**DenseNet121,** training batch size=**128**, testing bs=**128,** optimizer=**SGD, lr=0.02**, **epoch=60**

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

OOD accuracy without the "unknown" label: Accuracy of the network: 51.18 %

testing openmax...

0 1 2 3 4 5 6

Accuracy of the network: 51.18 %

Accuracy of the network: 85.7 %

threshold is 0.00:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 51.760 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.39844107804298406

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2806545066833496

threshold is 0.05:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 51.760 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.39844107804298406

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2806545066833496

threshold is 0.10:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 51.760 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.39844107804298406

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2806545066833496

threshold is 0.15:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 51.760 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.39844107804298406

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2806545066833496

threshold is 0.20:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 51.760 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.39844107804298406

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2806545066833496

threshold is 0.25:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 51.760 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.39844107804298406

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2806545066833496

threshold is 0.30:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 51.800 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.39844107804298406

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2806545066833496

threshold is 0.35:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 51.920 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.3991827759742737

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.28377367553710936

threshold is 0.40:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 52.170 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.4000822647094727

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2877898464202881

threshold is 0.45:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 52.580 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.4007863101959229

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.29042986221313477

threshold is 0.50:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 53.170 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.4015324862480164

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.291834464931488

threshold is 0.55:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 53.910 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.40172188949584964

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.29348910484313967

threshold is 0.60:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 54.740 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.40090861053466803

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2928484066009521

threshold is 0.65:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 55.810 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.39997359161376955

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.29087074394226076

threshold is 0.70:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 56.630 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.3968993194580079

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.28800390129089354

threshold is 0.75:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 57.650 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.39412005290985114

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2854675399780273

threshold is 0.80:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 58.890 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.3899557624816895

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.28101945457458494

threshold is 0.85:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 60.270 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.38743207554817205

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2780093438148499

threshold is 0.90:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 61.950 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.37963442993164065

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2741957836151123

threshold is 0.95:

Threshold accuracy openmax calibration: 51.76 %

Threshold accuracy: 63.810 %

Brier before calibration: 0.8614413187058222

ECE before calibration: 0.36890611457824707

calibrating...

Brier temperature\_scaling calibration: 0.7554319615776248

ECE temperature\_scaling calibration: 0.2686886199951172