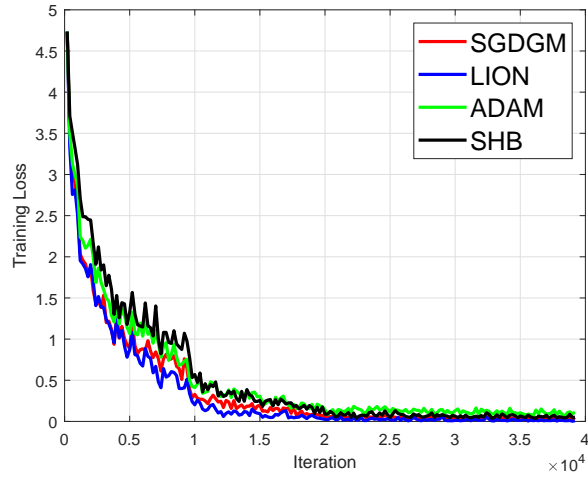
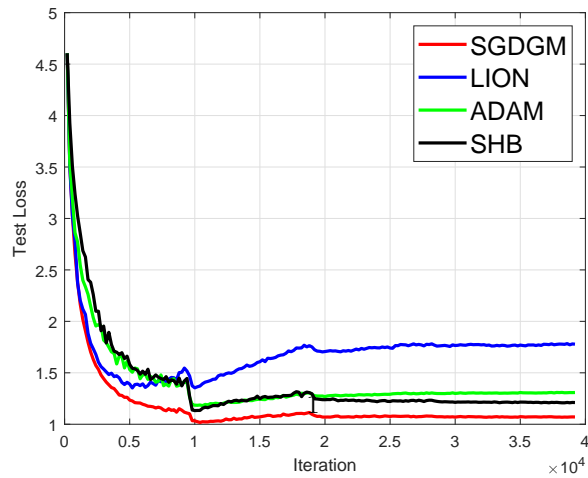


(a) Test Accuracy



(b) Training Loss



(c) Test Loss

Figure 1: Performance profiles of SGDGM, SHB, Adam, and Lion with ResNet-18 model on CIFAR 100 dataset.