 0.8828
262 Epoch 129/350
263 136/136 [=====] - 0s
    647us/step - loss: 0.3179 - accuracy: 0.8804
264 Epoch 130/350
265 136/136 [=====] - 0s
    584us/step - loss: 0.2988 - accuracy: 0.8951
266 Epoch 131/350
267 136/136 [=====] - 0s
    556us/step - loss: 0.3059 - accuracy: 0.8804
268 Epoch 132/350
269 136/136 [=====] - 0s
    628us/step - loss: 0.2997 - accuracy: 0.8819
270 Epoch 133/350
271 136/136 [=====] - 0s
    601us/step - loss: 0.3256 - accuracy: 0.8745
272 Epoch 134/350
273 136/136 [=====] - 0s
    569us/step - loss: 0.3113 - accuracy: 0.8833
274 Epoch 135/350
275 136/136 [=====] - 0s
    645us/step - loss: 0.3047 - accuracy: 0.8799
276 Epoch 136/350
277 136/136 [=====] - 0s
    593us/step - loss: 0.3033 - accuracy: 0.8828
278 Epoch 137/350
279 136/136 [=====] - 0s
    557us/step - loss: 0.3058 - accuracy: 0.8848
280 Epoch 138/350
281 136/136 [=====] - 0s
    661us/step - loss: 0.3077 - accuracy: 0.8828
282 Epoch 139/350
283 136/136 [=====] - 0s
    596us/step - loss: 0.2977 - accuracy: 0.8877
284 Epoch 140/350
285 136/136 [=====] - 0s
    557us/step - loss: 0.2964 - accuracy: 0.8882
286 Epoch 141/350
287 136/136 [=====] - 0s
```

```
287 645us/step - loss: 0.2920 - accuracy: 0.8912
288 Epoch 142/350
289 136/136 [=====] - 0s
    587us/step - loss: 0.2786 - accuracy: 0.8917
290 Epoch 143/350
291 136/136 [=====] - 0s
    556us/step - loss: 0.3005 - accuracy: 0.8882
292 Epoch 144/350
293 136/136 [=====] - 0s
    645us/step - loss: 0.2987 - accuracy: 0.8858
294 Epoch 145/350
295 136/136 [=====] - 0s
    586us/step - loss: 0.2893 - accuracy: 0.8931
296 Epoch 146/350
297 136/136 [=====] - 0s
    567us/step - loss: 0.2940 - accuracy: 0.8863
298 Epoch 147/350
299 136/136 [=====] - 0s
    651us/step - loss: 0.2844 - accuracy: 0.8897
300 Epoch 148/350
301 136/136 [=====] - 0s
    578us/step - loss: 0.2971 - accuracy: 0.8926
302 Epoch 149/350
303 136/136 [=====] - 0s
    554us/step - loss: 0.2785 - accuracy: 0.8907
304 Epoch 150/350
305 136/136 [=====] - 0s
    663us/step - loss: 0.3074 - accuracy: 0.8804
306 Epoch 151/350
307 136/136 [=====] - 0s
    574us/step - loss: 0.2920 - accuracy: 0.8868
308 Epoch 152/350
309 136/136 [=====] - 0s
    579us/step - loss: 0.2900 - accuracy: 0.8912
310 Epoch 153/350
311 136/136 [=====] - 0s
    621us/step - loss: 0.2775 - accuracy: 0.8936
312 Epoch 154/350
313 136/136 [=====] - 0s
    553us/step - loss: 0.2927 - accuracy: 0.8848
314 Epoch 155/350
315 136/136 [=====] - 0s
    615us/step - loss: 0.2784 - accuracy: 0.8946
316 Epoch 156/350
```

```
317 136/136 [=====] - 0s
    607us/step - loss: 0.2897 - accuracy: 0.8956
318 Epoch 157/350
319 136/136 [=====] - 0s
    549us/step - loss: 0.2856 - accuracy: 0.8941
320 Epoch 158/350
321 136/136 [=====] - 0s
    713us/step - loss: 0.2801 - accuracy: 0.8897
322 Epoch 159/350
323 136/136 [=====] - 0s
    565us/step - loss: 0.2758 - accuracy: 0.8936
324 Epoch 160/350
325 136/136 [=====] - 0s
    555us/step - loss: 0.2736 - accuracy: 0.8931
326 Epoch 161/350
327 136/136 [=====] - 0s
    671us/step - loss: 0.2807 - accuracy: 0.8931
328 Epoch 162/350
329 136/136 [=====] - 0s
    564us/step - loss: 0.2834 - accuracy: 0.8985
330 Epoch 163/350
331 136/136 [=====] - 0s
    558us/step - loss: 0.2828 - accuracy: 0.8907
332 Epoch 164/350
333 136/136 [=====] - 0s
    638us/step - loss: 0.2733 - accuracy: 0.8975
334 Epoch 165/350
335 136/136 [=====] - 0s
    553us/step - loss: 0.2695 - accuracy: 0.8946
336 Epoch 166/350
337 136/136 [=====] - 0s
    603us/step - loss: 0.2707 - accuracy: 0.8980
338 Epoch 167/350
339 136/136 [=====] - 0s
    599us/step - loss: 0.2798 - accuracy: 0.8926
340 Epoch 168/350
341 136/136 [=====] - 0s
    563us/step - loss: 0.2778 - accuracy: 0.8907
342 Epoch 169/350
343 136/136 [=====] - 0s
    673us/step - loss: 0.2689 - accuracy: 0.8975
344 Epoch 170/350
345 136/136 [=====] - 0s
    598us/step - loss: 0.2674 - accuracy: 0.9005
```

```
346 Epoch 171/350
347 136/136 [=====] - 0s
    557us/step - loss: 0.2791 - accuracy: 0.8956
348 Epoch 172/350
349 136/136 [=====] - 0s
    617us/step - loss: 0.2933 - accuracy: 0.8907
350 Epoch 173/350
351 136/136 [=====] - 0s
    553us/step - loss: 0.2800 - accuracy: 0.8912
352 Epoch 174/350
353 136/136 [=====] - 0s
    608us/step - loss: 0.2678 - accuracy: 0.9020
354 Epoch 175/350
355 136/136 [=====] - 0s
    621us/step - loss: 0.2679 - accuracy: 0.9015
356 Epoch 176/350
357 136/136 [=====] - 0s
    577us/step - loss: 0.2647 - accuracy: 0.8966
358 Epoch 177/350
359 136/136 [=====] - 0s
    658us/step - loss: 0.2592 - accuracy: 0.9010
360 Epoch 178/350
361 136/136 [=====] - 0s
    568us/step - loss: 0.2703 - accuracy: 0.8980
362 Epoch 179/350
363 136/136 [=====] - 0s
    553us/step - loss: 0.2791 - accuracy: 0.8902
364 Epoch 180/350
365 136/136 [=====] - 0s
    650us/step - loss: 0.2757 - accuracy: 0.8971
366 Epoch 181/350
367 136/136 [=====] - 0s
    582us/step - loss: 0.2773 - accuracy: 0.8922
368 Epoch 182/350
369 136/136 [=====] - 0s
    577us/step - loss: 0.2719 - accuracy: 0.8961
370 Epoch 183/350
371 136/136 [=====] - 0s
    666us/step - loss: 0.2768 - accuracy: 0.8951
372 Epoch 184/350
373 136/136 [=====] - 0s
    559us/step - loss: 0.2570 - accuracy: 0.9029
374 Epoch 185/350
375 136/136 [=====] - 0s
```

```
375 556us/step - loss: 0.2612 - accuracy: 0.9000
376 Epoch 186/350
377 136/136 [=====] - 0s
    644us/step - loss: 0.2584 - accuracy: 0.9059
378 Epoch 187/350
379 136/136 [=====] - 0s
    583us/step - loss: 0.2648 - accuracy: 0.9025
380 Epoch 188/350
381 136/136 [=====] - 0s
    578us/step - loss: 0.2578 - accuracy: 0.9010
382 Epoch 189/350
383 136/136 [=====] - 0s
    660us/step - loss: 0.2710 - accuracy: 0.8936
384 Epoch 190/350
385 136/136 [=====] - 0s
    564us/step - loss: 0.2699 - accuracy: 0.8995
386 Epoch 191/350
387 136/136 [=====] - 0s
    555us/step - loss: 0.2503 - accuracy: 0.9020
388 Epoch 192/350
389 136/136 [=====] - 0s
    643us/step - loss: 0.2515 - accuracy: 0.9029
390 Epoch 193/350
391 136/136 [=====] - 0s
    585us/step - loss: 0.2639 - accuracy: 0.8966
392 Epoch 194/350
393 136/136 [=====] - 0s
    577us/step - loss: 0.2598 - accuracy: 0.9020
394 Epoch 195/350
395 136/136 [=====] - 0s
    648us/step - loss: 0.2494 - accuracy: 0.9039
396 Epoch 196/350
397 136/136 [=====] - 0s
    587us/step - loss: 0.2477 - accuracy: 0.9083
398 Epoch 197/350
399 136/136 [=====] - 0s
    553us/step - loss: 0.2589 - accuracy: 0.9010
400 Epoch 198/350
401 136/136 [=====] - 0s
    646us/step - loss: 0.2503 - accuracy: 0.9020
402 Epoch 199/350
403 136/136 [=====] - 0s
    581us/step - loss: 0.2470 - accuracy: 0.9034
404 Epoch 200/350
```

```
405 136/136 [=====] - 0s
    578us/step - loss: 0.2548 - accuracy: 0.8951
406 Epoch 201/350
407 136/136 [=====] - 0s
    647us/step - loss: 0.2526 - accuracy: 0.9000
408 Epoch 202/350
409 136/136 [=====] - 0s
    575us/step - loss: 0.2671 - accuracy: 0.8926
410 Epoch 203/350
411 136/136 [=====] - 0s
    554us/step - loss: 0.2448 - accuracy: 0.9054
412 Epoch 204/350
413 136/136 [=====] - 0s
    650us/step - loss: 0.2449 - accuracy: 0.9054
414 Epoch 205/350
415 136/136 [=====] - 0s
    582us/step - loss: 0.2518 - accuracy: 0.9025
416 Epoch 206/350
417 136/136 [=====] - 0s
    574us/step - loss: 0.2470 - accuracy: 0.9098
418 Epoch 207/350
419 136/136 [=====] - 0s
    643us/step - loss: 0.2573 - accuracy: 0.9015
420 Epoch 208/350
421 136/136 [=====] - 0s
    583us/step - loss: 0.2408 - accuracy: 0.9108
422 Epoch 209/350
423 136/136 [=====] - 0s
    557us/step - loss: 0.2685 - accuracy: 0.8961
424 Epoch 210/350
425 136/136 [=====] - 0s
    651us/step - loss: 0.2349 - accuracy: 0.9054
426 Epoch 211/350
427 136/136 [=====] - 0s
    581us/step - loss: 0.2364 - accuracy: 0.9103
428 Epoch 212/350
429 136/136 [=====] - 0s
    575us/step - loss: 0.2352 - accuracy: 0.9074
430 Epoch 213/350
431 136/136 [=====] - 0s
    666us/step - loss: 0.2418 - accuracy: 0.9088
432 Epoch 214/350
433 136/136 [=====] - 0s
    558us/step - loss: 0.2369 - accuracy: 0.9078
```

```
434 Epoch 215/350
435 136/136 [=====] - 0s
      555us/step - loss: 0.2299 - accuracy: 0.9039
436 Epoch 216/350
437 136/136 [=====] - 0s
      656us/step - loss: 0.2391 - accuracy: 0.9044
438 Epoch 217/350
439 136/136 [=====] - 0s
      575us/step - loss: 0.2654 - accuracy: 0.9034
440 Epoch 218/350
441 136/136 [=====] - 0s
      572us/step - loss: 0.2218 - accuracy: 0.9113
442 Epoch 219/350
443 136/136 [=====] - 0s
      653us/step - loss: 0.2322 - accuracy: 0.9103
444 Epoch 220/350
445 136/136 [=====] - 0s
      557us/step - loss: 0.2386 - accuracy: 0.9088
446 Epoch 221/350
447 136/136 [=====] - 0s
      559us/step - loss: 0.2580 - accuracy: 0.8907
448 Epoch 222/350
449 136/136 [=====] - 0s
      660us/step - loss: 0.2519 - accuracy: 0.9020
450 Epoch 223/350
451 136/136 [=====] - 0s
      584us/step - loss: 0.2289 - accuracy: 0.9152
452 Epoch 224/350
453 136/136 [=====] - 0s
      573us/step - loss: 0.2300 - accuracy: 0.9137
454 Epoch 225/350
455 136/136 [=====] - 0s
      613us/step - loss: 0.2302 - accuracy: 0.9123
456 Epoch 226/350
457 136/136 [=====] - 0s
      537us/step - loss: 0.2408 - accuracy: 0.9044
458 Epoch 227/350
459 136/136 [=====] - 0s
      623us/step - loss: 0.2656 - accuracy: 0.8951
460 Epoch 228/350
461 136/136 [=====] - 0s
      649us/step - loss: 0.2260 - accuracy: 0.9123
462 Epoch 229/350
463 136/136 [=====] - 0s
```

```
463 530us/step - loss: 0.2398 - accuracy: 0.9064
464 Epoch 230/350
465 136/136 [=====] - 0s
    644us/step - loss: 0.2258 - accuracy: 0.9088
466 Epoch 231/350
467 136/136 [=====] - 0s
    581us/step - loss: 0.2285 - accuracy: 0.9093
468 Epoch 232/350
469 136/136 [=====] - 0s
    574us/step - loss: 0.2367 - accuracy: 0.9069
470 Epoch 233/350
471 136/136 [=====] - 0s
    684us/step - loss: 0.2330 - accuracy: 0.9078
472 Epoch 234/350
473 136/136 [=====] - 0s
    562us/step - loss: 0.2332 - accuracy: 0.9069
474 Epoch 235/350
475 136/136 [=====] - 0s
    554us/step - loss: 0.2301 - accuracy: 0.9049
476 Epoch 236/350
477 136/136 [=====] - 0s
    666us/step - loss: 0.2427 - accuracy: 0.9078
478 Epoch 237/350
479 136/136 [=====] - 0s
    596us/step - loss: 0.2239 - accuracy: 0.9093
480 Epoch 238/350
481 136/136 [=====] - 0s
    552us/step - loss: 0.2198 - accuracy: 0.9132
482 Epoch 239/350
483 136/136 [=====] - 0s
    667us/step - loss: 0.2262 - accuracy: 0.9088
484 Epoch 240/350
485 136/136 [=====] - 0s
    579us/step - loss: 0.2301 - accuracy: 0.9039
486 Epoch 241/350
487 136/136 [=====] - 0s
    568us/step - loss: 0.2302 - accuracy: 0.9108
488 Epoch 242/350
489 136/136 [=====] - 0s
    583us/step - loss: 0.2295 - accuracy: 0.9123
490 Epoch 243/350
491 136/136 [=====] - 0s
    580us/step - loss: 0.2295 - accuracy: 0.9103
492 Epoch 244/350
```

```
493 136/136 [=====] - 0s
    639us/step - loss: 0.2133 - accuracy: 0.9152
494 Epoch 245/350
495 136/136 [=====] - 0s
    586us/step - loss: 0.2096 - accuracy: 0.9162
496 Epoch 246/350
497 136/136 [=====] - 0s
    552us/step - loss: 0.2290 - accuracy: 0.9078
498 Epoch 247/350
499 136/136 [=====] - 0s
    644us/step - loss: 0.2151 - accuracy: 0.9137
500 Epoch 248/350
501 136/136 [=====] - 0s
    583us/step - loss: 0.2072 - accuracy: 0.9201
502 Epoch 249/350
503 136/136 [=====] - 0s
    575us/step - loss: 0.2076 - accuracy: 0.9162
504 Epoch 250/350
505 136/136 [=====] - 0s
    631us/step - loss: 0.2064 - accuracy: 0.9172
506 Epoch 251/350
507 136/136 [=====] - 0s
    568us/step - loss: 0.2104 - accuracy: 0.9225
508 Epoch 252/350
509 136/136 [=====] - 0s
    536us/step - loss: 0.2293 - accuracy: 0.9088
510 Epoch 253/350
511 136/136 [=====] - 0s
    621us/step - loss: 0.2159 - accuracy: 0.9132
512 Epoch 254/350
513 136/136 [=====] - 0s
    569us/step - loss: 0.2099 - accuracy: 0.9191
514 Epoch 255/350
515 136/136 [=====] - 0s
    591us/step - loss: 0.2243 - accuracy: 0.9113
516 Epoch 256/350
517 136/136 [=====] - 0s
    661us/step - loss: 0.2139 - accuracy: 0.9176
518 Epoch 257/350
519 136/136 [=====] - 0s
    580us/step - loss: 0.2216 - accuracy: 0.9123
520 Epoch 258/350
521 136/136 [=====] - 0s
    552us/step - loss: 0.2084 - accuracy: 0.9137
```

```
522 Epoch 259/350
523 136/136 [=====] - 0s
    631us/step - loss: 0.1944 - accuracy: 0.9211
524 Epoch 260/350
525 136/136 [=====] - 0s
    576us/step - loss: 0.2028 - accuracy: 0.9216
526 Epoch 261/350
527 136/136 [=====] - 0s
    618us/step - loss: 0.2119 - accuracy: 0.9137
528 Epoch 262/350
529 136/136 [=====] - 0s
    671us/step - loss: 0.1935 - accuracy: 0.9196
530 Epoch 263/350
531 136/136 [=====] - 0s
    566us/step - loss: 0.2073 - accuracy: 0.9196
532 Epoch 264/350
533 136/136 [=====] - 0s
    596us/step - loss: 0.2174 - accuracy: 0.9147
534 Epoch 265/350
535 136/136 [=====] - 0s
    631us/step - loss: 0.2161 - accuracy: 0.9113
536 Epoch 266/350
537 136/136 [=====] - 0s
    579us/step - loss: 0.2044 - accuracy: 0.9176
538 Epoch 267/350
539 136/136 [=====] - 0s
    715us/step - loss: 0.2023 - accuracy: 0.9201
540 Epoch 268/350
541 136/136 [=====] - 0s
    541us/step - loss: 0.1921 - accuracy: 0.9255
542 Epoch 269/350
543 136/136 [=====] - 0s
    544us/step - loss: 0.2257 - accuracy: 0.9157
544 Epoch 270/350
545 136/136 [=====] - 0s
    719us/step - loss: 0.2063 - accuracy: 0.9235
546 Epoch 271/350
547 136/136 [=====] - 0s
    572us/step - loss: 0.1876 - accuracy: 0.9279
548 Epoch 272/350
549 136/136 [=====] - 0s
    561us/step - loss: 0.1983 - accuracy: 0.9196
550 Epoch 273/350
551 136/136 [=====] - 0s
```

```
551 634us/step - loss: 0.2056 - accuracy: 0.9201
552 Epoch 274/350
553 136/136 [=====] - 0s
554 554us/step - loss: 0.2180 - accuracy: 0.9123
555 Epoch 275/350
556 136/136 [=====] - 0s
557 608us/step - loss: 0.1922 - accuracy: 0.9284
558 Epoch 276/350
559 136/136 [=====] - 0s
560 551us/step - loss: 0.1936 - accuracy: 0.9230
561 Epoch 278/350
562 136/136 [=====] - 0s
563 643us/step - loss: 0.1861 - accuracy: 0.9255
564 Epoch 279/350
565 136/136 [=====] - 0s
566 538us/step - loss: 0.1927 - accuracy: 0.9216
567 Epoch 280/350
568 136/136 [=====] - 0s
569 638us/step - loss: 0.2075 - accuracy: 0.9162
570 Epoch 282/350
571 136/136 [=====] - 0s
572 605us/step - loss: 0.1927 - accuracy: 0.9250
573 Epoch 283/350
574 136/136 [=====] - 0s
575 561us/step - loss: 0.2127 - accuracy: 0.9181
576 Epoch 284/350
577 136/136 [=====] - 0s
578 646us/step - loss: 0.2276 - accuracy: 0.9059
579 Epoch 285/350
580 136/136 [=====] - 0s
581 578us/step - loss: 0.1938 - accuracy: 0.9225
582 Epoch 286/350
583 136/136 [=====] - 0s
584 568us/step - loss: 0.2135 - accuracy: 0.9123
585 Epoch 287/350
586 136/136 [=====] - 0s
587 708us/step - loss: 0.2136 - accuracy: 0.9206
588 Epoch 288/350
```

```
581 136/136 [=====] - 0s
    557us/step - loss: 0.2244 - accuracy: 0.9108
582 Epoch 289/350
583 136/136 [=====] - 0s
    556us/step - loss: 0.1862 - accuracy: 0.9294
584 Epoch 290/350
585 136/136 [=====] - 0s
    614us/step - loss: 0.1881 - accuracy: 0.9255
586 Epoch 291/350
587 136/136 [=====] - 0s
    578us/step - loss: 0.1866 - accuracy: 0.9245
588 Epoch 292/350
589 136/136 [=====] - 0s
    606us/step - loss: 0.1752 - accuracy: 0.9294
590 Epoch 293/350
591 136/136 [=====] - 0s
    615us/step - loss: 0.2180 - accuracy: 0.9167
592 Epoch 294/350
593 136/136 [=====] - 0s
    552us/step - loss: 0.1966 - accuracy: 0.9206
594 Epoch 295/350
595 136/136 [=====] - 0s
    648us/step - loss: 0.1905 - accuracy: 0.9240
596 Epoch 296/350
597 136/136 [=====] - 0s
    586us/step - loss: 0.1997 - accuracy: 0.9216
598 Epoch 297/350
599 136/136 [=====] - 0s
    577us/step - loss: 0.1840 - accuracy: 0.9333
600 Epoch 298/350
601 136/136 [=====] - 0s
    645us/step - loss: 0.2277 - accuracy: 0.9113
602 Epoch 299/350
603 136/136 [=====] - 0s
    577us/step - loss: 0.1810 - accuracy: 0.9270
604 Epoch 300/350
605 136/136 [=====] - 0s
    538us/step - loss: 0.1898 - accuracy: 0.9250
606 Epoch 301/350
607 136/136 [=====] - 0s
    635us/step - loss: 0.1868 - accuracy: 0.9270
608 Epoch 302/350
609 136/136 [=====] - 0s
    596us/step - loss: 0.1800 - accuracy: 0.9250
```

```
610 Epoch 303/350
611 136/136 [=====] - 0s
    579us/step - loss: 0.1851 - accuracy: 0.9260
612 Epoch 304/350
613 136/136 [=====] - 0s
    654us/step - loss: 0.2064 - accuracy: 0.9225
614 Epoch 305/350
615 136/136 [=====] - 0s
    570us/step - loss: 0.1770 - accuracy: 0.9265
616 Epoch 306/350
617 136/136 [=====] - 0s
    551us/step - loss: 0.1751 - accuracy: 0.9324
618 Epoch 307/350
619 136/136 [=====] - 0s
    650us/step - loss: 0.1765 - accuracy: 0.9279
620 Epoch 308/350
621 136/136 [=====] - 0s
    580us/step - loss: 0.1826 - accuracy: 0.9275
622 Epoch 309/350
623 136/136 [=====] - 0s
    575us/step - loss: 0.1901 - accuracy: 0.9250
624 Epoch 310/350
625 136/136 [=====] - 0s
    643us/step - loss: 0.2093 - accuracy: 0.9157
626 Epoch 311/350
627 136/136 [=====] - 0s
    564us/step - loss: 0.1909 - accuracy: 0.9211
628 Epoch 312/350
629 136/136 [=====] - 0s
    576us/step - loss: 0.1679 - accuracy: 0.9353
630 Epoch 313/350
631 136/136 [=====] - 0s
    704us/step - loss: 0.1800 - accuracy: 0.9265
632 Epoch 314/350
633 136/136 [=====] - 0s
    558us/step - loss: 0.1824 - accuracy: 0.9255
634 Epoch 315/350
635 136/136 [=====] - 0s
    576us/step - loss: 0.1682 - accuracy: 0.9333
636 Epoch 316/350
637 136/136 [=====] - 0s
    618us/step - loss: 0.1980 - accuracy: 0.9221
638 Epoch 317/350
639 136/136 [=====] - 0s
```

```
639 553us/step - loss: 0.1914 - accuracy: 0.9196
640 Epoch 318/350
641 136/136 [=====] - 0s
    613us/step - loss: 0.1919 - accuracy: 0.9235
642 Epoch 319/350
643 136/136 [=====] - 0s
    617us/step - loss: 0.1716 - accuracy: 0.9324
644 Epoch 320/350
645 136/136 [=====] - 0s
    552us/step - loss: 0.1829 - accuracy: 0.9294
646 Epoch 321/350
647 136/136 [=====] - 0s
    681us/step - loss: 0.1753 - accuracy: 0.9275
648 Epoch 322/350
649 136/136 [=====] - 0s
    576us/step - loss: 0.2292 - accuracy: 0.9059
650 Epoch 323/350
651 136/136 [=====] - 0s
    551us/step - loss: 0.1788 - accuracy: 0.9275
652 Epoch 324/350
653 136/136 [=====] - 0s
    654us/step - loss: 0.1735 - accuracy: 0.9284
654 Epoch 325/350
655 136/136 [=====] - 0s
    568us/step - loss: 0.1606 - accuracy: 0.9397
656 Epoch 326/350
657 136/136 [=====] - 0s
    538us/step - loss: 0.1667 - accuracy: 0.9299
658 Epoch 327/350
659 136/136 [=====] - 0s
    654us/step - loss: 0.1549 - accuracy: 0.9368
660 Epoch 328/350
661 136/136 [=====] - 0s
    602us/step - loss: 0.1762 - accuracy: 0.9319
662 Epoch 329/350
663 136/136 [=====] - 0s
    549us/step - loss: 0.1665 - accuracy: 0.9309
664 Epoch 330/350
665 136/136 [=====] - 0s
    649us/step - loss: 0.1718 - accuracy: 0.9309
666 Epoch 331/350
667 136/136 [=====] - 0s
    582us/step - loss: 0.1843 - accuracy: 0.9270
668 Epoch 332/350
```

```
669 136/136 [=====] - 0s
    553us/step - loss: 0.1704 - accuracy: 0.9319
670 Epoch 333/350
671 136/136 [=====] - 0s
    653us/step - loss: 0.1533 - accuracy: 0.9412
672 Epoch 334/350
673 136/136 [=====] - 0s
    582us/step - loss: 0.1795 - accuracy: 0.9260
674 Epoch 335/350
675 136/136 [=====] - 0s
    586us/step - loss: 0.1630 - accuracy: 0.9358
676 Epoch 336/350
677 136/136 [=====] - 0s
    670us/step - loss: 0.1742 - accuracy: 0.9314
678 Epoch 337/350
679 136/136 [=====] - 0s
    566us/step - loss: 0.1897 - accuracy: 0.9206
680 Epoch 338/350
681 136/136 [=====] - 0s
    555us/step - loss: 0.1558 - accuracy: 0.9363
682 Epoch 339/350
683 136/136 [=====] - 0s
    668us/step - loss: 0.2075 - accuracy: 0.9137
684 Epoch 340/350
685 136/136 [=====] - 0s
    588us/step - loss: 0.1715 - accuracy: 0.9309
686 Epoch 341/350
687 136/136 [=====] - 0s
    551us/step - loss: 0.1637 - accuracy: 0.9387
688 Epoch 342/350
689 136/136 [=====] - 0s
    674us/step - loss: 0.1532 - accuracy: 0.9441
690 Epoch 343/350
691 136/136 [=====] - 0s
    562us/step - loss: 0.1575 - accuracy: 0.9353
692 Epoch 344/350
693 136/136 [=====] - 0s
    558us/step - loss: 0.1634 - accuracy: 0.9333
694 Epoch 345/350
695 136/136 [=====] - 0s
    654us/step - loss: 0.1686 - accuracy: 0.9304
696 Epoch 346/350
697 136/136 [=====] - 0s
    593us/step - loss: 0.2143 - accuracy: 0.9098
```

```
698 Epoch 347/350
699 136/136 [=====] - 0s
    554us/step - loss: 0.1538 - accuracy: 0.9373
700 Epoch 348/350
701 136/136 [=====] - 0s
    665us/step - loss: 0.1587 - accuracy: 0.9353
702 Epoch 349/350
703 136/136 [=====] - 0s
    559us/step - loss: 0.1660 - accuracy: 0.9333
704 Epoch 350/350
705 136/136 [=====] - 0s
    551us/step - loss: 0.1556 - accuracy: 0.9343
706 WARNING:tensorflow:From /Library/Frameworks/Python
.framework/Versions/3.8/lib/python3.8/site-
packages/tensorflow/python/training/tracking/
tracking.py:111: Model.state_updates (from
tensorflow.python.keras.engine.training) is
deprecated and will be removed in a future version
.
707 Instructions for updating:
708 This property should not be used in TensorFlow 2.0
, as updates are applied automatically.
709 2020-09-03 19:42:36.052218: W tensorflow/python/
util/util.cc:348] Sets are not currently
considered sequences, but this may change in the
future, so consider avoiding using them.
710 WARNING:tensorflow:From /Library/Frameworks/Python
.framework/Versions/3.8/lib/python3.8/site-
packages/tensorflow/python/training/tracking/
tracking.py:111: Layer.updates (from tensorflow.
python.keras.engine.base_layer) is deprecated and
will be removed in a future version.
711 Instructions for updating:
712 This property should not be used in TensorFlow 2.0
, as updates are applied automatically.
713
714 Process finished with exit code 0
715
```