

```
1 /usr/local/bin/python3.8 "/Users/surajvaddi/Desktop/TarPrint Full Journey/Machine Learning Code/Neural-Network-NO-test.py"
2 ['norm_imperVIOUS' 'tan_imperVIOUS' 'norm_imperVIOUS' ...]
3 ['norm_imperVIOUS' 'dry_pervious' 'norm_pervious']
4 [2 5 2 ... 2 0 3]
5 2020-09-03 18:09:51.967268: 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
6 To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
7 2020-09-03 18:09:51.992348: I tensorflow/compiler/xla/service/service.cc:168] XLA service 0x7fdb0efc8ec0 initialized for platform Host (this does not guarantee that XLA will be used). Devices:
8 2020-09-03 18:09:51.992360: I tensorflow/compiler/xla/service/service.cc:176] StreamExecutor device (0): Host, Default Version
9 [[0.30362644 0.32236881 0.29612949 ... 0.37484746 0
.38234441 0.32236881]
10 [0.38498641 0.33609925 0.26582395 ... 0.35748738 0
.32998835 0.25665761]
11 [0.32926562 0.33627127 0.29774019 ... 0.37830518 0
.381808 0.31875714]
12 ...
13 [0.31306804 0.32338897 0.28554558 ... 0.40251605 0
.40595636 0.35435174]
14 [0.42824723 0.39255996 0.27955027 ... 0.26765452 0
.28549815 0.19925392]
15 [0.21592634 0.31118796 0.19052324 ... 0.38739725 0
.450905 0.28578486]]
16 (2138, 9)
17 (2138, 7)
18 Epoch 1/150
19 214/214 [=====] - 0s 519us
/step - loss: 1.6658 - accuracy: 0.3559
20 Epoch 2/150
21 214/214 [=====] - 0s 509us
/step - loss: 1.3631 - accuracy: 0.5136
22 Epoch 3/150
```

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23 214/214 [=====] - 0s 497us
  /step - loss: 1.1072 - accuracy: 0.6155
24 Epoch 4/150
25 214/214 [=====] - 0s 516us
  /step - loss: 0.9414 - accuracy: 0.6707
26 Epoch 5/150
27 214/214 [=====] - 0s 510us
  /step - loss: 0.8224 - accuracy: 0.7226
28 Epoch 6/150
29 214/214 [=====] - 0s 504us
  /step - loss: 0.7479 - accuracy: 0.7526
30 Epoch 7/150
31 214/214 [=====] - 0s 520us
  /step - loss: 0.7043 - accuracy: 0.7657
32 Epoch 8/150
33 214/214 [=====] - 0s 669us
  /step - loss: 0.6689 - accuracy: 0.7703
34 Epoch 9/150
35 214/214 [=====] - 0s 536us
  /step - loss: 0.6524 - accuracy: 0.7741
36 Epoch 10/150
37 214/214 [=====] - 0s 525us
  /step - loss: 0.6344 - accuracy: 0.7802
38 Epoch 11/150
39 214/214 [=====] - 0s 490us
  /step - loss: 0.6261 - accuracy: 0.7769
40 Epoch 12/150
41 214/214 [=====] - 0s 521us
  /step - loss: 0.6127 - accuracy: 0.7881
42 Epoch 13/150
43 214/214 [=====] - 0s 507us
  /step - loss: 0.6054 - accuracy: 0.7909
44 Epoch 14/150
45 214/214 [=====] - 0s 523us
  /step - loss: 0.6041 - accuracy: 0.7905
46 Epoch 15/150
47 214/214 [=====] - 0s 492us
  /step - loss: 0.5972 - accuracy: 0.7923
48 Epoch 16/150
49 214/214 [=====] - 0s 519us
  /step - loss: 0.5931 - accuracy: 0.7933
50 Epoch 17/150
51 214/214 [=====] - 0s 489us
  /step - loss: 0.5830 - accuracy: 0.7919
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52 Epoch 18/150
53 214/214 [=====] - 0s 531us
    /step - loss: 0.5782 - accuracy: 0.7993
54 Epoch 19/150
55 214/214 [=====] - 0s 490us
    /step - loss: 0.5875 - accuracy: 0.7965
56 Epoch 20/150
57 214/214 [=====] - 0s 526us
    /step - loss: 0.5795 - accuracy: 0.8064
58 Epoch 21/150
59 214/214 [=====] - 0s 501us
    /step - loss: 0.5744 - accuracy: 0.7989
60 Epoch 22/150
61 214/214 [=====] - 0s 534us
    /step - loss: 0.5752 - accuracy: 0.8007
62 Epoch 23/150
63 214/214 [=====] - 0s 501us
    /step - loss: 0.5770 - accuracy: 0.7984
64 Epoch 24/150
65 214/214 [=====] - 0s 527us
    /step - loss: 0.5733 - accuracy: 0.8026
66 Epoch 25/150
67 214/214 [=====] - 0s 502us
    /step - loss: 0.5630 - accuracy: 0.8092
68 Epoch 26/150
69 214/214 [=====] - 0s 525us
    /step - loss: 0.5639 - accuracy: 0.7989
70 Epoch 27/150
71 214/214 [=====] - 0s 510us
    /step - loss: 0.5625 - accuracy: 0.8045
72 Epoch 28/150
73 214/214 [=====] - 0s 529us
    /step - loss: 0.5584 - accuracy: 0.8087
74 Epoch 29/150
75 214/214 [=====] - 0s 502us
    /step - loss: 0.5639 - accuracy: 0.8050
76 Epoch 30/150
77 214/214 [=====] - 0s 529us
    /step - loss: 0.5528 - accuracy: 0.8003
78 Epoch 31/150
79 214/214 [=====] - 0s 517us
    /step - loss: 0.5582 - accuracy: 0.8082
80 Epoch 32/150
81 214/214 [=====] - 0s 526us
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81 /step - loss: 0.5487 - accuracy: 0.8101
82 Epoch 33/150
83 214/214 [=====] - 0s
502us/step - loss: 0.5399 - accuracy: 0.8106
84 Epoch 34/150
85 214/214 [=====] - 0s
529us/step - loss: 0.5430 - accuracy: 0.8082
86 Epoch 35/150
87 214/214 [=====] - 0s
496us/step - loss: 0.5449 - accuracy: 0.8115
88 Epoch 36/150
89 214/214 [=====] - 0s
529us/step - loss: 0.5466 - accuracy: 0.8101
90 Epoch 37/150
91 214/214 [=====] - 0s
500us/step - loss: 0.5455 - accuracy: 0.8120
92 Epoch 38/150
93 214/214 [=====] - 0s
526us/step - loss: 0.5391 - accuracy: 0.8101
94 Epoch 39/150
95 214/214 [=====] - 0s
495us/step - loss: 0.5376 - accuracy: 0.8115
96 Epoch 40/150
97 214/214 [=====] - 0s
534us/step - loss: 0.5318 - accuracy: 0.8195
98 Epoch 41/150
99 214/214 [=====] - 0s
499us/step - loss: 0.5250 - accuracy: 0.8162
100 Epoch 42/150
101 214/214 [=====] - 0s
526us/step - loss: 0.5184 - accuracy: 0.8204
102 Epoch 43/150
103 214/214 [=====] - 0s
503us/step - loss: 0.5291 - accuracy: 0.8181
104 Epoch 44/150
105 214/214 [=====] - 0s
531us/step - loss: 0.5181 - accuracy: 0.8162
106 Epoch 45/150
107 214/214 [=====] - 0s
510us/step - loss: 0.5198 - accuracy: 0.8232
108 Epoch 46/150
109 214/214 [=====] - 0s
526us/step - loss: 0.5170 - accuracy: 0.8199
110 Epoch 47/150
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111 214/214 [=====] - 0s
    499us/step - loss: 0.5120 - accuracy: 0.8213
112 Epoch 48/150
113 214/214 [=====] - 0s
    531us/step - loss: 0.5122 - accuracy: 0.8199
114 Epoch 49/150
115 214/214 [=====] - 0s
    512us/step - loss: 0.5115 - accuracy: 0.8255
116 Epoch 50/150
117 214/214 [=====] - 0s
    532us/step - loss: 0.5049 - accuracy: 0.8251
118 Epoch 51/150
119 214/214 [=====] - 0s
    503us/step - loss: 0.5035 - accuracy: 0.8237
120 Epoch 52/150
121 214/214 [=====] - 0s
    529us/step - loss: 0.5013 - accuracy: 0.8349
122 Epoch 53/150
123 214/214 [=====] - 0s
    498us/step - loss: 0.5020 - accuracy: 0.8251
124 Epoch 54/150
125 214/214 [=====] - 0s
    555us/step - loss: 0.4978 - accuracy: 0.8283
126 Epoch 55/150
127 214/214 [=====] - 0s
    503us/step - loss: 0.4970 - accuracy: 0.8326
128 Epoch 56/150
129 214/214 [=====] - 0s
    527us/step - loss: 0.4987 - accuracy: 0.8269
130 Epoch 57/150
131 214/214 [=====] - 0s
    500us/step - loss: 0.4946 - accuracy: 0.8316
132 Epoch 58/150
133 214/214 [=====] - 0s
    528us/step - loss: 0.4814 - accuracy: 0.8312
134 Epoch 59/150
135 214/214 [=====] - 0s
    497us/step - loss: 0.4838 - accuracy: 0.8335
136 Epoch 60/150
137 214/214 [=====] - 0s
    524us/step - loss: 0.4857 - accuracy: 0.8288
138 Epoch 61/150
139 214/214 [=====] - 0s
    501us/step - loss: 0.4856 - accuracy: 0.8335
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140 Epoch 62/150
141 214/214 [=====] - 0s
    529us/step - loss: 0.4771 - accuracy: 0.8368
142 Epoch 63/150
143 214/214 [=====] - 0s
    510us/step - loss: 0.4869 - accuracy: 0.8344
144 Epoch 64/150
145 214/214 [=====] - 0s
    532us/step - loss: 0.4695 - accuracy: 0.8428
146 Epoch 65/150
147 214/214 [=====] - 0s
    497us/step - loss: 0.4737 - accuracy: 0.8349
148 Epoch 66/150
149 214/214 [=====] - 0s
    525us/step - loss: 0.4696 - accuracy: 0.8414
150 Epoch 67/150
151 214/214 [=====] - 0s
    512us/step - loss: 0.4710 - accuracy: 0.8349
152 Epoch 68/150
153 214/214 [=====] - 0s
    534us/step - loss: 0.4659 - accuracy: 0.8447
154 Epoch 69/150
155 214/214 [=====] - 0s
    501us/step - loss: 0.4660 - accuracy: 0.8396
156 Epoch 70/150
157 214/214 [=====] - 0s
    540us/step - loss: 0.4629 - accuracy: 0.8419
158 Epoch 71/150
159 214/214 [=====] - 0s
    501us/step - loss: 0.4636 - accuracy: 0.8433
160 Epoch 72/150
161 214/214 [=====] - 0s
    533us/step - loss: 0.4634 - accuracy: 0.8410
162 Epoch 73/150
163 214/214 [=====] - 0s
    500us/step - loss: 0.4613 - accuracy: 0.8405
164 Epoch 74/150
165 214/214 [=====] - 0s
    528us/step - loss: 0.4544 - accuracy: 0.8461
166 Epoch 75/150
167 214/214 [=====] - 0s
    502us/step - loss: 0.4635 - accuracy: 0.8368
168 Epoch 76/150
169 214/214 [=====] - 0s
```

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169 533us/step - loss: 0.4524 - accuracy: 0.8447
170 Epoch 77/150
171 214/214 [=====] - 0s
    499us/step - loss: 0.4564 - accuracy: 0.8438
172 Epoch 78/150
173 214/214 [=====] - 0s
    540us/step - loss: 0.4518 - accuracy: 0.8419
174 Epoch 79/150
175 214/214 [=====] - 0s
    511us/step - loss: 0.4524 - accuracy: 0.8428
176 Epoch 80/150
177 214/214 [=====] - 0s
    531us/step - loss: 0.4529 - accuracy: 0.8400
178 Epoch 81/150
179 214/214 [=====] - 0s
    511us/step - loss: 0.4537 - accuracy: 0.8419
180 Epoch 82/150
181 214/214 [=====] - 0s
    529us/step - loss: 0.4423 - accuracy: 0.8517
182 Epoch 83/150
183 214/214 [=====] - 0s
    502us/step - loss: 0.4489 - accuracy: 0.8410
184 Epoch 84/150
185 214/214 [=====] - 0s
    530us/step - loss: 0.4406 - accuracy: 0.8419
186 Epoch 85/150
187 214/214 [=====] - 0s
    511us/step - loss: 0.4462 - accuracy: 0.8452
188 Epoch 86/150
189 214/214 [=====] - 0s
    525us/step - loss: 0.4481 - accuracy: 0.8489
190 Epoch 87/150
191 214/214 [=====] - 0s
    510us/step - loss: 0.4408 - accuracy: 0.8419
192 Epoch 88/150
193 214/214 [=====] - 0s
    528us/step - loss: 0.4466 - accuracy: 0.8438
194 Epoch 89/150
195 214/214 [=====] - 0s
    499us/step - loss: 0.4384 - accuracy: 0.8438
196 Epoch 90/150
197 214/214 [=====] - 0s
    545us/step - loss: 0.4384 - accuracy: 0.8410
198 Epoch 91/150
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199 214/214 [=====] - 0s
    501us/step - loss: 0.4292 - accuracy: 0.8531
200 Epoch 92/150
201 214/214 [=====] - 0s
    535us/step - loss: 0.4310 - accuracy: 0.8471
202 Epoch 93/150
203 214/214 [=====] - 0s
    504us/step - loss: 0.4284 - accuracy: 0.8489
204 Epoch 94/150
205 214/214 [=====] - 0s
    539us/step - loss: 0.4320 - accuracy: 0.8466
206 Epoch 95/150
207 214/214 [=====] - 0s
    504us/step - loss: 0.4356 - accuracy: 0.8447
208 Epoch 96/150
209 214/214 [=====] - 0s
    541us/step - loss: 0.4371 - accuracy: 0.8405
210 Epoch 97/150
211 214/214 [=====] - 0s
    523us/step - loss: 0.4285 - accuracy: 0.8457
212 Epoch 98/150
213 214/214 [=====] - 0s
    546us/step - loss: 0.4322 - accuracy: 0.8452
214 Epoch 99/150
215 214/214 [=====] - 0s
    513us/step - loss: 0.4284 - accuracy: 0.8503
216 Epoch 100/150
217 214/214 [=====] - 0s
    558us/step - loss: 0.4234 - accuracy: 0.8513
218 Epoch 101/150
219 214/214 [=====] - 0s
    525us/step - loss: 0.4237 - accuracy: 0.8527
220 Epoch 102/150
221 214/214 [=====] - 0s
    530us/step - loss: 0.4210 - accuracy: 0.8522
222 Epoch 103/150
223 214/214 [=====] - 0s
    518us/step - loss: 0.4242 - accuracy: 0.8517
224 Epoch 104/150
225 214/214 [=====] - 0s
    532us/step - loss: 0.4237 - accuracy: 0.8494
226 Epoch 105/150
227 214/214 [=====] - 0s
    508us/step - loss: 0.4239 - accuracy: 0.8499
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228 Epoch 106/150
229 214/214 [=====] - 0s
    531us/step - loss: 0.4233 - accuracy: 0.8531
230 Epoch 107/150
231 214/214 [=====] - 0s
    515us/step - loss: 0.4194 - accuracy: 0.8485
232 Epoch 108/150
233 214/214 [=====] - 0s
    533us/step - loss: 0.4279 - accuracy: 0.8494
234 Epoch 109/150
235 214/214 [=====] - 0s
    508us/step - loss: 0.4135 - accuracy: 0.8517
236 Epoch 110/150
237 214/214 [=====] - 0s
    532us/step - loss: 0.4105 - accuracy: 0.8508
238 Epoch 111/150
239 214/214 [=====] - 0s
    511us/step - loss: 0.4153 - accuracy: 0.8508
240 Epoch 112/150
241 214/214 [=====] - 0s
    537us/step - loss: 0.4122 - accuracy: 0.8466
242 Epoch 113/150
243 214/214 [=====] - 0s
    514us/step - loss: 0.4179 - accuracy: 0.8536
244 Epoch 114/150
245 214/214 [=====] - 0s
    536us/step - loss: 0.4087 - accuracy: 0.8555
246 Epoch 115/150
247 214/214 [=====] - 0s
    506us/step - loss: 0.4177 - accuracy: 0.8485
248 Epoch 116/150
249 214/214 [=====] - 0s
    538us/step - loss: 0.4124 - accuracy: 0.8578
250 Epoch 117/150
251 214/214 [=====] - 0s
    506us/step - loss: 0.4136 - accuracy: 0.8569
252 Epoch 118/150
253 214/214 [=====] - 0s
    528us/step - loss: 0.4176 - accuracy: 0.8578
254 Epoch 119/150
255 214/214 [=====] - 0s
    508us/step - loss: 0.4088 - accuracy: 0.8583
256 Epoch 120/150
257 214/214 [=====] - 0s
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257 534us/step - loss: 0.4127 - accuracy: 0.8513
258 Epoch 121/150
259 214/214 [=====] - 0s
    521us/step - loss: 0.4092 - accuracy: 0.8536
260 Epoch 122/150
261 214/214 [=====] - 0s
    539us/step - loss: 0.4080 - accuracy: 0.8531
262 Epoch 123/150
263 214/214 [=====] - 0s
    509us/step - loss: 0.4072 - accuracy: 0.8555
264 Epoch 124/150
265 214/214 [=====] - 0s
    530us/step - loss: 0.4106 - accuracy: 0.8541
266 Epoch 125/150
267 214/214 [=====] - 0s
    518us/step - loss: 0.4045 - accuracy: 0.8597
268 Epoch 126/150
269 214/214 [=====] - 0s
    537us/step - loss: 0.4034 - accuracy: 0.8611
270 Epoch 127/150
271 214/214 [=====] - 0s
    510us/step - loss: 0.4060 - accuracy: 0.8583
272 Epoch 128/150
273 214/214 [=====] - 0s
    535us/step - loss: 0.4059 - accuracy: 0.8513
274 Epoch 129/150
275 214/214 [=====] - 0s
    517us/step - loss: 0.4039 - accuracy: 0.8573
276 Epoch 130/150
277 214/214 [=====] - 0s
    536us/step - loss: 0.4000 - accuracy: 0.8597
278 Epoch 131/150
279 214/214 [=====] - 0s
    511us/step - loss: 0.4026 - accuracy: 0.8564
280 Epoch 132/150
281 214/214 [=====] - 0s
    554us/step - loss: 0.4035 - accuracy: 0.8592
282 Epoch 133/150
283 214/214 [=====] - 0s
    519us/step - loss: 0.4085 - accuracy: 0.8592
284 Epoch 134/150
285 214/214 [=====] - 0s
    541us/step - loss: 0.4004 - accuracy: 0.8592
286 Epoch 135/150
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287 214/214 [=====] - 0s
    508us/step - loss: 0.4050 - accuracy: 0.8616
288 Epoch 136/150
289 214/214 [=====] - 0s
    531us/step - loss: 0.4016 - accuracy: 0.8555
290 Epoch 137/150
291 214/214 [=====] - 0s
    525us/step - loss: 0.3973 - accuracy: 0.8620
292 Epoch 138/150
293 214/214 [=====] - 0s
    555us/step - loss: 0.3966 - accuracy: 0.8578
294 Epoch 139/150
295 214/214 [=====] - 0s
    516us/step - loss: 0.4022 - accuracy: 0.8559
296 Epoch 140/150
297 214/214 [=====] - 0s
    535us/step - loss: 0.3965 - accuracy: 0.8611
298 Epoch 141/150
299 214/214 [=====] - 0s
    509us/step - loss: 0.3975 - accuracy: 0.8597
300 Epoch 142/150
301 214/214 [=====] - 0s
    531us/step - loss: 0.3965 - accuracy: 0.8606
302 Epoch 143/150
303 214/214 [=====] - 0s
    517us/step - loss: 0.4019 - accuracy: 0.8569
304 Epoch 144/150
305 214/214 [=====] - 0s
    532us/step - loss: 0.3992 - accuracy: 0.8625
306 Epoch 145/150
307 214/214 [=====] - 0s
    512us/step - loss: 0.3917 - accuracy: 0.8620
308 Epoch 146/150
309 214/214 [=====] - 0s
    532us/step - loss: 0.3943 - accuracy: 0.8611
310 Epoch 147/150
311 214/214 [=====] - 0s
    516us/step - loss: 0.3983 - accuracy: 0.8545
312 Epoch 148/150
313 214/214 [=====] - 0s
    533us/step - loss: 0.3966 - accuracy: 0.8658
314 Epoch 149/150
315 214/214 [=====] - 0s
    506us/step - loss: 0.3921 - accuracy: 0.8611
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316 Epoch 150/150
317 214/214 [=====] - 0s
      533us/step - loss: 0.3872 - accuracy: 0.8606
318 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
            .
319 Instructions for updating:
320 This property should not be used in TensorFlow 2.0
            , as updates are applied automatically.
321 2020-09-03 18:10:09.361670: 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.
322 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.
323 Instructions for updating:
324 This property should not be used in TensorFlow 2.0
            , as updates are applied automatically.
325
326 Process finished with exit code 0
327
```