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1 "C:\Program Files\Anaconda3\python.exe" C:/Users/anant/OneDrive/Documents/Niveditha/PSU/
  Spring2018/ML/ProgrammingAssignments/neuralNet/neuralNetworkExp3.py
2 Experiment 3.2 with 1/4 the training set
3 Epoch Number: 0
4 Training Accuracy:  9.226666666666667
5 Test Accuracy:  10.100000000000001
6 Epoch Number: 1
7 Training Accuracy:  89.82
8 Test Accuracy:  93.24
9 Epoch Number: 2
10 Training Accuracy:  95.76
11 Test Accuracy:  94.03
12 Epoch Number: 3
13 Training Accuracy:  97.18666666666667
14 Test Accuracy:  94.56
15 Epoch Number: 4
16 Training Accuracy:  97.98
17 Test Accuracy:  95.06
18 Epoch Number: 5
19 Training Accuracy:  98.53333333333333
20 Test Accuracy:  95.35
21 Epoch Number: 6
22 Training Accuracy:  98.96000000000001
23 Test Accuracy:  95.55
24 Epoch Number: 7
25 Training Accuracy:  99.11333333333333
26 Test Accuracy:  95.5
27 Epoch Number: 8
28 Training Accuracy:  99.26666666666667
29 Test Accuracy:  95.52000000000001
30 Epoch Number: 9
31 Training Accuracy:  99.36666666666667
32 Test Accuracy:  95.62
33 Epoch Number: 10
34 Training Accuracy:  99.43333333333332
35 Test Accuracy:  95.61
36 Epoch Number: 11
37 Training Accuracy:  99.50666666666666
38 Test Accuracy:  95.65
39 Epoch Number: 12
40 Training Accuracy:  99.56666666666666
41 Test Accuracy:  95.59
42 Epoch Number: 13
43 Training Accuracy:  99.60666666666667
44 Test Accuracy:  95.57
45 Epoch Number: 14
46 Training Accuracy:  99.64
47 Test Accuracy:  95.55
48 Epoch Number: 15
49 Training Accuracy:  99.66000000000001
50 Test Accuracy:  95.52000000000001
51 Epoch Number: 16
52 Training Accuracy:  99.69333333333333
53 Test Accuracy:  95.48
54 Epoch Number: 17
55 Training Accuracy:  99.74
56 Test Accuracy:  95.38
57 Epoch Number: 18
58 Training Accuracy:  99.75333333333334
59 Test Accuracy:  95.45
60 Epoch Number: 19
61 Training Accuracy:  99.78
62 Test Accuracy:  95.46
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63 Epoch Number: 20
64 Training Accuracy: 99.78666666666666
65 Test Accuracy: 95.50999999999999
66 Epoch Number: 21
67 Training Accuracy: 99.8
68 Test Accuracy: 95.48
69 Epoch Number: 22
70 Training Accuracy: 99.81333333333333
71 Test Accuracy: 95.48
72 Epoch Number: 23
73 Training Accuracy: 99.82666666666667
74 Test Accuracy: 95.55
75 Epoch Number: 24
76 Training Accuracy: 99.82666666666667
77 Test Accuracy: 95.54
78 Epoch Number: 25
79 Training Accuracy: 99.82666666666667
80 Test Accuracy: 95.54
81 Epoch Number: 26
82 Training Accuracy: 99.83333333333333
83 Test Accuracy: 95.49
84 Epoch Number: 27
85 Training Accuracy: 99.83333333333333
86 Test Accuracy: 95.49
87 Epoch Number: 28
88 Training Accuracy: 99.83999999999999
89 Test Accuracy: 95.44
90 Epoch Number: 29
91 Training Accuracy: 99.86
92 Test Accuracy: 95.45
93 Epoch Number: 30
94 Training Accuracy: 99.86666666666667
95 Test Accuracy: 95.41
96 Epoch Number: 31
97 Training Accuracy: 99.86666666666667
98 Test Accuracy: 95.28
99 Epoch Number: 32
100 Training Accuracy: 99.88
101 Test Accuracy: 95.33
102 Epoch Number: 33
103 Training Accuracy: 99.88666666666667
104 Test Accuracy: 95.33
105 Epoch Number: 34
106 Training Accuracy: 99.89333333333333
107 Test Accuracy: 95.3
108 Epoch Number: 35
109 Training Accuracy: 99.9
110 Test Accuracy: 95.19999999999999
111 Epoch Number: 36
112 Training Accuracy: 99.9
113 Test Accuracy: 95.19
114 Epoch Number: 37
115 Training Accuracy: 99.9
116 Test Accuracy: 95.14
117 Epoch Number: 38
118 Training Accuracy: 99.90666666666667
119 Test Accuracy: 95.16
120 Epoch Number: 39
121 Training Accuracy: 99.91333333333333
122 Test Accuracy: 95.12
123 Epoch Number: 40
124 Training Accuracy: 99.91333333333333
125 Test Accuracy: 95.05

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126 Epoch Number: 41
127 Training Accuracy:  99.92
128 Test Accuracy:  95.02000000000001
129 Epoch Number: 42
130 Training Accuracy:  99.92
131 Test Accuracy:  94.89999999999999
132 Epoch Number: 43
133 Training Accuracy:  99.92
134 Test Accuracy:  94.92
135 Epoch Number: 44
136 Training Accuracy:  99.92
137 Test Accuracy:  94.85
138 Epoch Number: 45
139 Training Accuracy:  99.92
140 Test Accuracy:  94.78999999999999
141 Epoch Number: 46
142 Training Accuracy:  99.92
143 Test Accuracy:  94.78999999999999
144 Epoch Number: 47
145 Training Accuracy:  99.92
146 Test Accuracy:  94.78
147 Epoch Number: 48
148 Training Accuracy:  99.92
149 Test Accuracy:  94.78
150 Epoch Number: 49
151 Training Accuracy:  99.92
152 Test Accuracy:  94.75
153 Confusion Matrix for the test data when the training data was reduced by 1/4
154 [[ 963    0    1    1    0    2    3    2    5    3]
155  [    0 1116    4    2    0    1    4    0    8    0]
156  [   15    1  973    4    2    0    4    9   22    2]
157  [    6    0   12  937    1   10    0    5   32    7]
158  [    3    2    4    0  921    0    8    1    8   35]
159  [   10    0    7   23    0  804   16    3   25    4]
160  [   12    2    1    1    8    7  909    1   17    0]
161  [    2    6   13    4    2    0    1  970   12   18]
162  [   11    0    1    5    2    4    5    7  931    8]
163  [    7    5    0    5    8    3    1    9   20  951]]
164 Total Time taken for the experiment 3.1:  0:10:49.857354
165
166 Process finished with exit code 0
167
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