Machine Problem 4

IE 534/CS 598 - Deep Learning

CIFAR 100 Resnet & Transfer learning

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Implementation:

In this implementation, I have used the same architecture as provided in the homework instructions.

PART 1:

Training and Testing:

The nohup files are provided with the model for the reference output.

Output:

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Files already downloaded and verified
Files already downloaded and verified
Epoch [1/80], Step [100/500] Loss: 4.1756, Acc:2.7500
Epoch [1/80], Step [200/500] Loss: 4.0769, Acc:4.1850
Epoch [1/80], Step [300/500] Loss: 4.0242, Acc:5.8333
Epoch [1/80], Step [400/500] Loss: 3.6885, Acc:7.0800
Epoch [1/80], Step [500/500] Loss: 3.9081, Acc:8.1920
Epoch [2/80], Step [100/500] Loss: 3.5295, Acc:15.3600
Epoch [2/80], Step [200/500] Loss: 3.2588, Acc:16.0600
Epoch [2/80], Step [300/500] Loss: 3.3574, Acc:17.1967
Epoch [2/80], Step [400/500] Loss: 3.0076, Acc:18.0250
Epoch [2/80], Step [500/500] Loss: 3.5565, Acc:18.9300
Epoch [3/80], Step [100/500] Loss: 3.1436, Acc:24.1000
Epoch [3/80], Step [200/500] Loss: 2.7160, Acc:25.3450
Epoch [3/80], Step [300/500] Loss: 2.6584, Acc:25.6733
Epoch [3/80], Step [400/500] Loss: 2.8437, Acc:26.4925
Epoch [3/80], Step [500/500] Loss: 2.4723, Acc:27.3280
Epoch [4/80], Step [100/500] Loss: 2.4450, Acc:33.6100
Epoch [4/80], Step [200/500] Loss: 2.4054, Acc:34.2100
Epoch [4/80], Step [300/500] Loss: 2.5312, Acc:34.5233
Epoch [4/80], Step [400/500] Loss: 2.5174, Acc:34.7250
Epoch [4/80], Step [500/500] Loss: 2.4392, Acc:35.2680
Epoch [5/80], Step [100/500] Loss: 2.1519, Acc:38.9500
Epoch [5/80], Step [200/500] Loss: 2.5162, Acc:40.0050
Epoch [5/80], Step [300/500] Loss: 2.2106, Acc:40.4333
Epoch [5/80], Step [400/500] Loss: 1.9257, Acc:40.6850
Epoch [5/80], Step [500/500] Loss: 1.8003, Acc:41.0520
Epoch [6/80], Step [100/500] Loss: 2.0336, Acc:45.6300
Epoch [6/80], Step [200/500] Loss: 1.9774, Acc:45.3850
Epoch [6/80], Step [300/500] Loss: 2.2515, Acc:45.8633
Epoch [6/80], Step [400/500] Loss: 2.0933, Acc:46.2425
Epoch [6/80], Step [500/500] Loss: 1.7746, Acc:46.4080
Epoch [7/80], Step [100/500] Loss: 2.0732, Acc:50.0800
Epoch [7/80], Step [200/500] Loss: 1.9280, Acc:49.7950
Epoch [7/80], Step [300/500] Loss: 1.4695, Acc:49.9100
Epoch [7/80], Step [400/500] Loss: 1.9321, Acc:49.9775
Epoch [7/80], Step [500/500] Loss: 1.8836, Acc:50.0980
Epoch [8/80], Step [100/500] Loss: 1.6202, Acc:53.0300
Epoch [8/80], Step [200/500] Loss: 1.7773, Acc:52.9600
Epoch [8/80], Step [300/500] Loss: 1.6313, Acc:53.1267
Epoch [8/80], Step [400/500] Loss: 1.6536, Acc:53.0825
Epoch [8/80], Step [500/500] Loss: 1.6770, Acc:53.2760
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Epoch [9/80], Step [100/500] Loss: 1.7618, Acc:56.6900
Epoch [9/80], Step [200/500] Loss: 1.5912, Acc:56.4250
Epoch [9/80], Step [300/500] Loss: 1.6941, Acc:56.3233
Epoch [9/80], Step [400/500] Loss: 1.3783, Acc:56.4100
Epoch [9/80], Step [500/500] Loss: 1.7130, Acc:56.3800
Epoch [10/80], Step [100/500] Loss: 1.4880, Acc:58.8500
Epoch [10/80], Step [200/500] Loss: 1.5192, Acc:59.1550
Epoch [10/80], Step [300/500] Loss: 1.1975, Acc:58.7467
Epoch [10/80], Step [400/500] Loss: 1.3235, Acc:58.3950
Epoch [10/80], Step [500/500] Loss: 1.3470, Acc:58.5740
Epoch [11/80], Step [100/500] Loss: 1.5341, Acc:61.4300
Epoch [11/80], Step [200/500] Loss: 1.2195, Acc:61.2600
Epoch [11/80], Step [300/500] Loss: 1.2084, Acc:60.9867
Epoch [11/80], Step [400/500] Loss: 1.2046, Acc:61.1275
Epoch [11/80], Step [500/500] Loss: 1.0642, Acc:61.1020
Epoch [12/80], Step [100/500] Loss: 1.4505, Acc:63.3800
Epoch [12/80], Step [200/500] Loss: 1.4046, Acc:63.1450
Epoch [12/80], Step [300/500] Loss: 1.2115, Acc:63.0667
Epoch [12/80], Step [400/500] Loss: 1.2428, Acc:63.1075
Epoch [12/80], Step [500/500] Loss: 1.3305, Acc:62.9160
Epoch [13/80], Step [100/500] Loss: 1.2116, Acc:64.8100
Epoch [13/80], Step [200/500] Loss: 1.4453, Acc:64.7750
Epoch [13/80], Step [300/500] Loss: 1.4161, Acc:64.7900
Epoch [13/80], Step [400/500] Loss: 1.2430, Acc:64.8950
Epoch [13/80], Step [500/500] Loss: 1.1540, Acc:64.7420
Epoch [14/80], Step [100/500] Loss: 1.3748, Acc:67.1800
Epoch [14/80], Step [200/500] Loss: 0.9706, Acc:67.2900
Epoch [14/80], Step [300/500] Loss: 1.2184, Acc:67.0567
Epoch [14/80], Step [400/500] Loss: 1.1123, Acc:67.0500
Epoch [14/80], Step [500/500] Loss: 1.0120, Acc:66.8200
Epoch [15/80], Step [100/500] Loss: 1.0922, Acc:69.2900
Epoch [15/80], Step [200/500] Loss: 1.0075, Acc:69.2050
Epoch [15/80], Step [300/500] Loss: 1.1281, Acc:68.9733
Epoch [15/80], Step [400/500] Loss: 1.0666, Acc:68.6225
Epoch [15/80], Step [500/500] Loss: 1.1946, Acc:68.5540
Epoch [16/80], Step [100/500] Loss: 1.0272, Acc:70.9600
Epoch [16/80], Step [200/500] Loss: 1.2767, Acc:70.8100
Epoch [16/80], Step [300/500] Loss: 1.2446, Acc:70.2367
Epoch [16/80], Step [400/500] Loss: 1.2729, Acc:70.2600
Epoch [16/80], Step [500/500] Loss: 1.0043, Acc:70.0000
Epoch [17/80], Step [100/500] Loss: 1.0244, Acc:72.3900
Epoch [17/80], Step [200/500] Loss: 0.8134, Acc:72.2200
Epoch [17/80], Step [300/500] Loss: 0.9752, Acc:72.0267
Epoch [17/80], Step [400/500] Loss: 0.8816, Acc:71.8650
Epoch [17/80], Step [500/500] Loss: 0.6812, Acc:71.6960
Epoch [18/80], Step [100/500] Loss: 0.9477, Acc:73.9700
Epoch [18/80], Step [200/500] Loss: 1.0862, Acc:73.6250
Epoch [18/80], Step [300/500] Loss: 1.0790, Acc:73.2433
Epoch [18/80], Step [400/500] Loss: 0.9598, Acc:72.9100
Epoch [18/80], Step [500/500] Loss: 1.1345, Acc:72.8200
Epoch [19/80], Step [100/500] Loss: 0.9054, Acc:74.9100
Epoch [19/80], Step [200/500] Loss: 0.7599, Acc:74.8950
Epoch [19/80], Step [300/500] Loss: 0.6886, Acc:74.9867
Epoch [19/80], Step [400/500] Loss: 0.8447, Acc:74.7550
Epoch [19/80], Step [500/500] Loss: 0.8616, Acc:74.3200
Epoch [20/80], Step [100/500] Loss: 0.9024, Acc:76.5000
Epoch [20/80], Step [200/500] Loss: 0.5429, Acc:76.5500
Epoch [20/80], Step [300/500] Loss: 0.8285, Acc:76.4233
Epoch [20/80], Step [400/500] Loss: 0.9724, Acc:75.9825
Epoch [20/80], Step [500/500] Loss: 0.9889, Acc:75.7300
Epoch [21/80], Step [100/500] Loss: 0.6320, Acc:80.5700
Epoch [21/80], Step [200/500] Loss: 0.5515, Acc:81.1250
Epoch [21/80], Step [300/500] Loss: 0.5326, Acc:81.7900
Epoch [21/80], Step [400/500] Loss: 0.5854, Acc:81.9450
Epoch [21/80], Step [500/500] Loss: 0.6419, Acc:81.9020
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Epoch [22/80], Step [100/500] Loss: 0.3907, Acc:84.4900
Epoch [22/80], Step [200/500] Loss: 0.5384, Acc:84.5350
Epoch [22/80], Step [300/500] Loss: 0.6198, Acc:84.4800
Epoch [22/80], Step [400/500] Loss: 0.3763, Acc:84.5925
Epoch [22/80], Step [500/500] Loss: 0.4952, Acc:84.4960
Epoch [23/80], Step [100/500] Loss: 0.5565, Acc:85.9700
Epoch [23/80], Step [200/500] Loss: 0.2809, Acc:85.7400
Epoch [23/80], Step [300/500] Loss: 0.4923, Acc:85.4800
Epoch [23/80], Step [400/500] Loss: 0.5262, Acc:85.3800
Epoch [23/80], Step [500/500] Loss: 0.5048, Acc:85.2240
Epoch [24/80], Step [100/500] Loss: 0.5298, Acc:86.4000
Epoch [24/80], Step [200/500] Loss: 0.4046, Acc:86.3400
Epoch [24/80], Step [300/500] Loss: 0.4765, Acc:86.1667
Epoch [24/80], Step [400/500] Loss: 0.4577, Acc:86.0375
Epoch [24/80], Step [500/500] Loss: 0.5706, Acc:86.0500
Epoch [25/80], Step [100/500] Loss: 0.4773, Acc:87.2400
Epoch [25/80], Step [200/500] Loss: 0.2163, Acc:87.3400
Epoch [25/80], Step [300/500] Loss: 0.4729, Acc:86.7933
Epoch [25/80], Step [400/500] Loss: 0.4217, Acc:86.8450
Epoch [25/80], Step [500/500] Loss: 0.4289, Acc:86.7060
Epoch [26/80], Step [100/500] Loss: 0.3777, Acc:88.1800
Epoch [26/80], Step [200/500] Loss: 0.5791, Acc:87.9750
Epoch [26/80], Step [300/500] Loss: 0.2465, Acc:87.5767
Epoch [26/80], Step [400/500] Loss: 0.3213, Acc:87.4775
Epoch [26/80], Step [500/500] Loss: 0.5030, Acc:87.3860
Epoch [27/80], Step [100/500] Loss: 0.5713, Acc:88.7500
Epoch [27/80], Step [200/500] Loss: 0.3873, Acc:88.8850
Epoch [27/80], Step [300/500] Loss: 0.4365, Acc:88.6033
Epoch [27/80], Step [400/500] Loss: 0.4154, Acc:88.4200
Epoch [27/80], Step [500/500] Loss: 0.5871, Acc:88.3100
Epoch [28/80], Step [100/500] Loss: 0.3816, Acc:89.3900
Epoch [28/80], Step [200/500] Loss: 0.3461, Acc:89.1000
Epoch [28/80], Step [300/500] Loss: 0.3047, Acc:88.9400
Epoch [28/80], Step [400/500] Loss: 0.4399, Acc:88.7775
Epoch [28/80], Step [500/500] Loss: 0.4034, Acc:88.6240
Epoch [29/80], Step [100/500] Loss: 0.3044, Acc:90.1100
Epoch [29/80], Step [200/500] Loss: 0.4282, Acc:89.7500
Epoch [29/80], Step [300/500] Loss: 0.2934, Acc:89.6267
Epoch [29/80], Step [400/500] Loss: 0.2916, Acc:89.4950
Epoch [29/80], Step [500/500] Loss: 0.3559, Acc:89.4720
Epoch [30/80], Step [100/500] Loss: 0.3308, Acc:90.2000
Epoch [30/80], Step [200/500] Loss: 0.3026, Acc:90.3100
Epoch [30/80], Step [300/500] Loss: 0.2287, Acc:90.2233
Epoch [30/80], Step [400/500] Loss: 0.4855, Acc:89.9725
Epoch [30/80], Step [500/500] Loss: 0.5197, Acc:89.8700
Epoch [31/80], Step [100/500] Loss: 0.4383, Acc:90.8000
Epoch [31/80], Step [200/500] Loss: 0.3905, Acc:90.4050
Epoch [31/80], Step [300/500] Loss: 0.3366, Acc:90.3533
Epoch [31/80], Step [400/500] Loss: 0.2524, Acc:90.4050
Epoch [31/80], Step [500/500] Loss: 0.3159, Acc:90.4080
Epoch [32/80], Step [100/500] Loss: 0.3468, Acc:91.8100
Epoch [32/80], Step [200/500] Loss: 0.3589, Acc:91.4900
Epoch [32/80], Step [300/500] Loss: 0.2461, Acc:91.2400
Epoch [32/80], Step [400/500] Loss: 0.2117, Acc:90.9225
Epoch [32/80], Step [500/500] Loss: 0.2606, Acc:90.7400
Epoch [33/80], Step [100/500] Loss: 0.2852, Acc:92.2300
Epoch [33/80], Step [200/500] Loss: 0.1844, Acc:92.0200
Epoch [33/80], Step [300/500] Loss: 0.2534, Acc:91.7200
Epoch [33/80], Step [400/500] Loss: 0.2103, Acc:91.6200
Epoch [33/80], Step [500/500] Loss: 0.2857, Acc:91.5580
Epoch [34/80], Step [100/500] Loss: 0.2492, Acc:92.3600
Epoch [34/80], Step [200/500] Loss: 0.2435, Acc:91.9600
Epoch [34/80], Step [300/500] Loss: 0.3120, Acc:91.9267
Epoch [34/80], Step [400/500] Loss: 0.2333, Acc:91.7250
Epoch [34/80], Step [500/500] Loss: 0.3523, Acc:91.7000
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Accuracy of the model on the test images: 64.22 %
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PART 2: Transfer Learning

Training and Testing:

The nohup files are provided with the model for the reference output.

Output:

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Files already downloaded and verified
Files already downloaded and verified
Epoch [1/40], Step [100/500] Loss: 2.1542, Acc:30.0600
Epoch [1/40], Step [200/500] Loss: 1.7288, Acc:38.2900
Epoch [1/40], Step [300/500] Loss: 1.6719, Acc:42.6200
Epoch [1/40], Step [400/500] Loss: 1.7165, Acc:45.5500
Epoch [1/40], Step [500/500] Loss: 1.4986, Acc:47.8700
Epoch [2/40], Step [100/500] Loss: 1.4977, Acc:62.6400
Epoch [2/40], Step [200/500] Loss: 1.5610, Acc:63.2550
Epoch [2/40], Step [300/500] Loss: 1.2104, Acc:63.5200
Epoch [2/40], Step [400/500] Loss: 1.1612, Acc:63.6675
Epoch [2/40], Step [500/500] Loss: 1.2333, Acc:63.9580
Epoch [3/40], Step [100/500] Loss: 0.9509, Acc:70.4200
Epoch [3/40], Step [200/500] Loss: 0.9257, Acc:70.7300
Epoch [3/40], Step [300/500] Loss: 0.9145, Acc:70.3333
Epoch [3/40], Step [400/500] Loss: 1.1207, Acc:70.2525
Epoch [3/40], Step [500/500] Loss: 0.9379, Acc:70.1920
Epoch [4/40], Step [100/500] Loss: 1.1154, Acc:74.5200
Epoch [4/40], Step [200/500] Loss: 0.8026, Acc:74.4650
Epoch [4/40], Step [300/500] Loss: 0.7278, Acc:74.1033
Epoch [4/40], Step [400/500] Loss: 0.7352, Acc:74.0800
Epoch [4/40], Step [500/500] Loss: 0.7353, Acc:73.9420
Epoch [5/40], Step [100/500] Loss: 0.8873, Acc:79.5900
Epoch [5/40], Step [200/500] Loss: 0.6309, Acc:80.2450
Epoch [5/40], Step [300/500] Loss: 0.8649, Acc:79.6400
Epoch [5/40], Step [400/500] Loss: 0.6067, Acc:79.5625
Epoch [5/40], Step [500/500] Loss: 0.5676, Acc:79.5680
Epoch [6/40], Step [100/500] Loss: 0.7233, Acc:83.7800
Epoch [6/40], Step [200/500] Loss: 0.4204, Acc:83.2850
Epoch [6/40], Step [300/500] Loss: 0.6738, Acc:82.6733
Epoch [6/40], Step [400/500] Loss: 0.4076, Acc:82.4800
Epoch [6/40], Step [500/500] Loss: 0.6568, Acc:82.3060
Epoch [7/40], Step [100/500] Loss: 0.5666, Acc:85.8600
Epoch [7/40], Step [200/500] Loss: 0.5307, Acc:85.5100
Epoch [7/40], Step [300/500] Loss: 0.3360, Acc:85.2733
Epoch [7/40], Step [400/500] Loss: 0.4355, Acc:84.9625
Epoch [7/40], Step [500/500] Loss: 0.5503, Acc:84.7340
Epoch [8/40], Step [100/500] Loss: 0.2953, Acc:88.0600
Epoch [8/40], Step [200/500] Loss: 0.4580, Acc:87.4800
Epoch [8/40], Step [300/500] Loss: 0.4381, Acc:86.8633
Epoch [8/40], Step [400/500] Loss: 0.5153, Acc:86.5775
Epoch [8/40], Step [500/500] Loss: 0.5556, Acc:86.2320
Epoch [9/40], Step [100/500] Loss: 0.4128, Acc:89.1200
Epoch [9/40], Step [200/500] Loss: 0.3023, Acc:88.8350
Epoch [9/40], Step [300/500] Loss: 0.2567, Acc:88.3533
Epoch [9/40], Step [400/500] Loss: 0.5764, Acc:88.1150
Epoch [9/40], Step [500/500] Loss: 0.3768, Acc:87.7860
Epoch [10/40], Step [100/500] Loss: 0.2154, Acc:90.7200
Epoch [10/40], Step [200/500] Loss: 0.4095, Acc:90.3450
Epoch [10/40], Step [300/500] Loss: 0.3941, Acc:90.1533
Epoch [10/40], Step [400/500] Loss: 0.3760, Acc:89.8350
Epoch [10/40], Step [500/500] Loss: 0.4964, Acc:89.4100
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Epoch [11/40], Step [100/500] Loss: 0.3677, Acc:91.2200
Epoch [11/40], Step [200/500] Loss: 0.1668, Acc:91.3050
Epoch [11/40], Step [300/500] Loss: 0.2492, Acc:91.1367
Epoch [11/40], Step [400/500] Loss: 0.4287, Acc:90.8375
Epoch [11/40], Step [500/500] Loss: 0.2771, Acc:90.6120
Epoch [12/40], Step [100/500] Loss: 0.1701, Acc:92.5300
Epoch [12/40], Step [200/500] Loss: 0.1777, Acc:92.2150
Epoch [12/40], Step [300/500] Loss: 0.1625, Acc:91.8767
Epoch [12/40], Step [400/500] Loss: 0.3837, Acc:91.6150
Epoch [12/40], Step [500/500] Loss: 0.2763, Acc:91.3180
Epoch [13/40], Step [100/500] Loss: 0.2196, Acc:92.9100
Epoch [13/40], Step [200/500] Loss: 0.2119, Acc:93.0900
Epoch [13/40], Step [300/500] Loss: 0.3132, Acc:92.8033
Epoch [13/40], Step [400/500] Loss: 0.1536, Acc:92.4550
Epoch [13/40], Step [500/500] Loss: 0.1942, Acc:92.0860
Epoch [14/40], Step [100/500] Loss: 0.3063, Acc:93.8400
Epoch [14/40], Step [200/500] Loss: 0.2695, Acc:93.7600
Epoch [14/40], Step [300/500] Loss: 0.2803, Acc:93.2033
Epoch [14/40], Step [400/500] Loss: 0.2735, Acc:92.9625
Epoch [14/40], Step [500/500] Loss: 0.2078, Acc:92.7740
Epoch [15/40], Step [100/500] Loss: 0.2182, Acc:94.2000
Epoch [15/40], Step [200/500] Loss: 0.2334, Acc:94.0400
Epoch [15/40], Step [300/500] Loss: 0.3064, Acc:93.6600
Epoch [15/40], Step [400/500] Loss: 0.2204, Acc:93.1700
Epoch [15/40], Step [500/500] Loss: 0.2423, Acc:93.0660
Epoch [16/40], Step [100/500] Loss: 0.2281, Acc:94.8000
Epoch [16/40], Step [200/500] Loss: 0.0558, Acc:94.7550
Epoch [16/40], Step [300/500] Loss: 0.1873, Acc:94.5200
Epoch [16/40], Step [400/500] Loss: 0.2369, Acc:94.0725
Epoch [16/40], Step [500/500] Loss: 0.3036, Acc:93.7760
Epoch [17/40], Step [100/500] Loss: 0.1650, Acc:95.0800
Epoch [17/40], Step [200/500] Loss: 0.1214, Acc:94.8950
Epoch [17/40], Step [300/500] Loss: 0.1884, Acc:94.6700
Epoch [17/40], Step [400/500] Loss: 0.1644, Acc:94.6625
Epoch [17/40], Step [500/500] Loss: 0.2194, Acc:94.3940
Epoch [18/40], Step [100/500] Loss: 0.0744, Acc:95.6600
Epoch [18/40], Step [200/500] Loss: 0.1503, Acc:95.1250
Epoch [18/40], Step [300/500] Loss: 0.1447, Acc:94.8067
Epoch [18/40], Step [400/500] Loss: 0.1170, Acc:94.5575
Epoch [18/40], Step [500/500] Loss: 0.2462, Acc:94.4800
Epoch [19/40], Step [100/500] Loss: 0.0914, Acc:96.1400
Epoch [19/40], Step [200/500] Loss: 0.1264, Acc:95.5100
Epoch [19/40], Step [300/500] Loss: 0.3602, Acc:95.2300
Epoch [19/40], Step [400/500] Loss: 0.1921, Acc:94.9150
Epoch [19/40], Step [500/500] Loss: 0.3380, Acc:94.6800
Epoch [20/40], Step [100/500] Loss: 0.1114, Acc:95.5600
Epoch [20/40], Step [200/500] Loss: 0.1151, Acc:95.4750
Epoch [20/40], Step [300/500] Loss: 0.1649, Acc:95.4667
Epoch [20/40], Step [400/500] Loss: 0.1734, Acc:95.4300
Epoch [20/40], Step [500/500] Loss: 0.0778, Acc:95.3340
Epoch [21/40], Step [100/500] Loss: 0.0768, Acc:97.2500
Epoch [21/40], Step [200/500] Loss: 0.0303, Acc:97.6650
Epoch [21/40], Step [300/500] Loss: 0.0272, Acc:97.9233
Epoch [21/40], Step [400/500] Loss: 0.0840, Acc:98.0850
Epoch [21/40], Step [500/500] Loss: 0.0341, Acc:98.2580
Epoch [22/40], Step [100/500] Loss: 0.0391, Acc:99.1400
Epoch [22/40], Step [200/500] Loss: 0.0208, Acc:99.1400
Epoch [22/40], Step [300/500] Loss: 0.0123, Acc:99.1833
Epoch [22/40], Step [400/500] Loss: 0.0218, Acc:99.1850
Epoch [22/40], Step [500/500] Loss: 0.0194, Acc:99.1940
Epoch [23/40], Step [100/500] Loss: 0.1026, Acc:99.4200
Epoch [23/40], Step [200/500] Loss: 0.0152, Acc:99.4400
Epoch [23/40], Step [300/500] Loss: 0.0734, Acc:99.3867
Epoch [23/40], Step [400/500] Loss: 0.0220, Acc:99.3700
Epoch [23/40], Step [500/500] Loss: 0.0093, Acc:99.3460
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Epoch [24/40], Step [100/500] Loss: 0.0434, Acc:99.4700
Epoch [24/40], Step [200/500] Loss: 0.0078, Acc:99.4300
Epoch [24/40], Step [300/500] Loss: 0.0394, Acc:99.5000
Epoch [24/40], Step [400/500] Loss: 0.0205, Acc:99.4875
Epoch [24/40], Step [500/500] Loss: 0.0145, Acc:99.4780
Epoch [25/40], Step [100/500] Loss: 0.0389, Acc:99.6000
Epoch [25/40], Step [200/500] Loss: 0.0742, Acc:99.5400
Epoch [25/40], Step [300/500] Loss: 0.0019, Acc:99.5533
Epoch [25/40], Step [400/500] Loss: 0.0624, Acc:99.5350
Epoch [25/40], Step [500/500] Loss: 0.0157, Acc:99.5300
Epoch [26/40], Step [100/500] Loss: 0.0147, Acc:99.5700
Epoch [26/40], Step [200/500] Loss: 0.0568, Acc:99.5600
Epoch [26/40], Step [300/500] Loss: 0.0088, Acc:99.5433
Epoch [26/40], Step [400/500] Loss: 0.0106, Acc:99.5100
Epoch [26/40], Step [500/500] Loss: 0.0219, Acc:99.4520
Epoch [27/40], Step [100/500] Loss: 0.0136, Acc:99.3100
Epoch [27/40], Step [200/500] Loss: 0.0087, Acc:99.3550
Epoch [27/40], Step [300/500] Loss: 0.0292, Acc:99.3467
Epoch [27/40], Step [400/500] Loss: 0.0210, Acc:99.3350
Epoch [27/40], Step [500/500] Loss: 0.0502, Acc:99.2960
Epoch [28/40], Step [100/500] Loss: 0.0108, Acc:99.3800
Epoch [28/40], Step [200/500] Loss: 0.0029, Acc:99.4050
Epoch [28/40], Step [300/500] Loss: 0.0179, Acc:99.4200
Epoch [28/40], Step [400/500] Loss: 0.0436, Acc:99.3900
Epoch [28/40], Step [500/500] Loss: 0.0347, Acc:99.3680
Epoch [29/40], Step [100/500] Loss: 0.0104, Acc:99.5300
Epoch [29/40], Step [200/500] Loss: 0.0340, Acc:99.4500
Epoch [29/40], Step [300/500] Loss: 0.0747, Acc:99.3567
Epoch [29/40], Step [400/500] Loss: 0.0472, Acc:99.2650
Epoch [29/40], Step [500/500] Loss: 0.0183, Acc:99.2400
Epoch [30/40], Step [100/500] Loss: 0.0240, Acc:99.5500
Epoch [30/40], Step [200/500] Loss: 0.0217, Acc:99.5450
Epoch [30/40], Step [300/500] Loss: 0.0152, Acc:99.5400
Epoch [30/40], Step [400/500] Loss: 0.0137, Acc:99.5550
Epoch [30/40], Step [500/500] Loss: 0.0760, Acc:99.5120
Epoch [31/40], Step [100/500] Loss: 0.0178, Acc:99.6300
Epoch [31/40], Step [200/500] Loss: 0.0072, Acc:99.5850
Epoch [31/40], Step [300/500] Loss: 0.0181, Acc:99.5267
Epoch [31/40], Step [400/500] Loss: 0.0122, Acc:99.5050
Epoch [31/40], Step [500/500] Loss: 0.0045, Acc:99.4840
Epoch [32/40], Step [100/500] Loss: 0.0283, Acc:99.4800
Epoch [32/40], Step [200/500] Loss: 0.0282, Acc:99.3650
Epoch [32/40], Step [300/500] Loss: 0.0235, Acc:99.3667
Epoch [32/40], Step [400/500] Loss: 0.0323, Acc:99.3350
Epoch [32/40], Step [500/500] Loss: 0.0049, Acc:99.3480
Epoch [33/40], Step [100/500] Loss: 0.0270, Acc:99.4200
Epoch [33/40], Step [200/500] Loss: 0.0459, Acc:99.4650
Epoch [33/40], Step [300/500] Loss: 0.0085, Acc:99.4167
Epoch [33/40], Step [400/500] Loss: 0.0085, Acc:99.4050
Epoch [33/40], Step [500/500] Loss: 0.0033, Acc:99.3980
Epoch [34/40], Step [100/500] Loss: 0.0207, Acc:99.5300
Epoch [34/40], Step [200/500] Loss: 0.0454, Acc:99.4600
Epoch [34/40], Step [300/500] Loss: 0.0269, Acc:99.4700
Epoch [34/40], Step [400/500] Loss: 0.0044, Acc:99.4400
Epoch [34/40], Step [500/500] Loss: 0.0416, Acc:99.4340
Epoch [35/40], Step [100/500] Loss: 0.0015, Acc:99.3100
Epoch [35/40], Step [200/500] Loss: 0.0062, Acc:99.3550
Epoch [35/40], Step [300/500] Loss: 0.0110, Acc:99.3567
Epoch [35/40], Step [400/500] Loss: 0.0038, Acc:99.3725
Epoch [35/40], Step [500/500] Loss: 0.0304, Acc:99.3600
Epoch [36/40], Step [100/500] Loss: 0.0194, Acc:99.4500
Epoch [36/40], Step [200/500] Loss: 0.0026, Acc:99.4900
Epoch [36/40], Step [300/500] Loss: 0.0106, Acc:99.4733
Epoch [36/40], Step [400/500] Loss: 0.0105, Acc:99.4825
Epoch [36/40], Step [500/500] Loss: 0.0059, Acc:99.4740
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Epoch [37/40], Step [100/500] Loss: 0.0041, Acc:99.6500
Epoch [37/40], Step [200/500] Loss: 0.0046, Acc:99.5150
Epoch [37/40], Step [300/500] Loss: 0.0248, Acc:99.4933
Epoch [37/40], Step [400/500] Loss: 0.0287, Acc:99.5175
Epoch [37/40], Step [500/500] Loss: 0.0038, Acc:99.5100
Epoch [38/40], Step [100/500] Loss: 0.1119, Acc:99.6100
Epoch [38/40], Step [200/500] Loss: 0.0120, Acc:99.6100
Epoch [38/40], Step [300/500] Loss: 0.0049, Acc:99.5767
Epoch [38/40], Step [400/500] Loss: 0.0137, Acc:99.5625
Epoch [38/40], Step [500/500] Loss: 0.0141, Acc:99.5480
Epoch [39/40], Step [100/500] Loss: 0.0253, Acc:99.5600
Epoch [39/40], Step [200/500] Loss: 0.0120, Acc:99.6250
Epoch [39/40], Step [300/500] Loss: 0.0265, Acc:99.5667
Epoch [39/40], Step [400/500] Loss: 0.0273, Acc:99.5125
Epoch [39/40], Step [500/500] Loss: 0.0065, Acc:99.4460
Epoch [40/40], Step [100/500] Loss: 0.0120, Acc:99.3700
Epoch [40/40], Step [200/500] Loss: 0.0321, Acc:99.3600
Epoch [40/40], Step [300/500] Loss: 0.0010, Acc:99.3767
Epoch [40/40], Step [400/500] Loss: 0.0382, Acc:99.3725
Epoch [40/40], Step [500/500] Loss: 0.0075, Acc:99.3580
Accuracy of the model on the test images: 77.54 %
```