

```

1 I:\Anaconda\envs\Vit\python.exe F:\CV\Vit\
  pythonProject2\train.py
2 
3 I:\Anaconda\envs\Vit\lib\site-packages\torch\nn\
  modules\transformer.py:286: UserWarning:
  enable_nested_tensor is True, but self.
  use_nested_tensor is False because encoder_layer.
  norm_first was True
4   warnings.warn(f"enable_nested_tensor is True, but
  self.use_nested_tensor is False because {
  why_not_sparsity_fast_path}")
5 
6   0%|          | 0/1688 [00:00<?, ?it/s]I:\Anaconda\
  envs\Vit\lib\site-packages\torch\nn\functional.py:
  5476: UserWarning: 1Torch was not compiled with flash
  attention. (Triggered internally at C:\cb\
  pytorch_1000000000000\work\aten\src\ATen\native\
  transformers\cuda\sdp_utils.cpp:263.)
7   attn_output = scaled_dot_product_attention(q, k, v
  , attn_mask, dropout_p, is_causal)
8 100%|██████████| 1688/1688 [1:30:13<00:00,  3.21s/it]
9 100%|██████████| 188/188 [07:34<00:00,  2.42s/it]
10 -----
11 Train Loss Epoch 1 : 1.9306
12 Validate Loss Epoch 1 : 1.5873
13 Train Accuracy Epoch 1 : 0.2569
14 Validate Accuracy Epoch 1 : 0.3920
15 -----
16 100%|██████████| 1688/1688 [1:25:16<00:00,  3.03s/it]
17 100%|██████████| 188/188 [07:33<00:00,  2.41s/it]
18 -----
19 Train Loss Epoch 2 : 1.4532
20 Validate Loss Epoch 2 : 1.1367
21 Train Accuracy Epoch 2 : 0.4664
22 Validate Accuracy Epoch 2 : 0.6135
23 -----
24 100%|██████████| 1688/1688 [1:25:15<00:00,  3.03s/it]
25 100%|██████████| 188/188 [07:34<00:00,  2.42s/it]
26 -----
27 Train Loss Epoch 3 : 0.9241
28 Validate Loss Epoch 3 : 0.6363

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29 Train Accuracy Epoch 3 : 0.7040
30 Validate Accuracy Epoch 3 : 0.8085
31 -----
32 100%|██████████| 1688/1688 [1:25:12<00:00, 3.03s/it]
33 100%|██████████| 188/188 [07:37<00:00, 2.43s/it]
34 -----
35 Train Loss Epoch 4 : 0.6238
36 Validate Loss Epoch 4 : 0.5205
37 Train Accuracy Epoch 4 : 0.8095
38 Validate Accuracy Epoch 4 : 0.8440
39 -----
40 100%|██████████| 1688/1688 [1:25:11<00:00, 3.03s/it]
41 100%|██████████| 188/188 [07:52<00:00, 2.52s/it]
42 -----
43 Train Loss Epoch 5 : 0.4981
44 Validate Loss Epoch 5 : 0.3334
45 Train Accuracy Epoch 5 : 0.8483
46 Validate Accuracy Epoch 5 : 0.9033
47 -----
48 100%|██████████| 1688/1688 [1:25:12<00:00, 3.03s/it]
49 100%|██████████| 188/188 [07:33<00:00, 2.41s/it]
50 -----
51 Train Loss Epoch 6 : 0.4315
52 Validate Loss Epoch 6 : 0.3118
53 Train Accuracy Epoch 6 : 0.8674
54 Validate Accuracy Epoch 6 : 0.9055
55 -----
56 100%|██████████| 1688/1688 [1:40:06<00:00, 3.56s/it]
57 100%|██████████| 188/188 [09:10<00:00, 2.93s/it]
58 -----
59 Train Loss Epoch 7 : 0.3828
60 Validate Loss Epoch 7 : 0.2704
61 Train Accuracy Epoch 7 : 0.8819
62 Validate Accuracy Epoch 7 : 0.9197
63 -----
64 100%|██████████| 1688/1688 [1:29:52<00:00, 3.19s/it]
65 100%|██████████| 188/188 [07:32<00:00, 2.41s/it]
66 -----
67 Train Loss Epoch 8 : 0.3537
68 Validate Loss Epoch 8 : 0.2794
69 Train Accuracy Epoch 8 : 0.8918
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70 Validate Accuracy Epoch 8 : 0.9175
71 -----
72 100%|██████████| 1688/1688 [1:24:48<00:00, 3.01s/it
   ]
73 100%|██████████| 188/188 [07:32<00:00, 2.41s/it]
74 -----
75 Train Loss Epoch 9 : 0.3271
76 Validate Loss Epoch 9 : 0.2346
77 Train Accuracy Epoch 9 : 0.8989
78 Validate Accuracy Epoch 9 : 0.9308
79 -----
80 100%|██████████| 1688/1688 [1:24:51<00:00, 3.02s/it
   ]
81 100%|██████████| 188/188 [07:46<00:00, 2.48s/it]
82 -----
83 Train Loss Epoch 10 : 0.3039
84 Validate Loss Epoch 10 : 0.2025
85 Train Accuracy Epoch 10 : 0.9073
86 Validate Accuracy Epoch 10 : 0.9420
87 -----
88 100%|██████████| 1688/1688 [1:25:02<00:00, 3.02s/it
   ]
89 100%|██████████| 188/188 [07:52<00:00, 2.52s/it]
90 -----
91 Train Loss Epoch 11 : 0.2844
92 Validate Loss Epoch 11 : 0.1917
93 Train Accuracy Epoch 11 : 0.9131
94 Validate Accuracy Epoch 11 : 0.9467
95 -----
96 100%|██████████| 1688/1688 [1:24:56<00:00, 3.02s/it
   ]
97 100%|██████████| 188/188 [07:43<00:00, 2.47s/it]
98 -----
99 Train Loss Epoch 12 : 0.2648
100 Validate Loss Epoch 12 : 0.1872
101 Train Accuracy Epoch 12 : 0.9180
102 Validate Accuracy Epoch 12 : 0.9470
103 -----
104 100%|██████████| 1688/1688 [1:24:50<00:00, 3.02s/it
   ]
105 100%|██████████| 188/188 [07:37<00:00, 2.43s/it]
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106 -----
107 Train Loss Epoch 13 : 0.2510
108 Validate Loss Epoch 13 : 0.1707
109 Train Accuracy Epoch 13 : 0.9217
110 Validate Accuracy Epoch 13 : 0.9513
111 -----
112 100%|██████████| 1688/1688 [1:24:47<00:00, 3.01s/it
    ]
113 100%|██████████| 188/188 [07:33<00:00, 2.41s/it]
114 -----
115 Train Loss Epoch 14 : 0.2361
116 Validate Loss Epoch 14 : 0.1821
117 Train Accuracy Epoch 14 : 0.9267
118 Validate Accuracy Epoch 14 : 0.9460
119 -----
120 100%|██████████| 1688/1688 [1:32:33<00:00, 3.29s/it
    ]
121 100%|██████████| 188/188 [07:40<00:00, 2.45s/it]
122 -----
123 Train Loss Epoch 15 : 0.2257
124 Validate Loss Epoch 15 : 0.1641
125 Train Accuracy Epoch 15 : 0.9307
126 Validate Accuracy Epoch 15 : 0.9530
127 -----
128 100%|██████████| 1688/1688 [1:27:16<00:00, 3.10s/it
    ]
129 100%|██████████| 188/188 [07:31<00:00, 2.40s/it]
130 -----
131 Train Loss Epoch 16 : 0.2157
132 Validate Loss Epoch 16 : 0.1630
133 Train Accuracy Epoch 16 : 0.9345
134 Validate Accuracy Epoch 16 : 0.9523
135 -----
136 100%|██████████| 1688/1688 [1:25:15<00:00, 3.03s/it
    ]
137 100%|██████████| 188/188 [07:33<00:00, 2.41s/it]
138 -----
139 Train Loss Epoch 17 : 0.2064
140 Validate Loss Epoch 17 : 0.1675
141 Train Accuracy Epoch 17 : 0.9366
142 Validate Accuracy Epoch 17 : 0.9525
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143 -----
144 100%|██████████| 1688/1688 [1:25:13<00:00, 3.03s/it
    ]
145 100%|██████████| 188/188 [07:35<00:00, 2.43s/it]
146 -----
147 Train Loss Epoch 18 : 0.2009
148 Validate Loss Epoch 18 : 0.1582
149 Train Accuracy Epoch 18 : 0.9388
150 Validate Accuracy Epoch 18 : 0.9545
151 -----
152 100%|██████████| 1688/1688 [1:35:16<00:00, 3.39s/it
    ]
153 100%|██████████| 188/188 [08:33<00:00, 2.73s/it]
154 -----
155 Train Loss Epoch 19 : 0.1905
156 Validate Loss Epoch 19 : 0.1515
157 Train Accuracy Epoch 19 : 0.9408
158 Validate Accuracy Epoch 19 : 0.9537
159 -----
160 100%|██████████| 1688/1688 [1:36:17<00:00, 3.42s/it
    ]
161 100%|██████████| 188/188 [09:00<00:00, 2.88s/it]
162 -----
163 Train Loss Epoch 20 : 0.1849
164 Validate Loss Epoch 20 : 0.1500
165 Train Accuracy Epoch 20 : 0.9418
166 Validate Accuracy Epoch 20 : 0.9535
167 -----
168 100%|██████████| 1688/1688 [1:39:31<00:00, 3.54s/it
    ]
169 100%|██████████| 188/188 [09:03<00:00, 2.89s/it]
170 -----
171 Train Loss Epoch 21 : 0.1754
172 Validate Loss Epoch 21 : 0.1659
173 Train Accuracy Epoch 21 : 0.9448
174 Validate Accuracy Epoch 21 : 0.9513
175 -----
176 100%|██████████| 1688/1688 [2:26:03<00:00, 5.19s/it
    ]
177 100%|██████████| 188/188 [07:51<00:00, 2.51s/it]
178 -----
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179 Train Loss Epoch 22 : 0.1728
180 Validate Loss Epoch 22 : 0.1506
181 Train Accuracy Epoch 22 : 0.9467
182 Validate Accuracy Epoch 22 : 0.9572
183 -----
184 100%|██████████| 1688/1688 [1:25:14<00:00, 3.03s/it
    ]
185 100%|██████████| 188/188 [07:47<00:00, 2.49s/it]
186 -----
187 Train Loss Epoch 23 : 0.1673
188 Validate Loss Epoch 23 : 0.1463
189 Train Accuracy Epoch 23 : 0.9480
190 Validate Accuracy Epoch 23 : 0.9592
191 -----
192 100%|██████████| 1688/1688 [1:25:13<00:00, 3.03s/it
    ]
193 100%|██████████| 188/188 [07:30<00:00, 2.39s/it]
194 -----
195 Train Loss Epoch 24 : 0.1621
196 Validate Loss Epoch 24 : 0.1453
197 Train Accuracy Epoch 24 : 0.9496
198 Validate Accuracy Epoch 24 : 0.9552
199 -----
200 100%|██████████| 1688/1688 [1:24:59<00:00, 3.02s/it
    ]
201 100%|██████████| 188/188 [07:35<00:00, 2.42s/it]
202 -----
203 Train Loss Epoch 25 : 0.1519
204 Validate Loss Epoch 25 : 0.1169
205 Train Accuracy Epoch 25 : 0.9524
206 Validate Accuracy Epoch 25 : 0.9633
207 -----
208 100%|██████████| 1688/1688 [1:24:55<00:00, 3.02s/it
    ]
209 100%|██████████| 188/188 [07:49<00:00, 2.50s/it]
210 -----
211 Train Loss Epoch 26 : 0.1502
212 Validate Loss Epoch 26 : 0.1238
213 Train Accuracy Epoch 26 : 0.9531
214 Validate Accuracy Epoch 26 : 0.9648
215 -----
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216 100%|██████████| 1688/1688 [1:25:02<00:00, 3.02s/it
    ]
217 100%|██████████| 188/188 [07:35<00:00, 2.42s/it]
218 -----
219 Train Loss Epoch 27 : 0.1487
220 Validate Loss Epoch 27 : 0.1084
221 Train Accuracy Epoch 27 : 0.9532
222 Validate Accuracy Epoch 27 : 0.9668
223 -----
224 100%|██████████| 1688/1688 [1:25:07<00:00, 3.03s/it
    ]
225 100%|██████████| 188/188 [07:36<00:00, 2.43s/it]
226 -----
227 Train Loss Epoch 28 : 0.1454
228 Validate Loss Epoch 28 : 0.1141
229 Train Accuracy Epoch 28 : 0.9556
230 Validate Accuracy Epoch 28 : 0.9675
231 -----
232 100%|██████████| 1688/1688 [1:25:12<00:00, 3.03s/it
    ]
233 100%|██████████| 188/188 [07:30<00:00, 2.40s/it]
234 -----
235 Train Loss Epoch 29 : 0.1398
236 Validate Loss Epoch 29 : 0.1194
237 Train Accuracy Epoch 29 : 0.9558
238 Validate Accuracy Epoch 29 : 0.9652
239 -----
240 100%|██████████| 1688/1688 [1:25:30<00:00, 3.04s/it
    ]
241 100%|██████████| 188/188 [07:56<00:00, 2.54s/it]
242 -----
243 Train Loss Epoch 30 : 0.1351
244 Validate Loss Epoch 30 : 0.0979
245 Train Accuracy Epoch 30 : 0.9575
246 Validate Accuracy Epoch 30 : 0.9717
247 -----
248 100%|██████████| 1688/1688 [1:48:09<00:00, 3.84s/it
    ]
249 100%|██████████| 188/188 [12:43<00:00, 4.06s/it]
250 -----
251 Train Loss Epoch 31 : 0.1317
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252 Validate Loss Epoch 31 : 0.1068
253 Train Accuracy Epoch 31 : 0.9584
254 Validate Accuracy Epoch 31 : 0.9698
255 -----
256 100%|██████████| 1688/1688 [1:57:28<00:00, 4.18s/it
    ]
257 100%|██████████| 188/188 [12:58<00:00, 4.14s/it]
258 -----
259 Train Loss Epoch 32 : 0.1280
260 Validate Loss Epoch 32 : 0.1126
261 Train Accuracy Epoch 32 : 0.9600
262 Validate Accuracy Epoch 32 : 0.9662
263 -----
264 100%|██████████| 1688/1688 [2:01:40<00:00, 4.33s/it
    ]
265 100%|██████████| 188/188 [07:33<00:00, 2.41s/it]
266 -----
267 Train Loss Epoch 33 : 0.1289
268 Validate Loss Epoch 33 : 0.0884
269 Train Accuracy Epoch 33 : 0.9601
270 Validate Accuracy Epoch 33 : 0.9733
271 -----
272 100%|██████████| 1688/1688 [1:41:17<00:00, 3.60s/it
    ]
273 100%|██████████| 188/188 [11:48<00:00, 3.77s/it]
274 -----
275 Train Loss Epoch 34 : 0.1240
276 Validate Loss Epoch 34 : 0.1018
277 Train Accuracy Epoch 34 : 0.9619
278 Validate Accuracy Epoch 34 : 0.9675
279 -----
280 100%|██████████| 1688/1688 [1:41:05<00:00, 3.59s/it
    ]
281 100%|██████████| 188/188 [10:21<00:00, 3.31s/it]
282 -----
283 Train Loss Epoch 35 : 0.1209
284 Validate Loss Epoch 35 : 0.0923
285 Train Accuracy Epoch 35 : 0.9617
286 Validate Accuracy Epoch 35 : 0.9722
287 -----
288 100%|██████████| 1688/1688 [2:36:16<00:00, 5.56s/it
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288 ]
289 100%|██████████| 188/188 [07:53<00:00, 2.52s/it]
290 -----
291 Train Loss Epoch 36 : 0.1199
292 Validate Loss Epoch 36 : 0.0932
293 Train Accuracy Epoch 36 : 0.9629
294 Validate Accuracy Epoch 36 : 0.9733
295 -----
296 100%|██████████| 1688/1688 [1:25:03<00:00, 3.02s/it
    ]
297 100%|██████████| 188/188 [07:33<00:00, 2.41s/it]
298 -----
299 Train Loss Epoch 37 : 0.1166
300 Validate Loss Epoch 37 : 0.0960
301 Train Accuracy Epoch 37 : 0.9632
302 Validate Accuracy Epoch 37 : 0.9728
303 -----
304 100%|██████████| 1688/1688 [1:25:04<00:00, 3.02s/it
    ]
305 100%|██████████| 188/188 [07:32<00:00, 2.40s/it]
306 -----
307 Train Loss Epoch 38 : 0.1152
308 Validate Loss Epoch 38 : 0.0815
309 Train Accuracy Epoch 38 : 0.9636
310 Validate Accuracy Epoch 38 : 0.9758
311 -----
312 100%|██████████| 1688/1688 [1:24:30<00:00, 3.00s/it
    ]
313 100%|██████████| 188/188 [07:43<00:00, 2.47s/it]
314 -----
315 Train Loss Epoch 39 : 0.1133
316 Validate Loss Epoch 39 : 0.0882
317 Train Accuracy Epoch 39 : 0.9640
318 Validate Accuracy Epoch 39 : 0.9742
319 -----
320 100%|██████████| 1688/1688 [1:24:33<00:00, 3.01s/it
    ]
321 100%|██████████| 188/188 [07:36<00:00, 2.43s/it]
322 -----
323 Train Loss Epoch 40 : 0.1089
324 Validate Loss Epoch 40 : 0.1033
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325 Train Accuracy Epoch 40 : 0.9650
326 Validate Accuracy Epoch 40 : 0.9698
327 -----
328 100%|██████████| 1688/1688 [1:24:32<00:00, 3.01s/it
    ]
329 100%|██████████| 188/188 [07:44<00:00, 2.47s/it]
330 -----
331 Train Loss Epoch 41 : 0.1068
332 Validate Loss Epoch 41 : 0.0843
333 Train Accuracy Epoch 41 : 0.9666
334 Validate Accuracy Epoch 41 : 0.9760
335 -----
336 100%|██████████| 1688/1688 [1:24:33<00:00, 3.01s/it
    ]
337 100%|██████████| 188/188 [07:43<00:00, 2.46s/it]
338 -----
339 Train Loss Epoch 42 : 0.1068
340 Validate Loss Epoch 42 : 0.0890
341 Train Accuracy Epoch 42 : 0.9666
342 Validate Accuracy Epoch 42 : 0.9727
343 -----
344 100%|██████████| 1688/1688 [1:24:31<00:00, 3.00s/it
    ]
345 100%|██████████| 188/188 [07:35<00:00, 2.42s/it]
346 -----
347 Train Loss Epoch 43 : 0.1018
348 Validate Loss Epoch 43 : 0.0811
349 Train Accuracy Epoch 43 : 0.9682
350 Validate Accuracy Epoch 43 : 0.9757
351 -----
352 100%|██████████| 1688/1688 [1:26:16<00:00, 3.07s/it
    ]
353 100%|██████████| 188/188 [08:14<00:00, 2.63s/it]
354 -----
355 Train Loss Epoch 44 : 0.1023
356 Validate Loss Epoch 44 : 0.0896
357 Train Accuracy Epoch 44 : 0.9675
358 Validate Accuracy Epoch 44 : 0.9727
359 -----
360 100%|██████████| 1688/1688 [1:32:16<00:00, 3.28s/it
    ]
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361 100%|██████████| 188/188 [07:54<00:00, 2.52s/it]
362 -----
363 Train Loss Epoch 45 : 0.0988
364 Validate Loss Epoch 45 : 0.0749
365 Train Accuracy Epoch 45 : 0.9691
366 Validate Accuracy Epoch 45 : 0.9783
367 -----
368 100%|██████████| 1688/1688 [1:48:33<00:00, 3.86s/it
    ]
369 100%|██████████| 188/188 [09:17<00:00, 2.97s/it]
370 -----
371 Train Loss Epoch 46 : 0.0982
372 Validate Loss Epoch 46 : 0.0903
373 Train Accuracy Epoch 46 : 0.9686
374 Validate Accuracy Epoch 46 : 0.9737
375 -----
376 100%|██████████| 1688/1688 [1:32:32<00:00, 3.29s/it
    ]
377 100%|██████████| 188/188 [07:31<00:00, 2.40s/it]
378 -----
379 Train Loss Epoch 47 : 0.0944
380 Validate Loss Epoch 47 : 0.0825
381 Train Accuracy Epoch 47 : 0.9700
382 Validate Accuracy Epoch 47 : 0.9737
383 -----
384 100%|██████████| 1688/1688 [1:25:31<00:00, 3.04s/it
    ]
385 100%|██████████| 188/188 [07:31<00:00, 2.40s/it]
386 -----
387 Train Loss Epoch 48 : 0.0931
388 Validate Loss Epoch 48 : 0.0677
389 Train Accuracy Epoch 48 : 0.9704
390 Validate Accuracy Epoch 48 : 0.9800
391 -----
392 100%|██████████| 1688/1688 [1:35:14<00:00, 3.39s/it
    ]
393 100%|██████████| 188/188 [07:41<00:00, 2.46s/it]
394 -----
395 Train Loss Epoch 49 : 0.0942
396 Validate Loss Epoch 49 : 0.0815
397 Train Accuracy Epoch 49 : 0.9700
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398 Validate Accuracy Epoch 49 : 0.9755
399 -----
400 100%|██████████| 1688/1688 [1:36:09<00:00, 3.42s/it
    ]
401 100%|██████████| 188/188 [07:57<00:00, 2.54s/it]
402 -----
403 Train Loss Epoch 50 : 0.0904
404 Validate Loss Epoch 50 : 0.0885
405 Train Accuracy Epoch 50 : 0.9715
406 Validate Accuracy Epoch 50 : 0.9730
407 -----
408 Training Time : 302862.09 s
409
410 Process finished with exit code 0
411
```