**DenseNet121,** training batch size=**128**, testing bs=**128,** optimizer=**SGD, lr=0.02**, **epoch=40**

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

epoch 1, loss 1.5302, train acc 0.435, test acc 0.434, time 123.9 sec

epoch 2, loss 0.5532, train acc 0.604, test acc 0.352, time 127.3 sec

epoch 3, loss 0.3004, train acc 0.683, test acc 0.511, time 132.0 sec

epoch 4, loss 0.1867, train acc 0.740, test acc 0.582, time 133.7 sec

epoch 5, loss 0.1287, train acc 0.776, test acc 0.715, time 132.3 sec

epoch 6, loss 0.0954, train acc 0.800, test acc 0.747, time 133.3 sec

epoch 7, loss 0.0727, train acc 0.825, test acc 0.680, time 134.0 sec

epoch 8, loss 0.0586, train acc 0.838, test acc 0.777, time 134.5 sec

epoch 9, loss 0.0481, train acc 0.849, test acc 0.775, time 134.9 sec

epoch 10, loss 0.0398, train acc 0.863, test acc 0.793, time 136.3 sec

epoch 11, loss 0.0338, train acc 0.871, test acc 0.786, time 136.4 sec

epoch 12, loss 0.0290, train acc 0.879, test acc 0.787, time 136.0 sec

epoch 13, loss 0.0253, train acc 0.885, test acc 0.811, time 136.7 sec

epoch 14, loss 0.0217, train acc 0.895, test acc 0.814, time 136.8 sec

epoch 15, loss 0.0197, train acc 0.897, test acc 0.771, time 137.0 sec

epoch 16, loss 0.0175, train acc 0.902, test acc 0.807, time 136.6 sec

epoch 17, loss 0.0160, train acc 0.905, test acc 0.752, time 137.1 sec

epoch 18, loss 0.0144, train acc 0.910, test acc 0.849, time 136.1 sec

epoch 19, loss 0.0132, train acc 0.914, test acc 0.796, time 136.0 sec

epoch 20, loss 0.0120, train acc 0.916, test acc 0.826, time 130.4 sec

epoch 21, loss 0.0109, train acc 0.921, test acc 0.827, time 128.9 sec

epoch 22, loss 0.0102, train acc 0.922, test acc 0.789, time 127.3 sec

epoch 23, loss 0.0096, train acc 0.923, test acc 0.810, time 128.1 sec

epoch 24, loss 0.0090, train acc 0.924, test acc 0.859, time 127.4 sec

epoch 25, loss 0.0082, train acc 0.929, test acc 0.810, time 126.5 sec

epoch 26, loss 0.0077, train acc 0.931, test acc 0.855, time 127.0 sec

epoch 27, loss 0.0074, train acc 0.932, test acc 0.790, time 127.6 sec

epoch 28, loss 0.0067, train acc 0.935, test acc 0.845, time 128.0 sec

epoch 29, loss 0.0066, train acc 0.934, test acc 0.844, time 129.3 sec

epoch 30, loss 0.0061, train acc 0.935, test acc 0.861, time 129.0 sec

epoch 31, loss 0.0057, train acc 0.941, test acc 0.866, time 128.0 sec

epoch 32, loss 0.0056, train acc 0.938, test acc 0.858, time 128.7 sec

epoch 33, loss 0.0055, train acc 0.938, test acc 0.846, time 128.3 sec

epoch 34, loss 0.0050, train acc 0.939, test acc 0.836, time 127.6 sec

epoch 35, loss 0.0049, train acc 0.940, test acc 0.862, time 128.1 sec

epoch 36, loss 0.0047, train acc 0.940, test acc 0.868, time 127.8 sec

epoch 37, loss 0.0045, train acc 0.942, test acc 0.872, time 127.7 sec

epoch 38, loss 0.0042, train acc 0.946, test acc 0.826, time 128.4 sec

epoch 39, loss 0.0041, train acc 0.944, test acc 0.840, time 128.5 sec

epoch 40, loss 0.0039, train acc 0.945, test acc 0.835, time 128.0 sec

Validation: Accuracy of the network: 83.46 %

Testing: Accuracy of the network: 83.47 %

Brier before calibration 0.24641676520373368

ECE before calibration: 0.07044877579212183

calibrating...

Closed Brier temperature\_scaling 0.23393271789087372

ECE temperature\_scaling calibration: 0.012216746520996033