Pattern Recognition - Exercise 2d (CNN & MLP)

Implementation details and Testing details

- See Report of Exercise 2b (MLP)

- See Report of Exercise 2c (CNN)

Results for CNN permutated

- Number of epochs: 10

- Initial learning rate: 0.1

- Accuracy: 97.71%

Epoch	Accuracy		Loss	
	Train Dataset	Test Dataset	Train Dataset	Test Dataset
1	92.60%	92.70%	0.2568	0.2495
2	95.41%	95.20%	0.1604	0.1613
3	96.24%	95.85%	0.1336	0.1391
4	96.49%	96.11%	0.1190	0.1368
5	97.50%	96.61%	0.0914	0.1114
6	97.91%	96.69%	0.0844	0.1078
7	98.07%	97.15%	0.0773	0.0999
8	98.36%	97.18%	0.0644	0.0930
9	98.38%	97.15%	0.0583	0.0914
10	98.76%	97.34%	0.0505	0.0855
11	98.68%	97.20%	0.0519	0.0897
12	98.87%	97.38%	0.0471	0.0849
13	98.95%	97.51%	0.0411	0.0807
14	99.09%	97.60%	0.0386	0.0792
15	99.17%	97.56%	0.0357	0.0786
16	99.20%	97.57%	0.0352	0.0798
17	99.28%	97.65%	0.0333	0.0788
18	99.36%	97.64%	0.0303	0.0767
19	99.35%	97.66%	0.0307	0.0782
20	99.40%	97.71%	0.0283	0.0753
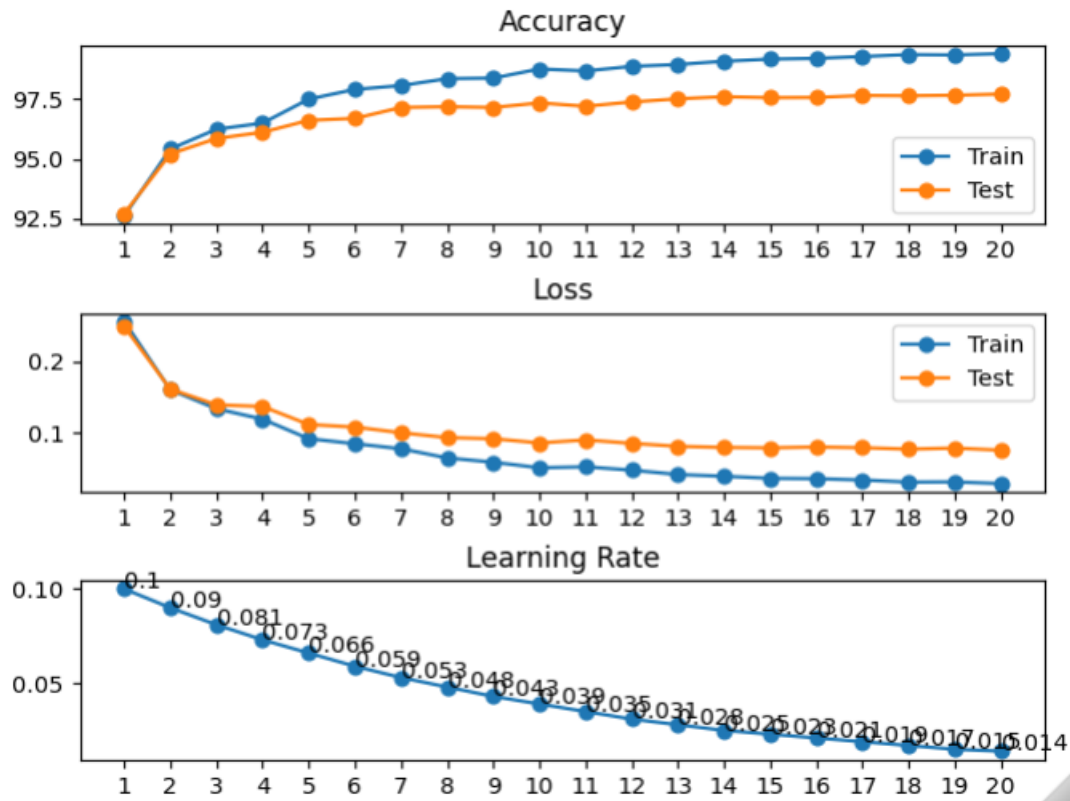
Comparision between CNN with normal dataset and CNN with permutated dataset

- The accuracy is slighly lower with the permutated MNIST dataset (98.60% vs 97.71%)

- The loss is slighly lower with the permutated MNIST dataset

- We clearly see that it is not a problem that the dataset given is permutated for the classification with the CNN