2) **CIFAR-10 Classification via CNN**

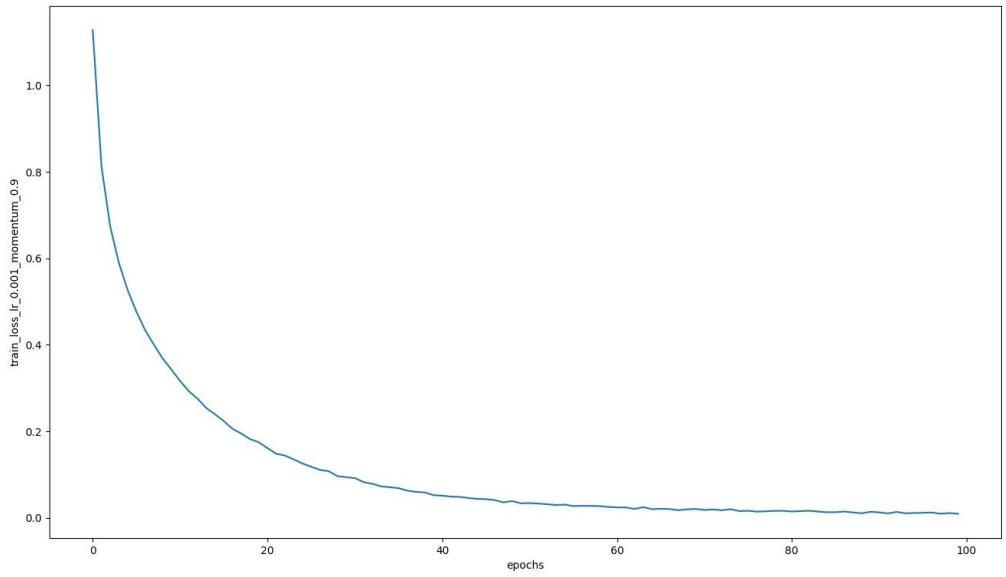
Network structure: VGG16

- Conv2d: num_filters=64, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- Conv2d: num_filters=64, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- MaxPool2d (filter_size2x2, s=2)
- Conv2d: num_filters=128, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- Conv2d: num_filters=128, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- MaxPool2d (filter_size2x2, s=2)
- Conv2d: num_filters=256, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- Conv2d: num_filters=256, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- Conv2d: num_filters=256, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- MaxPool2d (filter_size2x2, s=2)
- Conv2d: num_filters=512, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- Conv2d: num_filters=512, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- Conv2d: num_filters=512, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- MaxPool2d (filter_size2x2, s=2)
- Conv2d: num_filters=512, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- Conv2d: num_filters=512, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- Conv2d: num_filters=512, size=(3,3), BatchNorm=True, activation=ReLU, s=1, p=1
- MaxPool2d (filter_size2x2, s=2)
- Linear layer: W_1: (512,256), b_1: (256,), BatchNorm=True, activation=ReLU
- Linear layer: W_1: (256,64), b_1: (256,), BatchNorm=True, activation=ReLU
- Linear layer: W_1: (64,10), b_1: (256,),
- Loss: Softmax Cross entropy

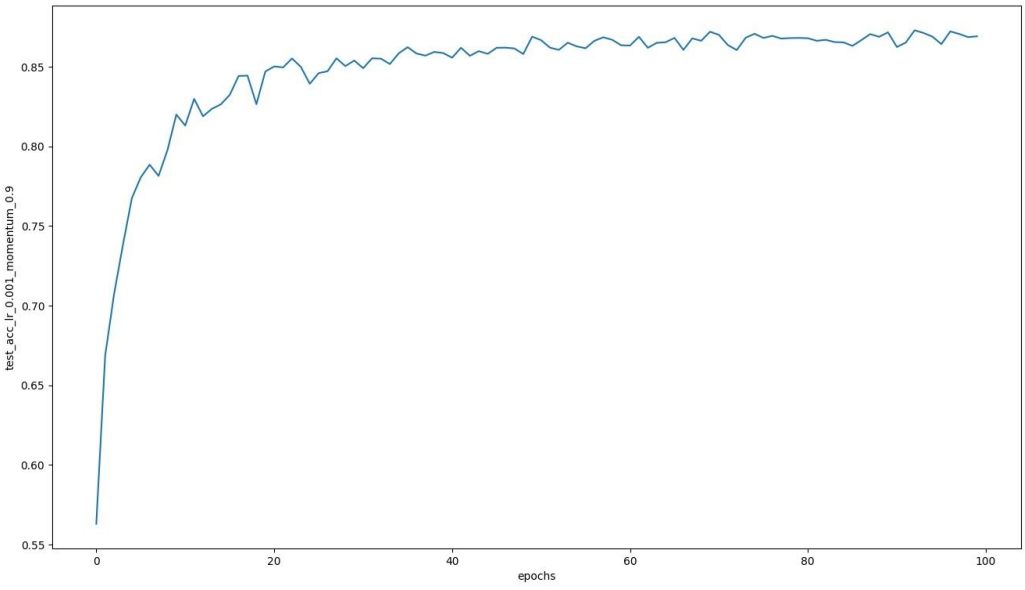
Batch size: 32
Optimizer: SGD with momentum
Learning rate: 1e-3
Momentum: 0.9
Number of epochs: 100

Results:

- Training loss:



- Test accuracy:



Final test accuracy: 86.91%