```
 1 C:\Users\matth\anaconda3\python.exe C:/Users/matth/
   Desktop/test/Pneumonia_xray/LoadTrainTest.py
 2
 3 Epoch 1 of 20
 4 ------------------------------------------
 5 train Accuracy: 87.48% Loss: 27.92
 6 val Accuracy: 89.06% Loss: 36.42
 7
 8 Epoch 2 of 20
 9 ------------------------------------------
10 train Accuracy: 90.81% Loss: 20.92
11 val Accuracy: 78.91% Loss: 35.84
12
13 Epoch 3 of 20
14 ------------------------------------------
15 train Accuracy: 92.22% Loss: 17.99
16 val Accuracy: 90.62% Loss: 18.80
17
18 Epoch 4 of 20
19 ------------------------------------------
20 train Accuracy: 94.33% Loss: 14.75
21 val Accuracy: 89.45% Loss: 24.22
22
23 Epoch 5 of 20
24 ------------------------------------------
25 train Accuracy: 94.60% Loss: 13.49
26 val Accuracy: 94.14% Loss: 18.34
27
28 Epoch 6 of 20
29 ------------------------------------------
30 train Accuracy: 95.16% Loss: 11.74
31 val Accuracy: 92.58% Loss: 12.94
32
33 Epoch 7 of 20
34 ------------------------------------------
35 train Accuracy: 95.91% Loss: 9.99
36 val Accuracy: 93.36% Loss: 14.61
37
38 Epoch 8 of 20
39 ------------------------------------------
40 train Accuracy: 96.43% Loss: 8.84
```

```
41 val Accuracy: 94.53% Loss: 13.76
42
43 Epoch 9 of 20
44 ------------------------------------------
45 train Accuracy: 96.69% Loss: 8.47
46 val Accuracy: 94.14% Loss: 15.64
47
48 Epoch 10 of 20
49 ------------------------------------------
50 train Accuracy: 97.32% Loss: 6.79
51 val Accuracy: 92.97% Loss: 15.36
52
53 Epoch 11 of 20
54 ------------------------------------------
55 train Accuracy: 98.17% Loss: 4.99
56 val Accuracy: 92.97% Loss: 18.89
57
58 Epoch 12 of 20
59 ------------------------------------------
60 train Accuracy: 98.21% Loss: 4.40
61 val Accuracy: 95.31% Loss: 14.29
62
63 Epoch 13 of 20
64 ------------------------------------------
65 train Accuracy: 98.17% Loss: 4.80
66 val Accuracy: 93.75% Loss: 11.92
67
68 Epoch 14 of 20
69 ------------------------------------------
70 train Accuracy: 98.49% Loss: 3.46
71 val Accuracy: 94.14% Loss: 17.67
72
73 Epoch 15 of 20
74 ------------------------------------------
75 train Accuracy: 99.27% Loss: 1.75
76 val Accuracy: 94.14% Loss: 19.32
77
78 Epoch 16 of 20
79 ------------------------------------------
80 train Accuracy: 99.23% Loss: 2.39
81 val Accuracy: 94.92% Loss: 15.25
```

```
 82
 83 Epoch 17 of 20
 84 ----------------------------------------
 85 train Accuracy: 99.62% Loss: 1.36
 86 val Accuracy: 94.14% Loss: 22.20
 87
 88 Epoch 18 of 20
 89 ----------------------------------------
 90 train Accuracy: 99.23% Loss: 1.79
 91 val Accuracy: 94.14% Loss: 18.43
 92
 93 Epoch 19 of 20
 94 ----------------------------------------
 95 train Accuracy: 99.01% Loss: 2.40
 96 val Accuracy: 92.58% Loss: 20.30
 97
 98 Epoch 20 of 20
 99 ----------------------------------------
100 train Accuracy: 99.84% Loss: 0.46
101 val Accuracy: 93.36% Loss: 19.22
102 Training finished in 37m 14s
103 Best validation accuracy: 95.31% at epoch 12
104
105 The trained neural net model has an accuracy of 85.
    90% on the test dataset.
106
107 Accuracy of class NORMAL: 67.094%
108 Accuracy of class PNEUMONIA: 97.179%
109
```