

# Assignment2

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My repository for this assignment can be found here:

<https://github.com/bklybor/Assignment3.git>

Trial	Optimizer	Learning Rate	Accuracy	Loss
1	Adam	0.10	0.632	0.0735
2	Adam	0.25	0.668	0.0664
3	Adam	0.50	0.594	0.0813
4	Adamax	0.10	0.823	0.0357
5	Adamax	0.25	0.752	0.0496
6	Adamax	0.50	0.588	0.0824
7	Nadam	0.10	0.841	0.0319
8	Nadam	0.25	0.649	0.0702
9	Nadam	0.50	0.623	0.0757

Figure 1: A table of accuracies for the MNIST data set. All trials used the same single layer softmax activation function, a batch size of 128, 20 epochs, and normalized data.

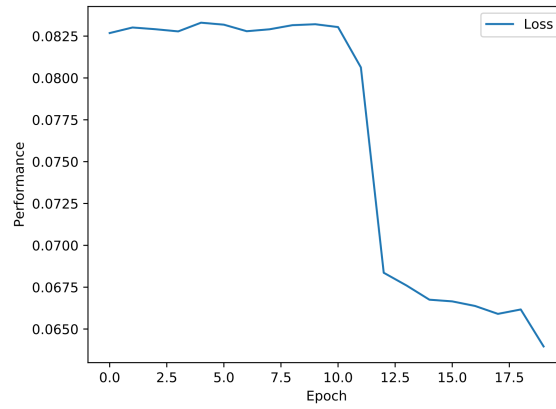


Figure 2: The loss function using the Adam optimizer and a learning rate of 0.1

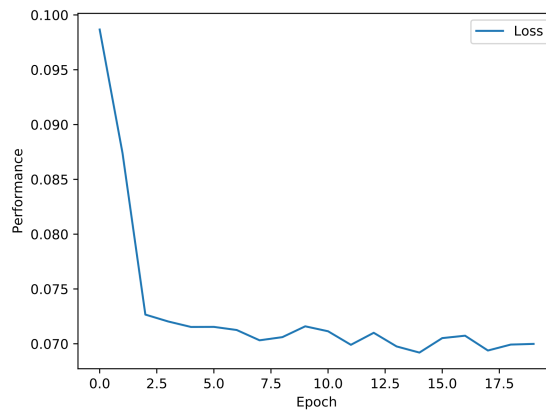


Figure 3: The loss function using the Adam optimizer and a learning rate of 0.25

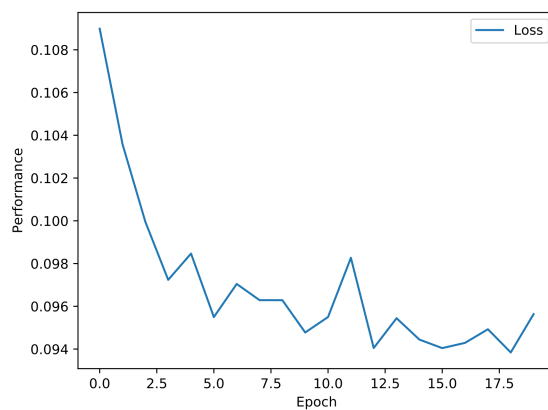


Figure 4: The loss function using the Adam optimizer and a learning rate of 0.60

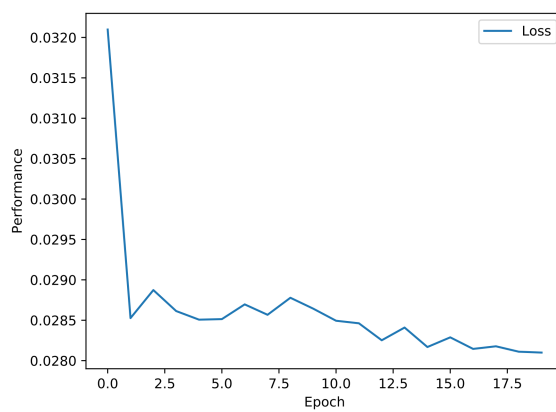


Figure 5: The loss function using the Adamax optimizer and a learning rate of 0.1

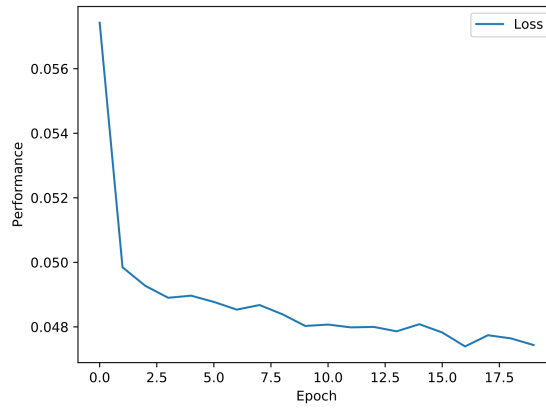


Figure 6: The loss function using the Adamax optimizer and a learning rate of 0.25

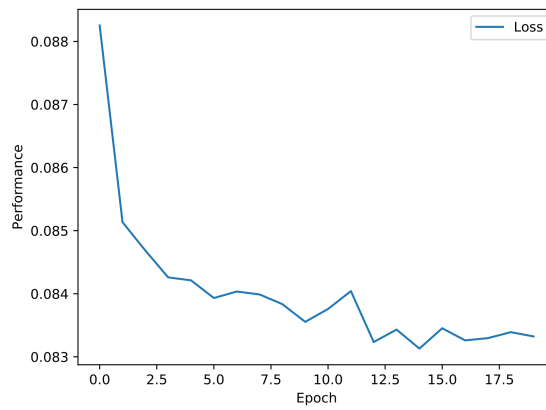


Figure 7: The loss function using the Adamax optimizer and a learning rate of 0.6

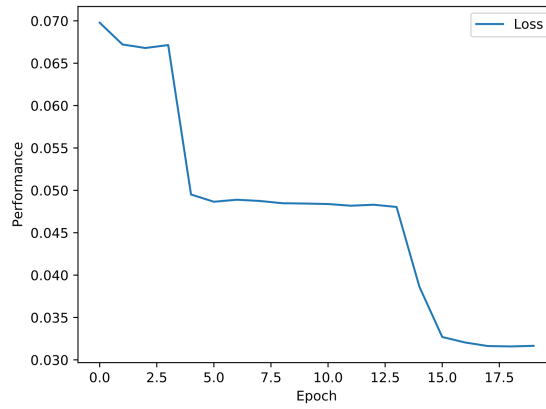


Figure 8: The loss function using the Nadam optimizer and a learning rate of 0.1

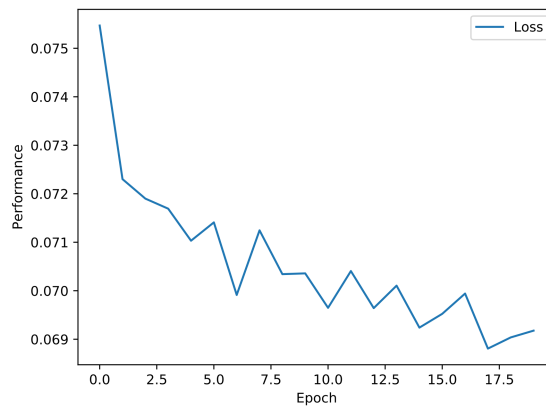


Figure 9: The loss function using the Nadam optimizer and a learning rate of 0.25

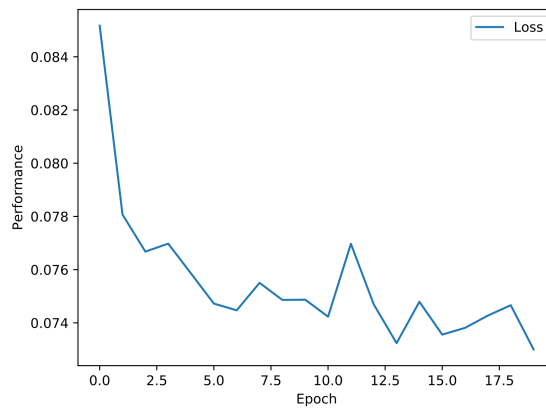


Figure 10: The loss function using the Nadam optimizer and a learning rate of 0.6