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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 3.1 with 1/2 the training set
3 Epoch Number: 0
4 Training Accuracy:  8.896666666666667
5 Test Accuracy:  10.38
6 Epoch Number: 1
7 Training Accuracy:  92.15333333333334
8 Test Accuracy:  81.62
9 Epoch Number: 2
10 Training Accuracy:  96.29666666666667
11 Test Accuracy:  90.45
12 Epoch Number: 3
13 Training Accuracy:  97.37666666666667
14 Test Accuracy:  92.7
15 Epoch Number: 4
16 Training Accuracy:  98.05666666666667
17 Test Accuracy:  93.07
18 Epoch Number: 5
19 Training Accuracy:  98.42999999999999
20 Test Accuracy:  94.98
21 Epoch Number: 6
22 Training Accuracy:  98.69666666666667
23 Test Accuracy:  96.04
24 Epoch Number: 7
25 Training Accuracy:  98.88666666666667
26 Test Accuracy:  96.05
27 Epoch Number: 8
28 Training Accuracy:  99.03333333333333
29 Test Accuracy:  95.56
30 Epoch Number: 9
31 Training Accuracy:  99.18
32 Test Accuracy:  95.91
33 Epoch Number: 10
34 Training Accuracy:  99.26666666666667
35 Test Accuracy:  95.96000000000001
36 Epoch Number: 11
37 Training Accuracy:  99.36333333333334
38 Test Accuracy:  96.11
39 Epoch Number: 12
40 Training Accuracy:  99.40333333333334
41 Test Accuracy:  96.22
42 Epoch Number: 13
43 Training Accuracy:  99.46000000000001
44 Test Accuracy:  96.17999999999999
45 Epoch Number: 14
46 Training Accuracy:  99.5
47 Test Accuracy:  96.17999999999999
48 Epoch Number: 15
49 Training Accuracy:  99.56
50 Test Accuracy:  96.23
51 Epoch Number: 16
52 Training Accuracy:  99.57333333333334
53 Test Accuracy:  96.17
54 Epoch Number: 17
55 Training Accuracy:  99.59666666666666
56 Test Accuracy:  96.21
57 Epoch Number: 18
58 Training Accuracy:  99.62333333333333
59 Test Accuracy:  96.19
60 Epoch Number: 19
61 Training Accuracy:  99.62
62 Test Accuracy:  96.04
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63 Epoch Number: 20  
64 Training Accuracy: 99.66333333333334  
65 Test Accuracy: 96.02000000000001  
66 Epoch Number: 21  
67 Training Accuracy: 99.70333333333333  
68 Test Accuracy: 96.00999999999999  
69 Epoch Number: 22  
70 Training Accuracy: 99.72666666666666  
71 Test Accuracy: 96.02000000000001  
72 Epoch Number: 23  
73 Training Accuracy: 99.72999999999999  
74 Test Accuracy: 96.1  
75 Epoch Number: 24  
76 Training Accuracy: 99.74333333333333  
77 Test Accuracy: 95.97  
78 Epoch Number: 25  
79 Training Accuracy: 99.75666666666667  
80 Test Accuracy: 95.98  
81 Epoch Number: 26  
82 Training Accuracy: 99.76666666666667  
83 Test Accuracy: 96.02000000000001  
84 Epoch Number: 27  
85 Training Accuracy: 99.78  
86 Test Accuracy: 95.93  
87 Epoch Number: 28  
88 Training Accuracy: 99.79  
89 Test Accuracy: 95.91  
90 Epoch Number: 29  
91 Training Accuracy: 99.79333333333334  
92 Test Accuracy: 95.84  
93 Epoch Number: 30  
94 Training Accuracy: 99.80333333333333  
95 Test Accuracy: 95.86  
96 Epoch Number: 31  
97 Training Accuracy: 99.80666666666667  
98 Test Accuracy: 95.76  
99 Epoch Number: 32  
100 Training Accuracy: 99.80666666666667  
101 Test Accuracy: 95.81  
102 Epoch Number: 33  
103 Training Accuracy: 99.80333333333333  
104 Test Accuracy: 95.81  
105 Epoch Number: 34  
106 Training Accuracy: 99.78666666666666  
107 Test Accuracy: 95.72  
108 Epoch Number: 35  
109 Training Accuracy: 99.81  
110 Test Accuracy: 95.81  
111 Epoch Number: 36  
112 Training Accuracy: 99.82333333333332  
113 Test Accuracy: 95.59  
114 Epoch Number: 37  
115 Training Accuracy: 99.81666666666666  
116 Test Accuracy: 95.58  
117 Epoch Number: 38  
118 Training Accuracy: 99.82333333333332  
119 Test Accuracy: 95.67  
120 Epoch Number: 39  
121 Training Accuracy: 99.82666666666667  
122 Test Accuracy: 95.56  
123 Epoch Number: 40  
124 Training Accuracy: 99.83  
125 Test Accuracy: 95.64

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126 Epoch Number: 41
127 Training Accuracy: 99.83333333333333
128 Test Accuracy: 95.65
129 Epoch Number: 42
130 Training Accuracy: 99.83666666666666
131 Test Accuracy: 95.66
132 Epoch Number: 43
133 Training Accuracy: 99.84333333333333
134 Test Accuracy: 95.57
135 Epoch Number: 44
136 Training Accuracy: 99.84333333333333
137 Test Accuracy: 95.54
138 Epoch Number: 45
139 Training Accuracy: 99.85666666666667
140 Test Accuracy: 95.55
141 Epoch Number: 46
142 Training Accuracy: 99.85000000000001
143 Test Accuracy: 95.6
144 Epoch Number: 47
145 Training Accuracy: 99.85333333333334
146 Test Accuracy: 95.57
147 Epoch Number: 48
148 Training Accuracy: 99.85333333333334
149 Test Accuracy: 95.50999999999999
150 Epoch Number: 49
151 Training Accuracy: 99.86
152 Test Accuracy: 95.54
153 Confusion Matrix for the test data when the training data was reduced by 1/2
154 [[ 964    0    2    1    1    3    2    1    4    2]
155 [    0 1117    1    3    0    1    2    3    8    0]
156 [    7    2  983    3    2    1    1   10   19    4]
157 [    3    1    5  952    1   17    0    5   18    8]
158 [    0    0    4    0  954    0    2    0    2   20]
159 [    6    0    2   15    2  830    6    2   22    7]
160 [   12    4    2    1    5   14  907    0   12    1]
161 [    1    5   16    4    7    1    0  952    9   33]
162 [    6    2    2    3    4    4    4    4  936    9]
163 [    4    3    1    4    9    3    1    7   18  959]]
164 Total Time taken for the experiment 3.1: 0:15:05.424138
165
166 Process finished with exit code 0
167
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