tide cnn3

Lucy Score = Throughput x Availability x Acc / 10,000. LPD condenses live-fit vs Acc-champ RAM.
[T]=Tween [S]=Split [FP]=FastProxy [L]=Linear [HP]=HeadProxy
done - epoch 1/1 (1 left, 100% overall) - lr unset - 2026-08-23 13:32:52 -
This epoch 2346 / 2346 cells. Recorded 2346 results. Learning rate unset.
Score 0 usually means the cell finished before a Lucy pulse (Acc never sampled). Score is live-fit: Throughput x Availability x Acc.
SGD that blocks serve dies on Availability. SoftAcc is serve-confidence only.
pi_collection - cnn3 - offline report

Lucy champions (this tide)

Axis	Cell	Score	Soft	Acc	Thru	Avail
hard acc	float32|none|tween_chain|single|simd	1574.94	32.3	67.2	12933.1	37.7
throughput	int2|none|[T][S][HP]|single|simd	1603.62	25.0	29.7	15017.6	42.8
availability	complex128|none|Mesh[T][S]Sparse|tricameral|simd	156.15	25.0	25.4	1294.3	48.3
lucy score	int2|none|[T][S][HP]|single|simd	1603.62	25.0	29.7	15017.6	42.8
mobile score (trap)	binary|none|[T][S][FP]|single|simd	1127.67	25.0	2.6	11223.3	40.1
t->50%	float32|none|step_tween_chain|single|simd	1415.49	32.0	71.7	12746.3	34.8
acc/sec	float16|none|sgd|single|simd	1423.72	32.1	70.9	12381.4	35.8

Lucy axis champions (this tide)

Axis	Mode	DType	Arch	Value
hard_acc	sgd	bfloat16	singlex1	74.93
throughput	[T][S][HP]	int2	singlex1	15017.63
availability	Mesh[T][S]Sparse	complex128	tricameralx3	48.25
score	[T][S][HP]	int2	singlex1	1603.62
soft_acc	tween_chain	float32	singlex1	32.33
acc_thru	sgd	bfloat16	singlex1	10286.58
realtime	[T][S][HP]	int2	singlex1	6420.52
adapt	MeshBP	complex64	singlex1	34.36
keep_learn	step_sgd	uint6	singlex1	15.20
acc_per_sec	sgd	float16	singlex1	16.05
time_to_50	step_tween_chain	float32	singlex1	0.10
consistency	sgd	uint5	singlex1	100.00
stability	tween	fp4	singlex1	100.00
mobile_score	[T][S][FP]	binary	singlex1	11824480~
lpd	[T][S][HP]Async	int4	singlex1	2.95
mspeed	sgd	float32	singlex1	1.00
mavail	[T][S][HP]Async	int4	singlex1	1.00
mix	sgd	bfloat16	singlex1	0.91
gold_std	sgd	bfloat16	singlex1	0.16

Best settings per train mode

Mode	DType	Format	Score	Soft	Acc	Avail	n
[T][S][HP]	int2	none	1603.6	25.0	29.7	42.8	102
tween_chain	float32	none	1574.9	32.3	67.2	37.7	102
sgd	float32	none	1453.3	29.6	60.3	33.2	102
step_tween_chain	float32	none	1415.5	32.0	71.7	34.8	102
[T][S][FP]	float32	none	1381.7	25.5	39.6	40.8	102
[T][S]	int8	none	1380.6	25.5	32.7	41.3	102
[T][S][L]Cache	float32	none	1296.3	25.2	46.8	41.8	102
step_sgd	float32	none	1284.2	31.7	68.3	31.1	102
Mesh[T]Chain	float32	none	1171.6	30.1	45.8	33.8	102

tween	float32	none	1127.7	24.1	40.1	32.4	102
MeshBP	float16	none	1122.7	30.5	66.5	34.2	102
[T][S][L]	float32	none	1120.6	25.2	47.6	34.8	102
Step[T][S]	float32	none	1084.9	27.6	48.5	34.5	102
step_tween	uint8	none	969.5	25.3	36.5	34.0	102
Mesh[T]	int2	none	943.9	25.1	25.5	37.3	102
[T][S][HP]Async	uint8	none	930.0	25.1	15.7	40.6	102
[T][S]Sparse	uint8	none	926.3	24.9	23.3	43.9	102
Mesh[T][S]	fp4	none	773.0	25.0	24.7	40.1	102
Step[T]Alt	float32	none	724.7	24.7	19.5	36.3	102
Mesh[T][S][FP]	binary	none	651.0	25.4	36.2	44.2	102
Mesh[T][S]Sparse	uint8	none	568.2	25.0	36.3	41.4	102
[T]Alt	float32	none	520.5	28.7	55.7	28.0	102
Mesh[T]Alt	fp8e5m2	none	363.6	25.4	30.7	33.1	102

Best dtype per mode

Mode	Winner dtype	Score	Soft	Acc
[T][S][HP]	int2	1603.6	25.0	29.7
tween_chain	float32	1574.9	32.3	67.2
sgd	float32	1453.3	29.6	60.3
step_tween_chain	float32	1415.5	32.0	71.7
[T][S][FP]	float32	1381.7	25.5	39.6
[T][S]	int8	1380.6	25.5	32.7
[T][S][L]Cache	float32	1296.3	25.2	46.8
step_sgd	float32	1284.2	31.7	68.3
Mesh[T]Chain	float32	1171.6	30.1	45.8
tween	float32	1127.7	24.1	40.1
MeshBP	float16	1122.7	30.5	66.5
[T][S][L]	float32	1120.6	25.2	47.6
Step[T][S]	float32	1084.9	27.6	48.5
step_tween	uint8	969.5	25.3	36.5
Mesh[T]	int2	943.9	25.1	25.5
[T][S][HP]Async	uint8	930.0	25.1	15.7
[T][S]Sparse	uint8	926.3	24.9	23.3
Mesh[T][S]	fp4	773.0	25.0	24.7
Step[T]Alt	float32	724.7	24.7	19.5
Mesh[T][S][FP]	binary	651.0	25.4	36.2
Mesh[T][S]Sparse	uint8	568.2	25.0	36.3
[T]Alt	float32	520.5	28.7	55.7
Mesh[T]Alt	fp8e5m2	363.6	25.4	30.7

Best mode per dtype

DType	Winner mode	Score	Soft	Acc
int2	[T][S][HP]	1603.6	25.0	29.7
float32	tween_chain	1574.9	32.3	67.2
int8	tween_chain	1482.2	26.3	48.0
bfloat16	sgd	1434.7	29.8	74.9
float16	sgd	1423.7	32.1	70.9
int4	[T][S][HP]	1406.6	25.1	18.8
uint8	[T][S][FP]	1305.2	24.9	6.1
int64	sgd	1213.3	31.4	66.7
uint16	sgd	1198.4	25.1	47.0

uint32	[T][S][HP]	1187.6	25.4	53.7
uint4	[T][S][HP]	1167.0	24.9	29.0
fp4	[T][S][HP]	1153.8	25.0	23.4
uint	[T][S][HP]	1139.6	24.9	21.0
fp8e5m2	sgd	1130.1	23.1	31.6
binary	[T][S][FP]	1127.7	25.0	2.6
ternary	tween_chain	1111.6	25.2	19.7
float64	MeshBP	1090.0	30.9	66.0
uint2	sgd	1063.9	23.9	31.6
uint64	sgd	1041.2	24.0	43.3
fp8e4m3	[T][S]	1032.2	24.8	26.6
int	sgd	1012.3	29.3	62.5
uintptr	[T][S][HP]	997.5	24.9	8.1
complex64	sgd	972.1	28.0	57.9
int16	[T][S][HP]	967.0	25.2	32.2
complex128	[T][S][HP]	946.7	25.2	34.7
int32	tween_chain	868.0	26.1	49.4
uint3	sgd	834.4	25.0	25.2
int3	[T][S][HP]	829.7	25.5	38.5
nf4	[T][S]	809.9	25.2	31.6
uint5	sgd	717.3	25.2	33.4
uint6	tween	576.7	25.1	22.5
int6	[T][S]	572.2	25.3	29.4
int5	[T][S]	561.7	25.0	26.6
fp6	tween	498.8	25.1	34.1

Leaderboard (Lucy Score)

#	Cell	Score	Soft	Acc	Thru	Avail
1	int2|none|[T][S][HP]|single|simd	1603.6	25.0	29.7	15017.6	42.8
2	float32|none|tween_chain|single|simd	1574.9	32.3	67.2	12933.1	37.7
3	int8|none|tween_chain|single|simd	1482.2	26.3	48.0	13758.8	40.9
4	float32|none|sgd|single|simd	1453.3	29.6	60.3	14765.8	33.2
5	bfloat16|none|sgd|single|simd	1434.7	29.8	74.9	13728.7	35.1
6	float16|none|sgd|single|simd	1423.7	32.1	70.9	12381.4	35.8
7	float32|none|step_tween_chain|single|simd	1415.5	32.0	71.7	12746.3	34.8
8	int4|none|[T][S][HP]|single|simd	1406.6	25.1	18.8	13284.8	42.2
9	float32|none|[T][S][FP]|single|simd	1381.7	25.5	39.6	13291.6	40.8
10	int8|none|[T][S]|single|simd	1380.6	25.5	32.7	13135.2	41.3
11	bfloat16|none|[T][S][FP]|single|simd	1351.3	25.2	47.8	11690.9	45.8
12	int2|none|[T][S]|single|simd	1346.4	25.0	33.3	12795.1	42.0
13	uint8|none|[T][S][FP]|single|simd	1305.2	24.9	6.1	12007.9	43.7
14	float32|none|[T][S][L]Cache|single|simd	1296.3	25.2	46.8	12283.7	41.8
15	float32|none|step_sgd|single|simd	1284.2	31.7	68.3	13022.9	31.1
16	float16|none|step_sgd|single|simd	1220.7	30.9	61.1	11444.6	34.5
17	uint8|none|sgd|single|simd	1214.5	24.2	47.1	14590.6	34.4
18	int64|none|sgd|single|simd	1213.3	31.4	66.7	9884.8	39.1
19	int2|none|tween_chain|single|simd	1201.3	25.0	18.0	13379.3	35.9
20	float16|none|tween_chain|single|simd	1198.7	31.6	71.3	10803.4	35.1

Leaderboard (SoftAcc)

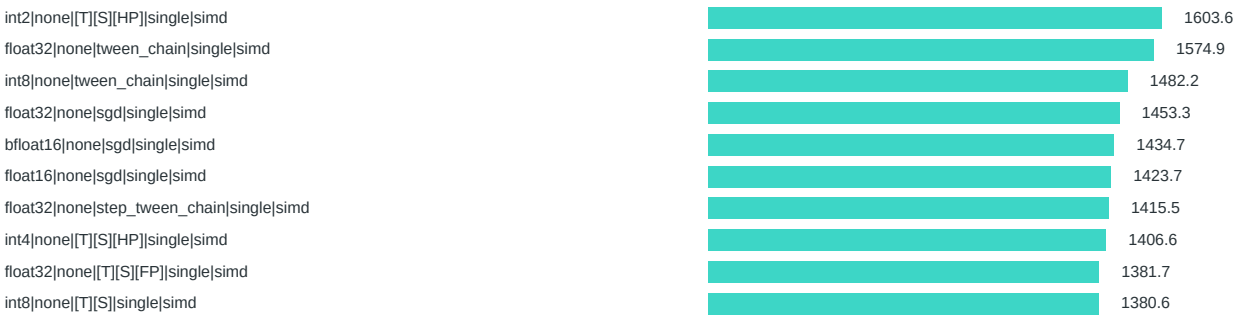
#	Cell	Score	Soft	Acc	Thru	Avail
1	float32|none|tween_chain|single|simd	1574.9	32.3	67.2	12933.1	37.7

2	float16|none|sgd|single|simd	1423.7	32.1	70.9	12381.4	35.8
3	float32|none|step_tween_chain|single|simd	1415.5	32.0	71.7	12746.3	34.8
4	float32|none|step_sgd|single|simd	1284.2	31.7	68.3	13022.9	31.1
5	float16|none|tween_chain|single|simd	1198.7	31.6	71.3	10803.4	35.1
6	int64|none|sgd|single|simd	1213.3	31.4	66.7	9884.8	39.1
7	float16|none|step_sgd|single|simd	1220.7	30.9	61.1	11444.6	34.5
8	float16|none|MeshBP|single|simd	1122.7	30.5	66.5	10755.2	34.2
9	float32|none|Mesh[T]Chain|single|simd	1171.6	30.1	45.8	11525.6	33.8
10	bfloat16|none|sgd|single|simd	1434.7	29.8	74.9	13728.7	35.1
11	float32|none|sgd|single|simd	1453.3	29.6	60.3	14765.8	33.2
12	float32|none|[T][S]|single|simd	1130.3	28.3	51.8	10255.1	38.9
13	uint8|none|tween_chain|single|simd	1180.9	26.5	57.3	13212.8	33.7
14	int8|none|tween_chain|single|simd	1482.2	26.3	48.0	13758.8	40.9
15	int8|none|[T][S]|single|simd	1380.6	25.5	32.7	13135.2	41.3
16	float32|none|[T][S][FP]|single|simd	1381.7	25.5	39.6	13291.6	40.8
17	uint32|none|[T][S][HP]|single|simd	1187.6	25.4	53.7	11185.3	41.9
18	float32|none|[T][S][L]Cache|single|simd	1296.3	25.2	46.8	12283.7	41.8
19	bfloat16|none|[T][S][FP]|single|simd	1351.3	25.2	47.8	11690.9	45.8
20	ternary|none|[T][S][L]Cache|single|simd	1108.2	25.2	41.1	10412.8	42.2

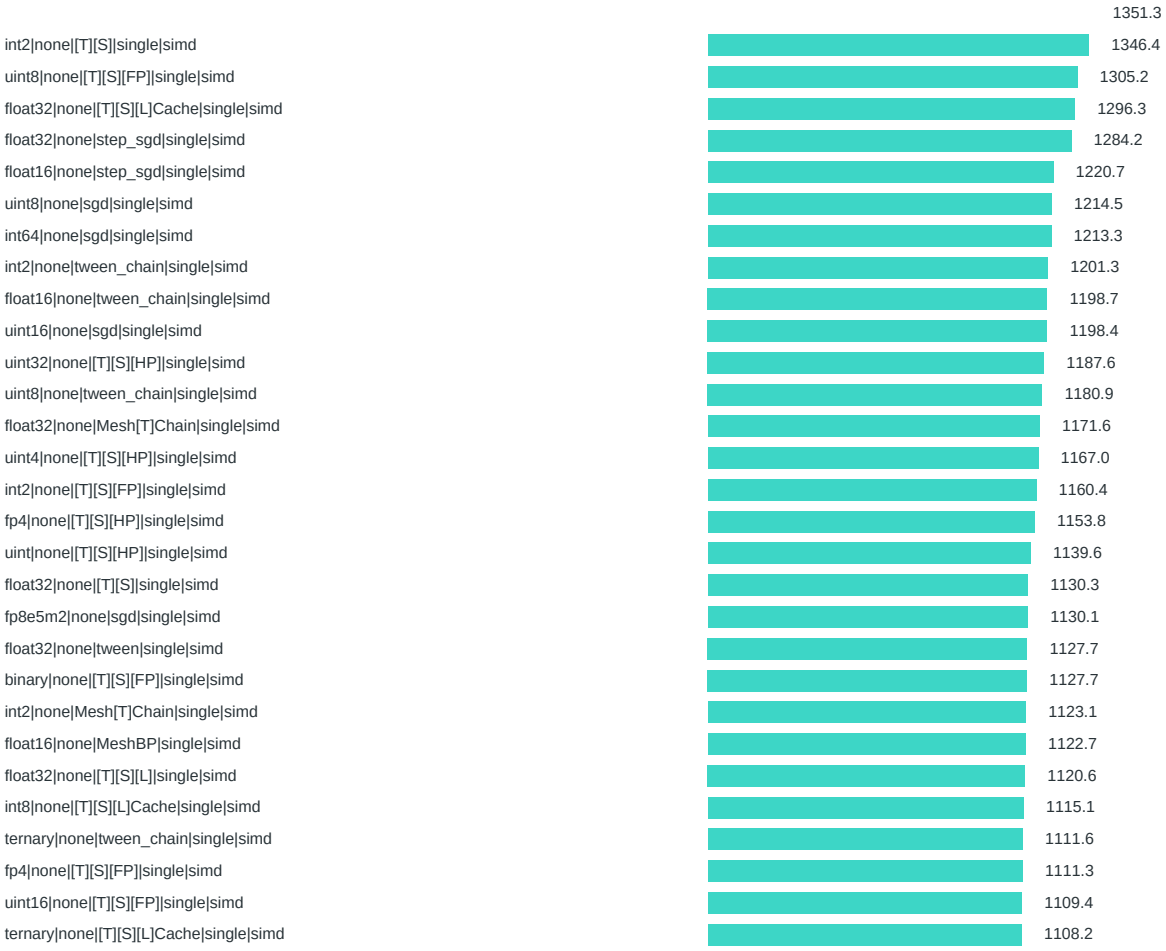
Leaderboard (hard Acc)

#	Cell	Score	Soft	Acc	Thru	Avail
1	bfloat16|none|sgd|single|simd	1434.7	29.8	74.9	13728.7	35.1
2	float32|none|step_tween_chain|single|simd	1415.5	32.0	71.7	12746.3	34.8
3	float16|none|tween_chain|single|simd	1198.7	31.6	71.3	10803.4	35.1
4	float16|none|sgd|single|simd	1423.7	32.1	70.9	12381.4	35.8
5	float32|none|step_sgd|single|simd	1284.2	31.7	68.3	13022.9	31.1
6	float32|none|tween_chain|single|simd	1574.9	32.3	67.2	12933.1	37.7
7	int64|none|sgd|single|simd	1213.3	31.4	66.7	9884.8	39.1
8	float16|none|MeshBP|single|simd	1122.7	30.5	66.5	10755.2	34.2
9	float16|none|step_sgd|single|simd	1220.7	30.9	61.1	11444.6	34.5
10	float32|none|sgd|single|simd	1453.3	29.6	60.3	14765.8	33.2
11	uint8|none|tween_chain|single|simd	1180.9	26.5	57.3	13212.8	33.7
12	uint32|none|[T][S][HP]|single|simd	1187.6	25.4	53.7	11185.3	41.9
13	float32|none|[T][S]|single|simd	1130.3	28.3	51.8	10255.1	38.9
14	int8|none|tween_chain|single|simd	1482.2	26.3	48.0	13758.8	40.9
15	bfloat16|none|[T][S][FP]|single|simd	1351.3	25.2	47.8	11690.9	45.8
16	float32|none|[T][S][L]|single|simd	1120.6	25.2	47.6	12781.8	34.8
17	uint8|none|sgd|single|simd	1214.5	24.2	47.1	14590.6	34.4
18	uint16|none|sgd|single|simd	1198.4	25.1	47.0	11875.2	40.3
19	float32|none|[T][S][L]Cache|single|simd	1296.3	25.2	46.8	12283.7	41.8
20	float32|none|Mesh[T]Chain|single|simd	1171.6	30.1	45.8	11525.6	33.8

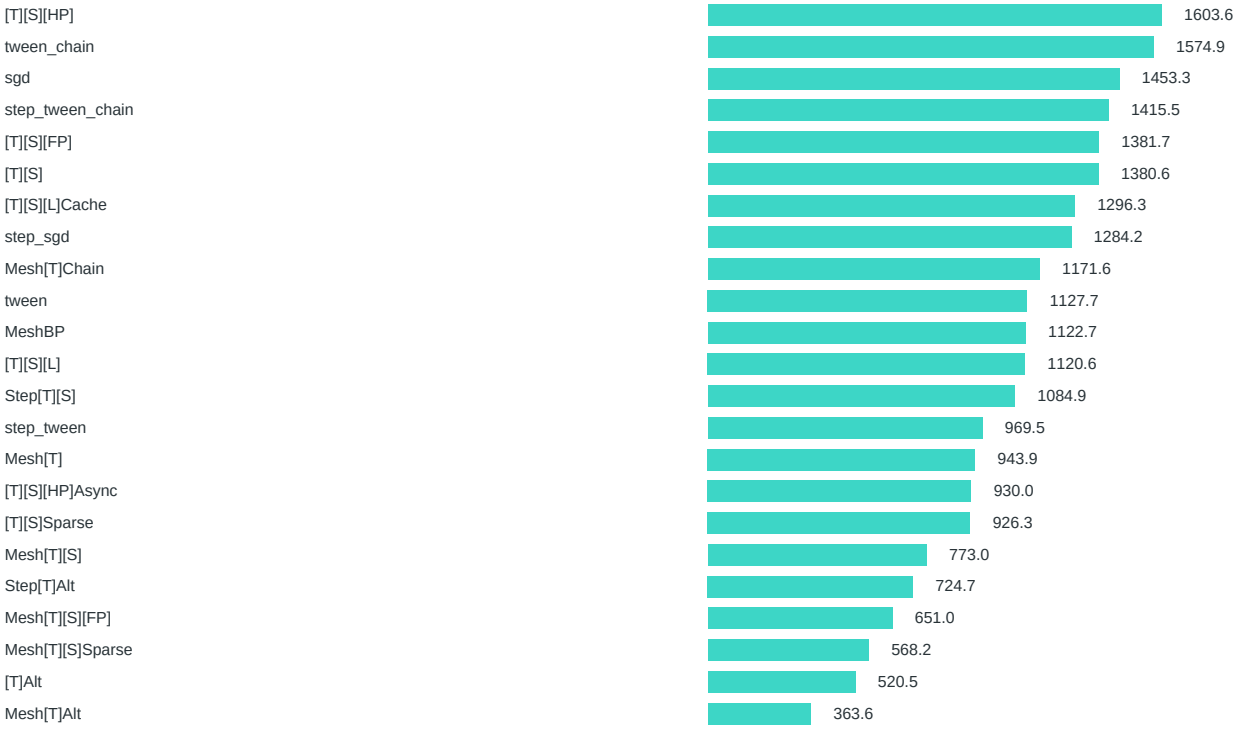
Top scores



bfloat16|none|[T][S][FP]|single|simd



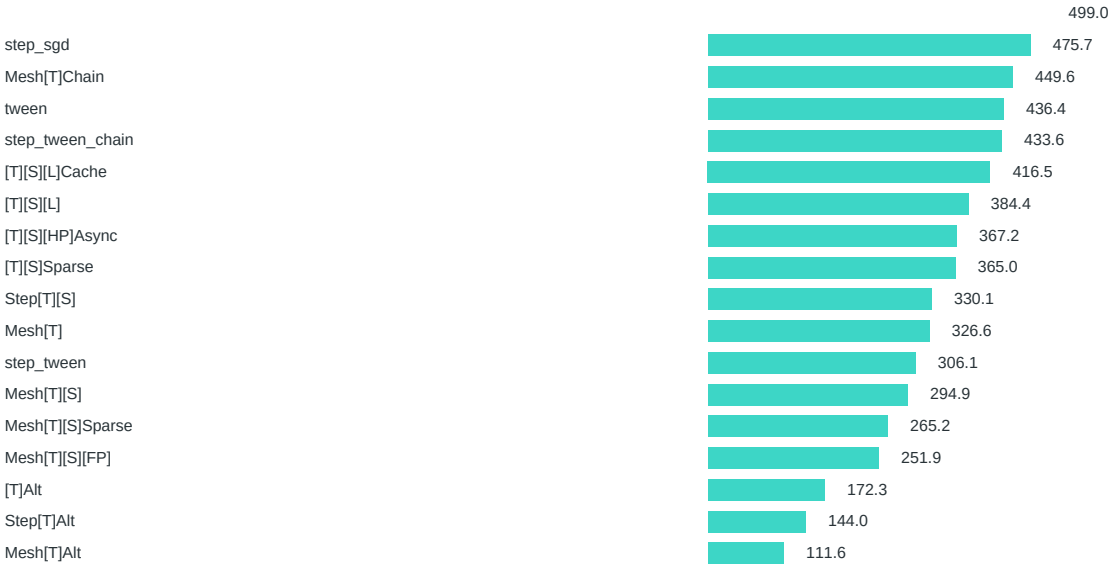
Best settings per mode



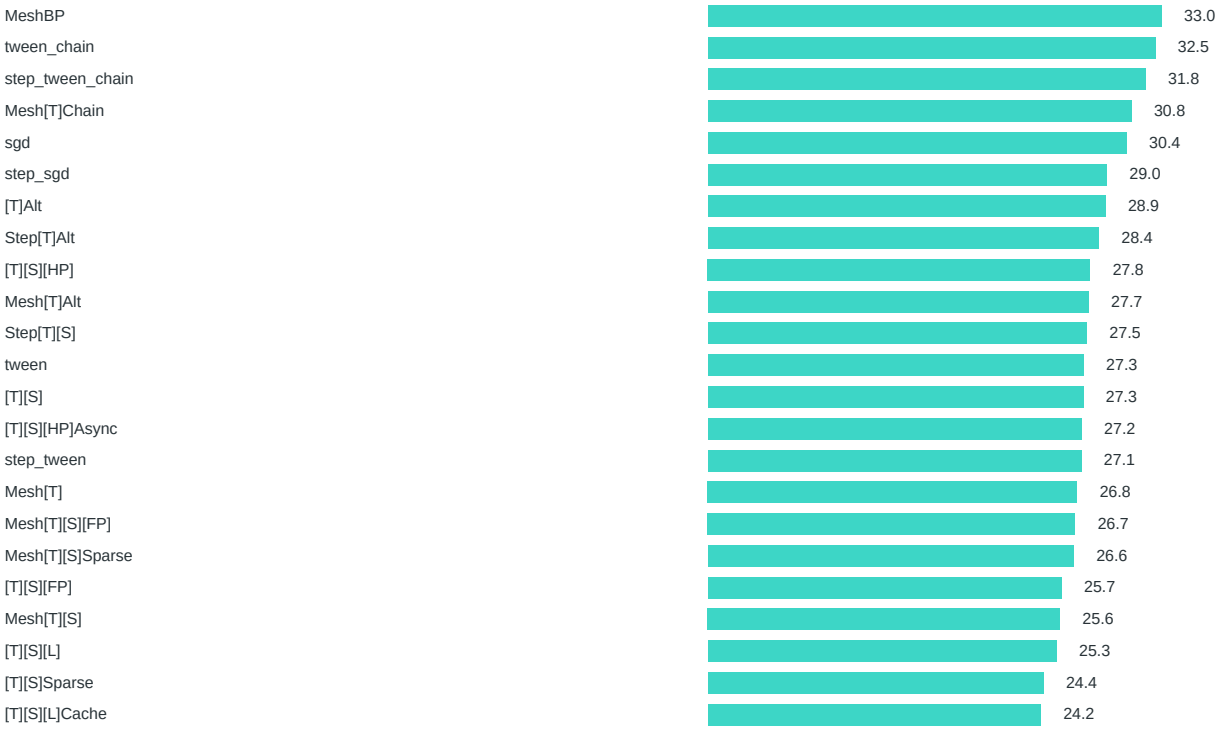
Mean Score by train mode



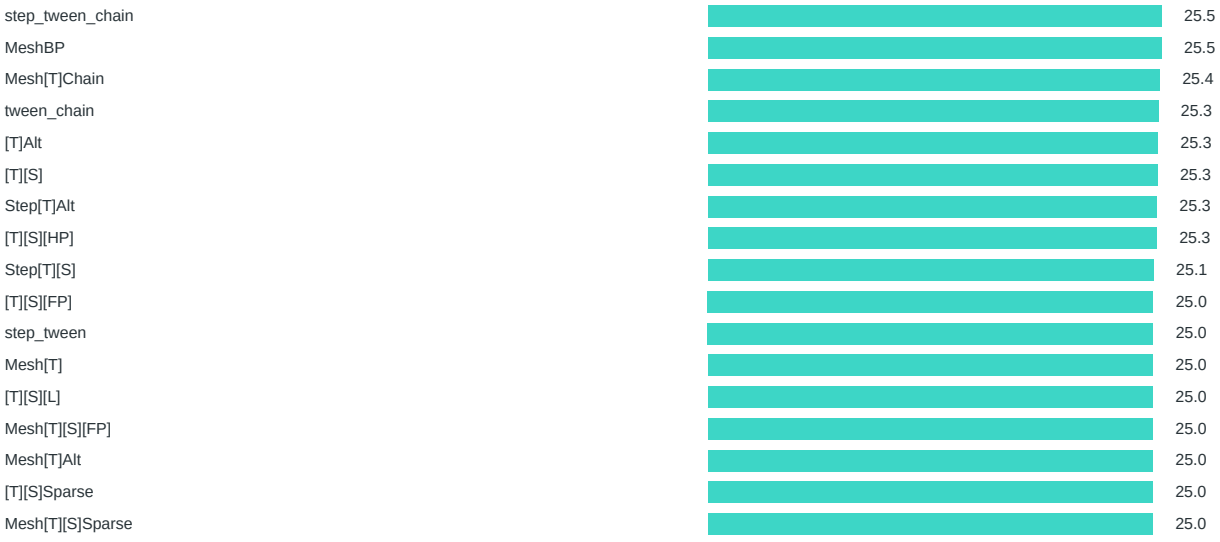
[T][S][FP]



Mean hard Acc by train mode



Mean SoftAcc by train mode

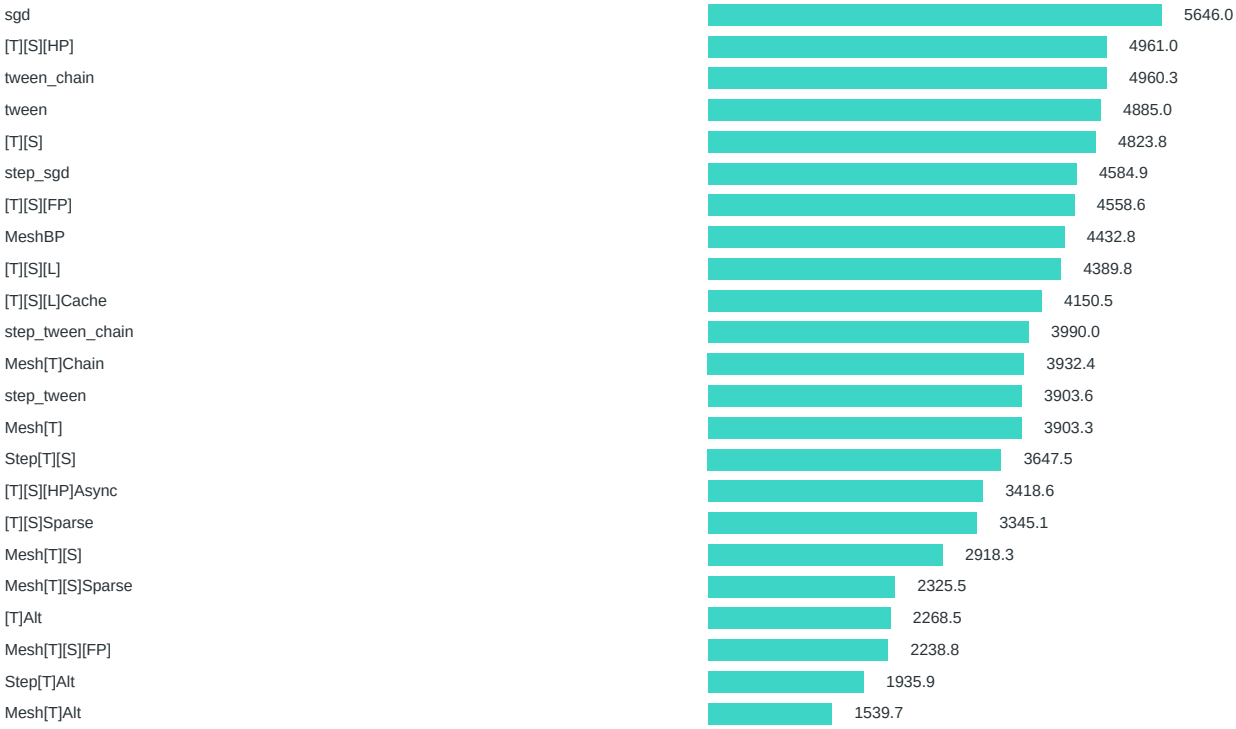




Mean Availability by train mode



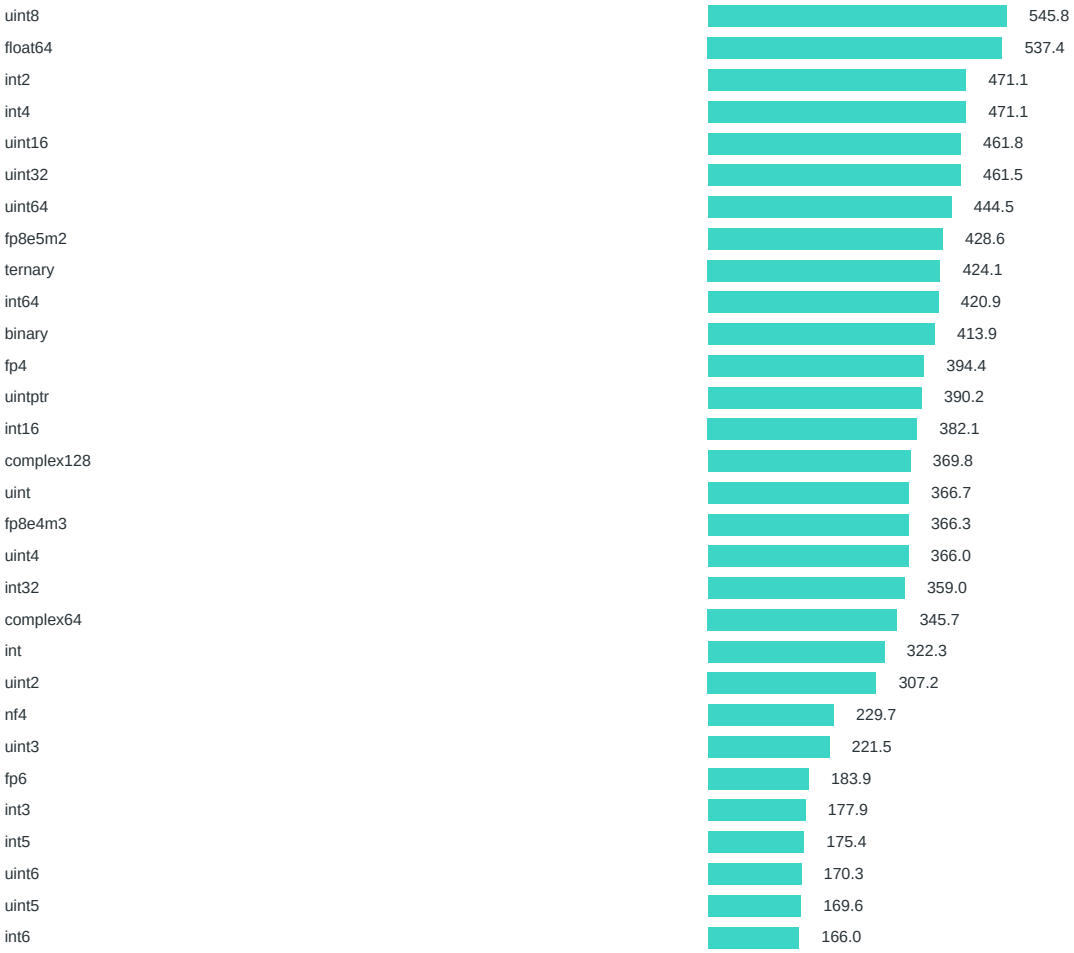
Mean Throughput by train mode



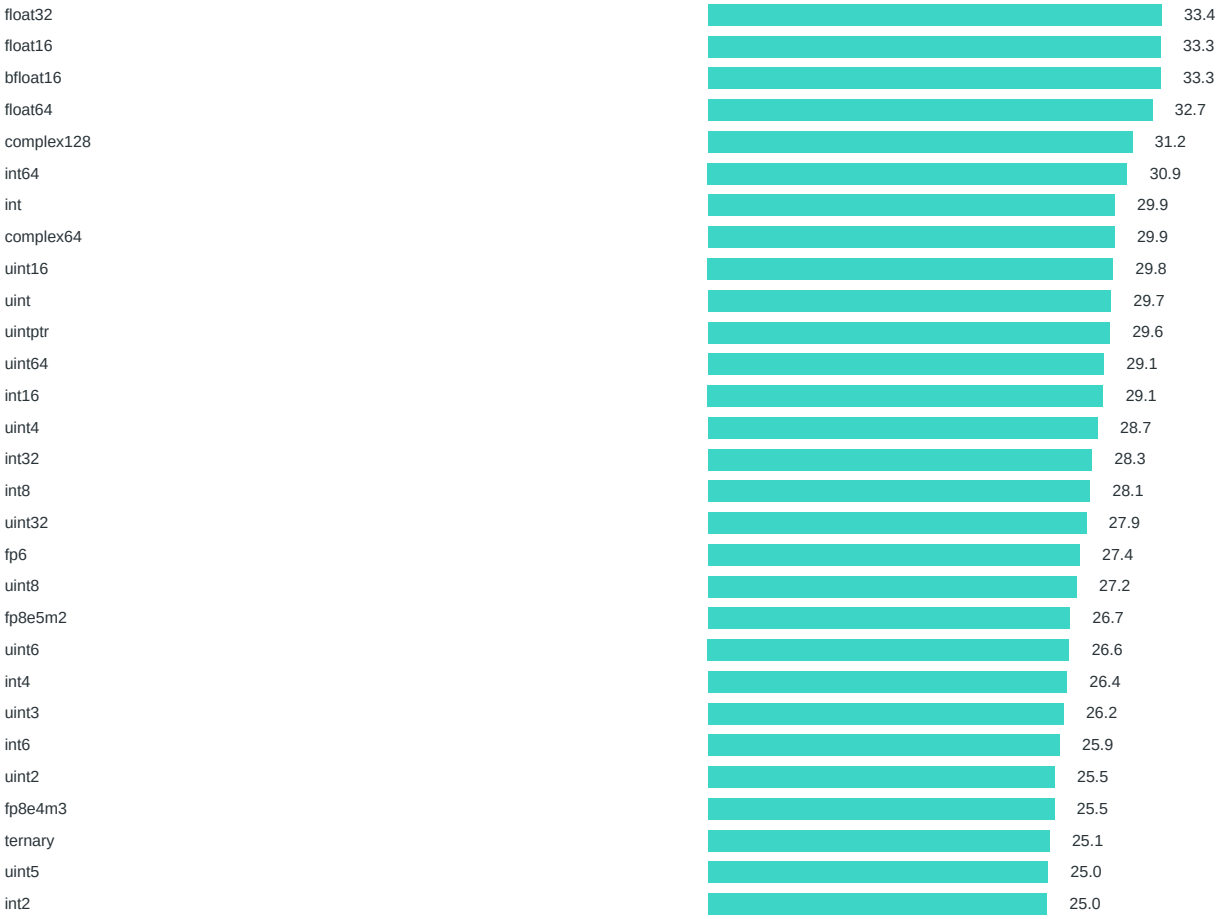
Mean Score by dtype



Mean Score by dtype



Mean hard Acc by dtype



Mean hard Acc by dtype



Mean Score by arch



Honesty - mean Score, every mode x dtype (cols 1-12)

	bfloat16	binary	complex128	complex64	float16	float32	float64	fp4	fp6	fp8e4m3	fp8e5m2	int
MeshBP	956	370	640	571	996	1089	1117	455	239	315	554	455
Mesh[T]	570	279	199	254	320	781	466	347	131	359	219	234
Mesh[T]Alt	182	131	101	111	148	275	152	71	55	231	179	72
Mesh[T]Chain	772	471	493	478	708	856	662	350	212	259	495	367
Mesh[T][S]	415	514	206	175	463	489	404	436	166	346	371	138
Mesh[T][S][FP]	431	424	233	266	220	342	259	273	46	371	234	264
Mesh[T][S]Sparse	610	273	254	139	153	610	406	295	141	165	355	103
Step[T]Alt	296	240	180	120	225	272	202	142	35	242	129	118
Step[T][S]	502	349	320	315	579	894	536	370	183	254	186	293
[T]Alt	293	172	208	184	292	429	282	120	46	227	205	134
[T][S]	902	559	635	624	758	1062	813	502	189	460	416	507
[T][S][FP]	1158	253	301	443	703	842	663	633	171	597	706	374
[T][S][HP]	737	545	674	321	796	986	640	623	301	394	679	707
[T][S][HP]Async	274	214	138	148	558	292	400	446	234	384	650	208
[T][S][L]	201	450	344	243	908	1067	549	522	264	237	536	209
[T][S][L]Cache	547	487	291	317	503	1425	525	511	75	391	401	172
[T][S]Sparse	507	606	324	442	350	545	452	438	201	321	411	284
sgd	1481	587	703	733	1158	1538	854	485	274	395	693	840
step_sgd	832	365	588	422	935	1149	641	438	263	518	585	450
step_tween	379	347	276	362	364	430	335	320	114	521	317	291
step_tween_chain	775	461	397	309	732	1295	629	375	226	512	413	265
tween	786	624	381	323	549	972	611	467	267	463	408	286
tween_chain	1085	798	620	648	1074	1429	764	453	395	460	713	643

Honesty - mean Score, every mode x dtype (cols 13-24)

Honesty - mean Score, every mode x dtype (cols 13-24)

	int16	int2	int3	int32	int4	int5	int6	int64	int8	nf4	ternary	uint
MeshBP	548	537	169	633	556	220	180	617	835	170	557	518
Mesh[T]	348	489	146	234	559	178	239	277	602	261	370	418
Mesh[T]Alt	107	123	57	121	146	41	48	120	117	55	96	61
Mesh[T]Chain	526	661	78	543	460	169	234	417	705	216	462	540
Mesh[T][S]	247	405	129	216	177	108	100	368	385	177	229	440
Mesh[T][S][FP]	197	275	77	245	276	115	188	227	377	190	243	354
Mesh[T][S]Sparse	300	308	98	247	498	114	99	312	345	120	506	196
Step[T]Alt	120	198	57	113	189	24	60	127	188	74	134	126
Step[T][S]	338	282	187	264	500	203	215	260	654	279	244	176
[T]Alt	193	238	78	113	134	81	58	238	191	104	189	171
[T][S]	513	827	174	456	325	288	291	554	838	517	550	412
[T][S][FP]	521	745	249	492	572	243	62	468	759	279	492	306
[T][S][HP]	590	797	525	402	600	316	200	966	726	167	699	490
[T][S][HP]Async	563	449	309	356	956	123	79	132	791	280	425	120
[T][S][L]	136	424	163	344	274	439	239	583	395	304	343	323
[T][S][L]Cache	500	791	227	431	674	153	123	401	472	382	760	354
[T][S]Sparse	135	622	220	418	911	116	251	282	539	193	498	341
sgd	637	634	143	579	562	216	215	1008	1119	306	597	614
step_sgd	505	367	261	449	485	159	216	567	633	240	387	401
step_tween	230	349	182	237	525	155	67	281	630	163	493	258
step_tween_chain	368	365	171	348	569	262	249	537	623	158	331	555
tween	497	393	229	271	374	213	189	362	466	404	517	518
tween_chain	670	556	162	743	513	94	215	575	1215	245	632	742

Honesty - mean Score, every mode x dtype (cols 25-34)

Honesty - mean Score, every mode x dtype (cols 25-34)

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	577	227	225	773	525	236	273	606	947	612
Mesh[T]	401	278	141	310	314	144	116	384	330	405
Mesh[T]Alt	149	101	62	140	119	48	81	127	96	71
Mesh[T]Chain	608	187	195	551	475	237	252	526	716	406
Mesh[T][S]	430	258	203	456	297	109	185	318	469	200
Mesh[T][S][FP]	312	271	108	170	363	55	114	397	329	320
Mesh[T][S]Sparse	368	231	192	182	165	133	130	284	508	175
Step[T]Alt	158	146	84	143	114	76	49	159	213	143
Step[T][S]	332	142	174	404	312	186	199	298	463	325
[T]Alt	169	164	70	172	176	76	60	132	242	217
[T][S]	558	537	180	530	348	290	254	535	579	357
[T][S][FP]	430	632	485	674	594	295	189	814	231	591
[T][S][HP]	692	360	338	995	604	205	310	498	913	328
[T][S][HP]Async	337	353	471	463	597	141	172	475	297	650
[T][S][L]	250	515	215	474	284	97	165	433	840	296
[T][S][L]Cache	474	293	296	499	250	101	98	598	425	213
[T][S]Sparse	426	406	160	239	453	96	123	208	453	438
sgd	880	571	386	1017	335	390	202	822	1000	805
step_sgd	602	236	199	583	337	196	214	803	580	570
step_tween	382	303	215	256	296	99	104	232	582	314
step_tween_chain	444	202	244	494	362	324	192	521	622	410
tween	714	330	234	522	676	155	200	384	662	391
tween_chain	927	322	218	569	420	212	233	673	1056	739

Honesty - mean hard Acc, every mode x dtype (cols 1-12)

Honesty - mean hard Acc, every mode x dtype (cols 1-12)

	bfloat16	binary	complex128	complex64	float16	float32	float64	fp4	fp6	fp8e4m3	fp8e5m2	int
MeshBP	47	22	41	39	47	43	50	25	26	24	24	38
Mesh[T]	25	11	25	32	35	31	31	25	26	28	18	23
Mesh[T]Alt	22	21	31	41	35	35	28	25	34	41	26	29
Mesh[T]Chain	36	24	35	34	39	33	34	24	35	20	31	33
Mesh[T][S]	32	35	27	24	31	31	27	25	38	25	25	16
Mesh[T][S][FP]	36	26	28	30	24	25	35	27	17	26	20	29
Mesh[T][S]Sparse	41	19	27	20	16	37	30	24	24	19	31	12
Step[T]Alt	31	35	36	32	32	25	33	26	26	34	29	31
Step[T][S]	29	25	29	33	36	38	30	24	31	20	16	39
[T]Alt	36	25	38	30	31	39	34	26	24	27	31	31
[T][S]	42	23	31	34	36	37	38	26	23	16	20	33
[T][S][FP]	36	15	21	32	30	21	35	28	22	36	33	22
[T][S][HP]	30	25	35	19	34	33	26	25	34	22	35	36
[T][S][HP]Async	24	19	17	20	32	15	31	24	32	17	32	16
[T][S][L]	16	21	34	21	39	35	31	24	25	18	21	26
[T][S][L]Cache	26	21	21	21	26	51	30	25	16	19	25	23
[T][S]Sparse	28	24	27	31	22	19	28	26	28	25	19	32
sgd	43	24	33	28	35	44	39	22	29	19	25	40
step_sgd	42	22	38	31	38	37	33	23	31	32	28	40
step_tween	22	20	30	36	30	19	27	25	18	37	32	30
step_tween_chain	43	28	35	35	44	44	39	25	31	32	29	33
tween	29	23	35	24	31	33	29	25	27	28	25	31
tween_chain	50	28	42	40	45	43	34	25	35	22	37	45

Honesty - mean hard Acc, every mode x dtype (cols 13-24)

Honesty - mean hard Acc, every mode x dtype (cols 13-24)

	int16	int2	int3	int32	int4	int5	int6	int64	int8	nf4	ternary	uint
MeshBP	27	29	32	37	27	35	28	37	35	19	24	38
Mesh[T]	31	21	27	25	28	23	27	31	30	28	26	32
Mesh[T]Alt	35	28	20	19	34	19	23	38	20	16	22	25
Mesh[T]Chain	32	26	18	34	25	24	33	28	33	29	26	44
Mesh[T][S]	21	25	19	21	10	16	13	36	27	22	17	39
Mesh[T][S][FP]	17	25	15	27	26	16	33	27	32	34	30	35
Mesh[T][S]Sparse	32	22	25	35	39	27	19	32	19	16	33	22
Step[T]Alt	30	35	28	29	31	14	37	35	25	19	26	27
Step[T][S]	34	22	29	24	32	24	28	26	27	32	19	19
[T]Alt	33	34	23	28	24	29	25	35	26	30	34	29
[T][S]	31	26	15	29	16	29	26	35	27	35	28	24
[T][S][FP]	20	24	19	28	23	26	14	17	25	23	23	20
[T][S][HP]	22	19	28	20	21	41	17	37	33	11	30	29
[T][S][HP]Async	42	27	45	21	39	20	22	9	42	24	25	19
[T][S][L]	13	20	15	25	17	40	33	32	14	24	27	32
[T][S][L]Cache	30	29	26	29	27	18	28	28	18	31	26	24
[T][S]Sparse	17	28	23	28	40	16	31	16	31	22	20	24
sgd	36	24	18	32	21	22	25	43	38	25	22	34
step_sgd	37	19	24	30	25	17	25	34	27	20	15	28
step_tween	30	19	29	30	30	30	20	31	32	29	26	23
step_tween_chain	34	24	24	34	29	28	34	40	32	22	27	39
tween	34	20	29	24	21	28	28	24	19	32	26	33
tween_chain	32	26	23	43	23	18	27	39	34	25	27	42

Honesty - mean hard Acc, every mode x dtype (cols 25-34)

Honesty - mean hard Acc, every mode x dtype (cols 25-34)

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	36	17	27	42	35	28	34	32	38	36
Mesh[T]	32	25	27	22	28	32	24	30	21	30
Mesh[T]Alt	30	35	16	28	28	26	30	22	28	32
Mesh[T]Chain	38	22	28	31	36	29	32	30	35	37
Mesh[T][S]	35	35	25	24	33	18	25	27	30	17
Mesh[T][S][FP]	26	22	23	24	33	15	29	42	23	29
Mesh[T][S]Sparse	33	24	34	17	23	30	34	23	39	23
Step[T]Alt	20	24	25	21	30	32	28	25	28	30
Step[T][S]	28	19	27	29	24	32	27	28	24	31
[T]Alt	30	26	21	24	28	23	26	27	25	30
[T][S]	26	27	21	28	25	26	21	27	24	22
[T][S][FP]	21	35	35	31	30	29	19	43	11	28
[T][S][HP]	37	24	31	29	25	21	34	23	34	23
[T][S][HP]Async	26	27	38	22	47	24	25	34	17	47
[T][S][L]	20	35	22	35	21	17	20	34	34	20
[T][S][L]Cache	23	16	25	32	16	18	18	27	13	16
[T][S]Sparse	26	33	20	20	29	13	24	13	20	26
sgd	34	22	32	38	22	32	31	34	30	37
step_sgd	32	23	24	28	25	26	27	37	28	37
step_tween	23	30	29	26	36	22	21	21	30	30
step_tween_chain	33	20	24	32	28	37	25	37	29	33
tween	37	24	25	28	30	24	24	25	27	30
tween_chain	38	22	23	31	27	22	32	31	37	39

Honesty - mean SoftAcc, every mode x dtype (cols 1-12)

Honesty - mean SoftAcc, every mode x dtype (cols 1-12)

	bfloat16	binary	complex128	complex64	float16	float32	float64	fp4	fp6	fp8e4m3	fp8e5m2	int
MeshBP	27	25	27	27	27	27	27	25	25	25	25	26
Mesh[T]	25	25	25	25	25	25	25	25	25	25	25	25
Mesh[T]Alt	25	25	25	25	25	25	25	25	25	25	25	25
Mesh[T]Chain	26	25	26	26	26	27	27	25	25	25	25	26
Mesh[T][S]	25	25	25	25	25	25	25	25	25	25	25	25
Mesh[T][S][FP]	25	25	25	25	25	25	25	25	25	25	25	25
Mesh[T][S]Sparse	25	25	25	25	25	25	25	25	25	25	25	25
Step[T]Alt	26	25	26	26	26	25	26	25	25	25	25	26
Step[T][S]	25	25	26	26	26	26	26	25	25	25	21	26
[T]Alt	26	25	26	26	26	27	26	25	25	25	25	26
[T][S]	26	25	26	26	26	26	26	25	25	25	25	26
[T][S][FP]	25	25	25	25	25	25	25	25	25	25	25	25
[T][S][HP]	26	25	25	26	26	27	26	25	25	25	25	25
[T][S][HP]Async	25	25	25	25	25	25	25	25	25	25	25	25
[T][S][L]	25	25	25	25	25	25	25	25	25	25	25	25
[T][S][L]Cache	25	25	25	25	25	25	25	25	25	25	25	25
[T][S]Sparse	25	25	25	25	25	25	25	25	25	25	25	25
sgd	26	23	25	25	26	25	25	22	22	23	23	24
step_sgd	25	22	25	23	26	26	23	23	23	23	23	24
step_tween	25	25	25	25	25	25	25	25	25	25	25	25
step_tween_chain	26	25	27	27	27	27	27	25	25	25	25	26
tween	24	25	24	25	24	24	24	25	25	24	25	24
tween_chain	26	25	27	27	27	27	26	25	25	24	24	27

Honesty - mean SoftAcc, every mode x dtype (cols 13-24)

Honesty - mean SoftAcc, every mode x dtype (cols 13-24)

	int16	int2	int3	int32	int4	int5	int6	int64	int8	nf4	ternary	uint
MeshBP	25	25	25	25	25	25	25	27	25	25	25	26
Mesh[T]	25	25	25	25	25	25	25	25	25	25	25	25
Mesh[T]Alt	25	25	25	25	25	25	25	25	25	25	25	25
Mesh[T]Chain	25	25	25	25	25	25	25	26	25	25	25	25
Mesh[T][S]	25	25	25	25	25	25	25	25	25	25	25	25
Mesh[T][S][FP]	25	25	25	25	25	25	25	25	25	25	25	25
Mesh[T][S]Sparse	25	25	25	25	25	25	25	25	25	25	25	25
Step[T]Alt	25	25	25	25	25	25	25	26	25	25	25	25
Step[T][S]	25	25	25	25	25	25	25	26	25	25	25	25
[T]Alt	25	25	25	25	25	25	25	26	25	25	25	25
[T][S]	25	25	25	25	25	25	25	26	25	25	25	25
[T][S][FP]	25	25	25	25	25	25	25	25	25	25	25	25
[T][S][HP]	25	25	25	25	25	25	25	25	25	25	25	25
[T][S][HP]Async	25	25	25	25	25	25	25	25	25	25	25	25
[T][S][L]	25	25	25	25	25	25	25	25	25	25	25	25
[T][S][L]Cache	25	25	25	25	25	25	25	25	25	25	25	25
[T][S]Sparse	25	25	25	25	25	25	25	25	25	25	25	25
sgd	22	22	22	22	23	22	22	26	23	22	23	23
step_sgd	22	23	24	23	23	22	23	25	23	24	25	23
step_tween	25	25	25	25	25	25	25	25	25	25	25	25
step_tween_chain	25	25	25	25	25	25	25	27	25	25	25	25
tween	24	25	25	23	24	24	24	24	24	25	25	25
tween_chain	24	25	24	25	25	25	25	27	25	25	25	25

Honesty - mean SoftAcc, every mode x dtype (cols 25-34)

Honesty - mean SoftAcc, every mode x dtype (cols 25-34)

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	25	25	25	25	25	25	25	25	25	25
Mesh[T]	25	25	25	25	25	25	25	25	25	25
Mesh[T]Alt	25	25	25	25	25	25	25	25	25	25
Mesh[T]Chain	25	25	25	25	25	25	25	25	25	25
Mesh[T][S]	25	25	25	25	25	25	25	25	25	25
Mesh[T][S][FP]	25	25	25	25	25	25	25	25	25	25
Mesh[T][S]Sparse	25	25	25	25	25	25	25	25	25	25
Step[T]Alt	25	25	25	25	25	25	25	25	25	25
Step[T][S]	25	25	25	25	25	25	25	25	25	25
[T]Alt	25	25	25	25	25	25	25	25	25	25
[T][S]	25	25	25	25	25	25	25	25	25	25
[T][S][FP]	25	25	25	25	25	25	25	25	25	25
[T][S][HP]	25	25	25	25	25	25	25	25	25	25
[T][S][HP]Async	25	25	25	25	25	25	25	25	25	25
[T][S][L]	25	25	25	25	25	25	25	25	25	25
[T][S][L]Cache	25	25	25	25	25	25	25	25	25	25
[T][S]Sparse	25	25	25	25	25	25	25	25	25	25
sgd	23	23	23	23	22	24	22	23	23	24
step_sgd	24	24	23	23	22	24	22	24	24	25
step_tween	25	25	25	25	25	25	25	25	25	25
step_tween_chain	25	25	25	25	25	25	25	25	25	25
tween	25	23	25	25	25	24	25	24	25	24
tween_chain	25	24	25	25	25	25	25	25	24	26

Honesty - mean Avail, every mode x dtype (cols 1-12)

Honesty - mean Avail, every mode x dtype (cols 1-12)

	bfloat16	binary	complex128	complex64	float16	float32	float64	fp4	fp6	fp8e4m3	fp8e5m2	int
MeshBP	30	29	29	27	30	31	34	29	27	28	30	25
Mesh[T]	29	31	25	26	26	32	29	28	25	29	28	26
Mesh[T]Alt	23	22	23	23	22	25	25	21	23	23	25	22
Mesh[T]Chain	29	30	30	31	29	32	30	27	25	29	27	29
Mesh[T][S]	37	36	36	36	39	35	40	41	36	42	43	39
Mesh[T][S][FP]	38	39	39	39	40	35	35	36	30	42	39	39
Mesh[T][S]Sparse	41	41	45	41	42	43	41	40	36	41	42	42
Step[T]Alt	25	20	22	19	23	26	24	18	18	22	23	19
Step[T][S]	32	30	27	28	29	31	30	30	28	31	29	25
[T]Alt	20	19	26	22	22	23	24	17	22	24	22	21
[T][S]	34	34	38	37	36	35	34	34	33	36	36	37
[T][S][FP]	40	37	36	39	41	37	36	37	35	41	41	40
[T][S][HP]	38	36	40	39	40	38	38	35	35	39	38	39
[T][S][HP]Async	35	31	37	39	39	36	38	39	35	39	42	39
[T][S][L]	34	31	33	31	33	35	31	35	33	34	31	31
[T][S][L]Cache	39	35	40	39	40	38	38	38	36	40	40	35
[T][S]Sparse	42	42	42	42	41	43	44	41	37	39	41	42
sgd	34	33	33	33	33	33	34	30	27	33	34	31
step_sgd	27	27	31	25	29	29	28	32	27	27	30	27
step_tween	26	26	24	25	26	28	25	23	22	26	25	24
step_tween_chain	26	27	26	21	25	29	26	24	22	25	25	23
tween	30	32	25	28	29	30	30	29	30	29	27	26
tween_chain	31	31	28	29	31	32	35	28	27	30	29	29

Honesty - mean Avail, every mode x dtype (cols 13-24)

Honesty - mean Avail, every mode x dtype (cols 13-24)

	int16	int2	int3	int32	int4	int5	int6	int64	int8	nf4	ternary	uint
MeshBP	30	30	26	31	31	26	23	29	28	27	31	27
Mesh[T]	29	31	26	26	29	26	27	27	32	26	28	27
Mesh[T]Alt	23	23	23	25	21	22	24	24	23	21	23	22
Mesh[T]Chain	31	32	25	30	31	24	28	32	30	26	33	30
Mesh[T][S]	41	36	35	39	37	35	35	39	37	35	37	42
Mesh[T][S][FP]	39	34	34	39	37	35	35	40	36	37	36	40
Mesh[T][S]Sparse	43	42	40	42	41	39	38	42	44	42	44	43
Step[T]Alt	20	18	21	21	24	18	18	19	20	20	20	20
Step[T][S]	30	29	28	29	30	27	30	30	30	28	30	29
[T]Alt	23	21	21	21	20	22	19	23	20	19	19	21
[T][S]	36	34	33	35	32	33	35	37	36	35	32	37
[T][S][FP]	41	36	36	41	37	37	36	38	37	38	35	40
[T][S][HP]	41	36	36	41	35	34	33	40	34	35	35	39
[T][S][HP]Async	41	37	35	37	37	36	32	42	36	36	36	36
[T][S][L]	33	31	32	32	33	32	30	33	33	30	31	31
[T][S][L]Cache	41	36	35	39	38	36	36	40	39	37	35	39
[T][S]Sparse	40	42	40	42	42	40	38	43	40	41	43	44
sgd	30	30	30	31	32	29	28	31	32	30	33	31
step_sgd	26	27	26	28	29	25	24	27	30	25	30	27
step_tween	22	26	24	23	28	22	21	25	27	21	27	22
step_tween_chain	22	27	23	26	27	26	23	27	27	23	24	27
tween	27	29	25	28	29	27	27	27	32	29	31	29
tween_chain	31	31	28	32	31	25	25	30	35	28	33	29

Honesty - mean Avail, every mode x dtype (cols 25-34)

Honesty - mean Avail, every mode x dtype (cols 25-34)

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	28	30	27	30	30	27	27	28	32	29
Mesh[T]	29	29	25	28	29	24	28	26	29	26
Mesh[T]Alt	25	24	24	26	25	19	24	24	23	21
Mesh[T]Chain	31	30	28	30	29	26	26	31	30	27
Mesh[T][S]	42	36	38	41	41	36	36	40	38	40
Mesh[T][S][FP]	39	41	35	40	40	34	36	38	39	40
Mesh[T][S]Sparse	42	42	39	41	36	37	35	41	42	44
Step[T]Alt	23	23	17	22	22	18	19	21	22	22
Step[T][S]	31	28	26	31	27	27	29	27	32	27
[T]Alt	20	25	22	23	22	18	18	19	23	25
[T][S]	36	37	35	36	34	34	34	37	32	37
[T][S][FP]	38	40	35	41	39	34	36	41	39	39
[T][S][HP]	38	39	38	40	40	34	36	42	39	39
[T][S][HP]Async	40	35	37	42	38	32	36	39	38	40
[T][S][L]	32	34	31	31	32	32	29	31	35	32
[T][S][L]Cache	41	42	38	40	38	35	36	40	37	38
[T][S]Sparse	42	43	39	39	42	39	37	42	44	40
sgd	32	33	31	33	31	32	25	34	32	33
step_sgd	29	27	24	27	27	25	22	30	26	29
step_tween	26	24	22	24	22	23	21	24	26	24
step_tween_chain	25	24	25	25	26	23	25	26	26	24
tween	28	26	27	29	30	27	26	28	30	28
tween_chain	33	29	27	31	31	26	26	30	30	29

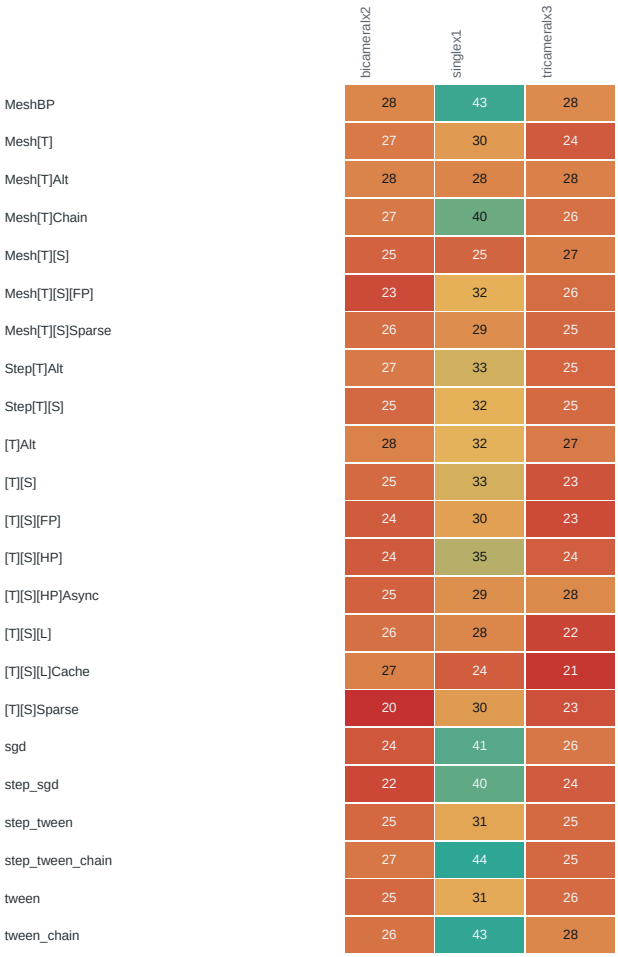
Mean Score, every mode x arch

Mean Score, every mode x arch

	bicameralx2	singlex1	tricameralx3
MeshBP	225	1224	166
Mesh[T]	174	674	132
Mesh[T]Alt	53	243	38
Mesh[T]Chain	179	1043	127
Mesh[T][S]	197	527	161
Mesh[T][S][FP]	130	503	123
Mesh[T][S]Sparse	197	442	157
Step[T]Alt	54	335	43
Step[T][S]	164	700	126
[T]Alt	73	397	47
[T][S]	296	1027	207
[T][S][FP]	264	1019	214
[T][S][HP]	348	1089	250
[T][S][HP]Async	212	716	173
[T][S][L]	249	764	141
[T][S][L]Cache	277	806	166
[T][S]Sparse	242	659	194
sgd	283	1497	230
step_sgd	175	1118	134
step_tween	138	675	105
step_tween_chain	146	1041	114
tween	207	943	159
tween_chain	256	1395	185

Mean hard Acc, every mode x arch

Mean hard Acc, every mode x arch



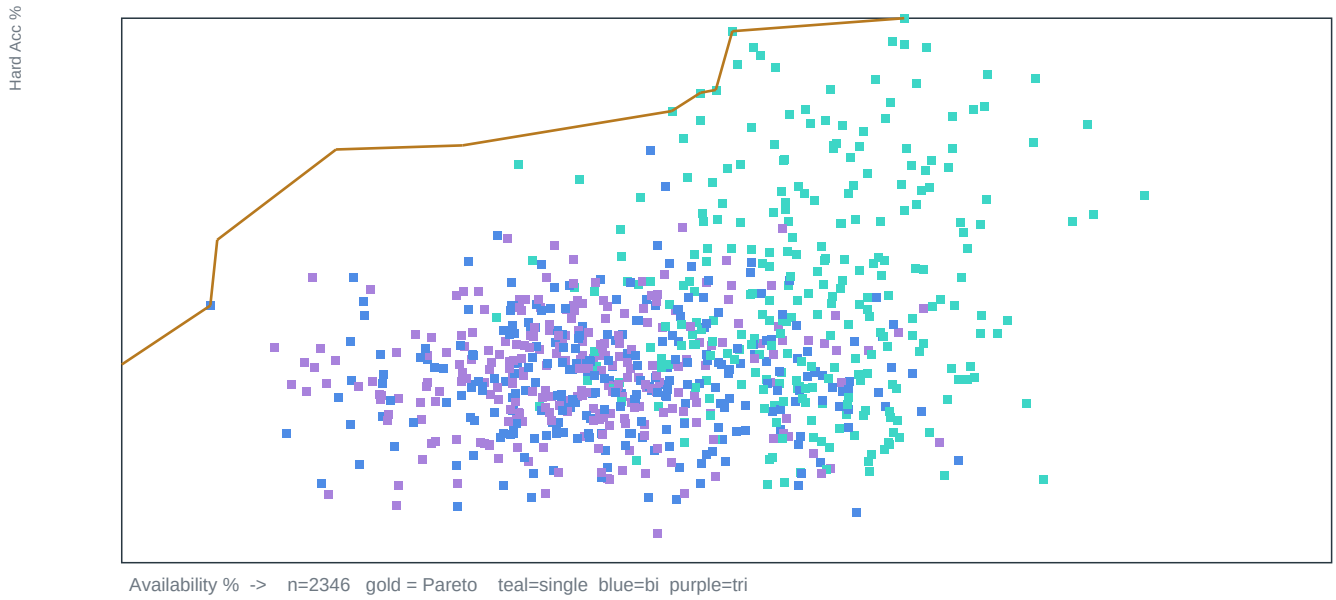
	bicameralx2	singlex1	tricameralx3
MeshBP	28	43	28
Mesh[T]	27	30	24
Mesh[T]Alt	28	28	28
Mesh[T]Chain	27	40	26
Mesh[T][S]	25	25	27
Mesh[T][S][FP]	23	32	26
Mesh[T][S]Sparse	26	29	25
Step[T]Alt	27	33	25
Step[T][S]	25	32	25
[T]Alt	28	32	27
[T][S]	25	33	23
[T][S][FP]	24	30	23
[T][S][HP]	24	35	24
[T][S][HP]Async	25	29	28
[T][S][L]	26	28	22
[T][S][L]Cache	27	24	21
[T][S]Sparse	20	30	23
sgd	24	41	26
step_sgd	22	40	24
step_tween	25	31	25
step_tween_chain	27	44	25
tween	25	31	26
tween_chain	26	43	28

Mean Avail, every mode x arch

Mean Avail, every mode x arch

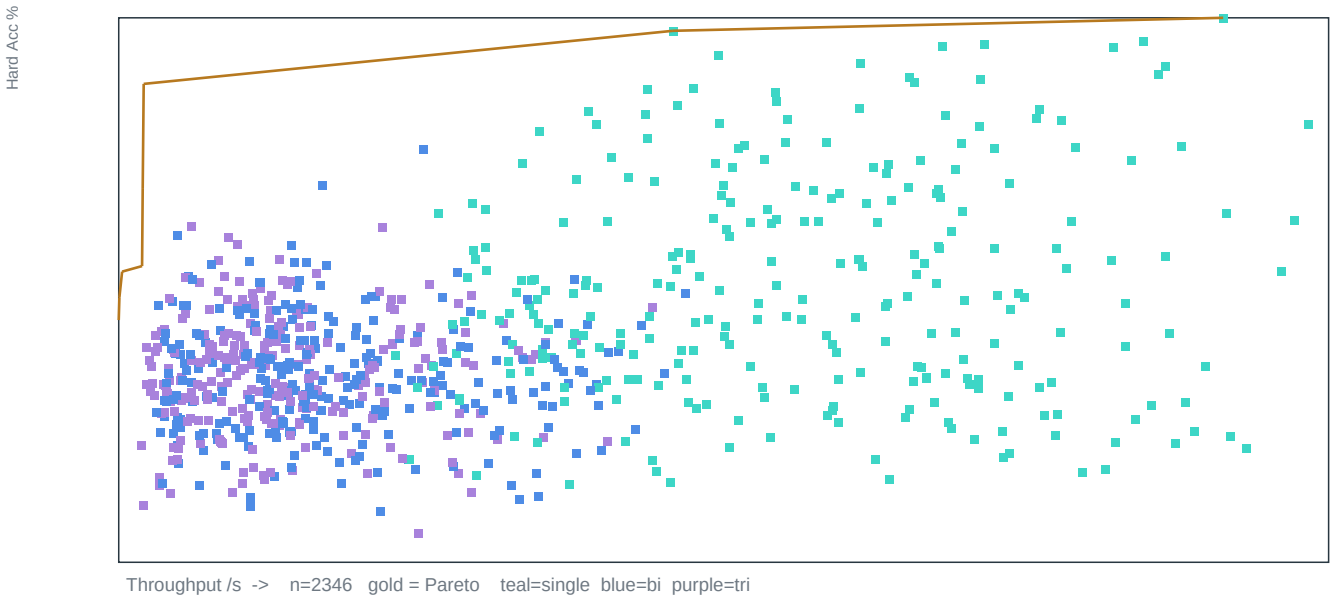
	bicamerax2	singlex1	tricamerax3
MeshBP	27	34	26
Mesh[T]	26	32	25
Mesh[T]Alt	21	28	20
Mesh[T]Chain	27	34	26
Mesh[T][S]	38	40	36
Mesh[T][S][FP]	37	39	36
Mesh[T][S]Sparse	42	40	42
Step[T]Alt	19	26	18
Step[T][S]	28	32	26
[T]Alt	20	26	18
[T][S]	35	37	33
[T][S][FP]	37	41	37
[T][S][HP]	38	40	35
[T][S][HP]Async	37	39	35
[T][S][L]	32	34	30
[T][S][L]Cache	37	41	36
[T][S]Sparse	42	40	42
sgd	31	34	29
step_sgd	26	32	24
step_tween	22	29	22
step_tween_chain	23	30	22
tween	27	33	25
tween_chain	29	34	26

Pillars - Availability vs hard Acc

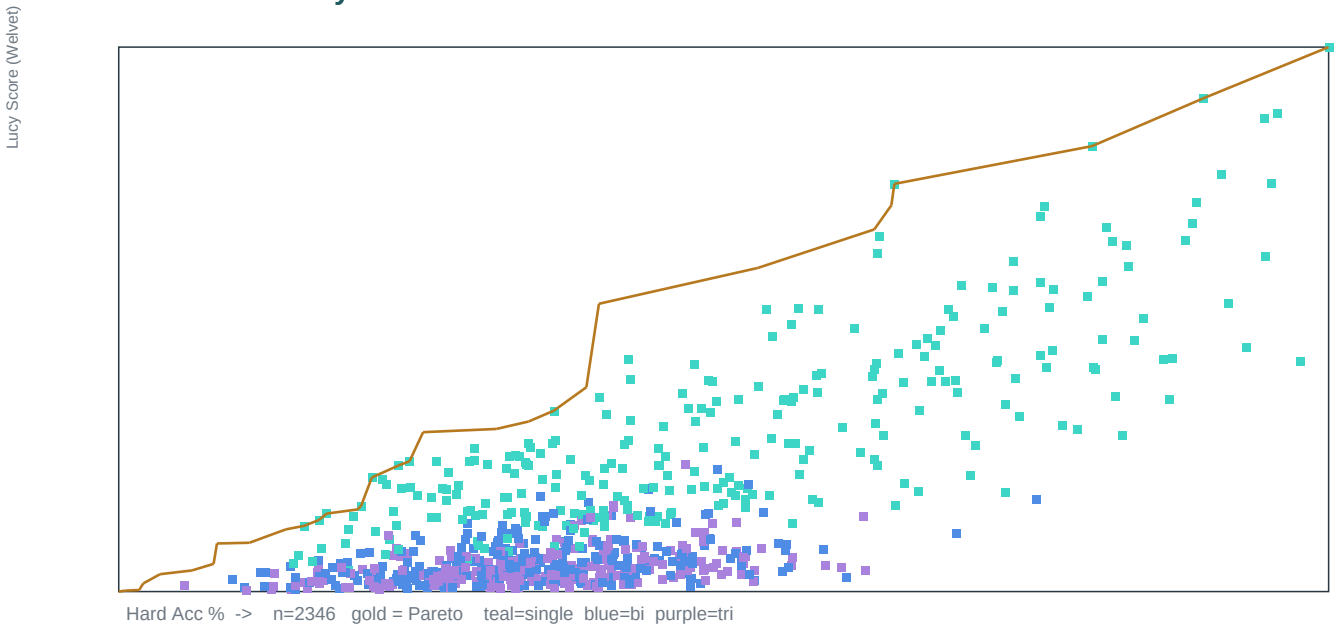


Pillars - Throughput vs hard Acc

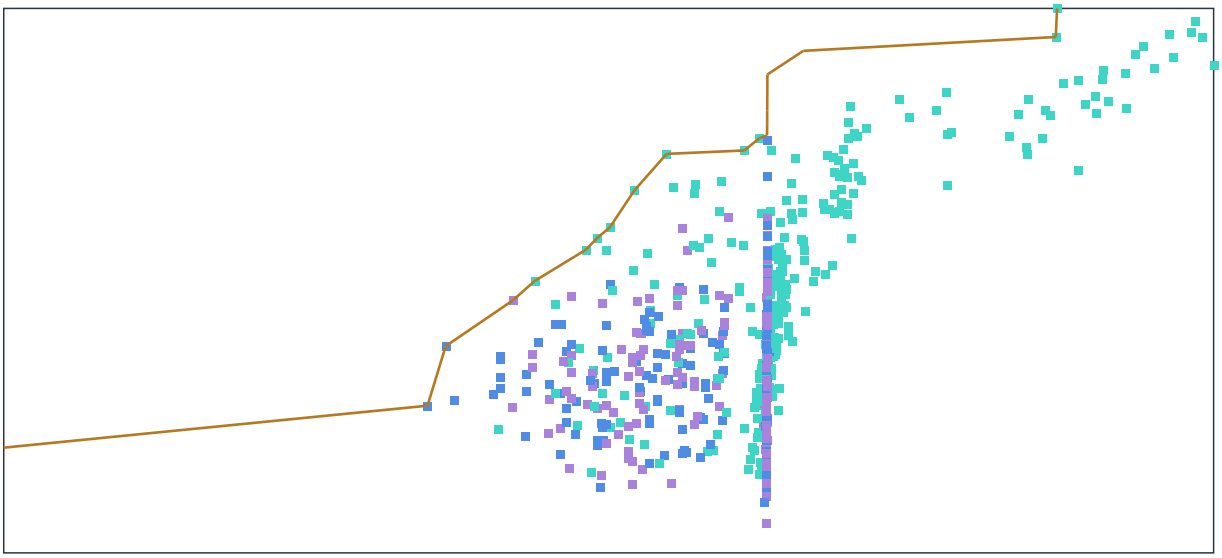
Pillars - Throughput vs hard Acc



Pareto - hard Acc vs Lucy Score

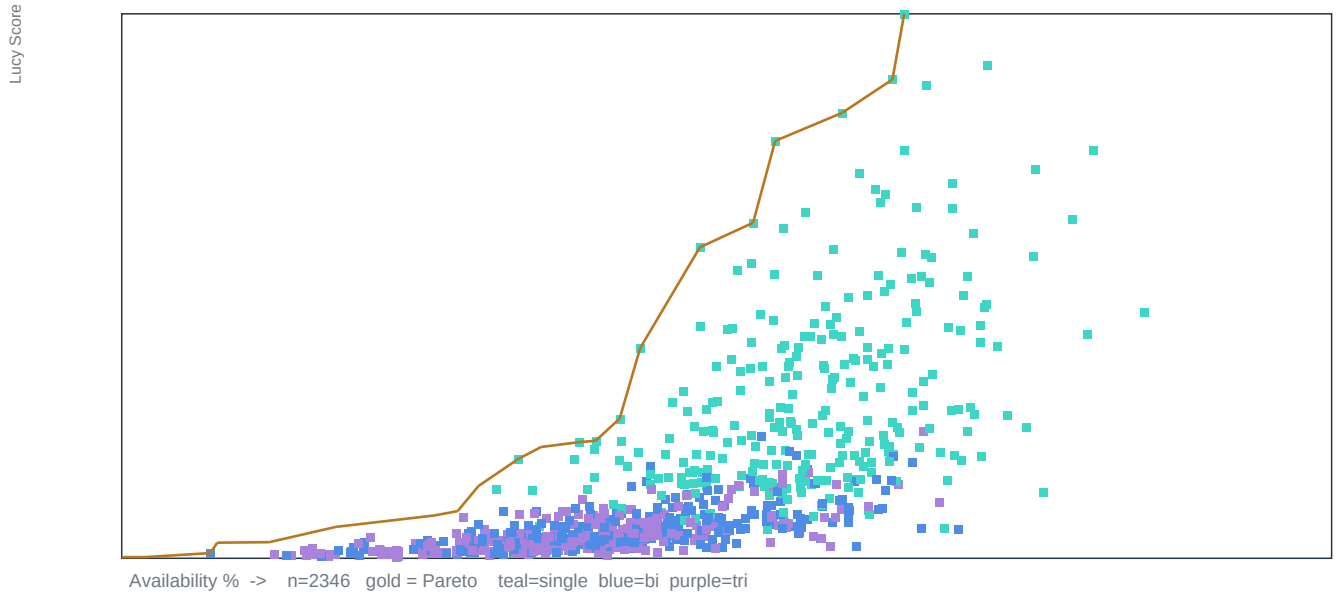


SoftAcc (serve-confidence) vs hard Acc

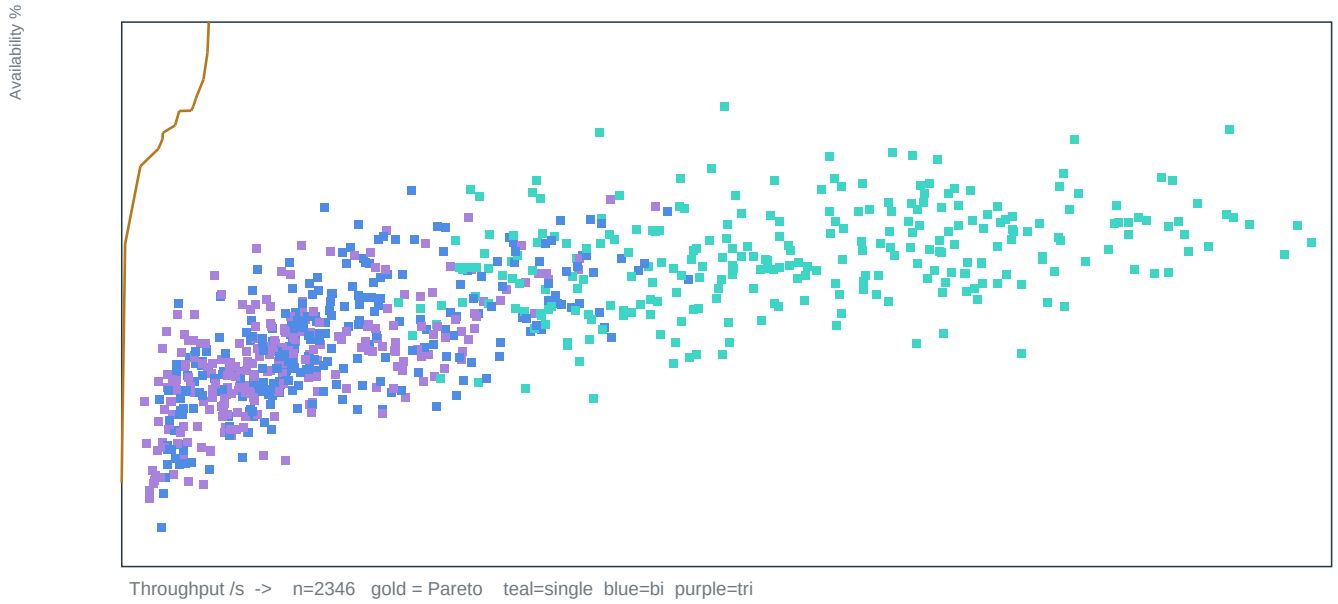



SoftAcc % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

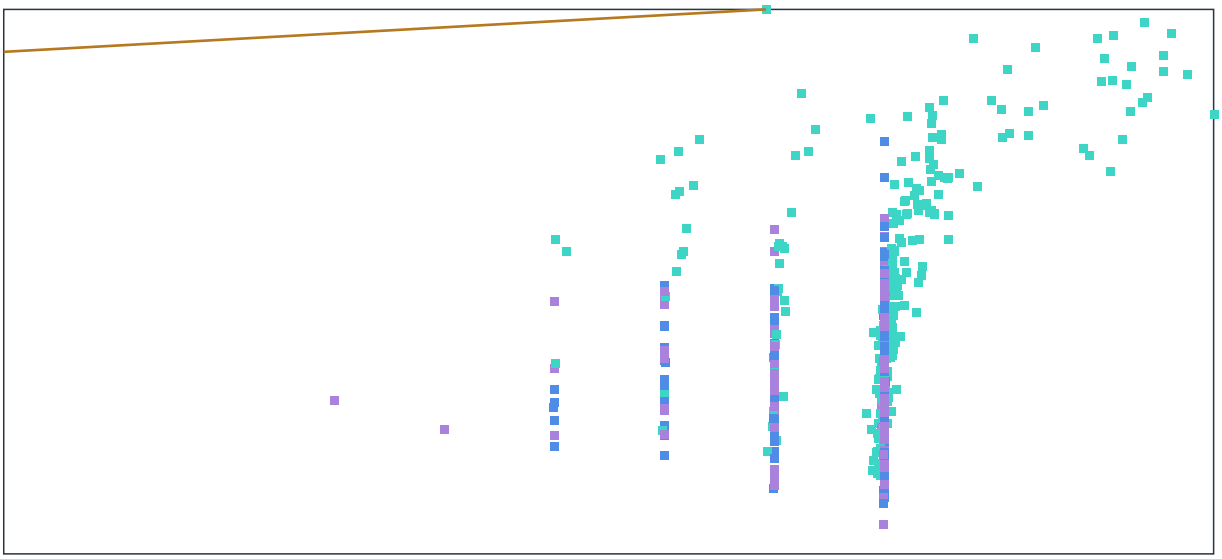
Avail vs Lucy Score (duty clock)



Pillars - Throughput vs Availability



AdaptPct vs hard Acc



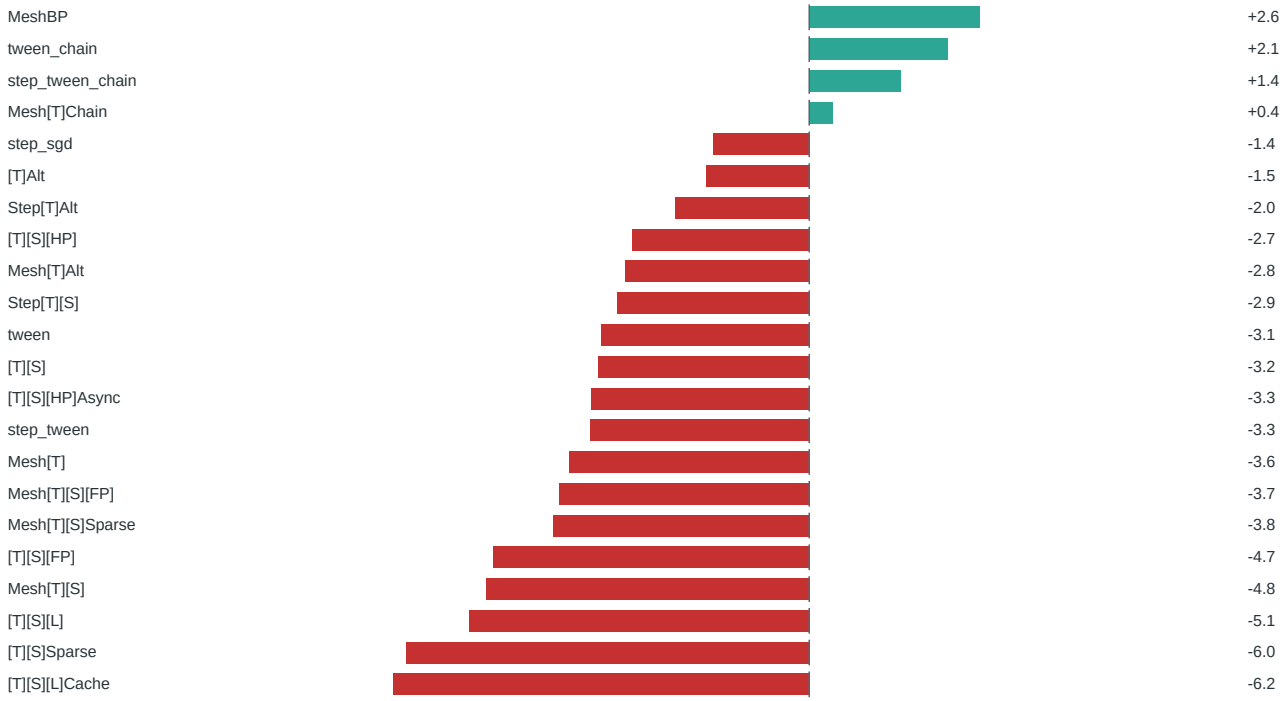

AdaptPct % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

vs sgd - matched dtype x format x arch

AccDelta is the honest column. ScoreDelta is usually Availability (duty clock), not a better chain rule. Acc win = AccDelta > 0.5. Score win = ScoreDelta > 1. Baseline is discovered from the board, not a frozen StepBP list.

mode	n	AccD	Acc win%	SoftD	AvailD	ThruD	ScoreD	Score win%
MeshBP	102	+2.6	63	+2.3	-2.6	-1213	-131.6	27
tween_chain	102	+2.1	56	+2.1	-1.7	-686	-57.8	42
step_tween_chain	102	+1.4	54	+2.3	-6.4	-1656	-236.4	14
Mesh[T]Chain	102	+0.4	53	+2.2	-2.3	-1714	-220.3	17
step_sgd	102	-1.4	47	+0.3	-4.2	-1061	-194.2	16
[T]Alt	102	-1.5	44	+2.1	-10.1	-3377	-497.7	0
Step[T]Alt	102	-2.0	47	+2.0	-10.6	-3710	-526.0	0
[T][S][HP]	102	-2.7	43	+2.0	+6.2	-685	-107.5	55
Mesh[T]Alt	102	-2.8	45	+1.8	-8.3	-4106	-558.4	0
Step[T][S]	102	-2.9	38	+1.8	-2.6	-1998	-339.9	12
tween	102	-3.1	39	+1.2	-3.0	-761	-233.5	23
[T][S]	102	-3.2	38	+2.0	+3.6	-822	-159.9	46
[T][S][HP]Async	102	-3.3	45	+1.8	+5.8	-2227	-302.7	29
step_tween	102	-3.3	44	+1.8	-7.2	-1742	-363.9	9
Mesh[T]	102	-3.6	39	+1.8	-3.7	-1743	-343.4	15
Mesh[T][S][FP]	102	-3.7	39	+1.8	+6.0	-3407	-418.0	10
Mesh[T][S]Sparse	102	-3.8	43	+1.8	+9.6	-3321	-404.7	15
[T][S][FP]	102	-4.7	40	+1.8	+6.7	-1087	-170.9	40
Mesh[T][S]	102	-4.8	41	+1.8	+6.7	-2728	-375.1	22
[T][S][L]	102	-5.1	39	+1.8	+0.7	-1256	-285.6	28
[T][S]Sparse	102	-6.0	37	+1.8	+9.6	-2301	-305.0	34
[T][S][L]Cache	102	-6.2	41	+1.8	+6.5	-1496	-253.4	36

mean AccD vs sgd



mean ScoreD vs sgd (duty clock)



mean ScoreD vs sgd (duty clock)



mean AvailD vs sgd



AccD vs sgd, every mode x dtype (cols 1-12)

AccD vs sgd, every mode x dtype (cols 1-12)

	bfloat16	binary	complex128	complex64	float16	float32	float64	fp4	fp6	fp8e4m3	fp8e5m2	int
MeshBP	+4	-2	+8	+11	+12	-1	+11	+3	-2	+5	-1	-2
Mesh[T]	-18	-13	-8	+4	-0	-13	-8	+3	-2	+9	-7	-17
Mesh[T]Alt	-22	-3	-2	+13	-0	-9	-10	+3	+5	+21	+1	-11
Mesh[T]Chain	-7	-1	+2	+7	+3	-12	-5	+2	+6	+0	+7	-7
Mesh[T][S]	-11	+11	-6	-4	-5	-13	-12	+3	+9	+5	+0	-24
Mesh[T][S][FP]	-8	+2	-5	+3	-11	-19	-4	+5	-11	+7	-5	-12
Mesh[T][S]Sparse	-3	-5	-6	-8	-20	-7	-9	+2	-5	-0	+6	-28
Step[T]Alt	-13	+10	+3	+4	-3	-19	-6	+4	-3	+15	+4	-9
Step[T][S]	-15	+1	-4	+6	+1	-7	-8	+2	+2	+1	-9	-1
[T]Alt	-7	+0	+5	+2	-4	-5	-4	+4	-5	+7	+6	-10
[T][S]	-1	-1	-2	+6	+0	-7	-0	+4	-6	-4	-5	-8
[T][S][FP]	-7	-9	-12	+5	-5	-23	-3	+6	-7	+16	+8	-18
[T][S][HP]	-13	+1	+2	-9	-1	-11	-12	+3	+5	+2	+10	-4
[T][S][HP]Async	-20	-5	-16	-8	-3	-29	-8	+2	+3	-3	+7	-24
[T][S][L]	-28	-3	+1	-6	+4	-9	-8	+2	-4	-1	-4	-14
[T][S][L]Cache	-17	-3	-11	-7	-9	+7	-9	+3	-13	-0	-0	-17
[T][S]Sparse	-15	-0	-5	+3	-14	-25	-11	+4	-1	+5	-6	-8
step_sgd	-1	-2	+5	+3	+2	-7	-6	+1	+2	+12	+3	-0
step_tween	-21	-4	-3	+8	-6	-25	-12	+3	-10	+17	+7	-11
step_tween_chain	-1	+4	+2	+7	+8	-0	-0	+3	+2	+13	+4	-7
tween	-14	-1	+3	-3	-5	-11	-10	+3	-2	+9	+0	-9
tween_chain	+6	+4	+9	+12	+9	-1	-4	+3	+6	+2	+12	+5

AccD vs sgd, every mode x dtype (cols 13-24)

AccD vs sgd, every mode x dtype (cols 13-24)

	int16	int2	int3	int32	int4	int5	int6	int64	int8	nf4	ternary	uint
MeshBP	-8	+5	+15	+5	+5	+13	+3	-6	-3	-5	+3	+4
Mesh[T]	-5	-3	+10	-7	+7	+1	+2	-12	-8	+4	+4	-2
Mesh[T]Alt	-1	+4	+3	-14	+12	-3	-2	-5	-18	-9	-0	-9
Mesh[T]Chain	-4	+2	-0	+1	+3	+2	+8	-15	-5	+5	+4	+10
Mesh[T][S]	-15	+1	+1	-12	-11	-6	-13	-7	-11	-3	-5	+4
Mesh[T][S][FP]	-19	+1	-3	-6	+5	-5	+8	-16	-6	+9	+9	+0
Mesh[T][S]Sparse	-4	-2	+7	+3	+18	+5	-6	-11	-19	-9	+11	-12
Step[T]Alt	-6	+11	+10	-4	+9	-8	+12	-8	-13	-6	+4	-7
Step[T][S]	-1	-2	+11	-8	+11	+2	+3	-16	-12	+8	-3	-16
[T]Alt	-2	+10	+5	-5	+2	+7	+0	-8	-12	+5	+12	-5
[T][S]	-5	+2	-2	-4	-6	+7	+1	-7	-12	+10	+7	-10
[T][S][FP]	-16	-0	+1	-4	+1	+4	-11	-26	-13	-2	+1	-14
[T][S][HP]	-14	-5	+10	-13	-1	+19	-8	-5	-5	-14	+8	-5
[T][S][HP]Async	+6	+3	+27	-11	+17	-2	-3	-34	+3	-0	+3	-16
[T][S][L]	-23	-4	-3	-8	-5	+18	+8	-11	-24	-0	+5	-3
[T][S][L]Cache	-6	+5	+8	-3	+5	-4	+3	-15	-21	+6	+5	-10
[T][S]Sparse	-18	+4	+5	-5	+18	-6	+6	-27	-7	-3	-2	-11
step_sgd	+1	-5	+6	-2	+4	-5	-1	-8	-11	-5	-6	-6
step_tween	-6	-5	+11	-3	+8	+8	-5	-12	-7	+5	+5	-12
step_tween_chain	-2	-0	+6	+2	+8	+6	+9	-2	-7	-3	+6	+5
tween	-2	-4	+11	-9	-0	+6	+3	-19	-19	+7	+4	-1
tween_chain	-4	+2	+5	+11	+2	-4	+2	-3	-4	+0	+5	+8

AccD vs sgd, every mode x dtype (cols 25-34)

AccD vs sgd, every mode x dtype (cols 25-34)

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	+2	-5	-5	+3	+14	-4	+3	-3	+9	-1
Mesh[T]	-2	+2	-4	-17	+6	-0	-7	-5	-9	-6
Mesh[T]Alt	-4	+13	-16	-11	+6	-6	-2	-12	-2	-4
Mesh[T]Chain	+4	-0	-4	-8	+14	-4	+0	-4	+5	+0
Mesh[T][S]	+1	+13	-6	-14	+11	-15	-6	-8	+0	-20
Mesh[T][S][FP]	-8	-1	-9	-15	+11	-17	-3	+8	-7	-8
Mesh[T][S]Sparse	-2	+2	+2	-21	+2	-2	+3	-11	+10	-14
Step[T]Alt	-14	+1	-6	-18	+8	-1	-3	-10	-1	-7
Step[T][S]	-6	-4	-4	-9	+3	-1	-4	-6	-6	-5
[T]Alt	-4	+4	-10	-14	+6	-10	-5	-7	-5	-7
[T][S]	-8	+4	-10	-10	+3	-6	-10	-8	-6	-14
[T][S][FP]	-13	+13	+3	-8	+9	-4	-12	+8	-19	-9
[T][S][HP]	+3	+1	-1	-9	+3	-11	+3	-11	+5	-14
[T][S][HP]Async	-8	+5	+6	-16	+26	-8	-6	+0	-13	+11
[T][S][L]	-14	+13	-10	-4	-1	-15	-12	-0	+4	-17
[T][S][L]Cache	-11	-7	-7	-7	-6	-14	-13	-7	-17	-21
[T][S]Sparse	-8	+11	-12	-18	+7	-19	-7	-21	-10	-11
step_sgd	-2	+0	-7	-10	+3	-6	-4	+3	-2	-0
step_tween	-11	+7	-3	-12	+15	-10	-10	-13	+0	-6
step_tween_chain	-1	-3	-8	-6	+7	+5	-6	+2	-1	-4
tween	+3	+1	-7	-11	+8	-9	-7	-9	-3	-7
tween_chain	+4	-0	-9	-7	+5	-11	+1	-3	+7	+2

ScoreD vs sgd, every mode x dtype (cols 1-12)

ScoreD vs sgd, every mode x dtype (cols 1-12)

	bfloat16	binary	complex128	complex64	float16	float32	float64	fp4	fp6	fp8e4m3	fp8e5m2	int
MeshBP	-526	-217	-62	-162	-162	-448	+264	-30	-35	-80	-139	-385
Mesh[T]	-912	-308	-504	-479	-838	-756	-388	-138	-143	-36	-474	-606
Mesh[T]Alt	-1300	-456	-602	-622	-1010	-1263	-702	-414	-219	-164	-514	-768
Mesh[T]Chain	-709	-116	-209	-255	-450	-681	-192	-135	-62	-136	-198	-473
Mesh[T][S]	-1067	-74	-497	-557	-695	-1048	-450	-49	-108	-49	-322	-702
Mesh[T][S][FP]	-1051	-163	-469	-467	-938	-1196	-595	-213	-228	-24	-459	-576
Mesh[T][S]Sparse	-872	-315	-449	-594	-1005	-927	-448	-190	-134	-230	-338	-737
Step[T]Alt	-1186	-347	-523	-612	-933	-1266	-652	-343	-239	-153	-564	-722
Step[T][S]	-980	-238	-383	-418	-579	-643	-318	-115	-91	-141	-507	-547
[T]Alt	-1189	-415	-494	-548	-866	-1109	-572	-365	-229	-168	-488	-706
[T][S]	-579	-29	-68	-109	-400	-475	-40	+17	-85	+65	-277	-333
[T][S][FP]	-323	-334	-401	-289	-455	-696	-191	+148	-103	+202	+12	-466
[T][S][HP]	-745	-43	-28	-412	-362	-551	-214	+138	+27	-1	-15	-133
[T][S][HP]Async	-1207	-373	-565	-584	-600	-1245	-453	-39	-40	-11	-43	-632
[T][S][L]	-1280	-137	-359	-489	-250	-470	-305	+37	-10	-158	-157	-631
[T][S][L]Cache	-935	-101	-411	-415	-655	-112	-329	+26	-199	-4	-292	-668
[T][S]Sparse	-975	+19	-378	-291	-808	-992	-402	-48	-73	-73	-282	-556
step_sgd	-650	-222	-115	-310	-223	-388	-213	-47	-11	+123	-109	-390
step_tween	-1103	-240	-426	-371	-794	-1108	-519	-165	-160	+126	-376	-549
step_tween_chain	-706	-126	-306	-423	-426	-243	-224	-111	-48	+117	-280	-575
tween	-695	+37	-322	-409	-609	-566	-243	-18	-8	+68	-285	-554
tween_chain	-396	+210	-83	-85	-84	-108	-89	-32	+121	+65	+20	-197

ScoreD vs sgd, every mode x dtype (cols 13-24)

ScoreD vs sgd, every mode x dtype (cols 13-24)

	int16	int2	int3	int32	int4	int5	int6	int64	int8	nf4	ternary	uint
MeshBP	-88	-96	+26	+53	-6	+4	-35	-391	-284	-136	-40	-97
Mesh[T]	-288	-145	+3	-345	-2	-38	+24	-731	-517	-45	-227	-197
Mesh[T]Alt	-530	-510	-86	-458	-416	-175	-167	-888	-1002	-251	-502	-554
Mesh[T]Chain	-111	+27	-65	-36	-102	-47	+19	-591	-414	-90	-136	-74
Mesh[T][S]	-389	-229	-14	-363	-385	-108	-115	-640	-734	-129	-368	-175
Mesh[T][S][FP]	-440	-358	-67	-334	-286	-101	-27	-781	-742	-116	-354	-260
Mesh[T][S]Sparse	-337	-325	-45	-332	-64	-102	-116	-696	-774	-185	-91	-418
Step[T]Alt	-516	-435	-86	-466	-373	-192	-155	-881	-931	-232	-464	-489
Step[T][S]	-298	-352	+44	-315	-62	-13	+1	-748	-465	-27	-353	-438
[T]Alt	-444	-396	-65	-466	-428	-135	-156	-770	-928	-202	-408	-444
[T][S]	-124	+194	+30	-124	-237	+72	+76	-454	-281	+211	-47	-202
[T][S][FP]	-116	+111	+106	-87	+10	+27	-153	-540	-360	-27	-105	-308
[T][S][HP]	-47	+163	+382	-177	+38	+100	-15	-42	-393	-139	+101	-125
[T][S][HP]Async	-74	-185	+165	-224	+394	-93	-135	-876	-327	-25	-172	-495
[T][S][L]	-500	-210	+20	-236	-288	+223	+25	-424	-724	-1	-255	-291
[T][S][L]Cache	-136	+157	+84	-149	+112	-63	-91	-606	-646	+76	+163	-260
[T][S]Sparse	-501	-11	+77	-161	+349	-100	+36	-726	-580	-113	-100	-274
step_sgd	-132	-267	+118	-131	-77	-57	+2	-441	-486	-66	-210	-214
step_tween	-407	-284	+39	-343	-37	-61	-147	-727	-489	-143	-104	-356
step_tween_chain	-268	-269	+28	-231	+8	+46	+34	-471	-496	-148	-266	-60
tween	-139	-241	+85	-308	-188	-3	-26	-646	-653	+98	-80	-96
tween_chain	+33	-78	+18	+164	-49	-122	+0	-433	+96	-60	+34	+128

ScoreD vs sgd, every mode x dtype (cols 25-34)

ScoreD vs sgd, every mode x dtype (cols 25-34)

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	-303	-344	-160	-244	+190	-153	+72	-216	-52	-194
Mesh[T]	-479	-292	-245	-708	-22	-246	-86	-438	-669	-400
Mesh[T]Alt	-731	-469	-324	-877	-216	-341	-121	-695	-904	-734
Mesh[T]Chain	-272	-383	-190	-466	+139	-153	+50	-296	-283	-400
Mesh[T][S]	-450	-313	-183	-561	-38	-281	-16	-504	-531	-606
Mesh[T][S][FP]	-568	-299	-278	-847	+28	-335	-87	-425	-670	-486
Mesh[T][S]Sparse	-512	-339	-194	-835	-170	-256	-71	-538	-492	-630
Step[T]Alt	-722	-425	-302	-874	-221	-314	-152	-663	-786	-663
Step[T][S]	-548	-428	-212	-613	-24	-204	-2	-524	-536	-480
[T]Alt	-711	-406	-316	-845	-160	-313	-142	-690	-757	-589
[T][S]	-322	-34	-206	-488	+13	-99	+53	-287	-420	-449
[T][S][FP]	-450	+61	+99	-344	+259	-95	-13	-8	-769	-214
[T][S][HP]	-188	-211	-48	-22	+269	-184	+108	-324	-86	-477
[T][S][HP]Async	-544	-218	+85	-554	+261	-248	-30	-347	-703	-155
[T][S][L]	-630	-55	-170	-543	-51	-292	-36	-389	-160	-510
[T][S][L]Cache	-406	-278	-89	-518	-86	-289	-104	-224	-574	-593
[T][S]Sparse	-454	-165	-226	-778	+118	-293	-78	-614	-547	-368
step_sgd	-278	-335	-186	-434	+2	-194	+12	-19	-420	-236
step_tween	-498	-267	-171	-762	-40	-291	-97	-590	-417	-492
step_tween_chain	-437	-368	-141	-524	+27	-66	-10	-301	-377	-396
tween	-166	-241	-152	-495	+341	-234	-2	-438	-338	-415
tween_chain	+47	-249	-167	-448	+85	-178	+32	-149	+56	-66

AvailD vs sgd, every mode x dtype (cols 1-12)

AvailD vs sgd, every mode x dtype (cols 1-12)

	bfloat16	binary	complex128	complex64	float16	float32	float64	fp4	fp6	fp8e4m3	fp8e5m2	int
MeshBP	-4	-3	-4	-6	-3	-2	+0	-1	-0	-5	-4	-6
Mesh[T]	-5	-2	-8	-7	-6	-1	-5	-1	-2	-4	-6	-5
Mesh[T]Alt	-11	-10	-10	-9	-10	-9	-9	-9	-5	-9	-10	-9
Mesh[T]Chain	-5	-2	-3	-1	-3	-1	-3	-3	-2	-4	-7	-2
Mesh[T][S]	+3	+4	+3	+4	+6	+2	+7	+11	+9	+9	+8	+8
Mesh[T][S][FP]	+4	+7	+6	+6	+7	+2	+1	+6	+3	+10	+4	+8
Mesh[T][S]Sparse	+7	+8	+11	+9	+10	+10	+7	+10	+9	+8	+7	+11
Step[T]Alt	-9	-12	-11	-13	-10	-7	-10	-11	-10	-11	-12	-12
Step[T][S]	-2	-3	-6	-5	-3	-2	-4	-0	+0	-2	-5	-6
[T]Alt	-14	-13	-7	-11	-11	-11	-10	-12	-5	-9	-12	-10
[T][S]	+0	+1	+5	+4	+4	+2	+1	+4	+6	+3	+2	+6
[T][S][FP]	+6	+4	+3	+6	+8	+4	+3	+7	+8	+8	+6	+9
[T][S][HP]	+4	+3	+7	+7	+8	+5	+5	+5	+7	+6	+4	+8
[T][S][HP]Async	+1	-1	+4	+6	+7	+3	+4	+9	+8	+6	+7	+8
[T][S][L]	-0	-2	-0	-1	+0	+2	-2	+5	+5	+1	-3	-0
[T][S][L]Cache	+5	+2	+6	+6	+7	+5	+4	+8	+8	+7	+5	+4
[T][S]Sparse	+8	+10	+9	+9	+9	+10	+11	+11	+9	+6	+6	+11
step_sgd	-7	-6	-2	-7	-4	-4	-6	+3	-1	-6	-5	-4
step_tween	-8	-6	-9	-7	-7	-5	-9	-6	-5	-7	-10	-7
step_tween_chain	-8	-6	-8	-11	-8	-4	-8	-6	-5	-8	-9	-8
tween	-4	-1	-8	-4	-3	-3	-4	-1	+3	-4	-7	-5
tween_chain	-3	-1	-5	-4	-2	-1	+2	-2	+0	-3	-6	-2

AvailD vs sgd, every mode x dtype (cols 13-24)

AvailD vs sgd, every mode x dtype (cols 13-24)

	int16	int2	int3	int32	int4	int5	int6	int64	int8	nf4	ternary	uint
MeshBP	+0	+0	-4	-0	-1	-3	-5	-2	-4	-2	-1	-3
Mesh[T]	-1	+1	-3	-5	-3	-3	-1	-5	-0	-4	-5	-3
Mesh[T]Alt	-7	-7	-7	-6	-12	-7	-4	-7	-9	-9	-10	-9
Mesh[T]Chain	+1	+2	-5	-0	-1	-5	-0	+0	-2	-3	+1	-1
Mesh[T][S]	+12	+6	+5	+8	+4	+6	+7	+8	+5	+5	+5	+11
Mesh[T][S][FP]	+9	+4	+4	+8	+4	+6	+7	+8	+4	+7	+3	+9
Mesh[T][S]Sparse	+13	+12	+10	+12	+9	+11	+10	+10	+12	+13	+12	+12
Step[T]Alt	-10	-12	-8	-10	-9	-11	-10	-12	-12	-10	-13	-10
Step[T][S]	+0	-1	-2	-2	-2	-2	+2	-2	-2	-2	-2	-2
[T]Alt	-7	-9	-8	-10	-12	-6	-9	-9	-12	-11	-13	-9
[T][S]	+6	+4	+3	+5	-1	+4	+7	+6	+5	+5	-1	+7
[T][S][FP]	+11	+6	+6	+10	+5	+8	+8	+7	+5	+9	+3	+9
[T][S][HP]	+11	+6	+7	+10	+3	+5	+5	+8	+2	+5	+3	+9
[T][S][HP]Async	+11	+7	+5	+6	+5	+7	+5	+10	+4	+7	+3	+6
[T][S][L]	+3	+1	+2	+1	+0	+3	+2	+2	+1	-0	-2	+1
[T][S][L]Cache	+11	+6	+5	+8	+5	+7	+8	+8	+7	+8	+3	+9
[T][S]Sparse	+10	+12	+10	+11	+9	+11	+10	+11	+8	+11	+11	+13
step_sgd	-4	-3	-4	-3	-3	-4	-4	-5	-2	-5	-2	-3
step_tween	-8	-4	-6	-8	-4	-7	-7	-7	-5	-8	-5	-9
step_tween_chain	-8	-3	-6	-4	-5	-3	-5	-4	-5	-6	-9	-4
tween	-3	-1	-5	-3	-4	-2	-1	-4	+0	-0	-2	-2
tween_chain	+1	+1	-2	+1	-1	-4	-3	-2	+3	-2	+0	-1

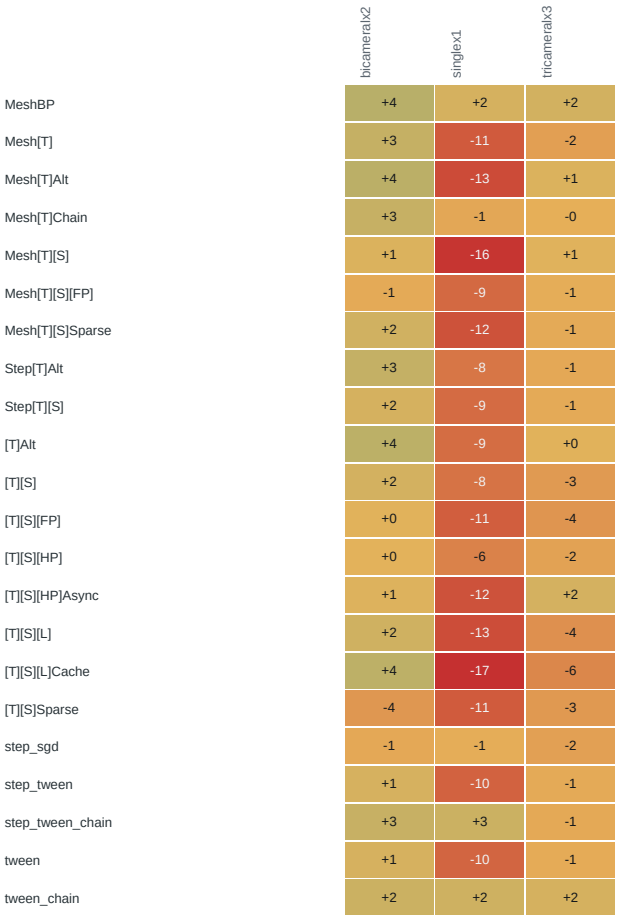
AvailD vs sgd, every mode x dtype (cols 25-34)

AvailD vs sgd, every mode x dtype (cols 25-34)

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	-3	-2	-4	-3	-1	-5	+1	-7	+0	-4
Mesh[T]	-3	-4	-6	-5	-2	-8	+2	-8	-3	-6
Mesh[T]Alt	-6	-9	-7	-7	-6	-13	-2	-10	-9	-11
Mesh[T]Chain	-0	-3	-3	-3	-2	-6	+0	-4	-1	-5
Mesh[T][S]	+10	+3	+6	+8	+10	+4	+11	+6	+6	+8
Mesh[T][S][FP]	+8	+8	+4	+7	+9	+2	+11	+4	+7	+7
Mesh[T][S]Sparse	+11	+9	+8	+8	+5	+5	+10	+6	+10	+12
Step[T]Alt	-9	-10	-14	-11	-9	-14	-7	-14	-10	-10
Step[T][S]	-1	-5	-5	-3	-4	-5	+4	-8	+0	-5
[T]Alt	-11	-8	-9	-10	-9	-14	-7	-15	-9	-8
[T][S]	+4	+4	+4	+2	+3	+2	+9	+3	+0	+4
[T][S][FP]	+7	+7	+4	+8	+8	+2	+11	+7	+7	+7
[T][S][HP]	+7	+7	+7	+7	+9	+2	+11	+7	+7	+7
[T][S][HP]Async	+9	+2	+6	+9	+7	+0	+11	+4	+7	+7
[T][S][L]	+1	+1	+0	-3	+1	+0	+4	-3	+3	-0
[T][S][L]Cache	+9	+9	+7	+6	+7	+3	+11	+6	+6	+5
[T][S]Sparse	+10	+10	+8	+6	+12	+7	+11	+7	+12	+8
step_sgd	-2	-6	-7	-7	-4	-7	-4	-5	-5	-4
step_tween	-6	-8	-9	-10	-9	-9	-4	-11	-6	-9
step_tween_chain	-6	-9	-6	-8	-5	-9	-1	-8	-6	-9
tween	-3	-7	-4	-4	-1	-5	+1	-6	-2	-5
tween_chain	+1	-4	-4	-2	+1	-6	+0	-4	-2	-4

AccD vs sgd, every mode x arch

AccD vs sgd, every mode x arch



Family collapse - Step* vs non-Step

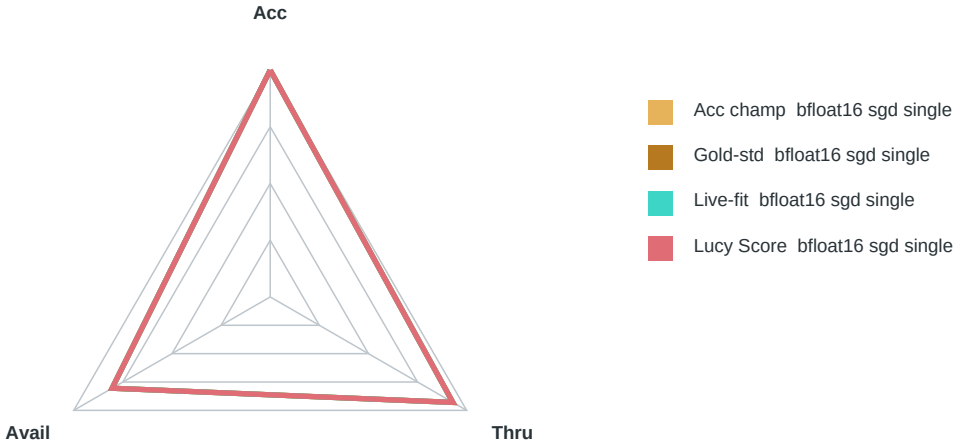
Step* is a 1D pipe (one sample enters layer 0 per tick; output is the sample that entered depth ticks ago). Non-Step of the same family is a full-chain update. AccD is a real scheduler split, not leftover warm-up forwards.

step	plain	n	mean |AccD|
Step[T]Alt	[T]Alt	102	7.27
Step[T][S]	[T][S]	102	7.95
step_sgd	sgd	102	7.65
step_tween	tween	102	8.12
step_tween_chain	tween_chain	102	8.45

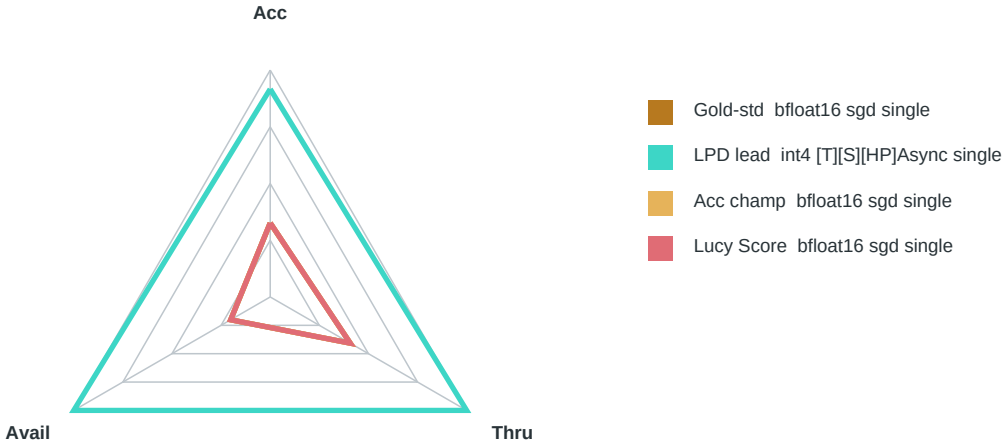
Consciousness - Acc, Throughput, Availability

Synthetic organism / Lucy density: can the net run and train at the same time in a small box. Lucy Score = Throughput x Availability x Acc / 10,000 (hard Acc; SoftAcc is serve-confidence only). SGD that blocks serve dies on Availability. Q = geomean Acc/Thru/Avail vs learner peaks (traps do not set Thru/Avail). LPD = Q x shrink vs Acc-champ RAM; 0 unless Acc keep >=70%. Gold = all 3 pillars >=80% at <=20% Acc-champ RAM. Gold-std = Acc >=80% plus Thru or Avail, then smallest then fastest. Score/MiB is the binary trap.
Acc champ bfloat16|none|sgd|single|simd Acc 74.9 Thru 13729 Avail 35.1% 0.2 KiB (RAM reference)
Lucy Score champ (T x Avail x Acc) bfloat16|none|sgd|single|simd Score 3612.0 Acc 74.9 Soft 30 0.2 KiB
Live-fit champ (best Q) bfloat16|none|sgd|single|simd Acc 74.9 Thru 13729 Avail 35.1% 0.2 KiB
Gold-std (2+ pillars, Acc keep >= 80%, then smallest then fastest): bfloat16|none|sgd|single|simd mode sgd Acc 74.9 Thru 13729 0.2 KiB
Board fastest int2|none|[T][S][HP]|single|simd Thru 15018 (traps may own this) Best availability complex128|none|Mesh[T][S]Sparse|tricameral|simd 48.3%
Learner Thru peak 14766 learner Avail peak 43.6%

Consciousness radar - Acc / Thru / Avail vs learner peaks



Memory density radar - same pillars x shrink vs Acc champ (traps sit at origin)



No gold cell yet. Need all three pillars at 80% of learner peaks in one fifth of Acc-champ RAM.

Gold-standard train modes - 2+ pillars, Acc keep >= 80%, smallest then fastest

Mode	n	Acc	KiB	Thru	Cell
sgd	5	74.9	0.2	14766	bfloat16 sgd single / float32 sgd single
tween_chain	3	71.3	0.2	12933	float16 tween_chain single / float32 tween_chain single
Mesh[T][S]Sparse	1	63.3	0.2	5174	bfloat16 Mesh[T][S]Sparse single
step_sgd	2	68.3	0.3	13023	float32 step_sgd single
step_tween_chain	1	71.7	0.3	12746	float32 step_tween_chain single
[T][S][HP]	2	63.9	0.3	9041	float32 [T][S][HP] single
[T][S][HP]Async	2	62.5	0.4	4141	int4 [T][S][HP]Async bicameral
MeshBP	2	66.0	0.6	9950	float64 MeshBP single
[T][S]	1	62.7	0.6	7618	float64 [T][S] single
Mesh[T][S]	1	61.8	0.8	574	fp6 Mesh[T][S] tricameral

Lucy density (LPD) - Q x shrink vs Acc-champ RAM; 0 if Acc keep < 70%

Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
-	int4 [T][S][HP]Async single	70	57	100	74	25	4.0	2.95	52.6	8425	0.0

Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
-	uint3 [T][S][HP]Async single	73	36	91	62	24	4.2	2.62	54.5	5364	0.0
-	int5 [T][S][L] single	74	37	82	61	31	3.2	1.95	55.5	5517	0.0
-	fp6 tween_chain single	79	36	78	61	38	2.7	1.62	59.3	5369	0.1
-	int8 sgd single	74	85	72	77	50	2.0	1.54	55.4	12605	0.1
-	int8 MeshBP single	76	74	75	75	50	2.0	1.50	57.0	10935	0.1
-	uint8 tween_chain single	76	89	77	81	55	1.8	1.47	57.3	13213	0.1
-	int6 Mesh[T][S][FP] single	75	17	88	48	38	2.7	1.27	55.9	2444	0.1
-	fp8e4m3 Mesh[T]Alt single	70	25	69	49	50	2.0	0.99	52.6	3653	0.1
keep	bfloat16 sgd single	100	93	80	91	100	1.0	0.91	74.9	13729	0.2
keep	float16 sgd single	95	84	82	87	100	1.0	0.87	70.9	12381	0.2
keep	float16 tween_chain single	95	73	80	82	100	1.0	0.82	71.3	10803	0.2
acc	float16 MeshBP single	89	73	78	80	100	1.0	0.80	66.5	10755	0.2
acc	float16 step_sgd single	82	78	79	79	100	1.0	0.79	61.1	11445	0.2
-	binary Mesh[T][S] bicameral	80	22	80	52	66	1.5	0.79	59.7	3308	0.1
acc	bfloat16 tween_chain single	83	78	74	78	100	1.0	0.78	62.4	11481	0.2
acc	float16 [T][S][L] single	92	67	76	78	100	1.0	0.78	69.1	9931	0.2
acc	bfloat16 MeshBP single	95	70	70	77	100	1.0	0.77	71.0	10292	0.2
keep	uint16 tween_chain single	82	70	84	78	105	1.0	0.75	61.5	10328	0.2
acc	bfloat16 step_sgd single	80	73	70	74	100	1.0	0.74	60.0	10751	0.2

Consciousness rank - Q = geomean Acc/Thru/Avail keep

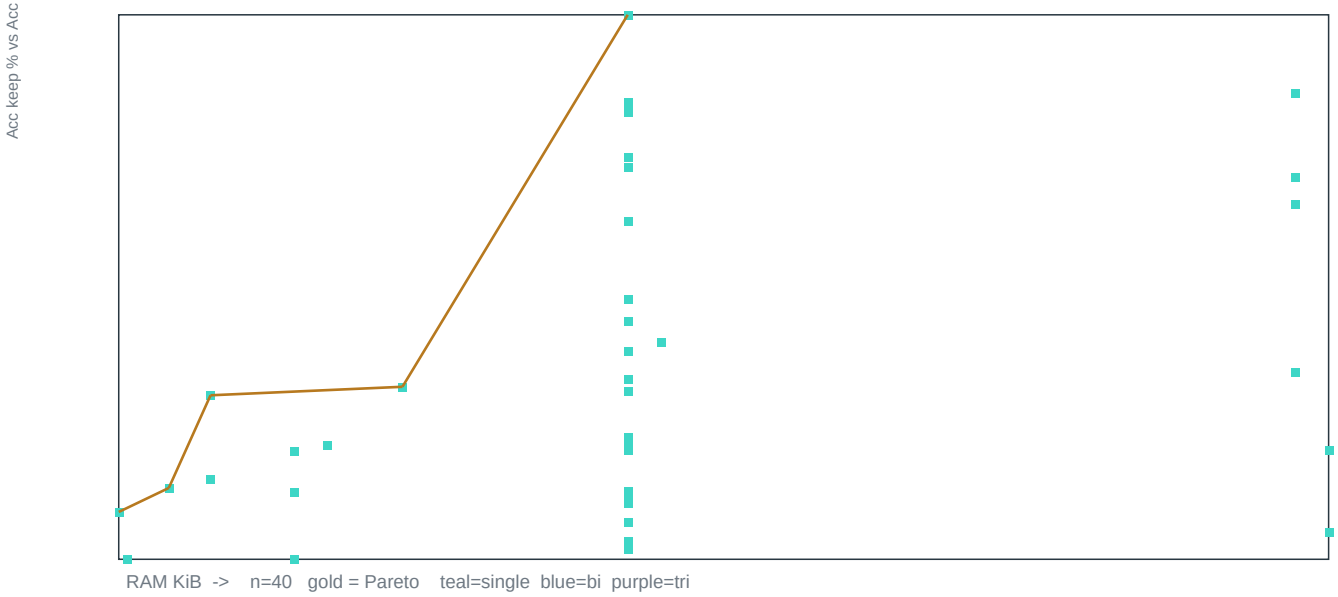
Band	Cell	Acc%	Thru%	Avail%	Q%	LPD	Thru	Avail
keep	bfloat16 sgd single	100	93	80	91	0.91	13729	35.1
keep	float32 tween_chain single	90	88	86	88	0.44	12933	37.7
keep	float32 step_tween_chain single	96	86	80	87	0.43	12746	34.8
keep	float16 sgd single	95	84	82	87	0.87	12381	35.8
keep	float32 sgd single	80	100	76	85	0.42	14766	33.2
keep	float32 step_sgd single	91	88	71	83	0.42	13023	31.1
keep	float16 tween_chain single	95	73	80	82	0.82	10803	35.1
keep	int64 sgd single	89	67	90	81	0.20	9885	39.1
-	uint8 tween_chain single	76	89	77	81	1.47	13213	33.7
-	uint32 [T][S][HP] single	72	76	96	80	0.39	11185	41.9

Trap - tiny RAM, Acc keep < 70% (Score/MiB and SoftAcc Score lie here)

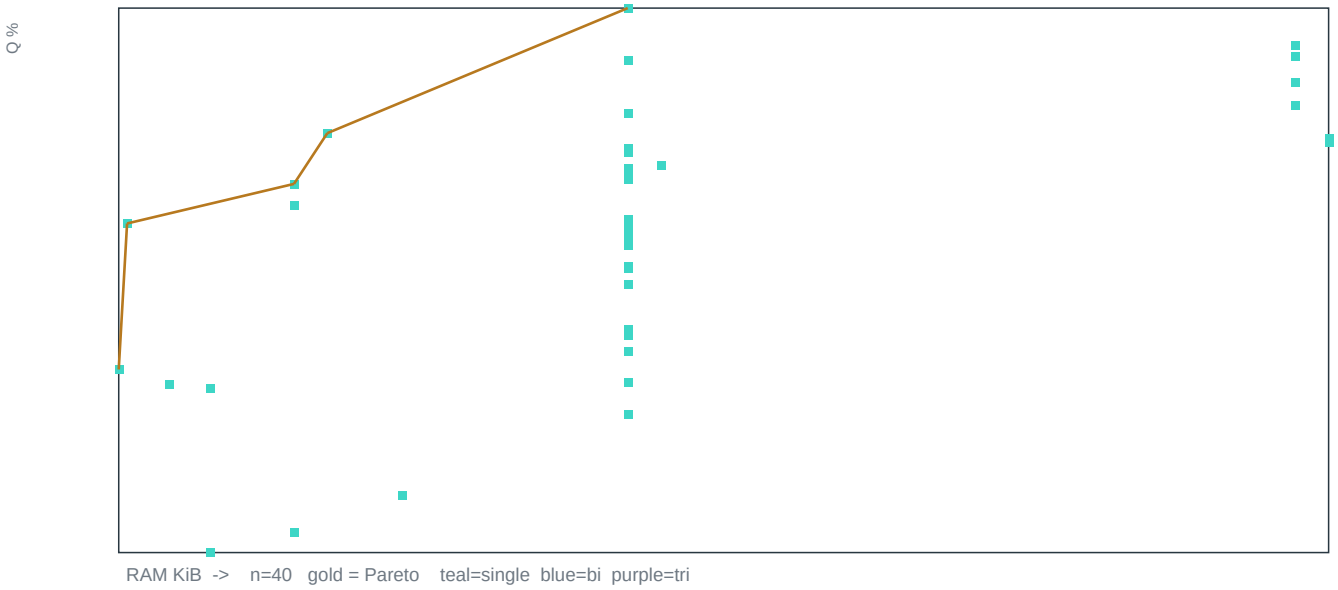
Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
trap	binary sgd single	21	95	79	54	6	16.0	0.00	15.7	14005	0.0
trap	binary step_sgd single	23	72	67	48	6	16.0	0.00	17.0	10690	0.0
trap	binary tween single	40	85	79	64	6	16.0	0.00	29.7	12526	0.0
trap	binary tween_chain single	56	84	79	72	6	16.0	0.00	41.6	12355	0.0
trap	binary step_tween single	26	70	71	51	6	16.0	0.00	19.3	10370	0.0
trap	binary step_tween_chain single	41	65	67	56	6	16.0	0.00	30.5	9592	0.0
trap	binary MeshBP single	23	56	72	45	6	16.0	0.00	17.2	8195	0.0
trap	binary Mesh[T] single	28	67	78	53	6	16.0	0.00	21.0	9895	0.0
trap	binary Mesh[T]Chain single	35	69	81	58	6	16.0	0.00	26.3	10255	0.0
trap	binary [T][S] single	41	61	86	60	6	16.0	0.00	30.4	9006	0.0

Acc keep % vs RAM KiB (gold = high Acc, low RAM vs Acc champ)

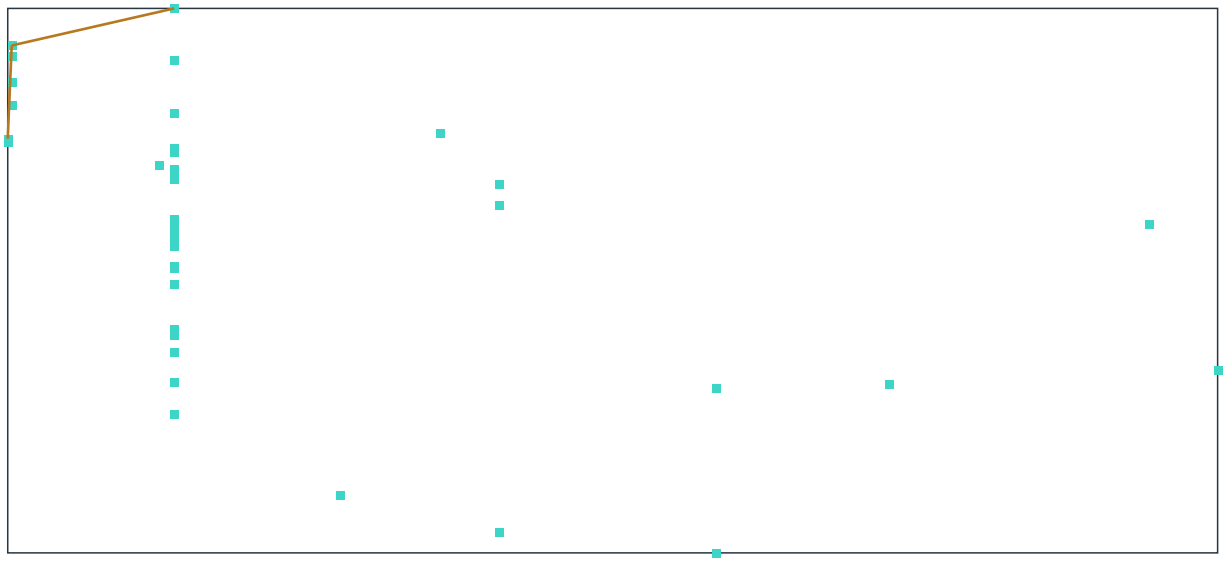
Acc keep % vs RAM KiB (gold = high Acc, low RAM vs Acc champ)



Q% vs RAM KiB (gold = high consciousness, low RAM)

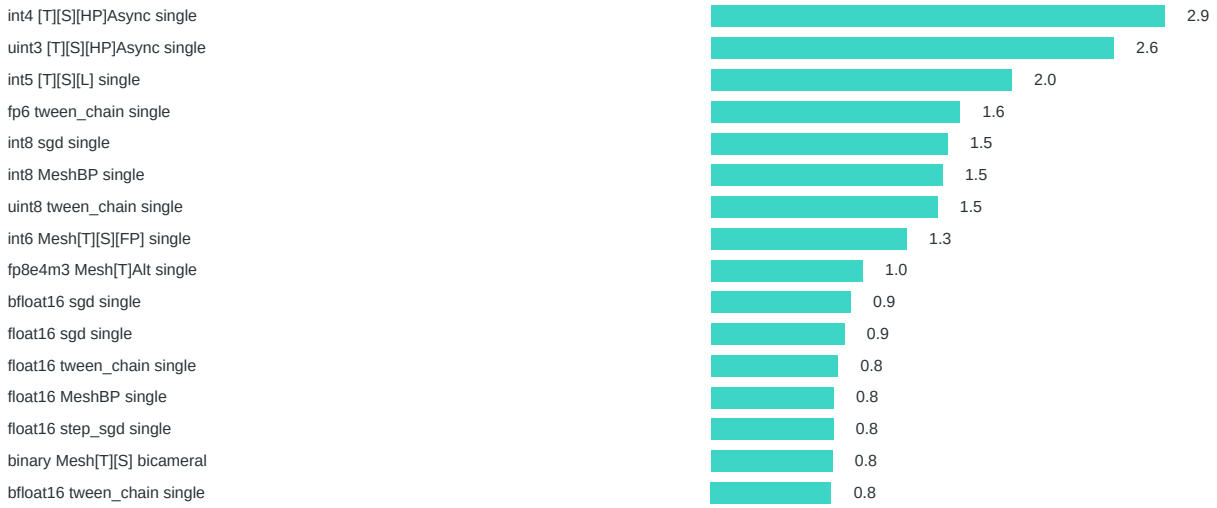


Q% vs shrink vs Acc champ (gold = upper right)

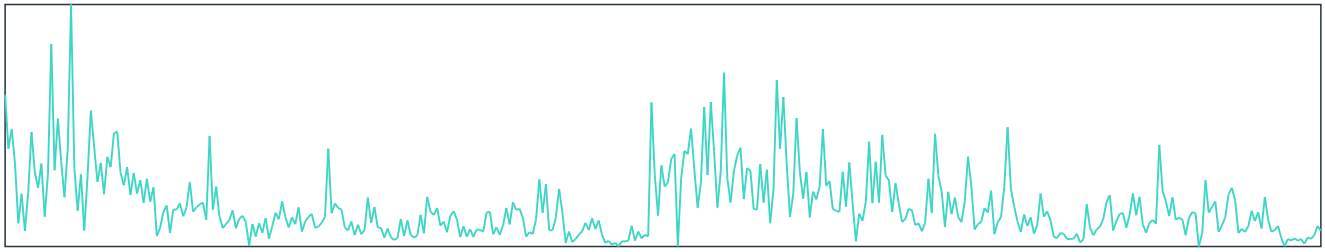



times smaller than Acc champ -> n=40 gold = Pareto teal=single blue=bi purple=tri
Q %

Top Lucy density (LPD)

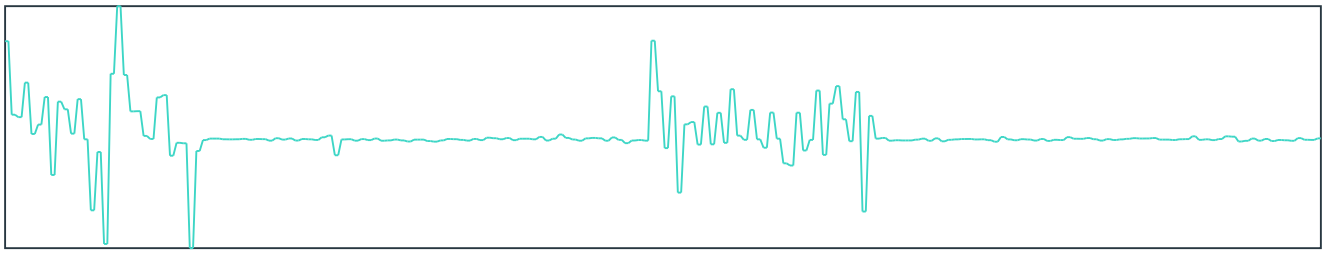


Live pulse (Score)



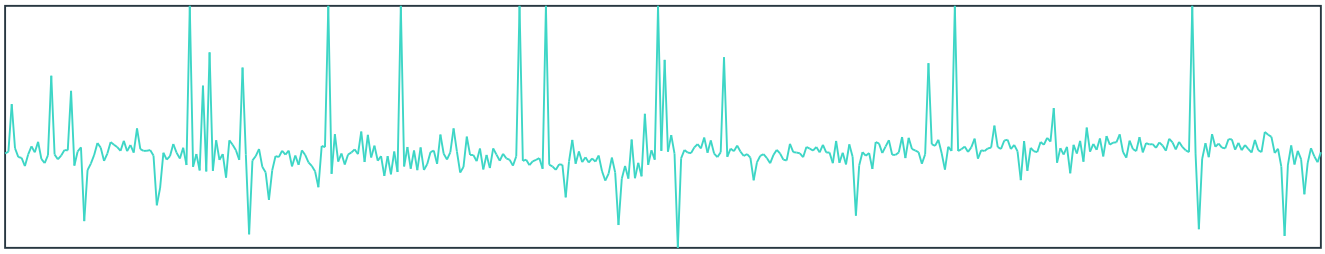
n=400 min=1.21 max=1390.62

Live pulse (SoftAcc)



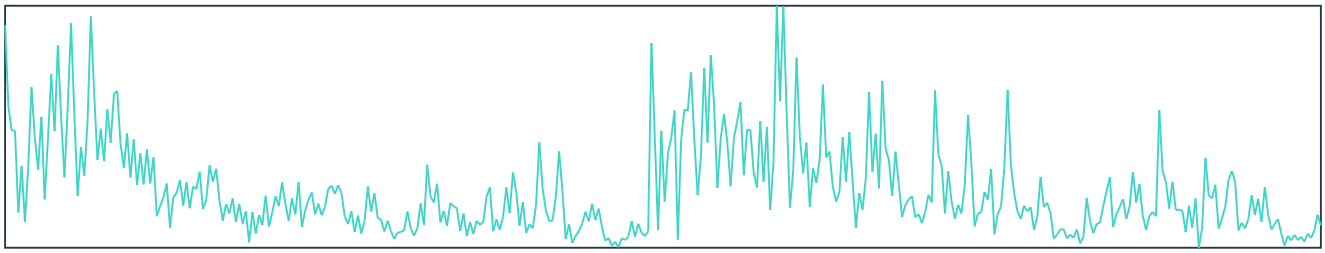
n=400 min=24.29 max=25.86

Live pulse (Availability)



n=400 min=2.82 max=100.00

Live pulse (Throughput)



n=400 min=47.09 max=9081.38

Queue by train mode (this epoch)

Mode	Done	Run	Left	Total