tide residual

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 13:33:03 -
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 - residual - offline report

Lucy champions (this tide)

Axis	Cell	Score	Soft	Acc	Thru	Avail
hard acc	binary|none|Mesh[T]Alt|single|simd	658.10	25.5	33.5	6203.4	41.6
throughput	float32|none|tween|single|simd	4041.07	25.0	27.8	33957.5	47.6
availability	uint3|none|[T][S][L]Cache|single|simd	873.94	25.0	22.8	6165.9	56.6
lucy score	float32|none|Step[T][S]|single|simd	4114.44	25.1	31.8	33642.4	48.8
mobile score (trap)	binary|none|tween|single|simd	3577.43	25.2	27.6	29875.9	47.5
t->50%	int32|none|step_sgd|single|simd	794.45	21.6	24.7	11720.5	31.4
acc/sec	uint2|none|sgd|single|simd	1673.31	25.1	27.7	17202.0	38.8

Lucy axis champions (this tide)

Axis	Mode	DType	Arch	Value
hard_acc	[T][S][FP]	float64	tricameralx3	44.91
throughput	tween	float32	singlex1	33957.51
availability	[T][S][L]Cache	uint3	singlex1	56.64
score	Step[T][S]	float32	singlex1	4114.44
soft_acc	Mesh[T]Alt	binary	singlex1	25.49
acc_thru	Step[T][S]	float32	singlex1	10710.93
realtime	Step[T][S]	float32	singlex1	16412.60
adapt	tween	binary	singlex1	25.36
keep_learn	step_sgd	float64	tricameralx3	15.09
acc_per_sec	sgd	uint2	singlex1	12.52
time_to_50	step_sgd	int32	singlex1	0.61
consistency	sgd	float64	singlex1	100.00
stability	sgd	fp4	singlex1	100.00
mobile_score	tween	binary	singlex1	31260090~
lpd	tween	int2	singlex1	26.49
mspeed	Step[T][S]	float32	singlex1	1.00
mavail	Mesh[T][S]Sparse	complex64	singlex1	1.00
mix	Step[T][S]	float32	singlex1	0.86
gold_std	Step[T][S]	uint4	singlex1	0.05

Best settings per train mode

Mode	DType	Format	Score	Soft	Acc	Avail	n
Step[T][S]	float32	none	4114.4	25.1	31.8	48.8	102
tween	float32	none	4041.1	25.0	27.8	47.6	102
tween_chain	float32	none	4004.7	25.0	25.4	47.4	102
Mesh[T]	float32	none	3941.8	25.0	26.9	48.1	102
MeshBP	float32	none	3667.2	25.0	27.4	47.6	102
step_tween	float32	none	3664.6	25.0	26.5	44.6	102
step_tween_chain	float32	none	3572.3	24.9	27.8	45.9	102
step_sgd	float32	none	3099.2	25.0	26.1	40.8	102
sgd	float32	none	2928.3	25.0	27.4	37.7	102

Mesh[T]Chain	float32	none	2880.8	24.9	24.5	46.4	102
[T][S]	float32	none	2850.1	25.2	27.3	51.1	102
[T][S][HP]	float32	none	2780.5	25.3	33.2	50.4	102
[T][S][L]	float32	none	2487.6	24.8	22.7	51.3	102
[T]Alt	int8	none	2172.5	24.8	23.4	42.9	102
Step[T]Alt	float32	none	1913.5	25.5	32.8	40.6	102
[T][S][FP]	float32	none	1883.4	24.9	22.1	48.6	102
[T][S][L]Cache	int8	none	1756.6	24.8	21.4	52.8	102
[T][S][HP]Async	float32	none	1570.5	25.1	26.1	49.4	102
[T][S]Sparse	float32	none	1474.9	24.8	24.6	51.2	102
Mesh[T][S]	float32	none	1299.4	24.7	26.5	51.5	102
Mesh[T][S]Sparse	float32	none	1026.4	24.7	16.8	49.8	102
Mesh[T][S][FP]	float32	none	995.5	24.9	28.4	49.3	102
Mesh[T]Alt	float32	none	753.3	25.0	26.6	41.7	102

Best dtype per mode

Mode	Winner dtype	Score	Soft	Acc
Step[T][S]	float32	4114.4	25.1	31.8
tween	float32	4041.1	25.0	27.8
tween_chain	float32	4004.7	25.0	25.4
Mesh[T]	float32	3941.8	25.0	26.9
MeshBP	float32	3667.2	25.0	27.4
step_tween	float32	3664.6	25.0	26.5
step_tween_chain	float32	3572.3	24.9	27.8
step_sgd	float32	3099.2	25.0	26.1
sgd	float32	2928.3	25.0	27.4
Mesh[T]Chain	float32	2880.8	24.9	24.5
[T][S]	float32	2850.1	25.2	27.3
[T][S][HP]	float32	2780.5	25.3	33.2
[T][S][L]	float32	2487.6	24.8	22.7
[T]Alt	int8	2172.5	24.8	23.4
Step[T]Alt	float32	1913.5	25.5	32.8
[T][S][FP]	float32	1883.4	24.9	22.1
[T][S][L]Cache	int8	1756.6	24.8	21.4
[T][S][HP]Async	float32	1570.5	25.1	26.1
[T][S]Sparse	float32	1474.9	24.8	24.6
Mesh[T][S]	float32	1299.4	24.7	26.5
Mesh[T][S]Sparse	float32	1026.4	24.7	16.8
Mesh[T][S][FP]	float32	995.5	24.9	28.4
Mesh[T]Alt	float32	753.3	25.0	26.6

Best mode per dtype

DType	Winner mode	Score	Soft	Acc
float32	Step[T][S]	4114.4	25.1	31.8
int8	tween_chain	3932.5	25.0	26.8
int2	tween	3744.0	25.1	31.6
ternary	tween	3702.3	25.1	24.8
int4	tween_chain	3669.1	24.9	22.0
binary	tween	3577.4	25.2	27.6
uint8	tween	3512.9	25.0	26.6
fp4	tween_chain	3371.4	25.0	25.0
bfloat16	Step[T][S]	3342.7	25.0	23.1

float64	tween_chain	3038.4	25.0	25.3
fp8e5m2	tween	2831.6	25.1	26.6
float16	tween	2813.5	25.0	23.5
fp8e4m3	Step[T][S]	2672.4	25.0	24.4
uint64	tween_chain	2576.0	24.9	25.9
uint16	tween_chain	2471.3	25.0	28.1
uint32	tween	2434.9	25.0	25.5
uint2	tween_chain	2325.9	25.0	25.9
uint4	tween_chain	2308.8	25.0	23.1
int16	tween	2197.7	25.0	29.3
int32	Step[T][S]	2192.5	24.8	21.9
int64	tween	2167.0	25.1	25.7
complex64	tween	2113.7	24.9	24.9
uintptr	Step[T][S]	2063.5	25.2	28.9
complex128	[T][S]	2060.7	25.2	28.8
uint	tween	2014.0	25.0	25.4
int	Step[T][S]	1885.7	25.0	19.3
nf4	tween	1674.9	25.0	25.2
uint3	Step[T][S]	1376.0	24.9	21.7
int3	tween_chain	1306.8	25.0	22.1
uint5	Step[T][S]	1044.1	24.9	20.4
int5	Step[T][S]	1001.0	25.0	25.9
uint6	[T][S]	947.0	25.0	22.5
int6	[T][S]	890.7	25.1	25.2
fp6	[T][S]	888.9	25.0	26.3

Leaderboard (Lucy Score)

#	Cell	Score	Soft	Acc	Thru	Avail
1	float32|none|Step[T][S]|single|simd	4114.4	25.1	31.8	33642.4	48.8
2	float32|none|tween|single|simd	4041.1	25.0	27.8	33957.5	47.6
3	float32|none|tween_chain|single|simd	4004.7	25.0	25.4	33851.5	47.4
4	float32|none|Mesh[T]|single|simd	3941.8	25.0	26.9	32803.8	48.1
5	int8|none|tween_chain|single|simd	3932.5	25.0	26.8	31902.7	49.3
6	int2|none|tween|single|simd	3744.0	25.1	31.6	30847.2	48.3
7	int8|none|tween|single|simd	3708.0	25.0	27.0	30987.1	47.8
8	ternary|none|tween|single|simd	3702.3	25.1	24.8	30743.2	47.9
9	int4|none|tween_chain|single|simd	3669.1	24.9	22.0	30341.1	48.5
10	float32|none|MeshBP|single|simd	3667.2	25.0	27.4	30834.3	47.6
11	float32|none|step_tween|single|simd	3664.6	25.0	26.5	32882.0	44.6
12	binary|none|tween|single|simd	3577.4	25.2	27.6	29875.9	47.5
13	float32|none|step_tween_chain|single|simd	3572.3	24.9	27.8	31245.6	45.9
14	int2|none|tween_chain|single|simd	3560.0	24.9	24.6	29331.3	48.8
15	int8|none|Step[T][S]|single|simd	3540.4	25.2	26.4	28377.0	49.6
16	uint8|none|tween|single|simd	3512.9	25.0	26.6	29057.5	48.3
17	ternary|none|tween_chain|single|simd	3486.3	25.1	24.6	29156.3	47.6
18	uint8|none|tween_chain|single|simd	3460.9	25.0	26.6	28976.8	47.8
19	int4|none|tween|single|simd	3429.7	25.0	19.8	29232.3	46.9
20	uint8|none|Mesh[T]|single|simd	3390.1	24.9	24.4	27766.5	49.0

Leaderboard (SoftAcc)

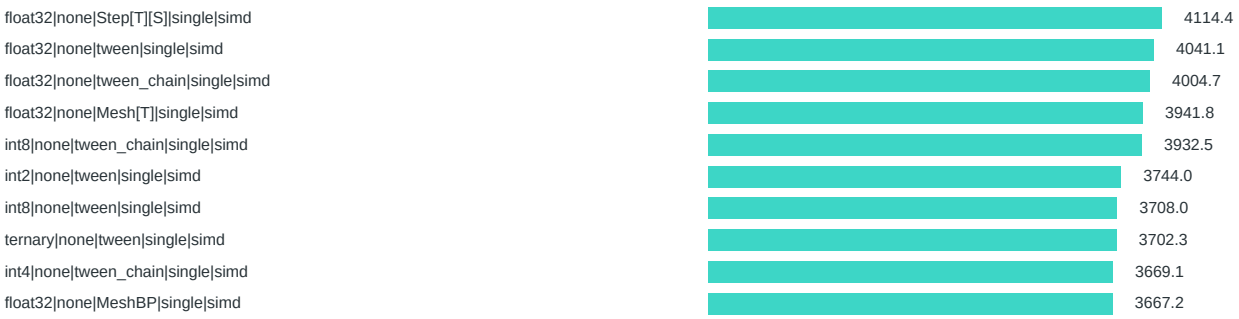
#	Cell	Score	Soft	Acc	Thru	Avail
1	binary|none|tween|single|simd	3577.4	25.2	27.6	29875.9	47.5

2	int8|none|Step[T][S]|single|simd	3540.4	25.2	26.4	28377.0	49.6
3	int2|none|tween|single|simd	3744.0	25.1	31.6	30847.2	48.3
4	ternary|none|tween_chain|single|simd	3486.3	25.1	24.6	29156.3	47.6
5	ternary|none|Mesh[T]|single|simd	3303.5	25.1	27.2	28041.3	46.9
6	ternary|none|tween|single|simd	3702.3	25.1	24.8	30743.2	47.9
7	float32|none|Step[T][S]|single|simd	4114.4	25.1	31.8	33642.4	48.8
8	int8|none|Mesh[T]|single|simd	3365.5	25.1	27.0	28401.7	47.3
9	int8|none|tween|single|simd	3708.0	25.0	27.0	30987.1	47.8
10	int8|none|MeshBP|single|simd	3332.8	25.0	26.6	27466.9	48.5
11	bfloat16|none|Step[T][S]|single|simd	3342.7	25.0	23.1	26505.7	50.4
12	float32|none|step_tween|single|simd	3664.6	25.0	26.5	32882.0	44.6
13	uint8|none|tween_chain|single|simd	3460.9	25.0	26.6	28976.8	47.8
14	int4|none|Mesh[T]|single|simd	3222.0	25.0	25.0	27246.0	47.3
15	uint8|none|tween|single|simd	3512.9	25.0	26.6	29057.5	48.3
16	float32|none|Mesh[T]|single|simd	3941.8	25.0	26.9	32803.8	48.1
17	float32|none|MeshBP|single|simd	3667.2	25.0	27.4	30834.3	47.6
18	fp4|none|tween_chain|single|simd	3371.4	25.0	25.0	28794.6	46.8
19	fp4|none|tween|single|simd	3201.3	25.0	24.9	27959.9	45.8
20	fp4|none|Step[T][S]|single|simd	3171.2	25.0	24.3	26602.1	47.7

Leaderboard (hard Acc)

#	Cell	Score	Soft	Acc	Thru	Avail
1	float32|none|Step[T][S]|single|simd	4114.4	25.1	31.8	33642.4	48.8
2	int2|none|tween|single|simd	3744.0	25.1	31.6	30847.2	48.3
3	uint8|none|Step[T][S]|single|simd	3262.7	24.9	27.9	27183.3	48.1
4	float32|none|tween|single|simd	4041.1	25.0	27.8	33957.5	47.6
5	float32|none|step_tween_chain|single|simd	3572.3	24.9	27.8	31245.6	45.9
6	binary|none|tween|single|simd	3577.4	25.2	27.6	29875.9	47.5
7	float32|none|MeshBP|single|simd	3667.2	25.0	27.4	30834.3	47.6
8	ternary|none|Mesh[T]|single|simd	3303.5	25.1	27.2	28041.3	46.9
9	int8|none|tween|single|simd	3708.0	25.0	27.0	30987.1	47.8
10	int8|none|Mesh[T]|single|simd	3365.5	25.1	27.0	28401.7	47.3
11	bfloat16|none|tween_chain|single|simd	3122.6	25.0	27.0	26291.4	47.5
12	float32|none|Mesh[T]|single|simd	3941.8	25.0	26.9	32803.8	48.1
13	int8|none|tween_chain|single|simd	3932.5	25.0	26.8	31902.7	49.3
14	uint8|none|tween|single|simd	3512.9	25.0	26.6	29057.5	48.3
15	int8|none|MeshBP|single|simd	3332.8	25.0	26.6	27466.9	48.5
16	uint8|none|tween_chain|single|simd	3460.9	25.0	26.6	28976.8	47.8
17	binary|none|tween_chain|single|simd	3357.2	24.9	26.6	28063.0	48.0
18	float32|none|step_tween|single|simd	3664.6	25.0	26.5	32882.0	44.6
19	int8|none|Step[T][S]|single|simd	3540.4	25.2	26.4	28377.0	49.6
20	bfloat16|none|tween|single|simd	3283.4	25.0	26.1	27603.7	47.6

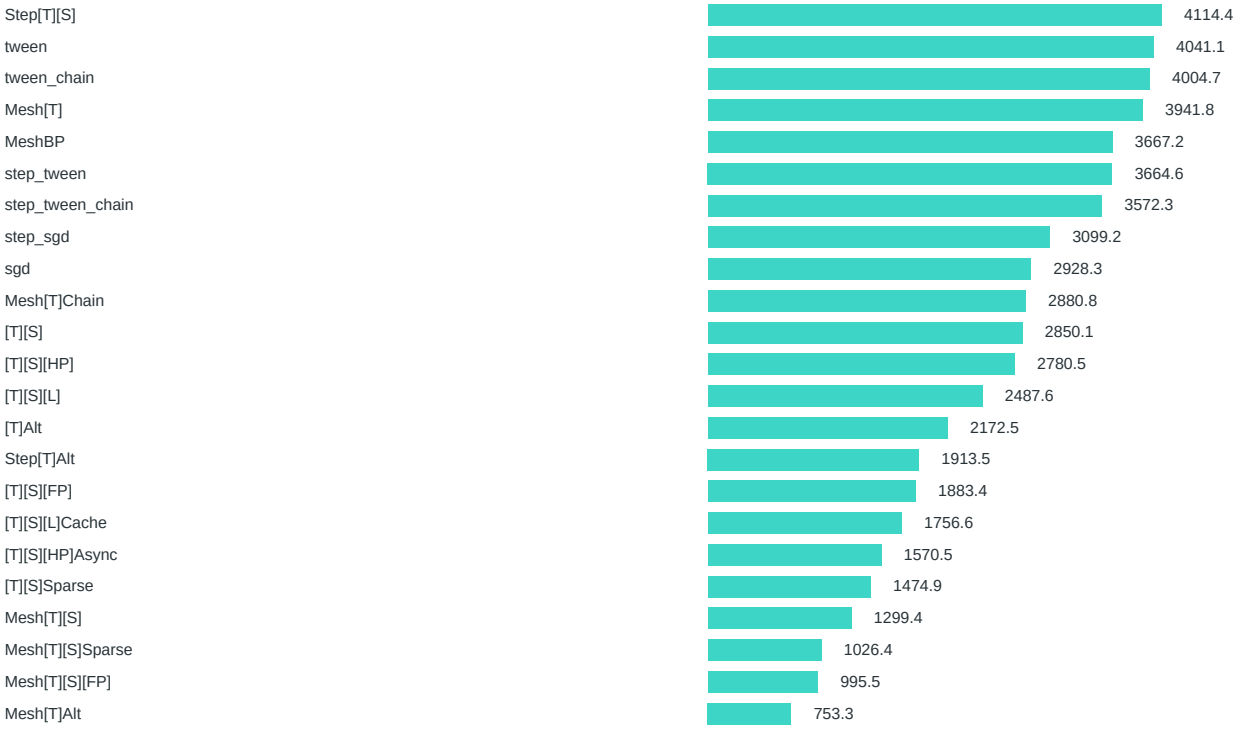
Top scores



float32|none|step_tween|single|simd



Best settings per mode



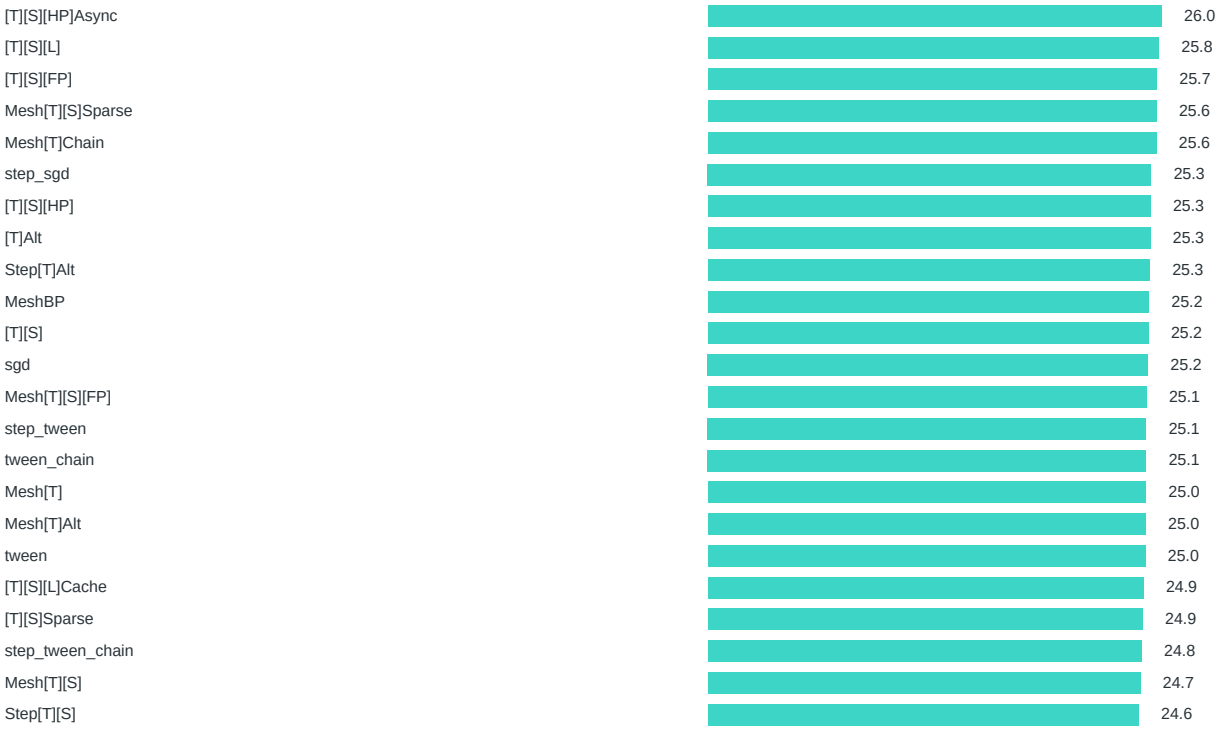
Mean Score by train mode



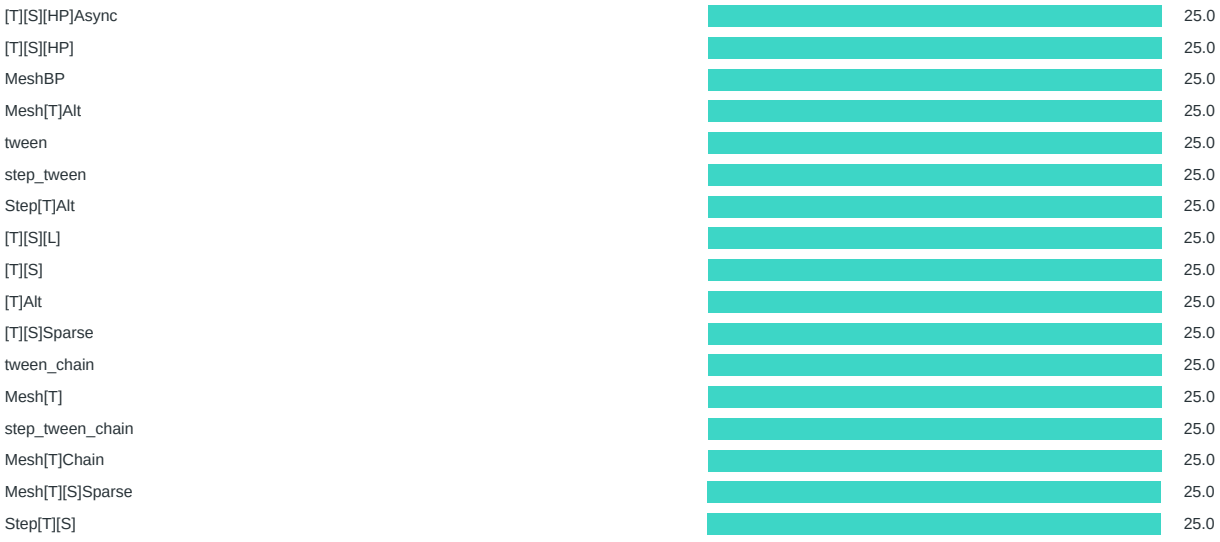




Mean hard Acc by train mode



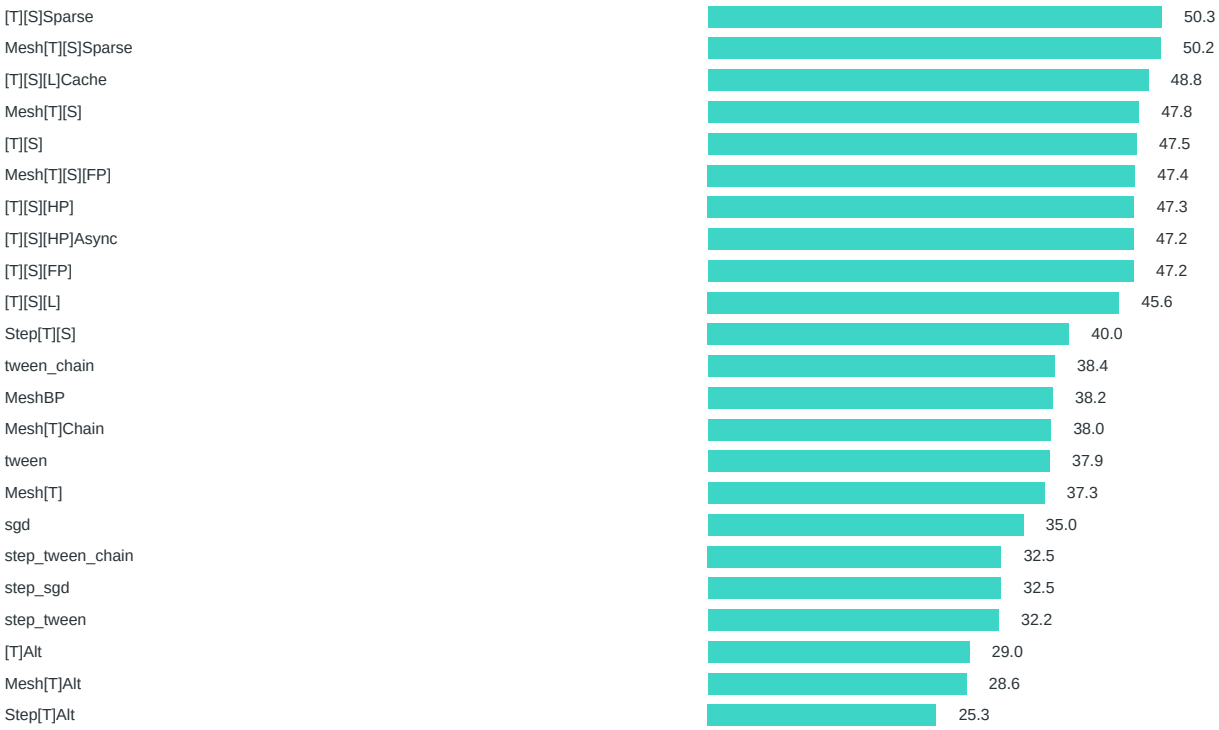
Mean SoftAcc by train mode



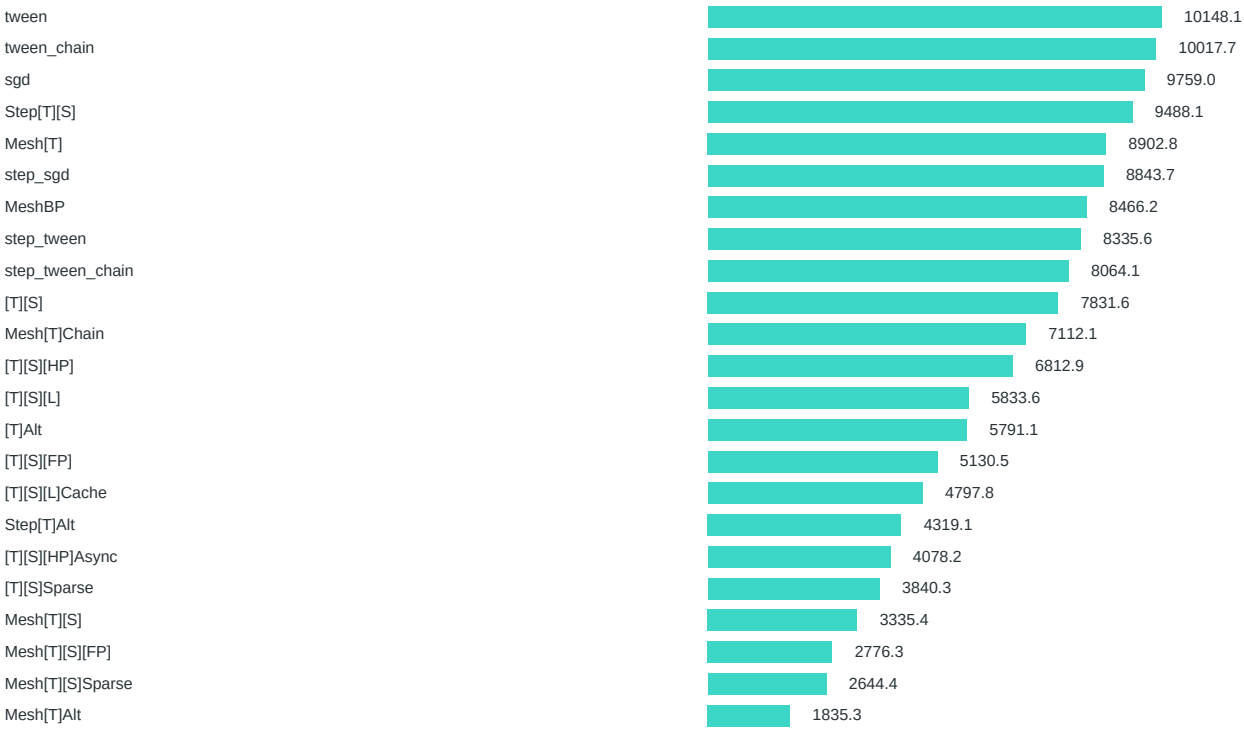




Mean Availability by train mode



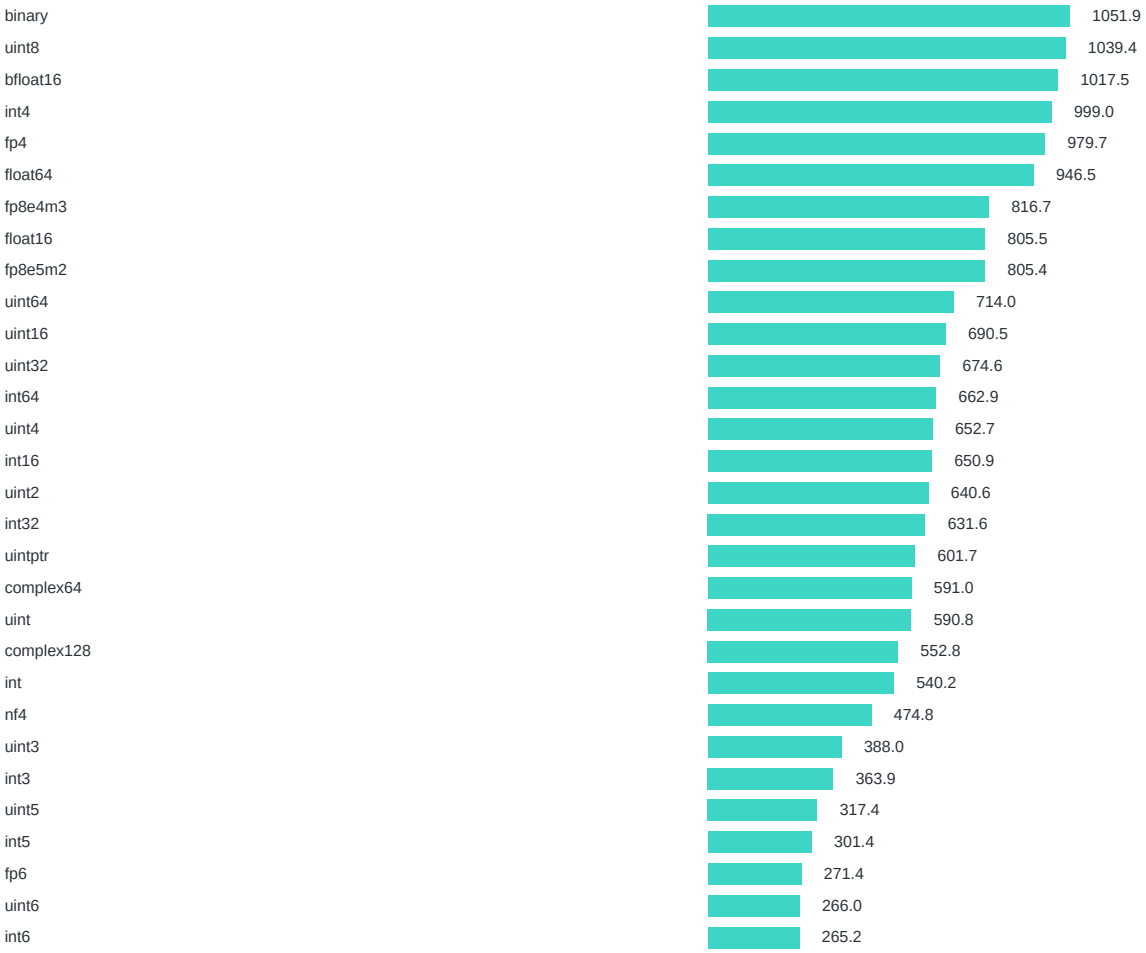
Mean Throughput by train mode



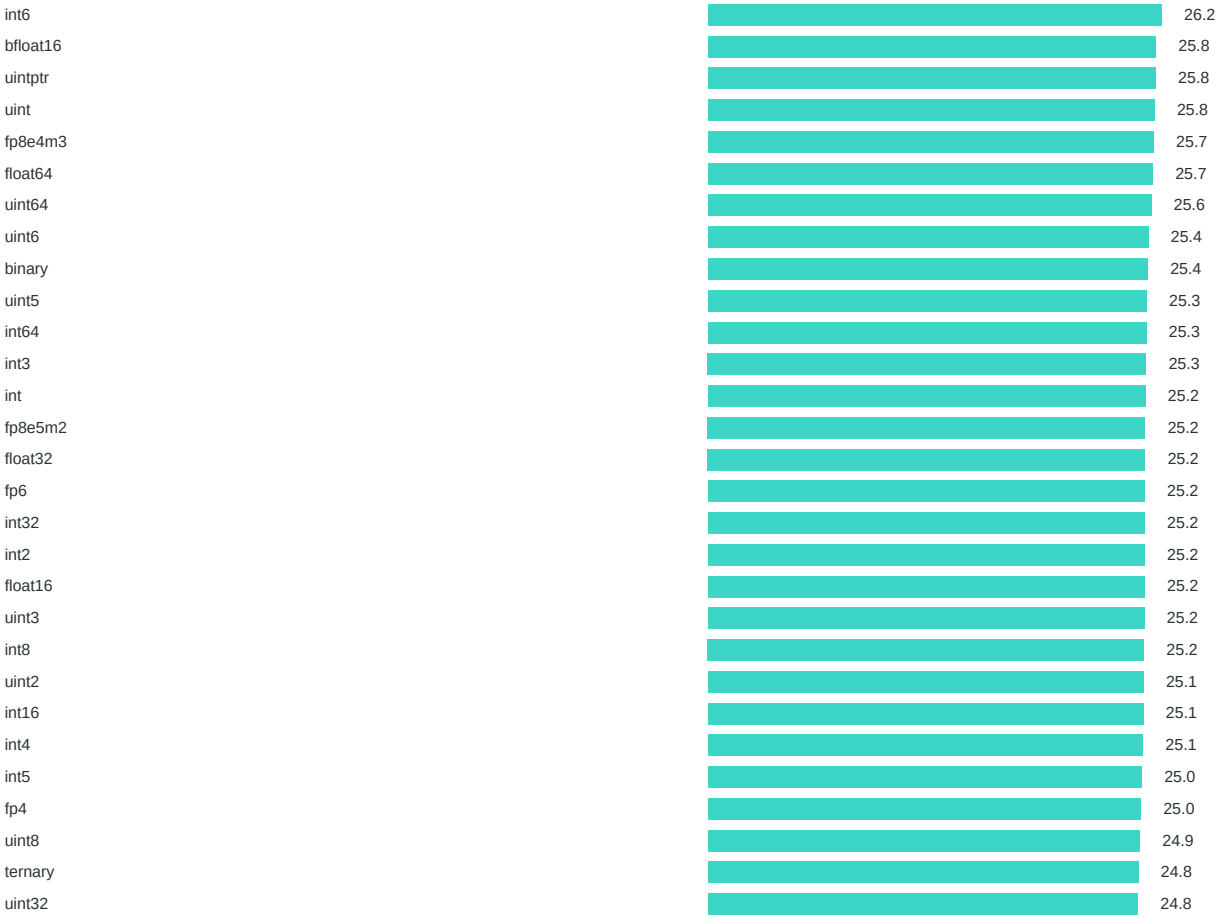
Mean Score by dtype



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	1479	1539	708	807	1107	1809	1240	1239	246	1245	1191	738
Mesh[T]	1441	1183	541	684	1236	1912	1352	1430	229	1107	1144	708
Mesh[T]Alt	255	359	96	119	217	345	235	222	43	202	243	133
Mesh[T]Chain	1141	1134	648	719	947	1337	1109	1074	227	980	1141	548
Mesh[T][S]	515	634	319	243	473	636	547	550	227	357	539	337
Mesh[T][S][FP]	411	474	280	356	361	598	388	459	143	397	404	324
Mesh[T][S]Sparse	477	493	268	335	386	580	472	469	125	450	486	313
Step[T]Alt	709	690	238	182	377	969	416	468	100	350	414	313
Step[T][S]	1428	1548	601	671	986	2236	1224	1482	376	1260	869	664
[T]Alt	821	836	294	350	705	543	964	772	162	609	611	320
[T][S]	1293	1259	1096	1014	1045	1613	1136	1178	505	1169	944	758
[T][S][FP]	982	905	414	715	706	1021	1012	854	295	861	604	576
[T][S][HP]	1454	1413	852	676	1035	1819	1071	1096	406	899	868	718
[T][S][HP]Async	563	662	409	510	363	991	811	669	244	491	545	382
[T][S][L]	1013	1125	704	709	905	1244	1036	1054	397	972	870	579
[T][S][L]Cache	732	973	449	585	587	1179	744	804	254	648	658	458
[T][S]Sparse	834	600	472	379	553	793	538	735	254	521	521	372
sgd	1241	1224	835	787	1057	1660	1281	1211	366	1060	987	819
step_sgd	1196	1402	662	691	982	1640	1041	1243	346	947	914	641
step_tween	1115	1150	533	589	827	1688	1029	1183	298	957	1099	486
step_tween_chain	1159	1112	488	595	1061	1755	1138	1211	295	967	786	556
tween	1590	1817	853	946	1277	2098	1528	1542	359	1018	1371	864
tween_chain	1551	1665	955	930	1333	1889	1459	1590	344	1320	1315	818

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	897	1183	473	790	1328	330	276	980	1556	534	1650	814
Mesh[T]	779	1104	401	623	1423	357	258	980	1755	671	1621	895
Mesh[T]Alt	132	269	84	115	198	63	54	173	271	99	249	85
Mesh[T]Chain	694	1227	284	820	1084	273	285	804	1151	454	1165	639
Mesh[T][S]	390	443	190	340	563	206	222	485	611	374	642	366
Mesh[T][S][FP]	391	504	200	311	550	192	121	258	478	248	497	267
Mesh[T][S]Sparse	306	586	213	307	510	155	186	311	480	281	551	268
Step[T]Alt	161	451	202	281	519	100	128	366	647	235	622	238
Step[T][S]	1027	1572	477	952	1375	446	365	946	1625	664	1674	839
[T]Alt	574	786	243	514	1020	185	244	566	910	217	648	510
[T][S]	802	1507	579	894	1302	511	444	865	1462	852	1320	803
[T][S][FP]	476	1042	446	649	840	368	297	396	966	403	889	440
[T][S][HP]	843	1251	529	748	1097	457	383	774	1318	659	1306	695
[T][S][HP]Async	521	936	344	514	707	236	280	508	686	418	745	479
[T][S][L]	666	1098	432	590	1055	447	471	644	845	561	927	578
[T][S][L]Cache	592	839	315	626	835	335	281	530	872	512	634	572
[T][S]Sparse	507	637	310	543	736	217	165	444	801	241	591	492
sgd	848	1239	524	909	1199	411	359	845	1527	639	1330	844
step_sgd	763	1278	435	507	1418	335	179	791	1524	526	1335	663
step_tween	702	1418	268	725	1364	262	278	734	1462	483	1460	655
step_tween_chain	727	1268	311	684	818	255	287	771	1362	441	1361	633
tween	1100	2048	584	1035	1389	392	342	1020	1951	719	1712	928
tween_chain	1073	1684	522	1049	1647	400	196	1059	1915	689	1647	886

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	981	804	512	892	948	354	322	996	1412	804
Mesh[T]	952	948	387	1096	901	355	324	1157	1453	945
Mesh[T]Alt	167	172	77	143	142	67	38	151	279	102
Mesh[T]Chain	804	647	371	733	747	295	259	774	1253	738
Mesh[T][S]	392	273	331	403	358	217	184	329	607	395
Mesh[T][S][FP]	352	321	236	338	361	211	153	278	397	325
Mesh[T][S]Sparse	331	254	191	341	339	192	124	387	363	334
Step[T]Alt	379	209	200	274	316	80	100	315	591	238
Step[T][S]	1098	878	522	1167	1498	361	429	1108	1533	1018
[T]Alt	487	372	173	513	365	218	151	467	859	468
[T][S]	795	894	667	943	971	563	477	857	1521	950
[T][S][FP]	483	696	422	564	398	466	269	738	871	568
[T][S][HP]	836	777	518	546	624	436	303	675	1172	725
[T][S][HP]Async	604	531	361	564	500	216	265	658	582	389
[T][S][L]	492	847	364	702	668	467	316	571	909	504
[T][S][L]Cache	546	501	406	560	610	366	272	617	707	594
[T][S]Sparse	509	506	326	532	380	300	231	460	736	347
sgd	928	819	543	862	737	427	407	924	1342	812
step_sgd	841	719	415	801	697	324	334	852	1403	709
step_tween	849	663	291	834	728	263	290	831	1205	642
step_tween_chain	768	672	322	772	622	281	166	857	1328	582
tween	1046	1157	604	1155	1084	421	367	1226	1696	666
tween_chain	1244	1073	689	779	1020	420	337	1195	1686	983

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	27	25	24	25	26	26	24	25	23	27	24	25
Mesh[T]	25	27	20	22	25	25	24	25	22	26	27	23
Mesh[T]Alt	27	31	25	20	28	23	25	26	24	28	27	28
Mesh[T]Chain	25	26	28	25	26	24	26	25	23	28	26	24
Mesh[T][S]	26	28	21	19	27	21	24	25	26	21	26	25
Mesh[T][S][FP]	24	23	25	30	22	25	24	25	24	27	29	29
Mesh[T][S]Sparse	25	26	25	27	26	27	25	24	22	30	30	29
Step[T]Alt	31	25	22	21	24	25	24	25	24	23	26	32
Step[T][S]	24	28	20	22	24	25	25	26	25	27	23	19
[T]Alt	26	27	23	22	31	21	31	26	21	26	29	26
[T][S]	26	22	25	28	26	26	25	25	27	27	26	22
[T][S][FP]	28	21	22	31	23	24	34	24	31	29	22	25
[T][S][HP]	29	29	25	24	26	28	25	25	26	23	22	24
[T][S][HP]Async	20	24	23	27	19	31	30	24	27	23	25	23
[T][S][L]	25	28	26	25	27	26	29	25	28	34	27	23
[T][S][L]Cache	25	28	28	24	24	30	26	24	25	24	23	24
[T][S]Sparse	31	19	26	21	23	22	23	25	27	21	24	25
sgd	25	25	28	25	27	25	26	25	24	27	23	29
step_sgd	25	24	26	26	26	26	24	25	27	24	25	26
step_tween	24	23	26	27	23	25	24	25	26	25	26	24
step_tween_chain	27	22	22	26	28	25	25	25	27	24	23	27
tween	24	27	26	25	24	25	25	25	27	24	24	25
tween_chain	25	25	26	25	25	24	25	25	25	25	24	25

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	23	27	22	26	22	26	26	25	22	27	25
Mesh[T]	25	21	23	26	23	26	23	23	30	27	28	29
Mesh[T]Alt	22	24	28	22	32	22	28	27	25	23	21	22
Mesh[T]Chain	23	26	26	25	24	24	31	24	26	22	26	26
Mesh[T][S]	23	20	22	24	25	26	31	28	24	28	29	26
Mesh[T][S][FP]	29	26	26	26	28	26	20	20	26	24	24	25
Mesh[T][S]Sparse	26	28	24	24	26	25	28	27	24	25	26	25
Step[T]Alt	21	25	30	24	26	24	29	28	25	23	23	27
Step[T][S]	25	26	23	25	23	25	26	26	22	24	26	26
[T]Alt	25	24	26	28	26	27	28	27	23	22	27	30
[T][S]	27	26	22	26	22	25	23	24	23	26	23	24
[T][S][FP]	21	26	27	25	26	26	26	25	26	21	22	28
[T][S][HP]	26	27	27	25	25	28	27	24	26	27	24	27
[T][S][HP]Async	26	30	27	27	25	24	30	25	23	26	24	25
[T][S][L]	25	27	23	28	26	31	30	26	20	26	23	23
[T][S][L]Cache	29	25	24	26	25	27	22	24	25	30	22	26
[T][S]Sparse	26	23	26	27	24	21	23	23	28	28	23	27
sgd	26	24	24	26	23	24	24	25	27	24	26	27
step_sgd	27	24	27	26	27	26	26	27	26	24	24	24
step_tween	25	27	24	25	24	26	24	25	27	26	27	25
step_tween_chain	24	24	24	25	21	24	26	27	25	25	25	25
tween	25	27	24	24	23	25	25	24	28	23	25	25
tween_chain	26	25	26	25	26	23	24	25	25	24	26	25

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	24	25	25	24	26	25	29	26	26	25
Mesh[T]	24	27	22	25	25	26	28	27	24	27
Mesh[T]Alt	27	35	22	26	24	23	20	25	22	21
Mesh[T]Chain	26	25	28	24	28	26	25	25	28	27
Mesh[T][S]	23	19	28	28	24	23	23	22	27	29
Mesh[T][S][FP]	23	27	24	23	27	28	23	22	22	28
Mesh[T][S]Sparse	24	19	22	24	26	26	25	32	24	28
Step[T]Alt	28	20	27	22	28	18	26	26	26	29
Step[T][S]	27	24	24	26	33	21	27	25	21	24
[T]Alt	22	23	23	23	21	24	23	29	24	28
[T][S]	22	27	27	28	24	28	25	25	28	27
[T][S][FP]	23	28	26	24	19	31	27	30	26	26
[T][S][HP]	25	24	25	18	25	24	28	23	25	26
[T][S][HP]Async	28	31	29	26	23	29	29	30	24	25
[T][S][L]	20	30	19	26	25	30	27	21	25	23
[T][S][L]Cache	24	22	26	21	27	23	22	24	22	26
[T][S]Sparse	24	27	28	31	20	27	27	25	25	24
sgd	25	23	26	25	22	25	25	25	26	25
step_sgd	25	23	26	25	24	25	24	26	28	26
step_tween	24	24	24	26	25	23	26	26	25	24
step_tween_chain	25	23	24	25	23	26	24	26	25	24
tween	22	27	26	25	24	25	26	25	25	25
tween_chain	26	24	27	26	24	26	25	24	25	26

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	25	25	25	25	25	25	25	25	25	25	25	25
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	25	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	25	25	25	25	25
Step[T][S]	25	25	25	25	25	25	25	25	25	25	25	25
[T]Alt	25	25	25	25	25	25	25	25	25	25	25	25
[T][S]	25	25	25	25	25	25	25	25	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	25	25	25	25	25	25	25	25	25	25	25	25
step_sgd	25	25	25	25	25	25	24	25	25	25	25	25
step_tween	25	25	25	25	25	25	25	25	25	25	25	25
step_tween_chain	25	25	25	25	25	25	25	25	25	25	25	25
tween	25	25	25	25	25	25	25	25	25	25	25	25
tween_chain	25	25	25	25	25	25	25	25	25	25	25	25

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	25	25	25	25	25
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	25	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	25	25	25	25	25
Step[T][S]	25	25	25	25	25	25	25	25	25	25	25	25
[T]Alt	25	25	25	25	25	25	25	25	25	25	25	25
[T][S]	25	25	25	25	25	25	25	25	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	25	25	25	25	25	25	25	25	25	25	25	25
step_sgd	25	25	25	24	25	25	24	25	25	25	25	25
step_tween	25	25	25	25	25	25	25	25	25	25	25	25
step_tween_chain	25	25	25	25	25	25	25	25	25	25	25	25
tween	25	25	25	25	25	25	25	25	25	25	25	25
tween_chain	25	25	25	25	25	25	25	25	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	25	24	25	25	25	25	25	25	25	25
step_sgd	25	25	25	25	25	25	25	25	25	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	25	25	25	25	25	25	25	25	25
tween_chain	25	25	25	25	25	25	25	25	25	25

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	41	40	39	39	41	40	42	39	30	41	41	39
Mesh[T]	41	40	38	38	40	41	41	39	29	40	40	38
Mesh[T]Alt	31	32	26	29	30	35	32	29	23	29	30	28
Mesh[T]Chain	42	40	39	39	41	40	42	39	30	41	41	38
Mesh[T][S]	49	48	48	48	47	50	48	47	47	47	47	48
Mesh[T][S][FP]	48	48	47	47	48	49	48	47	45	46	47	48
Mesh[T][S]Sparse	52	52	50	49	51	53	52	51	48	48	52	50
Step[T]Alt	28	28	25	25	26	31	29	25	21	26	26	25
Step[T][S]	42	42	41	41	41	42	42	41	33	42	40	41
[T]Alt	31	31	29	29	29	31	33	30	25	30	30	28
[T][S]	49	49	45	48	48	50	49	45	47	47	47	48
[T][S][FP]	49	48	48	49	48	49	49	47	45	47	47	47
[T][S][HP]	49	48	49	48	47	50	50	46	45	47	47	48
[T][S][HP]Async	49	48	48	48	47	49	49	47	45	48	47	47
[T][S][L]	46	44	48	47	46	48	47	47	43	46	46	48
[T][S][L]Cache	50	51	46	49	49	50	50	49	48	49	50	49
[T][S]Sparse	51	53	51	50	52	53	51	52	48	51	51	50
sgd	36	36	36	36	35	37	38	35	31	35	36	36
step_sgd	35	37	31	32	34	37	35	35	28	34	34	32
step_tween	35	37	31	30	32	37	36	35	27	35	35	29
step_tween_chain	35	37	32	32	34	38	37	35	27	34	35	31
tween	41	40	38	39	42	41	42	40	30	40	41	38
tween_chain	40	41	40	40	42	41	42	40	30	41	42	39

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	40	40	34	40	40	31	30	41	41	36	39	38
Mesh[T]	39	40	33	36	39	30	30	40	40	36	39	38
Mesh[T]Alt	29	31	26	30	27	25	21	29	34	26	30	28
Mesh[T]Chain	40	40	31	40	40	31	29	40	41	36	40	39
Mesh[T][S]	48	48	48	48	48	47	46	48	48	48	48	48
Mesh[T][S][FP]	47	49	48	48	48	45	45	49	48	48	47	47
Mesh[T][S]Sparse	50	53	50	50	52	48	48	49	52	49	52	50
Step[T]Alt	23	28	23	25	28	21	21	25	29	25	28	24
Step[T][S]	42	41	35	41	41	34	33	42	41	39	42	40
[T]Alt	30	31	26	30	31	26	25	29	34	27	29	28
[T][S]	44	48	48	44	49	47	46	49	48	47	49	48
[T][S][FP]	47	48	48	47	47	45	44	44	48	47	48	44
[T][S][HP]	48	48	48	45	48	46	45	49	49	44	48	48
[T][S][HP]Async	48	48	47	48	48	46	45	47	48	48	48	47
[T][S][L]	46	45	45	43	44	43	43	47	45	47	44	47
[T][S][L]Cache	49	50	50	48	50	48	47	48	51	48	46	49
[T][S]Sparse	50	52	50	51	52	48	48	50	52	41	51	51
sgd	36	35	34	36	35	31	31	36	36	35	35	36
step_sgd	32	36	28	30	37	27	25	32	37	30	38	31
step_tween	32	34	26	33	37	27	26	33	37	29	37	31
step_tween_chain	32	38	27	32	33	27	27	33	35	30	37	31
tween	39	40	34	40	40	31	30	40	40	35	40	38
tween_chain	40	41	34	40	41	32	27	42	41	37	40	39

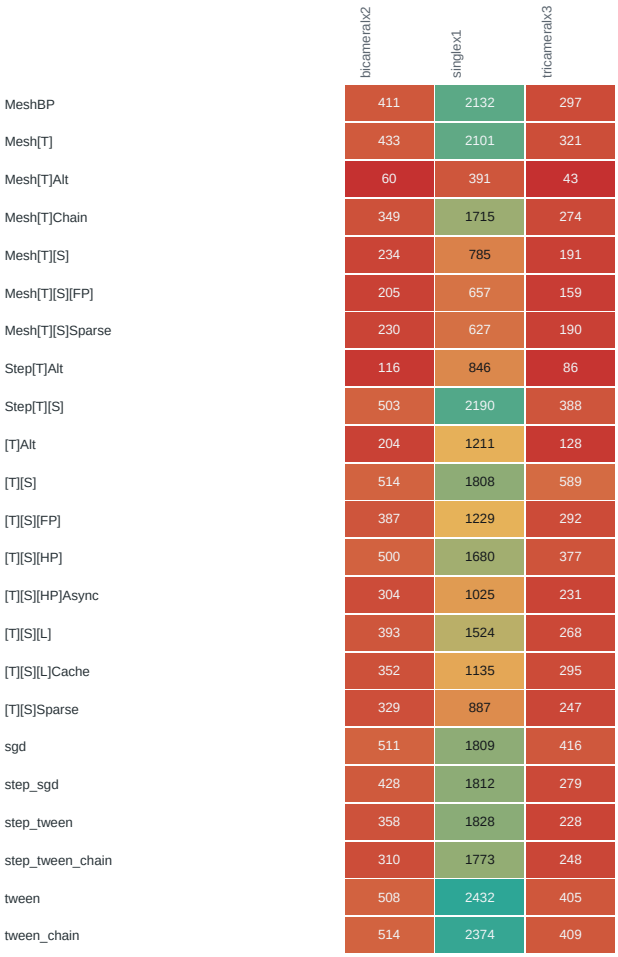
Honesty - mean Avail, every mode x dtype (cols 25-34)

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

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	41	39	35	40	40	31	31	41	41	39
Mesh[T]	37	38	33	40	39	30	29	39	40	38
Mesh[T]Alt	29	29	26	30	29	25	24	30	33	28
Mesh[T]Chain	40	39	34	40	39	31	30	40	40	39
Mesh[T][S]	48	48	49	47	48	47	46	47	50	48
Mesh[T][S][FP]	47	48	47	47	49	45	45	47	48	48
Mesh[T][S]Sparse	51	50	49	50	51	49	44	50	49	50
Step[T]Alt	26	25	24	25	25	21	21	25	29	24
Step[T][S]	42	42	36	43	43	34	33	43	42	42
[T]Alt	30	29	26	30	29	26	25	28	33	28
[T][S]	47	48	48	47	48	48	47	47	48	49
[T][S][FP]	47	49	47	47	47	46	45	48	48	48
[T][S][HP]	47	48	48	46	44	46	42	48	49	47
[T][S][HP]Async	47	45	47	47	48	43	45	47	48	47
[T][S][L]	47	47	45	46	46	43	42	46	44	47
[T][S][L]Cache	49	49	49	49	49	49	47	48	49	49
[T][S]Sparse	50	50	49	51	50	48	48	51	53	48
sgd	36	34	33	37	36	32	31	36	36	36
step_sgd	33	32	28	33	33	28	27	33	37	32
step_tween	33	32	27	33	33	27	27	33	38	32
step_tween_chain	34	33	28	34	32	27	24	33	38	32
tween	40	40	34	41	40	30	30	40	41	35
tween_chain	41	40	35	35	41	32	30	41	41	39

Mean Score, every mode x arch

Mean Score, every mode x arch



Mean hard Acc, every mode x arch

Mean hard Acc, every mode x arch

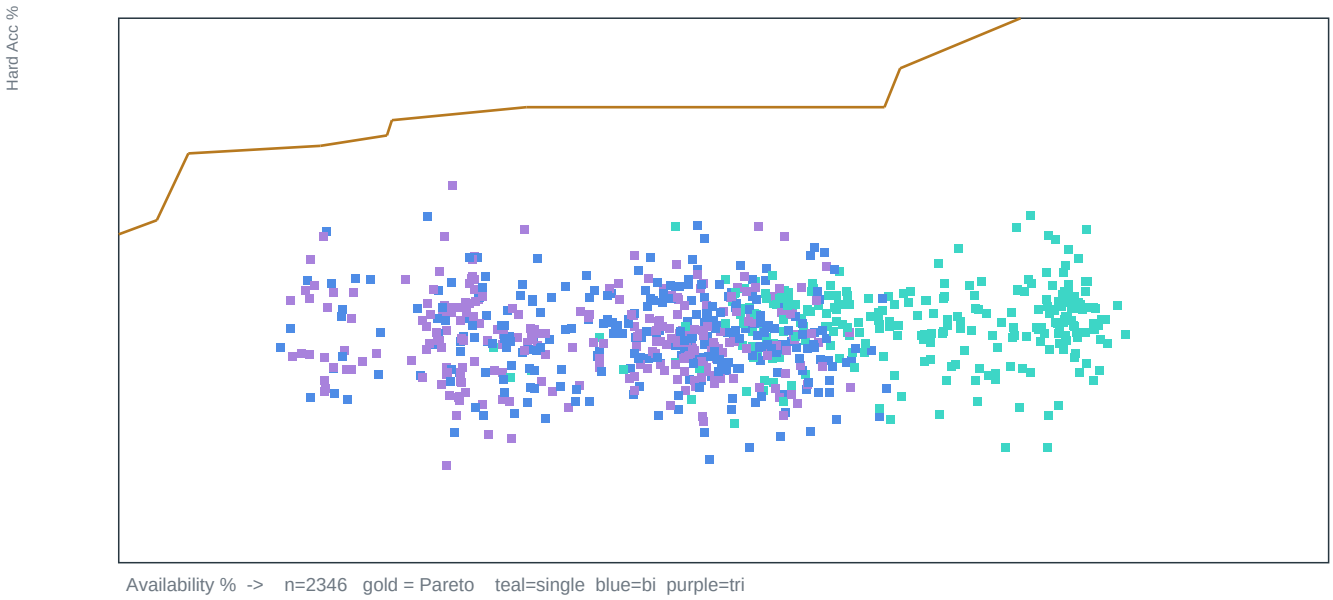


Mean Avail, every mode x arch

Mean Avail, every mode x arch

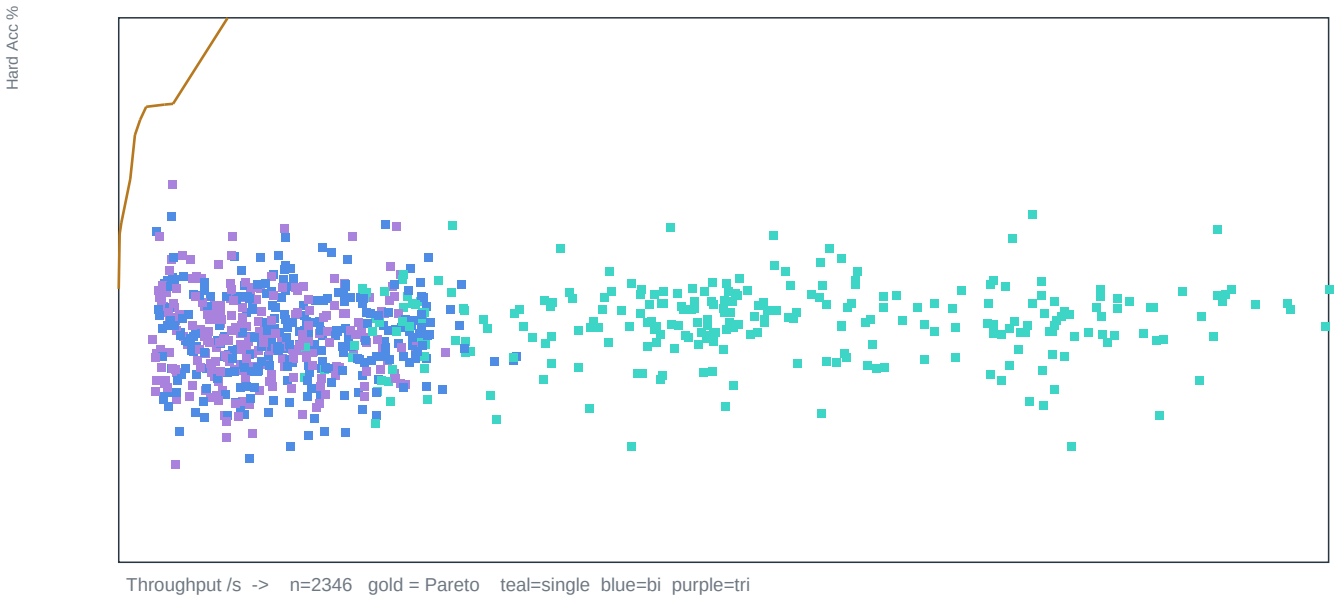
	bicameralx2	singlex1	tricameralx3
MeshBP	35	46	33
Mesh[T]	34	45	33
Mesh[T]Alt	25	37	23
Mesh[T]Chain	35	45	33
Mesh[T][S]	46	53	45
Mesh[T][S][FP]	46	52	44
Mesh[T][S]Sparse	50	52	49
Step[T]Alt	22	33	21
Step[T][S]	37	47	36
[T]Alt	26	38	24
[T][S]	46	52	45
[T][S][FP]	46	51	44
[T][S][HP]	46	52	44
[T][S][HP]Async	45	52	44
[T][S][L]	43	53	41
[T][S][L]Cache	47	53	46
[T][S]Sparse	50	52	49
sgd	34	38	33
step_sgd	31	39	28
step_tween	29	41	26
step_tween_chain	30	41	27
tween	35	45	33
tween_chain	36	46	34

Pillars - Availability vs hard Acc

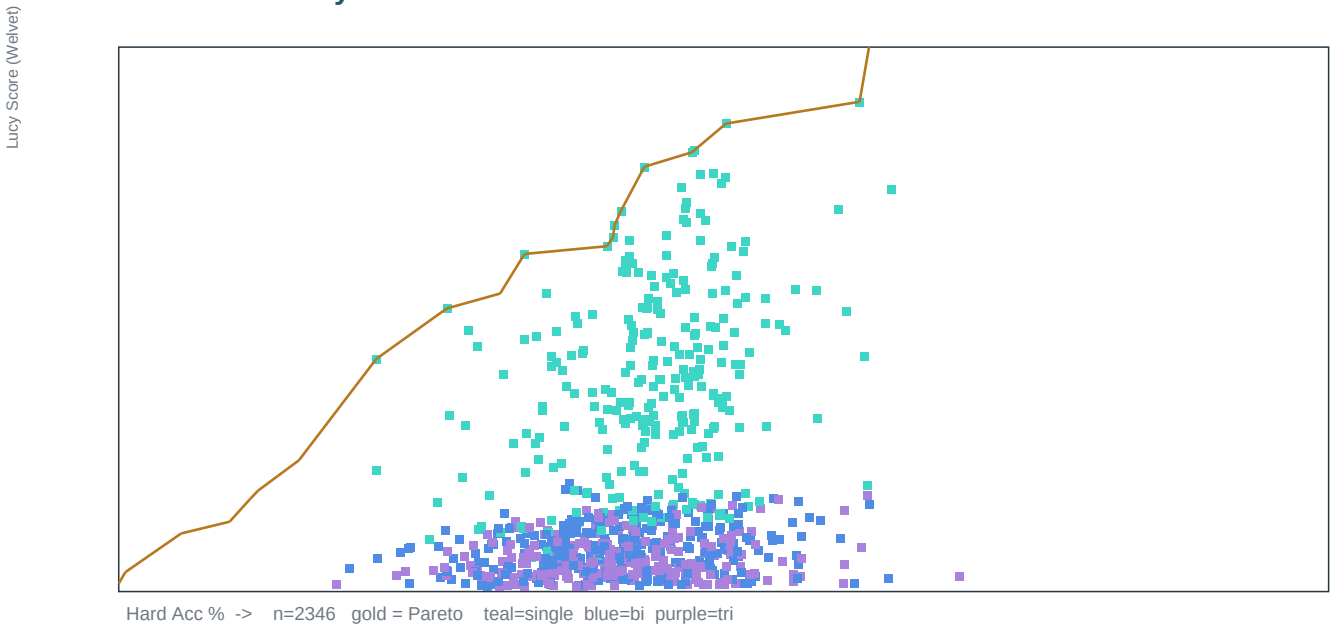


Pillars - Throughput vs hard Acc

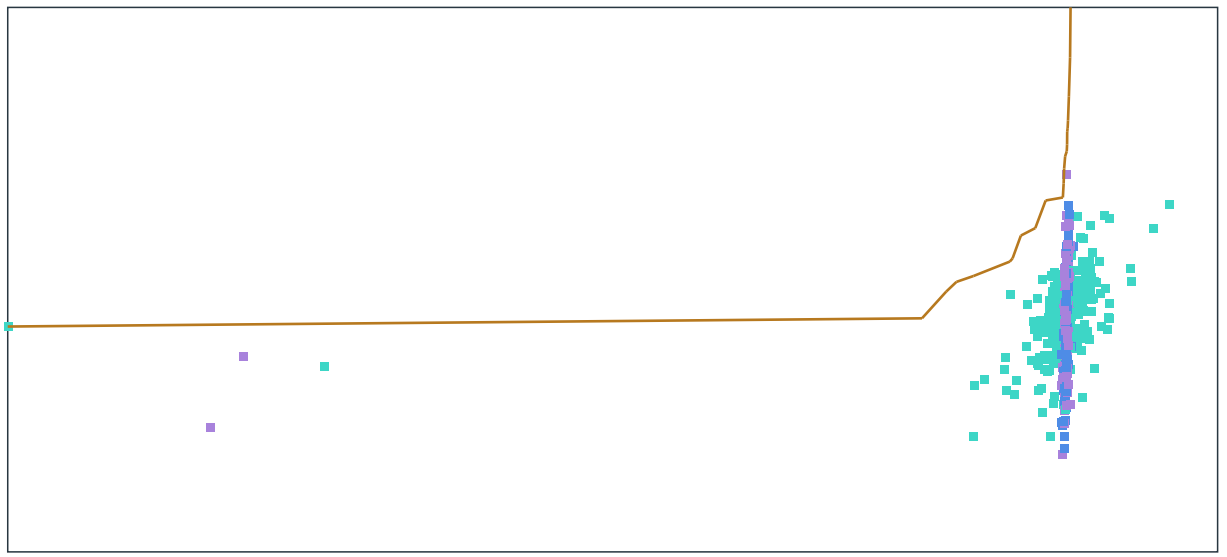
Pillars - Throughput vs hard Acc



Pareto - hard Acc vs Lucy Score

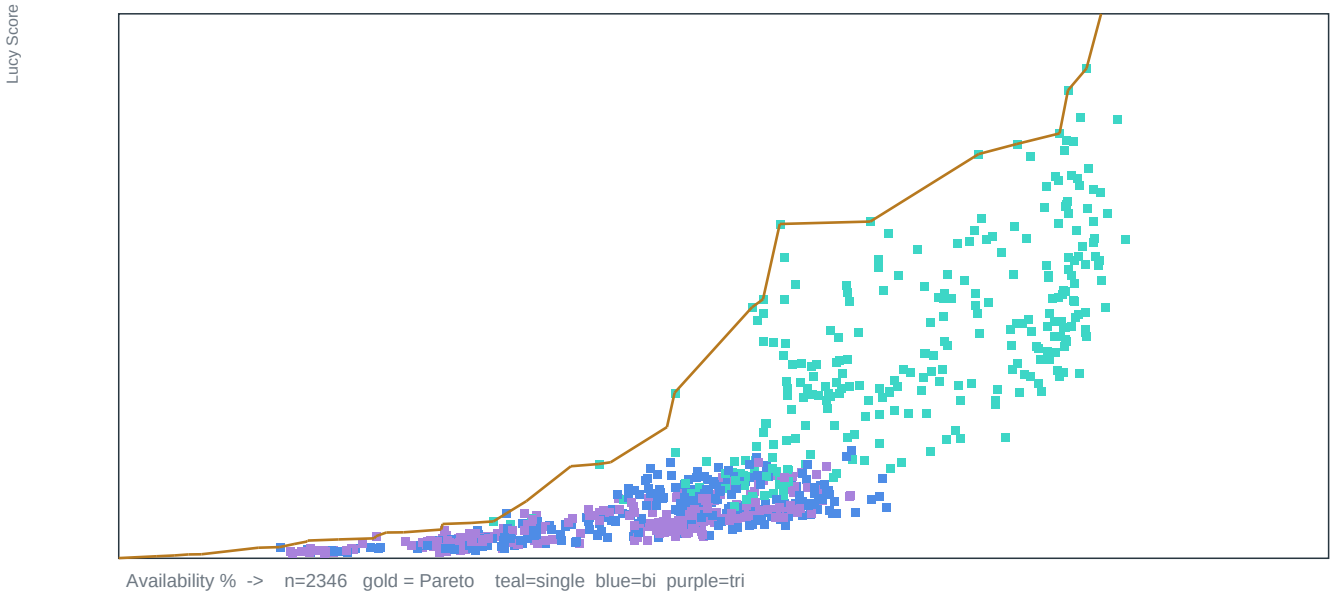


SoftAcc (serve-confidence) vs hard Acc

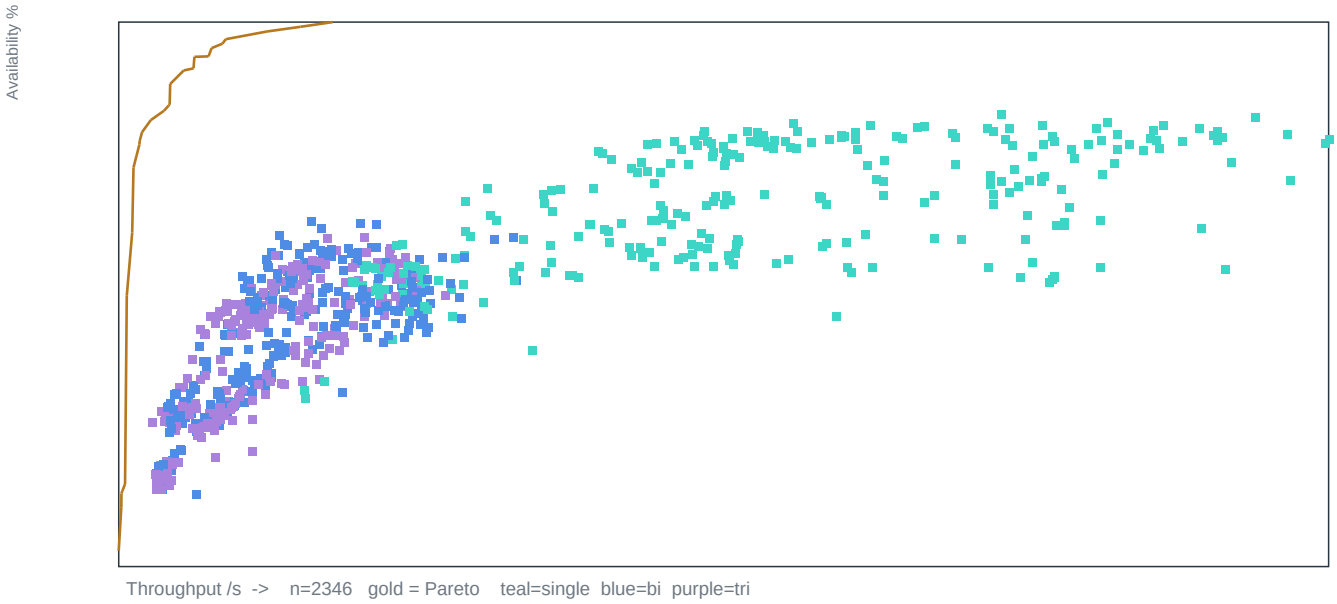



SoftAcc % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

Avail vs Lucy Score (duty clock)



Pillars - Throughput vs Availability



AdaptPct vs hard Acc



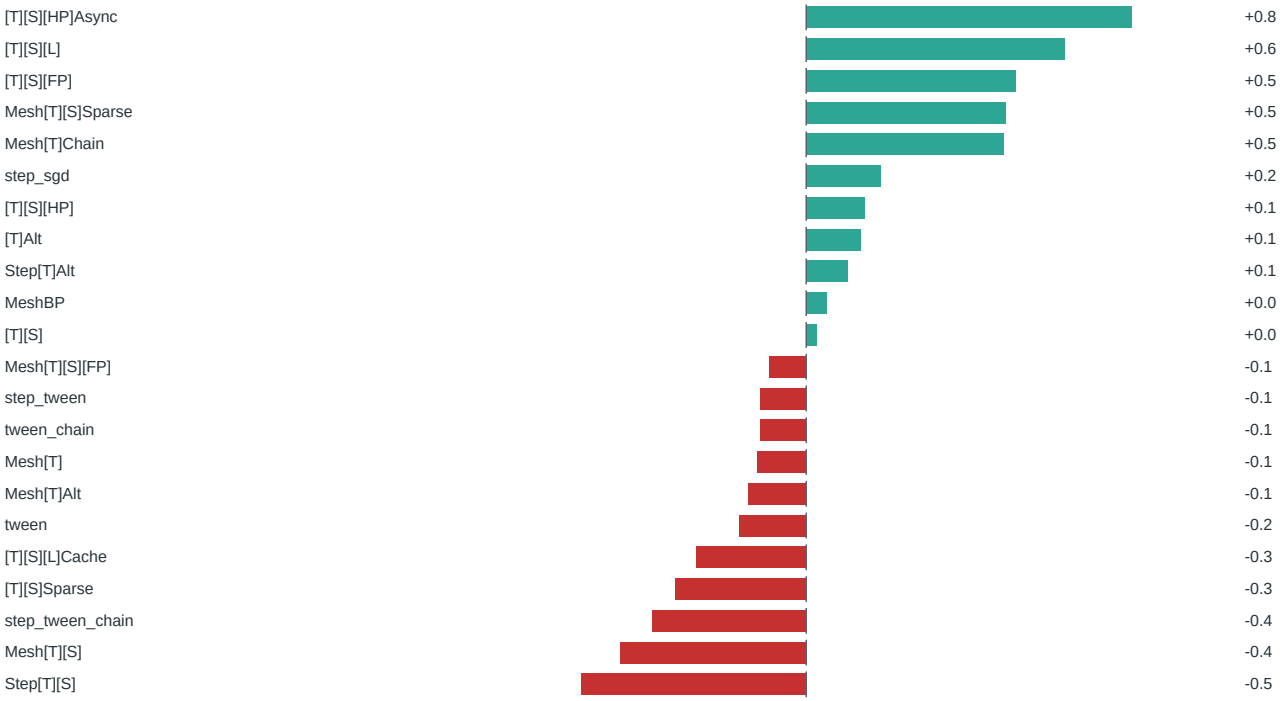

AdaptPct % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

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%
[T][S][HP]Async	102	+0.8	44	+0.0	+12.2	-5681	-391.8	4
[T][S][L]	102	+0.6	48	+0.0	+10.6	-3925	-183.6	16
[T][S][FP]	102	+0.5	51	+0.0	+12.2	-4628	-275.7	10
Mesh[T][S]Sparse	102	+0.5	51	+0.0	+15.2	-7115	-562.9	0
Mesh[T]Chain	102	+0.5	42	+0.0	+3.0	-2647	-132.3	13
step_sgd	102	+0.2	43	-0.1	-2.5	-915	-72.1	23
[T][S][HP]	102	+0.1	40	+0.0	+12.3	-2946	-59.5	35
[T]Alt	102	+0.1	45	+0.0	-6.0	-3968	-397.8	1
Step[T]Alt	102	+0.1	46	+0.0	-9.7	-5440	-562.5	0
MeshBP	102	+0.0	40	+0.0	+3.2	-1293	+34.7	30
[T][S]	102	+0.0	43	+0.0	+12.6	-1927	+58.4	58
Mesh[T][S][FP]	102	-0.1	45	+0.0	+12.4	-6983	-571.2	1
step_tween	102	-0.1	41	+0.0	-2.8	-1423	-107.1	18
tween_chain	102	-0.1	35	+0.0	+3.5	+259	+187.0	58
Mesh[T]	102	-0.1	45	+0.0	+2.3	-856	+39.7	27
Mesh[T]Alt	102	-0.1	47	+0.0	-6.3	-7924	-747.2	0
tween	102	-0.2	36	+0.0	+2.9	+389	+203.0	51
[T][S][L]Cache	102	-0.3	41	+0.0	+13.9	-4961	-318.0	8
[T][S]Sparse	102	-0.3	41	+0.0	+15.3	-5919	-424.1	2
step_tween_chain	102	-0.4	37	+0.0	-2.5	-1695	-135.1	16
Mesh[T][S]	102	-0.4	45	+0.0	+12.8	-6424	-509.0	1
Step[T][S]	102	-0.5	39	+0.0	+5.1	-271	+115.1	52

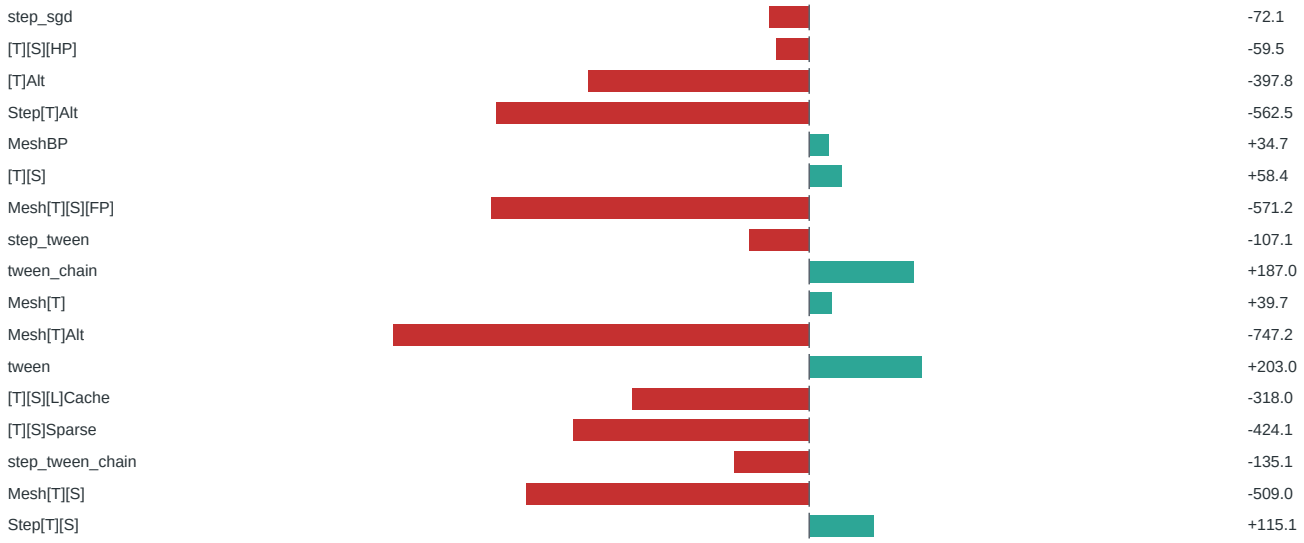
mean AccD vs sgd



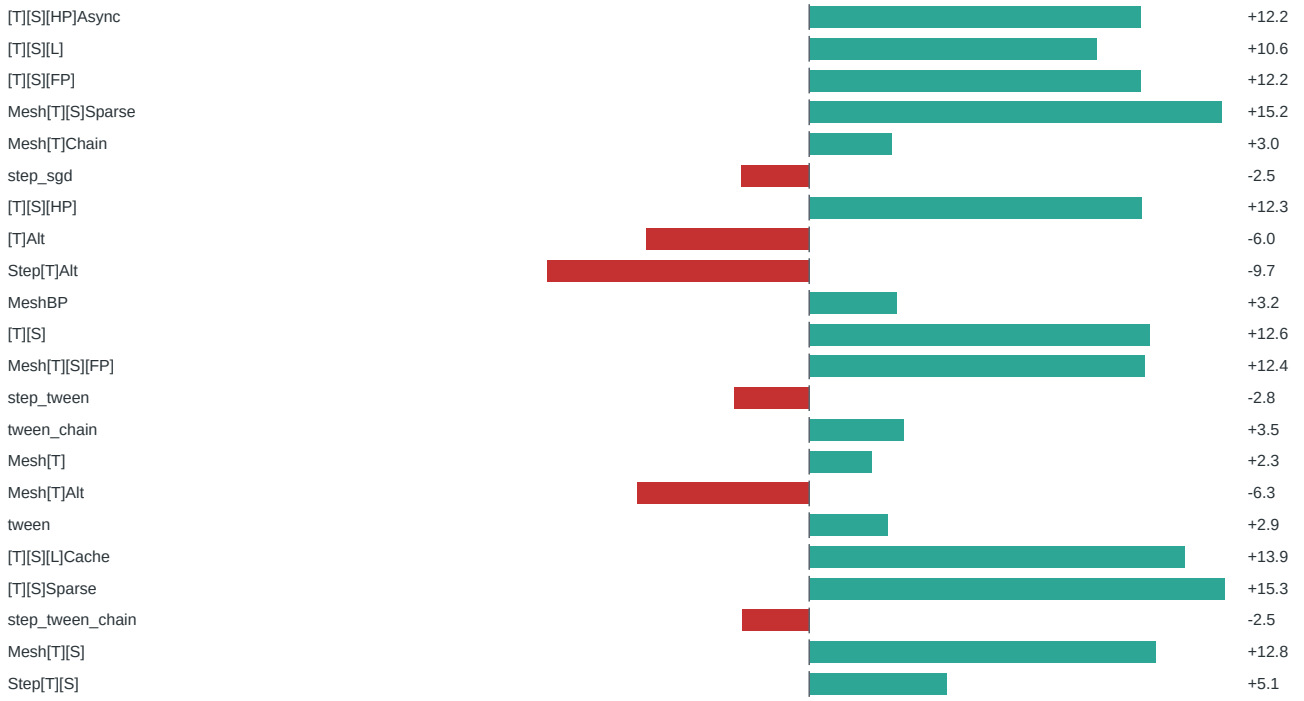
mean ScoreD vs sgd (duty clock)



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	+1	+0	-3	-0	-1	+1	-2	-0	-1	+0	+0	-4
Mesh[T]	-1	+1	-8	-3	-2	+0	-3	+0	-2	-0	+3	-6
Mesh[T]Alt	+2	+5	-3	-6	+1	-1	-1	+0	+0	+1	+3	-1
Mesh[T]Chain	-1	+0	+0	-0	-1	-0	-0	-0	-1	+1	+3	-5
Mesh[T][S]	+0	+3	-7	-6	-0	-4	-2	-0	+2	-5	+2	-4
Mesh[T][S][FP]	-1	-2	-2	+5	-5	+0	-3	-1	-0	-0	+5	+0
Mesh[T][S]Sparse	-0	+1	-3	+1	-1	+2	-2	-1	-2	+3	+6	+0
Step[T]Alt	+6	-1	-6	-5	-2	+1	-2	+0	+0	-4	+3	+3
Step[T][S]	-2	+3	-8	-3	-3	-0	-2	+0	+1	+0	-1	-9
[T]Alt	+0	+1	-5	-4	+4	-4	+5	+1	-3	-1	+5	-3
[T][S]	+0	-3	-2	+2	-1	+1	-1	-0	+4	+1	+2	-7
[T][S][FP]	+2	-4	-6	+6	-4	-0	+8	-1	+7	+2	-2	-3
[T][S][HP]	+4	+4	-2	-1	-1	+3	-1	-0	+3	-3	-2	-5
[T][S][HP]Async	-5	-2	-5	+1	-8	+6	+4	-1	+3	-3	+2	-6
[T][S][L]	-0	+3	-2	-1	+0	+1	+2	-1	+4	+7	+4	-6
[T][S][L]Cache	-1	+3	+0	-2	-3	+5	-1	-1	+1	-3	-0	-5
[T][S]Sparse	+6	-6	-2	-5	-4	-3	-3	+0	+3	-6	+0	-4
step_sgd	-1	-1	-2	+1	-1	+1	-2	-0	+3	-3	+2	-3
step_tween	-1	-2	-2	+2	-3	-0	-2	-0	+3	-2	+3	-4
step_tween_chain	+2	-3	-5	+0	+2	+0	-2	-0	+3	-3	-1	-2
tween	-1	+1	-2	-1	-3	+0	-1	-0	+3	-3	+1	-3
tween_chain	-0	-0	-2	-1	-2	-1	-1	-0	+1	-1	+0	-4

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	+1	-2	+3	-4	+3	-2	+2	+1	-3	-2	+1	-1
Mesh[T]	-1	-3	-1	-0	+0	+2	-1	-2	+3	+4	+2	+2
Mesh[T]Alt	-4	+0	+4	-4	+9	-2	+4	+2	-3	-0	-5	-5
Mesh[T]Chain	-2	+2	+2	-1	+1	+0	+6	-1	-1	-2	-0	-0
Mesh[T][S]	-2	-4	-2	-2	+2	+2	+7	+3	-4	+4	+2	-1
Mesh[T][S][FP]	+4	+1	+2	-0	+5	+2	-4	-5	-2	+1	-2	-1
Mesh[T][S]Sparse	+1	+4	-0	-2	+3	+1	+3	+2	-3	+1	-0	-2
Step[T]Alt	-4	+0	+6	-2	+3	-0	+4	+3	-2	-1	-3	+1
Step[T][S]	-1	+2	-1	-1	+0	+1	+2	+1	-5	+1	-0	-0
[T]Alt	-1	-1	+2	+3	+3	+3	+4	+2	-4	-1	+1	+3
[T][S]	+1	+2	-1	-0	-1	+1	-1	-1	-4	+2	-3	-2
[T][S][FP]	-4	+2	+3	-1	+3	+2	+2	+0	-1	-3	-5	+1
[T][S][HP]	+0	+2	+3	-1	+2	+5	+2	-1	-1	+3	-3	+0
[T][S][HP]Async	+1	+6	+3	+1	+2	-0	+6	+0	-5	+2	-2	-2
[T][S][L]	-0	+3	-1	+2	+3	+7	+6	+1	-7	+2	-3	-3
[T][S][L]Cache	+3	+1	-0	+0	+2	+3	-2	-1	-2	+6	-4	-0
[T][S]Sparse	+0	-1	+2	+1	+1	-3	-1	-2	+0	+5	-3	-0
step_sgd	+1	-1	+3	-0	+4	+2	+2	+2	-2	-0	-2	-3
step_tween	-1	+2	-0	-1	+1	+2	-0	-0	-1	+3	+1	-2
step_tween_chain	-2	+0	+0	-1	-2	+0	+1	+2	-2	+1	-1	-1
tween	-0	+3	-0	-2	+0	+1	+1	-1	+1	-1	-1	-1
tween_chain	+0	+1	+2	-1	+3	-1	-1	+0	-2	+0	-0	-2

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	-0	+2	-0	-1	+4	+0	+4	+1	+1	-0
Mesh[T]	-0	+5	-4	+0	+2	+1	+3	+3	-2	+2
Mesh[T]Alt	+2	+12	-4	+1	+2	-2	-5	+0	-3	-4
Mesh[T]Chain	+1	+3	+2	-2	+5	+2	+0	+0	+3	+2
Mesh[T][S]	-2	-4	+2	+3	+2	-2	-2	-3	+2	+3
Mesh[T][S][FP]	-2	+4	-2	-2	+5	+4	-2	-3	-4	+2
Mesh[T][S]Sparse	-1	-4	-3	-1	+4	+1	-0	+7	-2	+3
Step[T]Alt	+3	-3	+2	-3	+6	-7	+1	+1	-0	+3
Step[T][S]	+2	+1	-2	+1	+11	-3	+2	+1	-5	-1
[T]Alt	-2	-0	-3	-2	-1	-0	-1	+5	-2	+2
[T][S]	-3	+4	+2	+3	+2	+3	+0	+0	+2	+2
[T][S][FP]	-1	+5	-0	-1	-3	+7	+2	+5	-0	+0
[T][S][HP]	+0	+1	-1	-7	+3	-0	+3	-2	-1	+0
[T][S][HP]Async	+3	+9	+4	+1	+1	+5	+4	+5	-2	-0
[T][S][L]	-5	+7	-6	+1	+3	+5	+2	-3	-1	-2
[T][S][L]Cache	-0	-1	+0	-5	+5	-2	-2	-1	-4	+1
[T][S]Sparse	-1	+4	+2	+6	-2	+2	+3	+0	-1	-1
step_sgd	+1	+0	+0	-0	+2	+0	-1	+1	+2	+0
step_tween	-0	+1	-1	+0	+3	-1	+1	+2	-1	-1
step_tween_chain	-0	+0	-2	-1	+1	+1	-1	+1	-1	-1
tween	-2	+4	+1	-0	+2	+1	+1	-0	-1	-1
tween_chain	+2	+1	+1	+1	+2	+2	+0	-1	-1	+0

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	+238	+315	-128	+20	+50	+149	-41	+28	-120	+185	+204	-81
Mesh[T]	+200	-41	-294	-103	+178	+252	+71	+219	-137	+47	+156	-111
Mesh[T]Alt	-987	-865	-739	-668	-840	-1315	-1046	-989	-323	-858	-745	-686
Mesh[T]Chain	-101	-90	-187	-68	-110	-323	-172	-138	-139	-80	+153	-271
Mesh[T][S]	-726	-590	-516	-544	-584	-1024	-734	-661	-139	-703	-448	-482
Mesh[T][S][FP]	-830	-750	-556	-430	-696	-1062	-893	-752	-223	-663	-584	-496
Mesh[T][S]Sparse	-764	-731	-568	-452	-671	-1080	-809	-742	-241	-610	-502	-506
Step[T]Alt	-533	-534	-597	-605	-680	-691	-865	-743	-266	-710	-573	-506
Step[T][S]	+187	+324	-234	-116	-71	+577	-57	+271	+10	+200	-119	-155
[T]Alt	-420	-388	-541	-437	-352	-1117	-317	-439	-204	-451	-376	-499
[T][S]	+52	+35	+261	+227	-12	-47	-145	-33	+139	+109	-43	-61
[T][S][FP]	-259	-319	-421	-72	-351	-639	-269	-357	-70	-199	-383	-243
[T][S][HP]	+212	+189	+16	-111	-22	+159	-210	-115	+40	-161	-119	-101
[T][S][HP]Async	-678	-562	-426	-276	-694	-669	-470	-542	-122	-570	-443	-437
[T][S][L]	-228	-99	-131	-78	-153	-416	-245	-157	+31	-88	-117	-240
[T][S][L]Cache	-509	-251	-386	-202	-470	-480	-537	-407	-112	-412	-329	-361
[T][S]Sparse	-408	-624	-363	-408	-504	-866	-743	-476	-112	-539	-467	-448
step_sgd	-46	+178	-173	-96	-75	-19	-240	+32	-20	-113	-73	-179
step_tween	-127	-74	-302	-198	-230	+28	-252	-28	-68	-103	+112	-333
step_tween_chain	-82	-112	-347	-191	+3	+95	-143	+0	-71	-93	-202	-263
tween	+349	+593	+18	+159	+219	+438	+247	+331	-7	-42	+384	+45
tween_chain	+310	+441	+119	+143	+276	+229	+178	+379	-22	+260	+328	-1

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	+49	-56	-51	-119	+129	-80	-84	+136	+30	-106	+319	-30
Mesh[T]	-69	-134	-123	-286	+224	-54	-102	+135	+229	+32	+291	+51
Mesh[T]Alt	-716	-970	-440	-794	-1000	-348	-306	-671	-1256	-541	-1081	-760
Mesh[T]Chain	-154	-11	-240	-89	-115	-138	-74	-41	-375	-185	-165	-205
Mesh[T][S]	-459	-796	-334	-569	-636	-204	-137	-360	-915	-266	-689	-478
Mesh[T][S][FP]	-457	-735	-324	-598	-648	-218	-239	-587	-1049	-391	-833	-577
Mesh[T][S]Sparse	-543	-652	-311	-601	-689	-255	-174	-533	-1046	-358	-779	-576
Step[T]Alt	-687	-787	-322	-627	-680	-310	-231	-479	-879	-404	-709	-606
Step[T][S]	+179	+334	-47	+43	+176	+35	+5	+101	+99	+25	+344	-6
[T]Alt	-275	-452	-281	-395	-179	-225	-116	-279	-616	-422	-682	-335
[T][S]	-46	+268	+55	-15	+103	+100	+84	+20	-65	+213	-10	-41
[T][S][FP]	-372	-196	-78	-260	-359	-42	-62	-449	-560	-236	-441	-405
[T][S][HP]	-6	+12	+5	-161	-102	+47	+24	-70	-208	+20	-25	-150
[T][S][HP]Async	-327	-303	-180	-395	-491	-175	-80	-336	-841	-222	-585	-366
[T][S][L]	-182	-140	-92	-319	-143	+37	+111	-201	-681	-78	-403	-266
[T][S][L]Cache	-256	-400	-208	-283	-364	-76	-78	-315	-655	-128	-696	-272
[T][S]Sparse	-342	-601	-214	-366	-463	-194	-194	-401	-726	-398	-739	-352
step_sgd	-86	+39	-89	-402	+220	-76	-180	-54	-3	-114	+5	-181
step_tween	-146	+180	-256	-183	+166	-148	-82	-110	-65	-156	+129	-189
step_tween_chain	-122	+29	-213	-225	-380	-156	-72	-74	-165	-198	+30	-211
tween	+252	+809	+60	+126	+190	-18	-18	+175	+424	+80	+381	+84
tween_chain	+224	+446	-2	+140	+448	-11	-164	+215	+388	+49	+316	+42

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	+53	-16	-30	+30	+211	-73	-85	+73	+70	-8
Mesh[T]	+24	+128	-156	+234	+164	-72	-84	+233	+111	+134
Mesh[T]Alt	-761	-648	-466	-719	-595	-360	-370	-772	-1063	-710
Mesh[T]Chain	-124	-172	-172	-128	+10	-132	-148	-150	-89	-74
Mesh[T][S]	-536	-547	-212	-459	-379	-210	-224	-595	-735	-417
Mesh[T][S][FP]	-576	-498	-307	-524	-376	-216	-255	-646	-945	-487
Mesh[T][S]Sparse	-597	-565	-352	-520	-398	-235	-283	-537	-979	-478
Step[T]Alt	-549	-610	-342	-588	-421	-347	-307	-609	-751	-574
Step[T][S]	+171	+58	-21	+305	+761	-66	+21	+184	+191	+206
[T]Alt	-440	-447	-370	-348	-372	-208	-257	-456	-483	-344
[T][S]	-132	+75	+124	+81	+234	+136	+70	-67	+179	+139
[T][S][FP]	-445	-123	-121	-298	-339	+39	-138	-186	-471	-244
[T][S][HP]	-92	-42	-25	-316	-113	+9	-105	-249	-170	-86
[T][S][HP]Async	-324	-289	-182	-298	-237	-211	-143	-266	-760	-423
[T][S][L]	-436	+28	-179	-160	-69	+40	-92	-352	-433	-308
[T][S][L]Cache	-381	-318	-137	-302	-127	-61	-135	-307	-635	-218
[T][S]Sparse	-419	-313	-217	-330	-357	-127	-177	-464	-606	-465
step_sgd	-87	-100	-128	-61	-40	-103	-74	-72	+60	-103
step_tween	-79	-156	-252	-27	-9	-164	-118	-93	-137	-170
step_tween_chain	-159	-147	-221	-89	-115	-146	-241	-67	-14	-230
tween	+118	+338	+61	+294	+347	-6	-40	+302	+354	-146
tween_chain	+316	+253	+146	-83	+283	-7	-71	+272	+344	+171

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	+6	+4	+3	+3	+6	+4	+4	+5	-1	+5	+5	+3
Mesh[T]	+6	+4	+2	+1	+5	+4	+4	+5	-2	+5	+5	+2
Mesh[T]Alt	-5	-4	-10	-7	-6	-2	-5	-6	-8	-6	-6	-7
Mesh[T]Chain	+6	+4	+3	+2	+6	+3	+4	+5	-1	+6	+5	+3
Mesh[T][S]	+13	+12	+13	+12	+12	+13	+11	+12	+16	+12	+11	+13
Mesh[T][S][FP]	+13	+12	+11	+11	+13	+12	+11	+12	+14	+10	+12	+12
Mesh[T][S]Sparse	+16	+16	+14	+13	+15	+16	+15	+17	+17	+13	+16	+14
Step[T]Alt	-8	-8	-11	-11	-10	-6	-9	-9	-10	-9	-10	-11
Step[T][S]	+7	+6	+5	+5	+6	+6	+4	+6	+2	+7	+4	+5
[T]Alt	-4	-5	-7	-7	-6	-6	-5	-5	-6	-6	-6	-7
[T][S]	+13	+13	+9	+12	+12	+13	+11	+11	+16	+12	+11	+13
[T][S][FP]	+13	+12	+12	+13	+13	+12	+12	+12	+14	+12	+12	+12
[T][S][HP]	+13	+13	+13	+12	+12	+13	+12	+12	+14	+12	+11	+12
[T][S][HP]Async	+13	+12	+12	+12	+12	+13	+11	+12	+14	+12	+11	+12
[T][S][L]	+10	+9	+12	+11	+11	+11	+9	+13	+12	+11	+10	+12
[T][S][L]Cache	+14	+15	+10	+12	+14	+14	+13	+14	+17	+14	+14	+14
[T][S]Sparse	+16	+17	+15	+14	+16	+16	+13	+18	+17	+16	+15	+15
step_sgd	-1	+1	-4	-4	-2	+1	-3	+0	-3	-2	-2	-4
step_tween	-0	+1	-5	-6	-3	+0	-1	+0	-4	-1	-1	-7
step_tween_chain	-0	+1	-4	-4	-1	+1	-1	+1	-4	-1	-1	-5
tween	+5	+4	+3	+3	+6	+5	+4	+5	-1	+4	+5	+3
tween_chain	+4	+5	+4	+4	+6	+4	+5	+6	-1	+5	+6	+3

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	+4	+5	+0	+4	+4	-0	-1	+5	+5	+1	+4	+2
Mesh[T]	+3	+5	-1	+0	+4	-2	-1	+4	+4	+1	+4	+2
Mesh[T]Alt	-7	-3	-8	-6	-8	-6	-9	-6	-2	-9	-5	-8
Mesh[T]Chain	+4	+5	-3	+4	+5	-0	-2	+4	+5	+1	+4	+2
Mesh[T][S]	+12	+13	+14	+12	+13	+16	+15	+13	+12	+13	+12	+12
Mesh[T][S][FP]	+12	+14	+14	+12	+13	+14	+14	+13	+12	+13	+12	+11
Mesh[T][S]Sparse	+15	+18	+16	+14	+16	+16	+18	+14	+16	+14	+17	+13
Step[T]Alt	-13	-7	-11	-11	-7	-10	-10	-11	-7	-10	-7	-12
Step[T][S]	+6	+7	+1	+5	+6	+3	+2	+6	+5	+4	+7	+4
[T]Alt	-6	-4	-8	-6	-4	-6	-6	-6	-2	-8	-6	-8
[T][S]	+8	+14	+14	+8	+14	+15	+15	+13	+12	+13	+13	+12
[T][S][FP]	+12	+13	+14	+11	+12	+14	+14	+8	+12	+13	+13	+8
[T][S][HP]	+12	+14	+14	+9	+13	+15	+15	+13	+12	+9	+13	+12
[T][S][HP]Async	+12	+13	+13	+12	+13	+15	+14	+11	+12	+13	+12	+11
[T][S][L]	+11	+10	+11	+7	+9	+11	+12	+11	+9	+12	+9	+10
[T][S][L]Cache	+13	+15	+16	+12	+15	+17	+16	+12	+15	+13	+11	+12
[T][S]Sparse	+15	+17	+16	+15	+17	+17	+17	+14	+16	+7	+16	+15
step_sgd	-3	+2	-6	-6	+2	-4	-6	-3	+1	-5	+3	-5
step_tween	-3	-0	-7	-3	+2	-5	-4	-3	+1	-6	+2	-5
step_tween_chain	-3	+3	-6	-4	-2	-4	-3	-3	-1	-5	+2	-5
tween	+4	+5	-0	+4	+4	-1	-1	+4	+4	+1	+5	+2
tween_chain	+5	+6	+1	+4	+5	+0	-4	+6	+5	+2	+5	+3

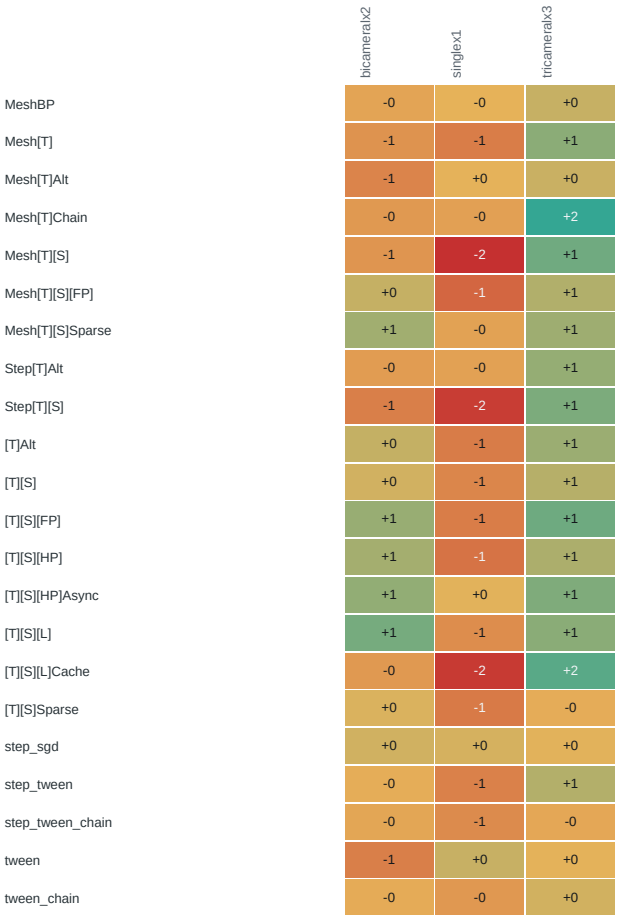
AvailD vs sgd, every mode x dtype (cols 25-34)

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

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

AccD vs sgd, every mode x arch

AccD vs sgd, every mode x arch



Family collapse - Step* vs non-Step

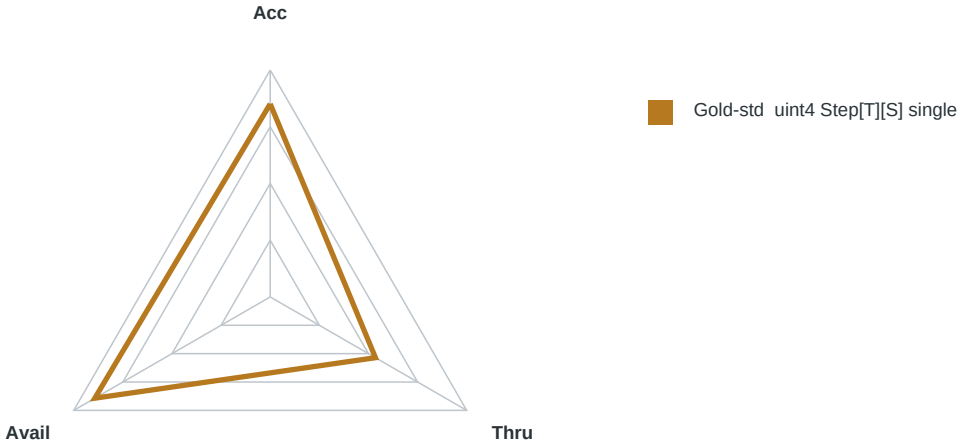
Step* is a 1D pipe (one sample enters layer 0 per tick; output is the sample that entered depth ticks ago). Non-Step of the same family is a full-chain update. AccD is a real scheduler split, not leftover warm-up forwards.

step	plain	n	mean |AccD|
Step[T]Alt	[T]Alt	102	5.41
Step[T][S]	[T][S]	102	4.82
step_sgd	sgd	102	2.49
step_tween	tween	102	2.61
step_tween_chain	tween_chain	102	2.79

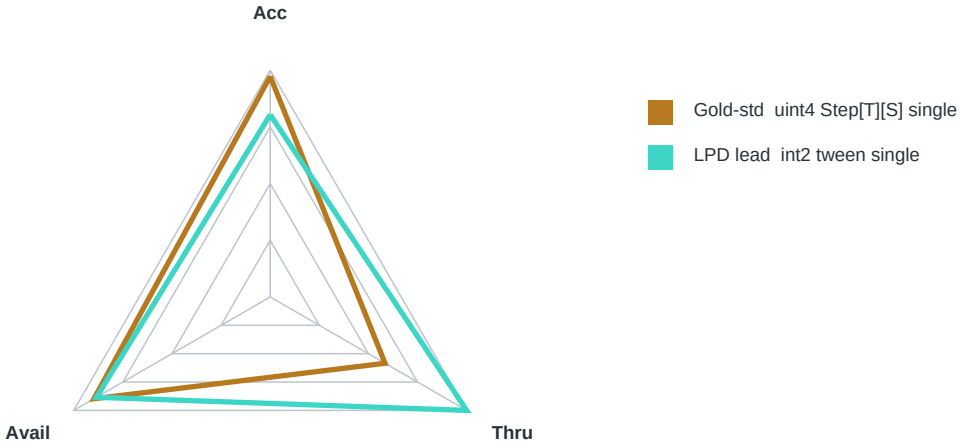
Consciousness - Acc, Throughput, Availability

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 float64|none|[T][S][FP]|tricameral|simd Acc 44.9 Thru 3234 Avail 46.0% 2.8 KiB (RAM reference)
Lucy Score champ (T x Avail x Acc) float32|none|Step[T][S]|single|simd Score 5225.4 Acc 31.8 Soft 25 0.4 KiB
Live-fit champ (best Q) float32|none|Step[T][S]|single|simd Acc 31.8 Thru 33642 Avail 48.8% 0.4 KiB
Gold-std (2+ pillars, Acc keep >= 80%, then smallest then fastest): uint4|none|Step[T][S]|single|simd mode Step[T][S] Acc 38.2 Thru 18024 0.1 KiB
Board fastest float32|none|tween|single|simd Thru 33958 (traps may own this) Best availability uint3|none|[T][S][L]Cache|single|simd 56.6%
Learner Thru peak 33642 learner Avail peak 54.9%

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
Step[T][S]	1	38.2	0.1	18024	uint4 Step[T][S] single
[T][S][FP]	3	44.9	0.1	5370	uint5 [T][S][FP] single
[T][S][L]	1	37.2	0.1	5765	int6 [T][S][L] single
[T][S][L]Cache	2	37.9	0.2	4543	nf4 [T][S][L]Cache tricameral / float32 [T][S][L]Cache tricameral
[T][S][HP]Async	1	38.4	1.4	3658	float32 [T][S][HP]Async tricameral
[T][S]Sparse	1	36.1	1.4	1982	uint32 [T][S]Sparse tricameral
Mesh[T][S]	1	37.8	2.3	1810	uintptr Mesh[T][S] bicameral
Mesh[T][S]Sparse	1	39.5	2.3	1709	uint64 Mesh[T][S]Sparse bicameral

Near-gold - 2+ pillars, RAM <= 50% of Acc champ

Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
near	uint4 Step[T][S] single	85	54	89	74	2	32.0	23.71	38.2	18024	0.1
near	int6 [T][S][L] single	83	17	99	52	3	32.0	16.66	37.2	5765	0.1
near	uint5 [T][S][FP] single	85	16	94	50	2	32.0	16.05	38.0	5370	0.1

Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
near	int4 [T][S][FP] bicameral	82	12	80	43	5	19.6	8.35	37.0	3952	0.1
near	nf4 [T][S][L]Cache tricameral	84	5	82	33	6	16.0	5.28	37.9	1752	0.2
near	float32 [T][S][L]Cache tricameral	81	14	91	46	50	2.0	0.93	36.4	4543	1.4
near	float32 [T][S][HP]Async tricameral	85	11	86	43	50	2.0	0.86	38.4	3658	1.4

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
-	int2 tween single	70	92	88	83	1	32.0	26.49	31.6	30847	0.0
-	ternary MeshBP single	72	76	84	78	1	32.0	24.81	32.5	25687	0.0
near	uint4 Step[T][S] single	85	54	89	74	2	32.0	23.71	38.2	18024	0.1
-	int4 [T]Alt single	76	56	74	68	2	32.0	21.82	34.3	18763	0.0
-	int2 [T][S][FP] single	71	41	90	64	1	32.0	20.38	31.8	13653	0.0
-	uint2 [T][S][L] single	74	31	99	61	1	32.0	19.63	33.5	10553	0.0
-	int2 [T][S][HP]Async single	77	33	92	61	1	32.0	19.62	34.7	10942	0.0
-	binary Step[T]Alt single	72	43	70	60	0	32.0	19.26	32.3	14627	0.0
near	int6 [T][S][L] single	83	17	99	52	3	32.0	16.66	37.2	5765	0.1
-	uint5 [T][S][L] single	71	19	97	51	2	32.0	16.37	31.8	6537	0.1
near	uint5 [T][S][FP] single	85	16	94	50	2	32.0	16.05	38.0	5370	0.1
-	int5 [T][S][L] single	71	18	97	50	2	32.0	16.00	31.7	6169	0.1
-	int3 step_sgd single	71	28	62	50	1	32.0	15.96	31.8	9496	0.0
-	binary Step[T][S] bicameral	72	24	69	49	1	32.0	15.69	32.4	7940	0.0
-	binary Mesh[T]Alt single	75	18	76	47	0	32.0	15.07	33.5	6203	0.0
-	binary [T][S][L]Cache bicameral	76	14	91	45	1	32.0	14.56	34.0	4584	0.0
-	binary [T][S][HP] tricameral	74	15	83	45	2	32.0	14.44	33.1	5057	0.0
-	fp8e4m3 Mesh[T][S]Sparse single	76	16	96	49	3	29.3	14.25	33.9	5314	0.1
-	int6 Mesh[T]Chain single	72	17	68	44	3	32.0	14.10	32.5	5885	0.1
-	binary [T][S][L] bicameral	71	15	79	44	1	32.0	14.01	31.8	5017	0.0

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

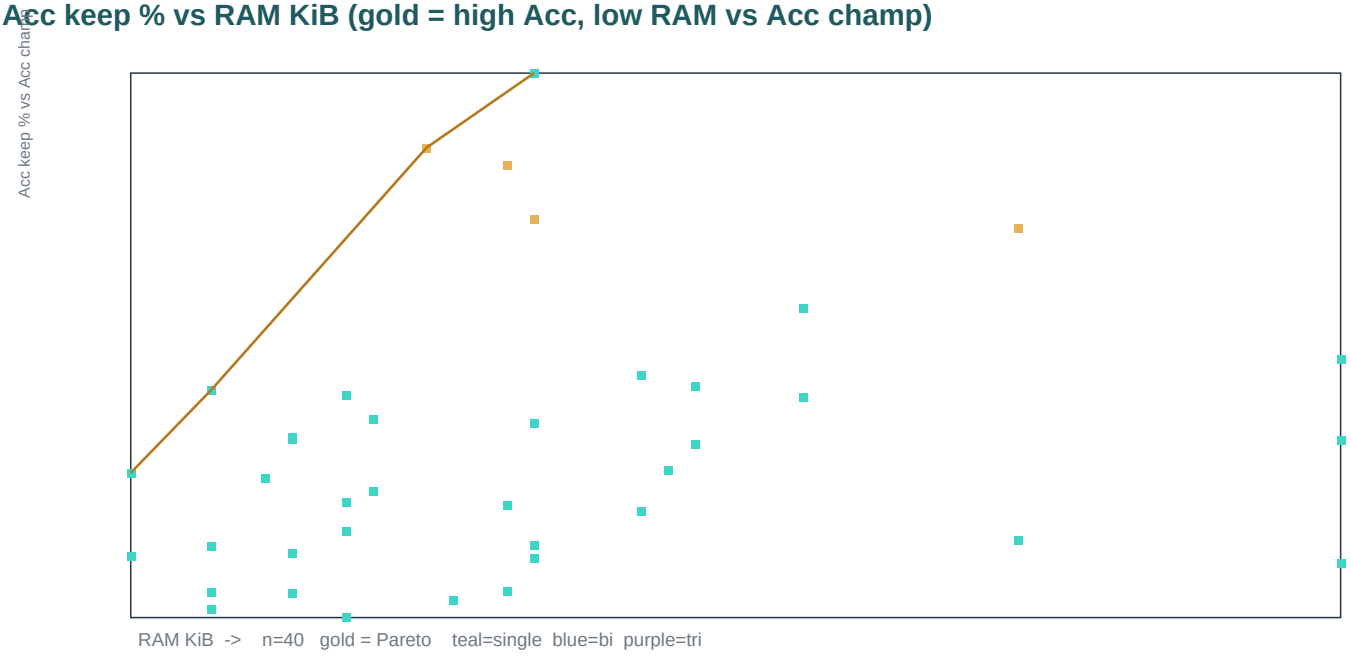
Band	Cell	Acc%	Thru%	Avail%	Q%	LPD	Thru	Avail
-	float32 Step[T][S] single	71	100	89	86	6.29	33642	48.8
-	int2 tween single	70	92	88	83	26.49	30847	48.3
-	ternary MeshBP single	72	76	84	78	24.81	25687	46.4
-	float32 [T][S][HP] single	74	65	92	76	5.58	21823	50.4
near	uint4 Step[T][S] single	85	54	89	74	23.71	18024	49.0
-	bfloat16 [T][S][HP] single	72	53	93	71	10.35	17796	50.9
-	int4 [T]Alt single	76	56	74	68	21.82	18763	40.8
-	float32 Step[T]Alt single	73	55	74	67	4.89	18525	40.6
-	float64 [T]Alt single	72	50	76	65	2.39	16915	42.0
-	uintptr Mesh[T] single	71	46	84	65	2.35	15589	45.9

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

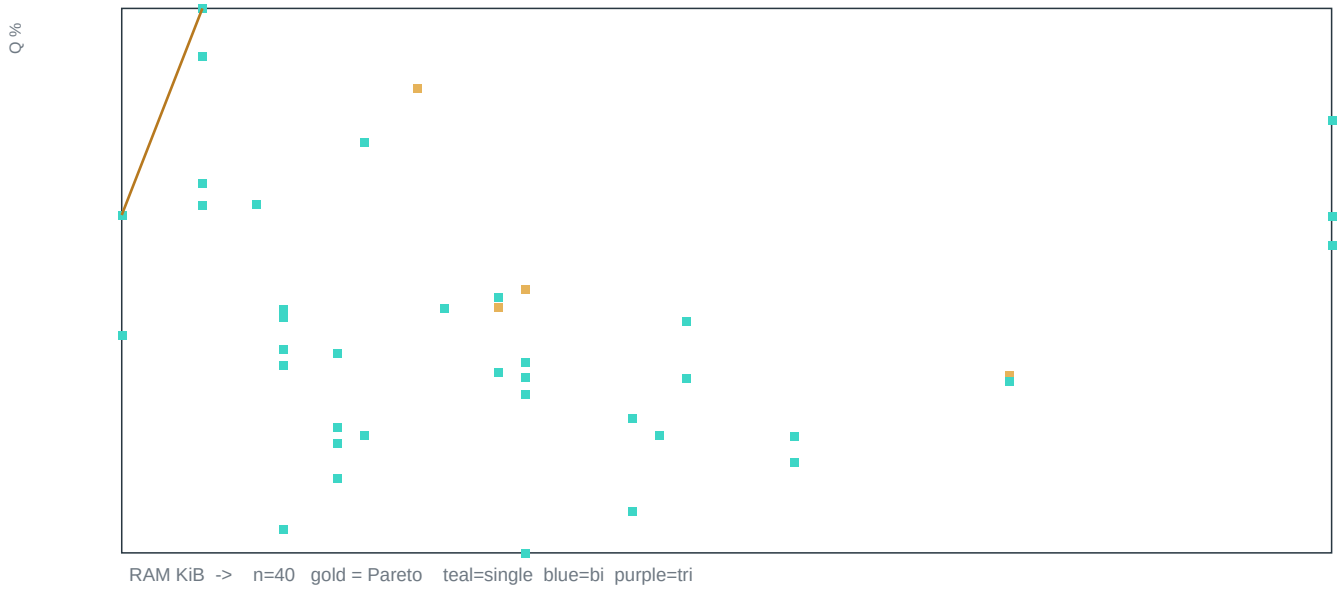
Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
trap	binary sgd single	48	78	68	63	0	32.0	0.00	21.4	26299	0.0
trap	binary step_sgd single	58	79	77	71	0	32.0	0.00	26.2	26719	0.0
trap	binary tween single	62	89	87	78	0	32.0	0.00	27.6	29876	0.0
trap	binary tween_chain single	59	83	88	76	0	32.0	0.00	26.6	28063	0.0
trap	binary step_tween single	46	76	81	66	0	32.0	0.00	20.7	25590	0.0
trap	binary step_tween_chain single	49	74	81	66	0	32.0	0.00	22.0	24826	0.0
trap	binary MeshBP single	69	75	86	76	0	32.0	0.00	31.0	25135	0.0
trap	binary Mesh[T] single	63	52	84	65	0	32.0	0.00	28.4	17507	0.0

trap	binary Mesh[T]Chain single	54	63	86	67	0	32.0	0.00	24.3	21309	0.0
trap	binary [T][S] single	46	57	93	62	0	32.0	0.00	20.5	19093	0.0

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

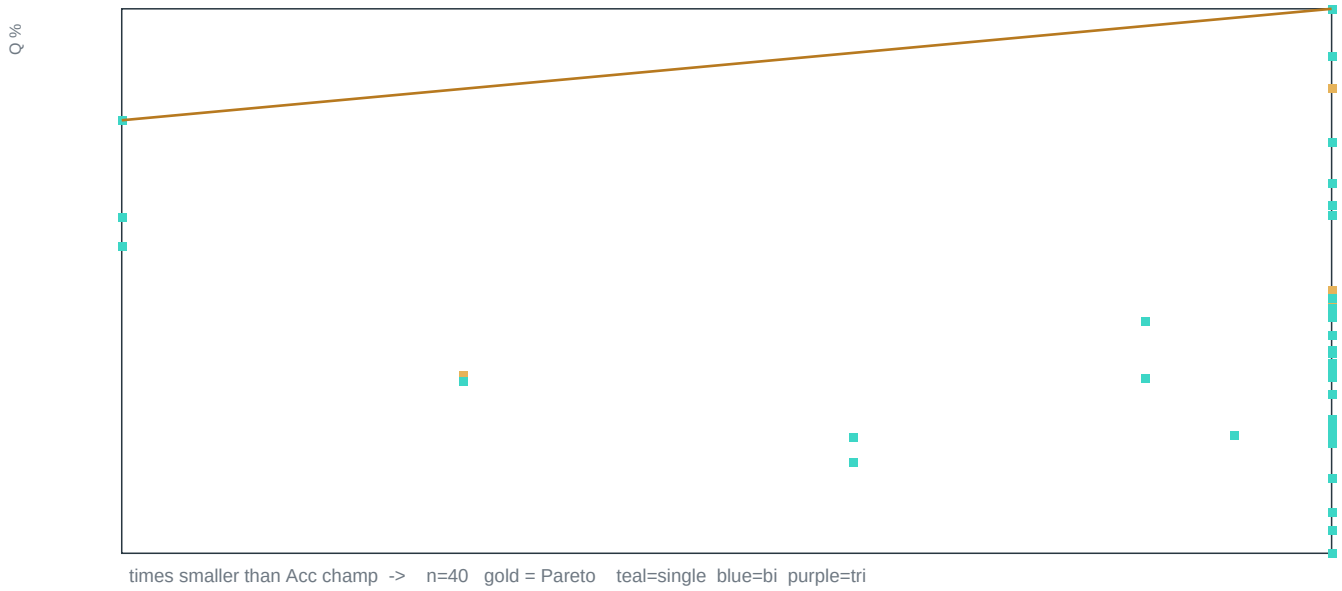


Q% vs RAM KiB (gold = high consciousness, low RAM)



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

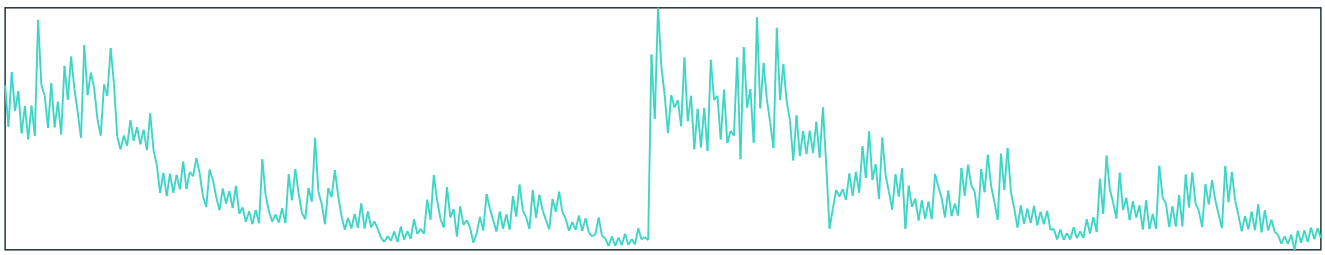
Q% vs shrink vs Acc champ (gold = upper right)



Top Lucy density (LPD)

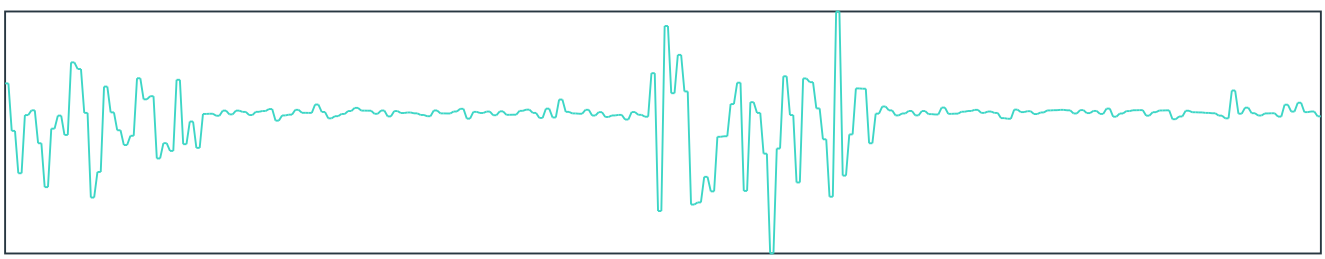


Live pulse (Score)



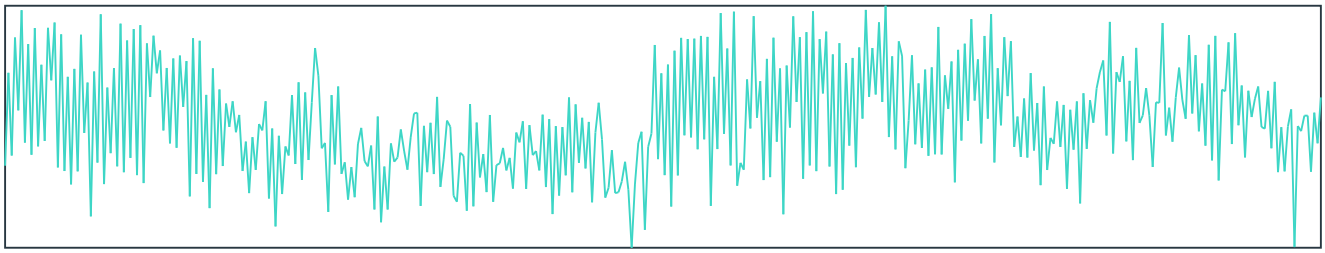
n=400 min=37.23 max=1344.25

Live pulse (SoftAcc)



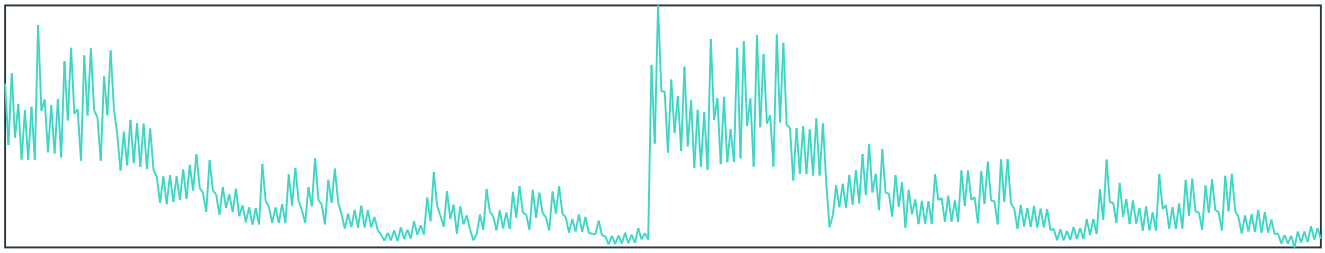
n=400 min=24.61 max=25.28

Live pulse (Availability)



n=400 min=35.60 max=55.33

Live pulse (Throughput)



n=400 min=417.67 max=12696.24

Queue by train mode (this epoch)

Mode	Done	Run	Left	Total