MedMNIST-EdgeAI v2 — Phase-2 OCT2017

2025-10-29 22:00:16

Phase-2 OCT2017 consolidated evidence

Teacher dir: D:\MedMNIST-EdgeAIv2\reports\phase2_oct2017\teacher_resnet50

Student dir: D:\MedMNIST-EdgeAIv2\reports\phase2_oct2017\student_effb0
Student dir: D:\MedMNIST-EdgeAIv2\reports\phase2_oct2017\student_mbv2
Student dir: D:\MedMNIST-EdgeAIv2\reports\phase2_oct2017\student_resnet18

Teacher — Metrics

2025-10-29 22:00:16

Dir: D:\MedMNIST-EdgeAIv2\reports\phase2_oct2017\teacher_resnet50

Val Acc: 0.9726

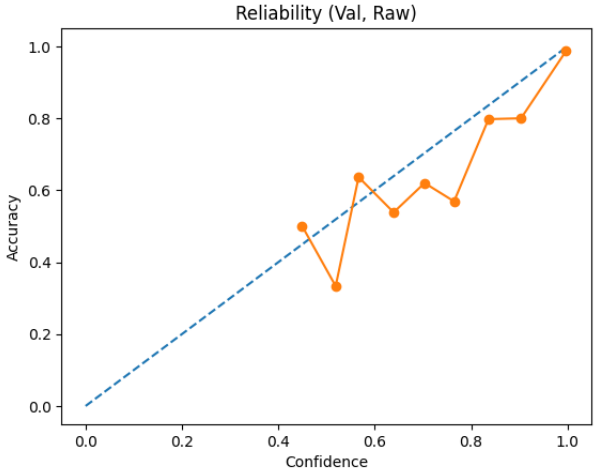
Val Loss: 0.0992

Test Acc: 0.9969

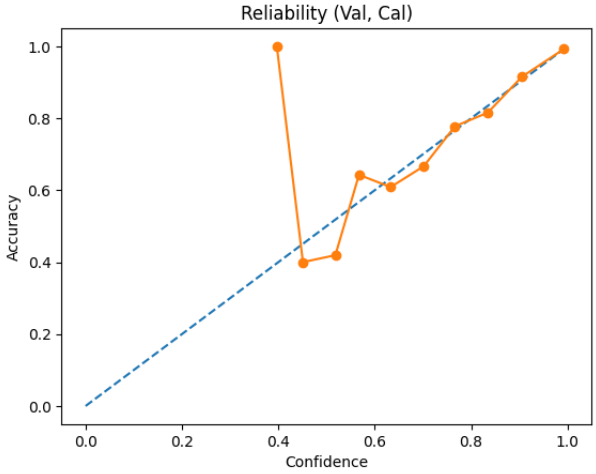
Test Loss: 0.0120

Temp (T): 1.4916

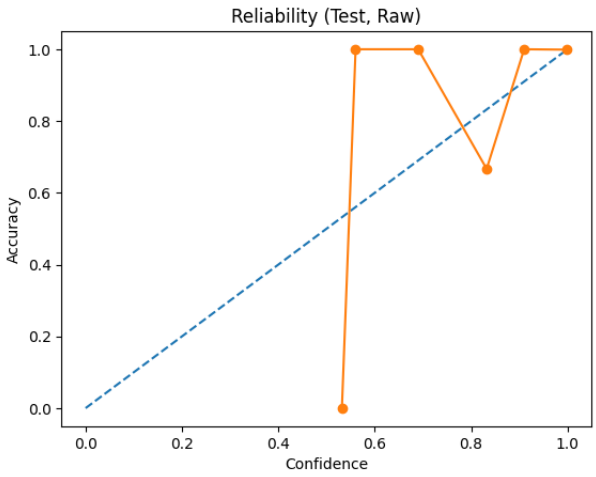
Val Reliability (Raw)



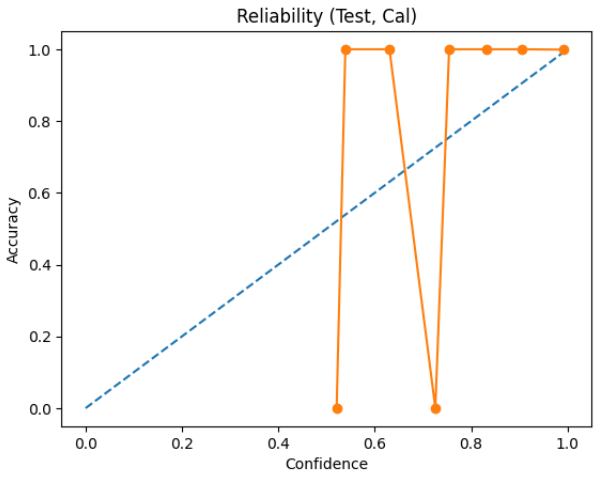
Val Reliability (Cal)



Test Reliability (Raw)



Test Reliability (Cal)



Teacher — Robustness

2025-10-29 22:00:16

corruption	level	acc	nll	ece	brier	n
gauss	0.1000	0.9680	0.0956	0.0121	0.0510	968
gauss	0.2000	0.5207	3.6345	0.3925	0.8268	968
gauss	0.3000	0.2521	14.9194	0.6888	1.4942	968
jpeg	90	0.9959	0.0119	0.0055	0.0058	968
jpeg	70	0.9979	0.0086	0.0045	0.0037	968
jpeg	50	0.9969	0.0134	0.0069	0.0059	968
contrast	0.8000	0.9990	0.0082	0.0059	0.0030	968
contrast	0.6000	0.9959	0.0155	0.0088	0.0064	968

Teacher — Efficiency (CPU latency)

2025-10-29 22:00:16

arch	batch	device	lat_ms_p50	lat_ms_p05	lat_ms_p95	peak_cuda_mib
resnet50	1	cpu	57.85964988172084	49.90595006383952	65.26866011274978	0.0
resnet50	2	cpu	88.47135002724826	86.30091497907495	95.04586006607859	0.0
resnet50	4	cpu	147.37834990955818	143.66858492139727	157.95496004493907	0.0

Teacher — Efficiency (GPU latency)

2025-10-29 22:00:16

arch	batch	device	lat_ms_p50	lat_ms_p05	lat_ms_p95	peak_cuda_mib
resnet50	1	cuda	11.928575992584229	11.703244972229004	14.351378965377808	167.17431640625
resnet50	2	cuda	11.592495918273926	11.594410848617554	13.820109033584595	195.6806640625
resnet50	4	cuda	11.149824142456055	11.146335697174072	13.060832262039185	185.9931640625
resnet50	8	cuda	16.705024719238281	16.425598812103271	17.173657512664795	199.0556640625

Teacher — Efficiency (Memory)

2025-10-29 22:00:16

arch	param_bytes	param_mib	img_size	batch	peak_cuda_mib
resnet50	94064912	89.70729064941406	224	1	110.39501953125

Student — student_effb0 — Metrics

2025-10-29 22:00:16

Dir: D:\MedMNIST-EdgeAIv2\reports\phase2_oct2017\student_effb0

Val Acc: 0.9760

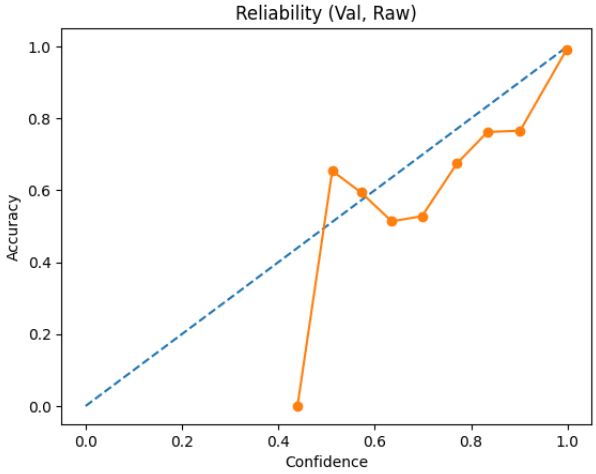
Val Loss: 0.0846

Test Acc: 0.9990

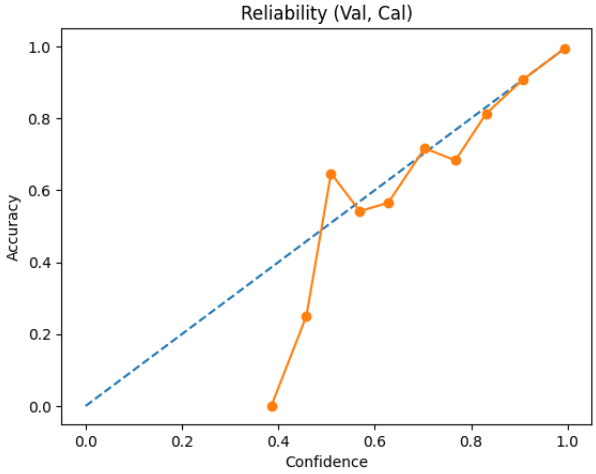
Test Loss: 0.0082

Temp (T): 1.4478

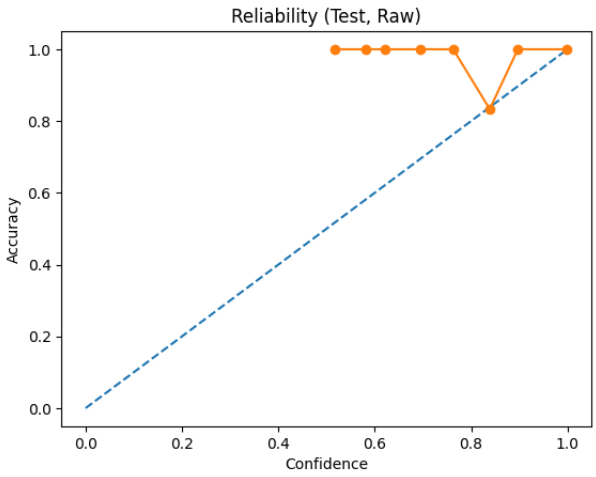
Val Reliability (Raw)



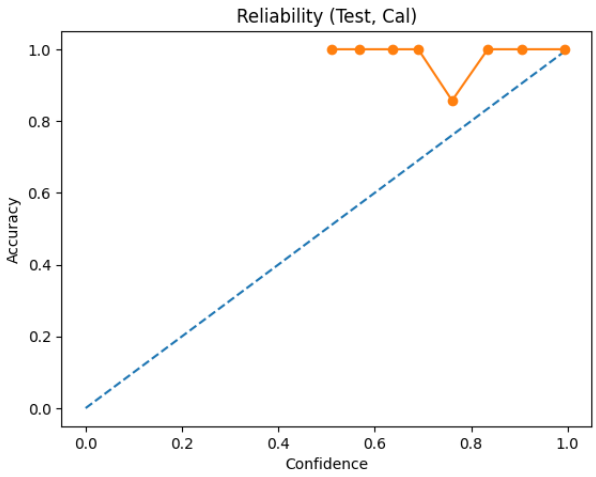
Val Reliability (Cal)



Test Reliability (Raw)



Test Reliability (Cal)



Student — student_effb0 — Robustness

2025-10-29 22:00:16

corruption	level	acc	nll	ece	brier	n
gauss	0.1000	0.2521	2.5059	0.5183	1.1556	968
gauss	0.2000	0.2428	12.5500	0.7094	1.4546	968
gauss	0.3000	0.2500	19.3147	0.0723	1.4999	968
jpeg	90	0.9979	0.0087	0.0053	0.0038	968
jpeg	70	1	0.0078	0.0068	0.0030	968
jpeg	50	0.9979	0.0098	0.0054	0.0045	968
contrast	0.8000	0.9969	0.0087	0.0073	0.0037	968
contrast	0.6000	0.9959	0.0133	0.0066	0.0063	968

Student — student_effb0 — Efficiency (CPU latency)

2025-10-29 22:00:16

arch	batch	device	lat_ms_p50	lat_ms_p05	lat_ms_p95	peak_cuda_mib
efficientnet_b0	1	cpu	31.40209999401129	29.40689007518815	33.37342984927810	0
efficientnet_b0	2	cpu	51.30030005238954	44.27435521502066	68.81941011920571	0
efficientnet_b0	4	cpu	67.28654995094985	55.85018501151353	82.68178483704105	0

Student — student_effb0 — Efficiency (GPU latency)

2025-10-29 22:00:16

arch	batch	device	lat_ms_p50	lat_ms_p05	lat_ms_p95	peak_cuda_mib
efficientnet_b0	1	cuda	17.36297607421875	15.352355098724365	19.39431495666504	34.09814453125
efficientnet_b0	2	cuda	17.319503784179688	15.879048490524292	18.788818264007568	35.77779296875
efficientnet_b0	4	cuda	17.459584236145020	14.190643310546875	19.796236801147461	46.880859375
efficientnet_b0	8	cuda	17.027423858642578	14.165402984619141	20.253011035919189	69.951171875

Student — student_effb0 — Efficiency (Memory)

2025-10-29 22:00:16

arch	param_bytes	param_mib	img_size	batch	peak_cuda_mib
efficientnet_b0	16050688	15.30712890625	224	1	35.1962890625

Student — student_mbv2 — Metrics

2025-10-29 22:00:16

Dir: D:\MedMNIST-EdgeAIv2\reports\phase2_oct2017\student_mbv2

Val Acc: 0.9747

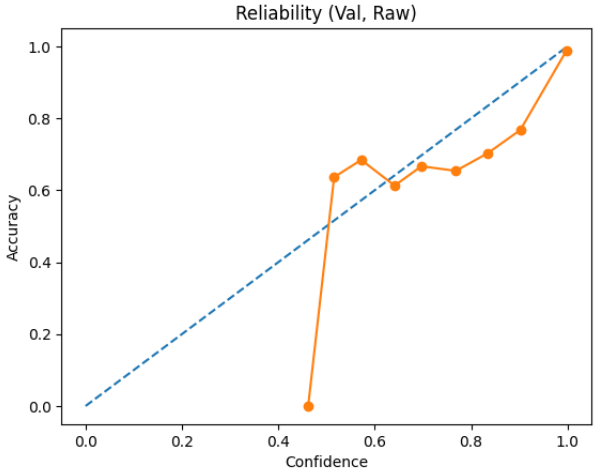
Val Loss: 0.0964

Test Acc: 0.9979

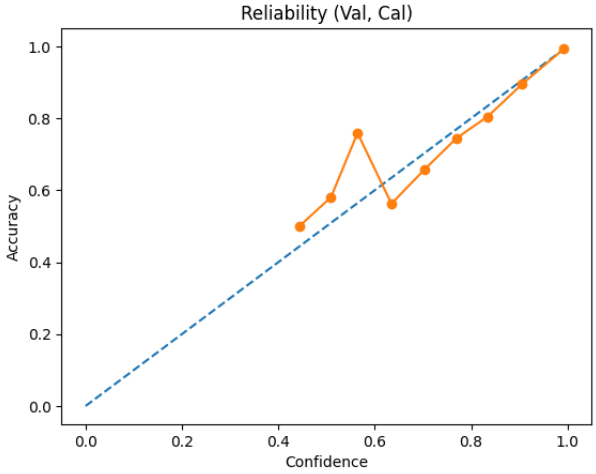
Test Loss: 0.0072

Temp (T): 1.5151

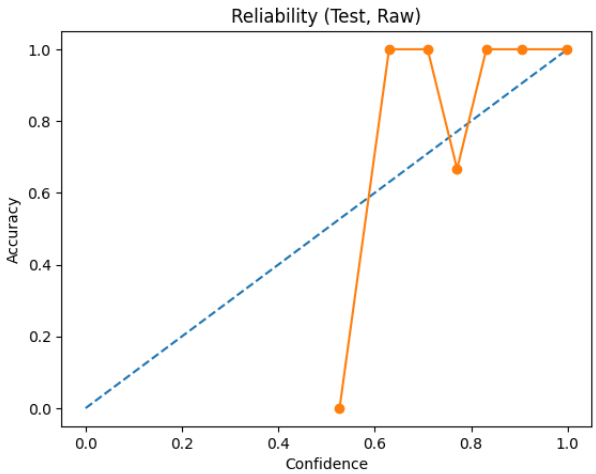
Val Reliability (Raw)



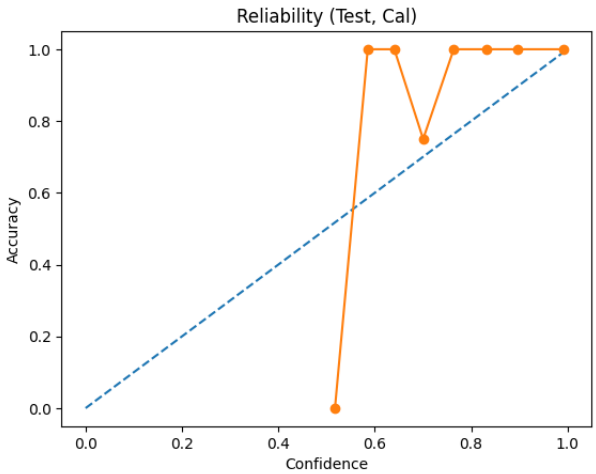
Val Reliability (Cal)



Test Reliability (Raw)



Test Reliability (Cal)



Student — student_mbv2 — Robustness

2025-10-29 22:00:16

corruption	level	acc	nll	ece	brier	n
gauss	0.1000	0.9876	0.0548	0.0070	0.0240	968
gauss	0.2000	0.8409	0.6615	0.1064	0.2693	968
gauss	0.3000	0.3079	5.7678	0.6704	1.3466	968
jpeg	90	0.9990	0.0069	0.0041	0.0028	968
jpeg	70	0.9979	0.0077	0.0054	0.0033	968
jpeg	50	0.9979	0.0089	0.0040	0.0039	968
contrast	0.8000	0.9969	0.0091	0.0059	0.0040	968
contrast	0.6000	0.9928	0.0198	0.0104	0.0108	968

Student — student_mbv2 — Efficiency (CPU latency)

2025-10-29 22:00:16

arch	batch	device	lat_ms_p50	lat_ms_p05	lat_ms_p95	peak_cuda_mib
mobilenet_v2	1	cpu	20.246550091542384	18.176639988087318	21.213744915090	5.0
mobilenet_v2	2	cpu	38.826899835839	37.357779836747495	40.354105131700635	6.5
mobilenet_v2	4	cpu	52.454550052061	50.712014897726574	56.485954937990755	7.5

Student — student_mbv2 — Efficiency (GPU latency)

2025-10-29 22:00:16

arch	batch	device	lat_ms_p50	lat_ms_p05	lat_ms_p95	peak_cuda_mib
mobilenet_v2	1	cuda	11.103728294372559	10.921382379531861	11.129328298568726	25.3935546875
mobilenet_v2	2	cuda	11.284607887268066	11.161576008796692	12.904214286804199	28.9443359375
mobilenet_v2	4	cuda	11.481535911560059	11.368051218986511	16.233776184082031	40.0458984375
mobilenet_v2	8	cuda	10.809296131134033	10.723769688606262	12.051481676101685	62.2490234375

Student — student_mbv2 — Efficiency (Memory)

2025-10-29 22:00:16

arch	param_bytes	param_mib	img_size	batch	peak_cuda_mib
mobilenet_v2	8915984	8.502944946289062	224	1	28.36328125

Student — student_resnet18 — Metrics

2025-10-29 22:00:16

Dir: D:\MedMNIST-EdgeAIv2\reports\phase2_oct2017\student_resnet18

Val Acc: 0.9741

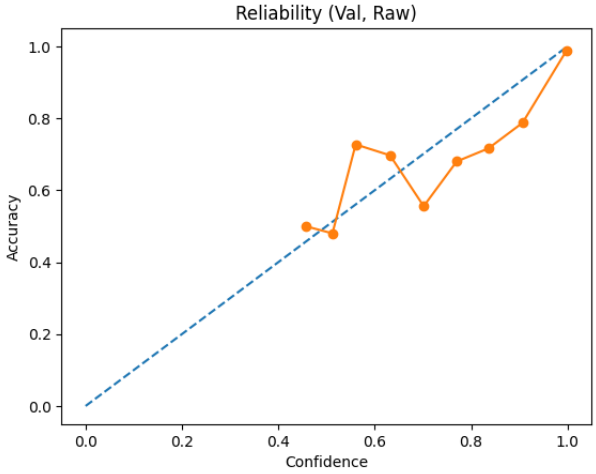
Val Loss: 0.0969

Test Acc: 0.9969

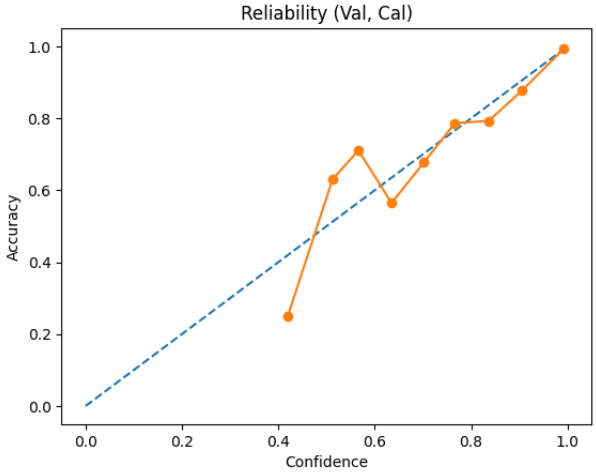
Test Loss: 0.0085

Temp (T): 1.5097

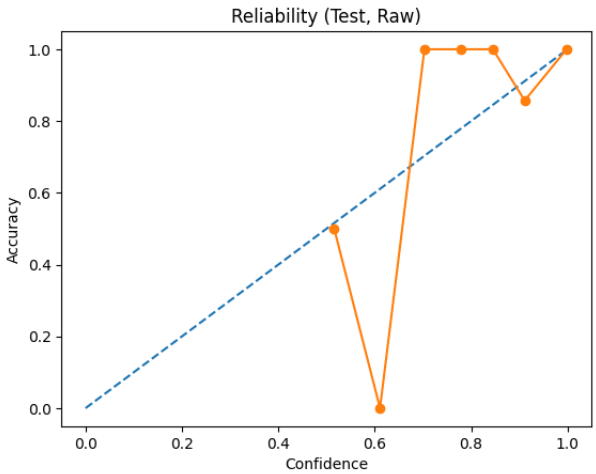
Val Reliability (Raw)



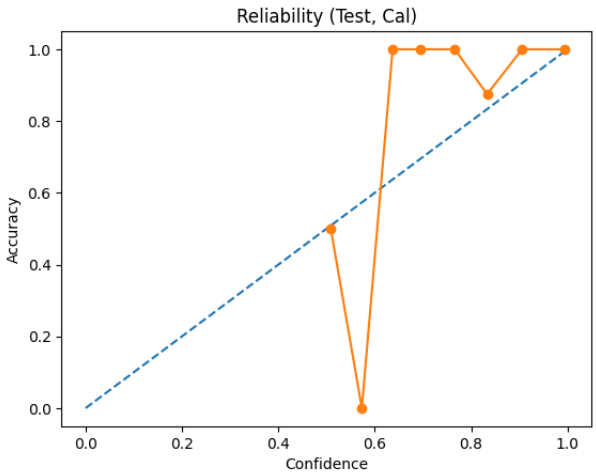
Val Reliability (Cal)



Test Reliability (Raw)



Test Reliability (Cal)



Student — student_resnet18 — Robustness

2025-10-29 22:00:16

corruption	level	acc	nll	ece	brier	n
gauss	0.1000	0.9886	0.0205	0.0092	0.0124	968
gauss	0.2000	0.8554	0.5630	0.0955	0.2365	968
gauss	0.3000	0.3874	3.4996	0.5384	1.1122	968
jpeg	90	0.9959	0.0085	0.0048	0.0045	968
jpeg	70	0.9990	0.0073	0.0051	0.0032	968
jpeg	50	0.9979	0.0086	0.0042	0.0040	968
contrast	0.8000	0.9990	0.0094	0.0049	0.0040	968
contrast	0.6000	0.9917	0.0220	0.0026	0.0124	968

Student — student_resnet18 — Efficiency (CPU latency)

2025-10-29 22:00:16

arch	batch	device	lat_ms_p50	lat_ms_p05	lat_ms_p95	peak_cuda_mib
resnet18	1	cpu	25.12264996767044	24.17539481539276	26.20401498861610	1.0
resnet18	2	cpu	37.29220002423976	36.04759997688234	38.87916983803733	3.5
resnet18	4	cpu	60.20434992387851	58.62649496411965	62.95938498806208	0.4

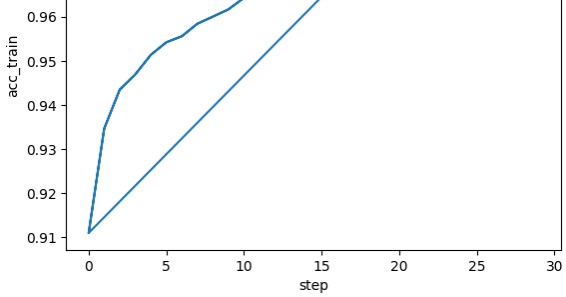
Student — student_resnet18 — Efficiency (GPU latency)

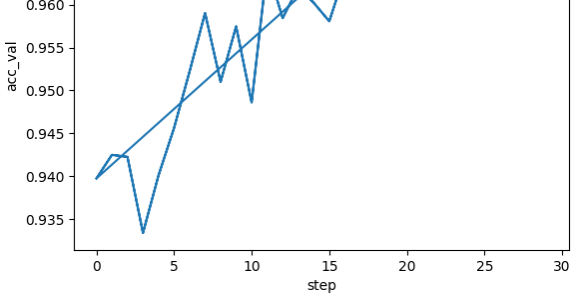
2025-10-29 22:00:16

arch	batch	device	lat_ms_p50	lat_ms_p05	lat_ms_p95	peak_cuda_mib
resnet18	1	cuda	5.313023805618226	5.569832050800323	7.559038209915161	80.15380859375
resnet18	2	cuda	5.215744018554687	5.538273620605468	6.283095979690551	81.16455078125
resnet18	4	cuda	5.080512046813965	5.654464113712310	7.618195056915283	82.25634765625
resnet18	8	cuda	6.521343946456909	6.585459065437317	7.783401417732239	87.26806640625

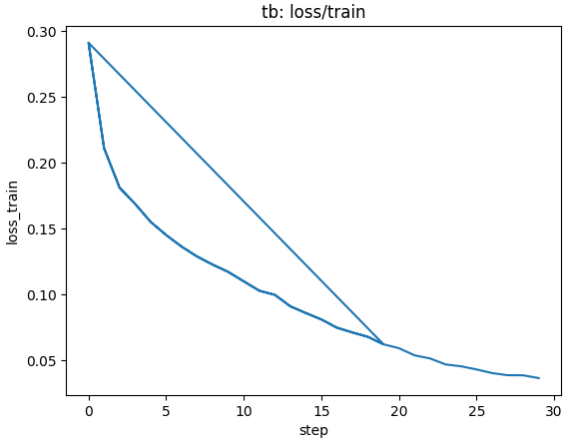
Student — student_resnet18 — Efficiency (Memory) 2025-10-29 22:00:16

arch	param_bytes	param_mib	img_size	batch	peak_cuda_mib
resnet18	44714256	42.64283752441406	224	1	62.09375

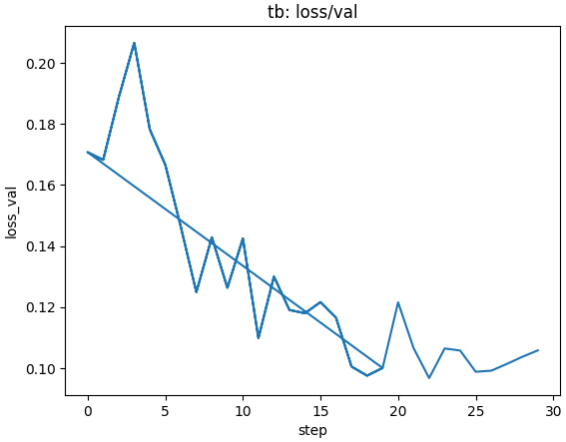




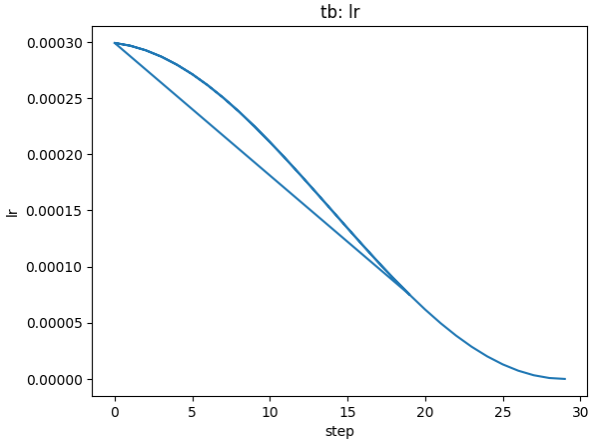
loss_train.png

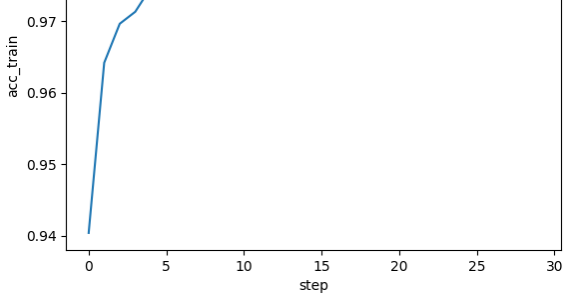


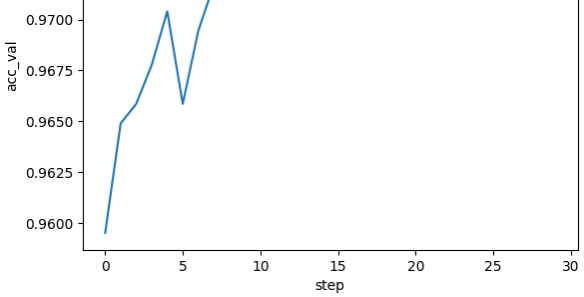
loss_val.png



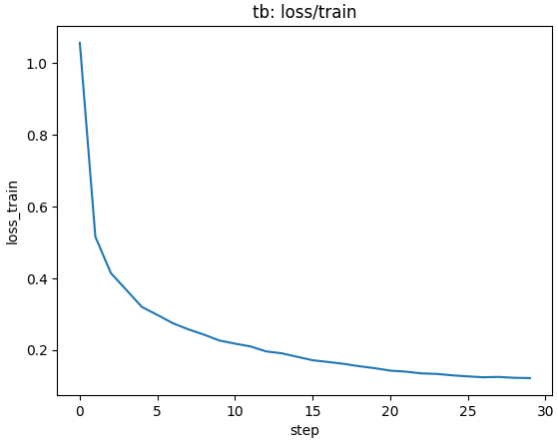
lr.png



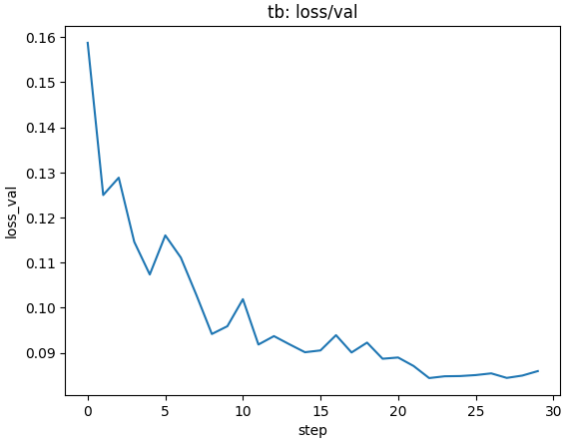




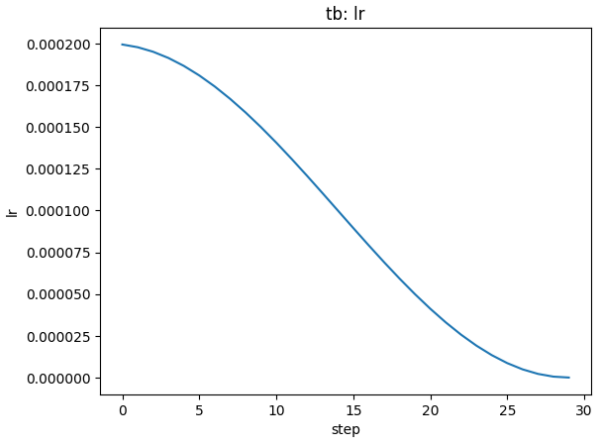
loss_train.png

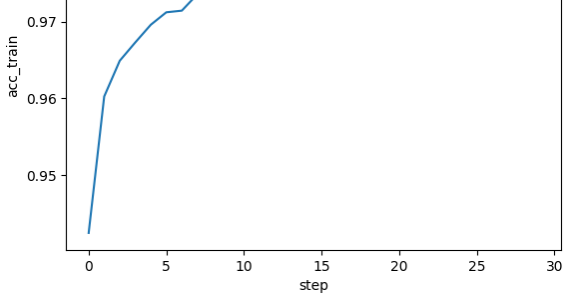


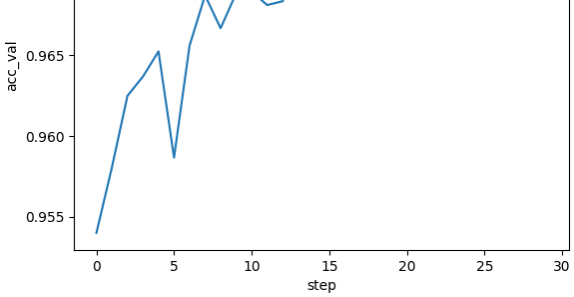
loss_val.png



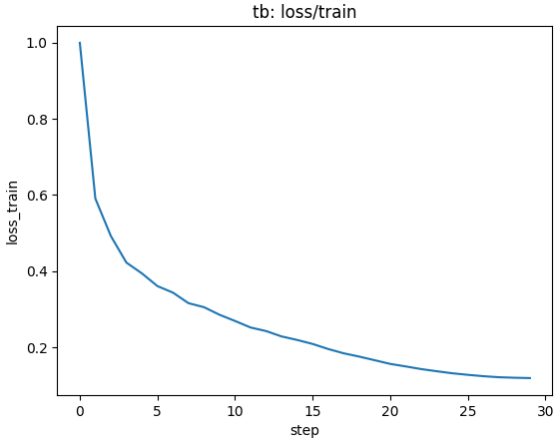
lr.png



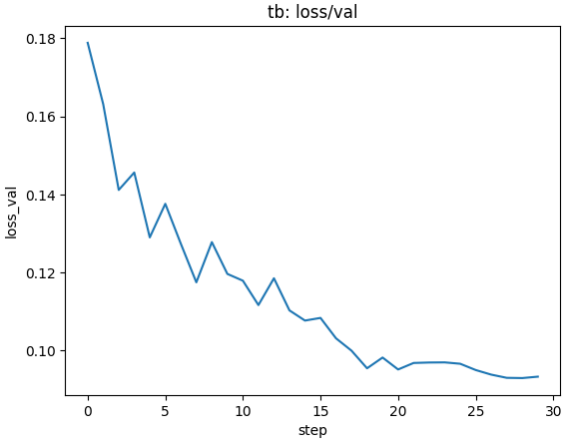




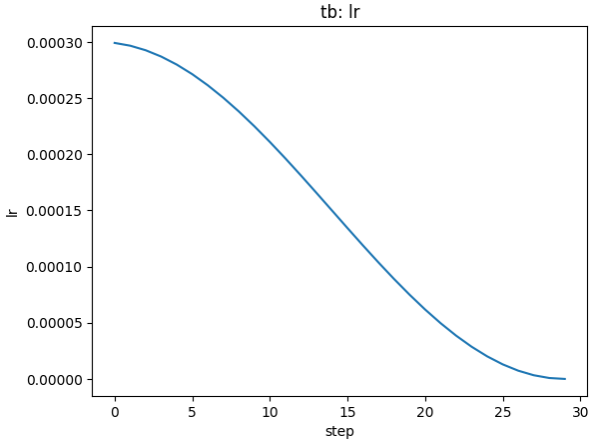
loss_train.png

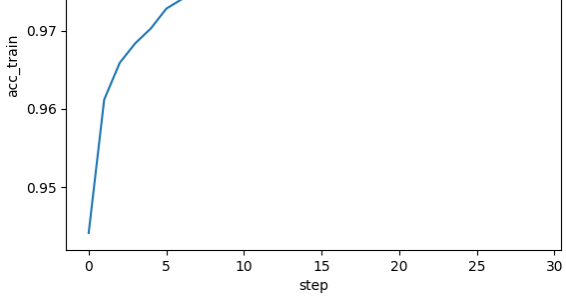


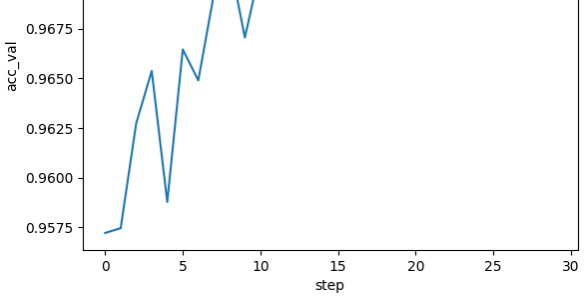
loss_val.png



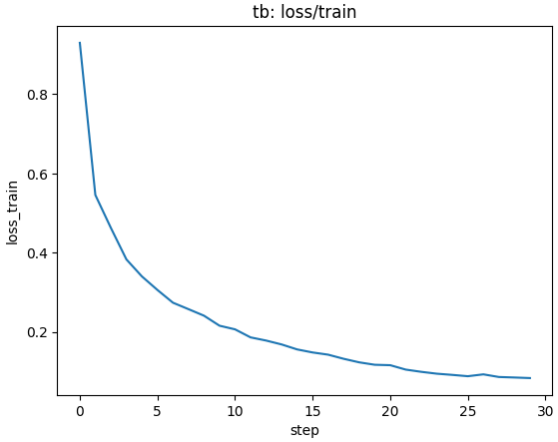
lr.png



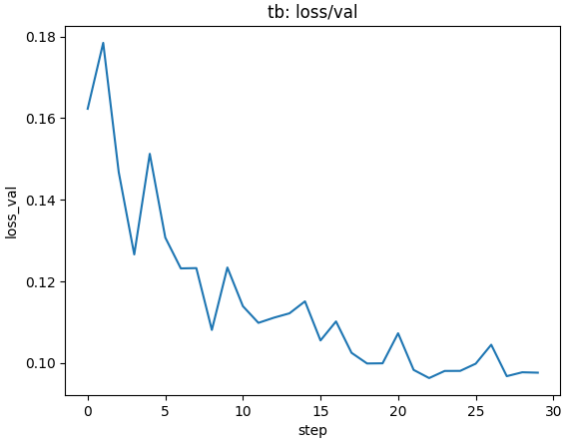




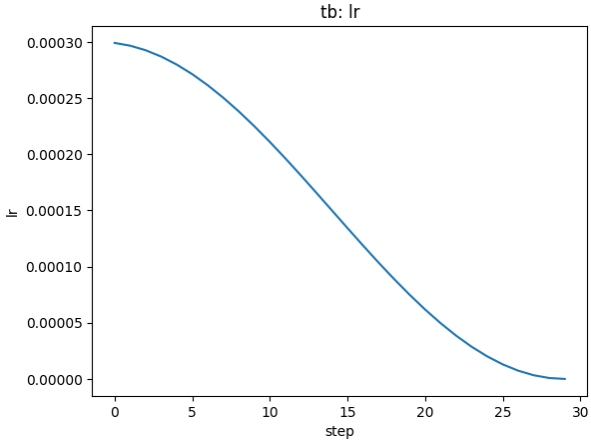
loss_train.png

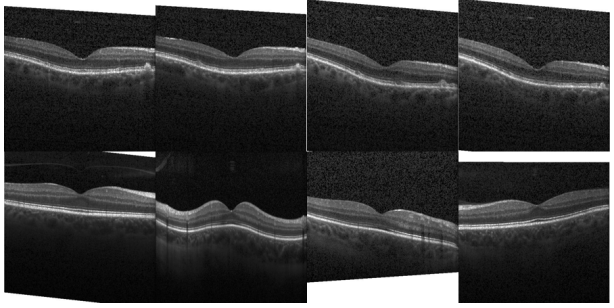


loss_val.png



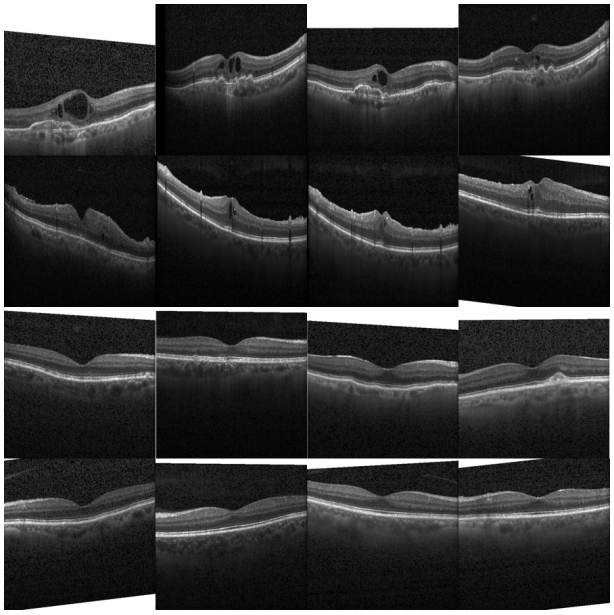
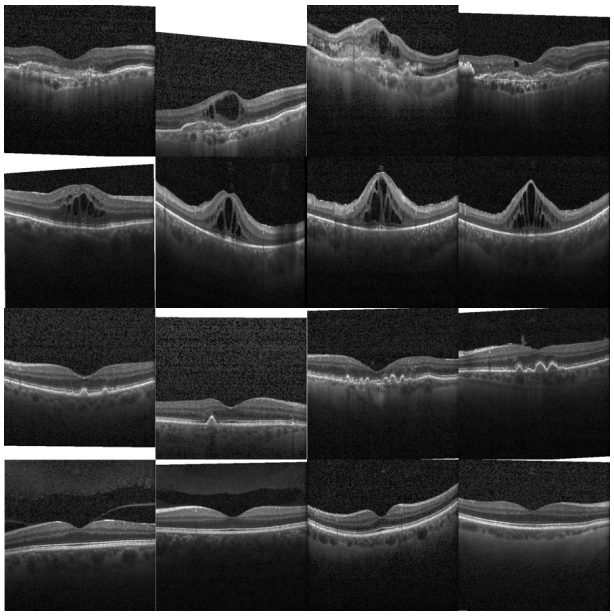
lr.png





2025-10-29 22:00:21

VAL



TEST