

6300Assignment2

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1 Task 1

1.1 step5

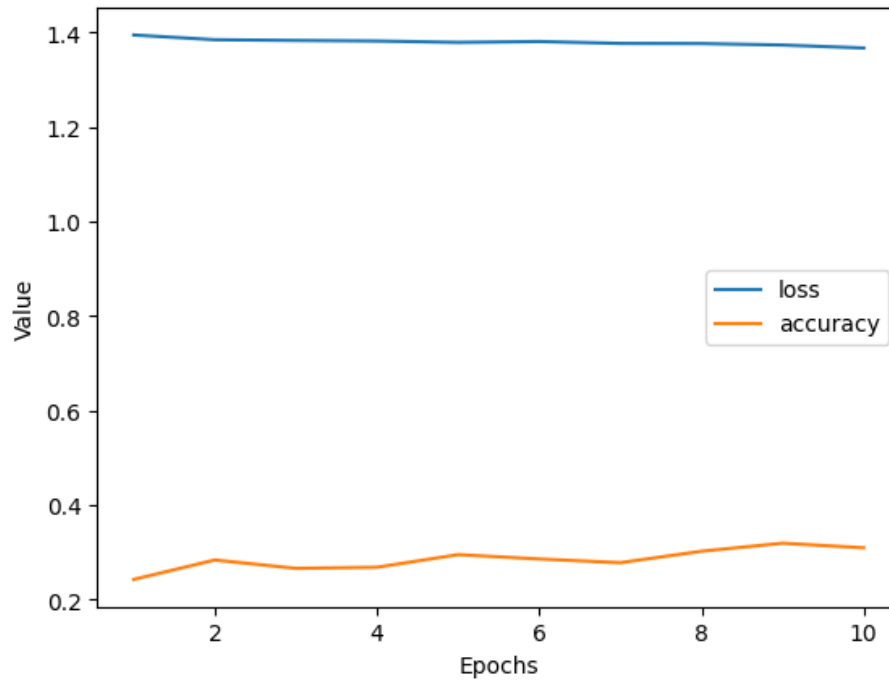


Figure 1: Caption

The model is performing better with epoches, the training accuracy is increasing and the training loss is decreasing. I got 27.42% accuracy on testing set. As the testing performance is only 4% lower in accuracy than training, i would say there might not exist overfitting. I use batch size = 32, learning rate = 0.001, optimizer is adam.

2 Task 2

2.1 step1

I tried two more models. The first one i add a fully connected layer after the drop out, and do a ReLU on that. The second model, i add a fully connected layer as the input layer, and change all ReLU function to tanh.

2.2 step2

training accuracy	testing accuracy	Observations
0.3097	0.2742	original model
0.2661	0.3065	model 2
0.2331	0.2742	model 3

Table 1: Caption

2.3 step3

2.3.1 a

based on the test accuracy, the model 2 is doing the best, i think the answer is the fully connected layer after the dropout process give more robustness on predicting.

2.3.2 b

When i add a single 64 to 64 fully connected layer after dropout, it increase the performance of the model, however, if i add a fully connected layer at the front place, from 4096 to 4096, it might make the model overfitting easily, , so properly increasing the model complexity can improve the performance, but a complex model may cost more time and become overfitting at the end.