|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Configurations** | **Accuracy** | | **Precision** | | **Recall** | | **F1-Score** | |
| Train set | Test set | Train set | Test set | Train set | Test set | Train set | Test set |
| ANN | 784x784,tanh  784x512,sigmoid  512x100,ReLU  100x10,softmax  Epoch=50  Batch size=200  Scaling=yes | 98 | 89 | [ 99, 99, 98, 99, 95, 98, 95, 98, 100, 99] | [83, 98, 82, 91, 82, 94, 69, 94, 97, 97] | [98, 99, 95, 97, 97, 99, 97, 98, 99, 98 ] | [81, 98, 81, 86, 83, 98, 74, 94, 97, 94] | [98, 99, 97, 98, 96, 99, 96, 98, 99, 99] | [82, 98, 81, 88, 82, 96, 71, 94, 97, 95] |
| CNN-1 | (28x28x1)x40 (5x5)kernel, ReLU  MaxPooling(2x2)  484x100, ReLU  100x10, Softmax  Epoch=50  Batch size=200  Scaling=yes | 100 | 92 | [100, 100, 100, 100, 100, 100, 100, 100, 100, 100] | 84, 99, 88, 91, 87, 98, 80, 96, 97, 98] | [100, 100, 100, 100, 100, 100, 100, 100, 100, 100] | [88, 97, 86, 91, 89, 98, 76, 97, 98, 96] | [100, 100, 100, 100, 100, 100, 100, 100, 100, 100] | [86, 98, 87, 91, 88, 98, 78, 97, 97, 97] |
| CNN-2 | (28x28x1)x48(3x3)kernel, ReLU  MaxPooling(2x2)  (24x24x1)x96(3x3)kernel, ReLU  MaxPooling(2x2)  400x100, ReLu  100x10, Softmax  Epoch=50  Batch size=200  Scaling=yes | 99 | 91 | [ 99, 100, 98, 99, 98, 100, 99, 100, 99, 99] | [86, 99, 82, 92, 85, 98, 77, 95, 96, 95] | [ 98, 99, 99, 99, 99, 100, 97, 99, 99, 100 ] | [86, 96, 89, 90, 88, 97, 72, 95, 98, 96] | [ 99, 99, 98, 99, 99, 100, 98, 99, 99, 99] | [86, 98, 86, 91, 87, 98, 75, 95, 97, 96] |