**ResNet18,** training batch size=**128**, testing bs=**128,** optimizer=**SGD, lr=0.02**, **epoch=40**

+ RandomHorizontalFlip() + RandomCrop(32, padding=4)

num of classes: 10

training on cuda:0

epoch 1, loss 2.1702, train acc 0.220, test acc 0.158, time 91.3 sec

epoch 2, loss 0.8300, train acc 0.409, test acc 0.423, time 89.6 sec

epoch 3, loss 0.3172, train acc 0.681, test acc 0.786, time 91.5 sec

epoch 4, loss 0.1393, train acc 0.822, test acc 0.829, time 93.1 sec

epoch 5, loss 0.0862, train acc 0.866, test acc 0.870, time 94.4 sec

epoch 6, loss 0.0614, train acc 0.886, test acc 0.879, time 94.8 sec

epoch 7, loss 0.0484, train acc 0.897, test acc 0.875, time 95.9 sec

epoch 8, loss 0.0390, train acc 0.905, test acc 0.909, time 96.3 sec

epoch 9, loss 0.0326, train acc 0.911, test acc 0.916, time 96.2 sec

epoch 10, loss 0.0277, train acc 0.917, test acc 0.916, time 97.2 sec

epoch 11, loss 0.0243, train acc 0.920, test acc 0.918, time 95.9 sec

epoch 12, loss 0.0212, train acc 0.924, test acc 0.926, time 96.4 sec

epoch 13, loss 0.0189, train acc 0.928, test acc 0.924, time 96.2 sec

epoch 14, loss 0.0173, train acc 0.929, test acc 0.936, time 96.4 sec

epoch 15, loss 0.0154, train acc 0.932, test acc 0.936, time 96.5 sec

epoch 16, loss 0.0140, train acc 0.934, test acc 0.936, time 96.0 sec

epoch 17, loss 0.0129, train acc 0.936, test acc 0.935, time 96.4 sec

epoch 18, loss 0.0123, train acc 0.935, test acc 0.939, time 96.4 sec

epoch 19, loss 0.0112, train acc 0.938, test acc 0.936, time 96.4 sec

epoch 20, loss 0.0105, train acc 0.938, test acc 0.942, time 97.5 sec

epoch 21, loss 0.0097, train acc 0.941, test acc 0.934, time 97.1 sec

epoch 22, loss 0.0094, train acc 0.939, test acc 0.936, time 97.6 sec

epoch 23, loss 0.0085, train acc 0.942, test acc 0.935, time 96.4 sec

epoch 24, loss 0.0082, train acc 0.942, test acc 0.944, time 96.4 sec

epoch 25, loss 0.0078, train acc 0.943, test acc 0.941, time 96.8 sec

epoch 26, loss 0.0077, train acc 0.941, test acc 0.939, time 110.0 sec

epoch 27, loss 0.0070, train acc 0.945, test acc 0.953, time 96.4 sec

epoch 28, loss 0.0066, train acc 0.947, test acc 0.944, time 97.5 sec

epoch 29, loss 0.0064, train acc 0.947, test acc 0.930, time 115.1 sec

epoch 30, loss 0.0063, train acc 0.945, test acc 0.943, time 96.8 sec

epoch 31, loss 0.0060, train acc 0.947, test acc 0.938, time 97.1 sec

epoch 32, loss 0.0057, train acc 0.947, test acc 0.943, time 102.0 sec

epoch 33, loss 0.0055, train acc 0.947, test acc 0.943, time 105.7 sec

epoch 34, loss 0.0053, train acc 0.948, test acc 0.952, time 97.5 sec

epoch 35, loss 0.0052, train acc 0.947, test acc 0.932, time 96.4 sec

epoch 36, loss 0.0049, train acc 0.949, test acc 0.945, time 96.6 sec

epoch 37, loss 0.0047, train acc 0.950, test acc 0.945, time 96.7 sec

epoch 38, loss 0.0045, train acc 0.951, test acc 0.952, time 102.6 sec

epoch 39, loss 0.0044, train acc 0.951, test acc 0.942, time 96.6 sec

epoch 40, loss 0.0042, train acc 0.952, test acc 0.943, time 96.5 sec

Validation: Accuracy of the network: 93.24324324324324 %

Testing: Accuracy of the network: 94.34593281188145 %

Brier before calibration 0.0845137567713217

ECE before calibration: 0.00863214903886585

calibrating...

Closed Brier temperature\_scaling 0.08421493507127784

ECE temperature\_scaling calibration: 0.005915947915789869