

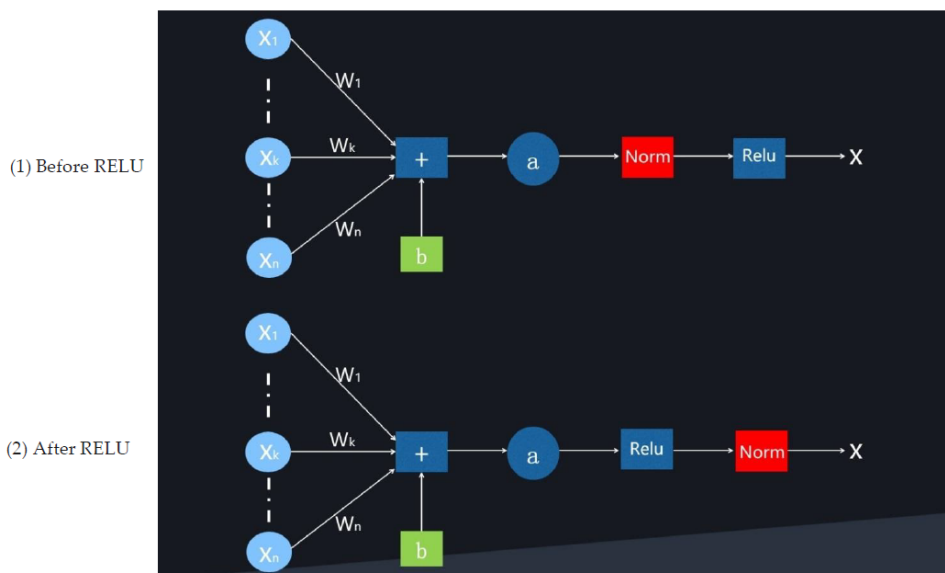
Exercise 4

Implement Batch Normalization with your own CNN model in Exercise 1 on MNIST dataset, compare the differences between with Batch Normalization and without Batch Normalization, display the classification error (%) by epoch.

Note:

1. MNIST database link: <http://yann.lecun.com/exdb/mnist/>, in MNIST dataset 60000 images for training and 10000 images for testing

Where is Batch Normalization (BN): Two Options?



Batch Normalization (BN) may work better after RELU than before RELU.