tide metacognition

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 13:33:04 -
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 - metacognition - offline report

Lucy champions (this tide)

Axis	Cell	Score	Soft	Acc	Thru	Avail
hard acc	binary|none|[T][S]Sparse|single|simd	1339.47	25.7	25.9	10996.4	47.4
throughput	float32|none|sgd|single|simd	5471.31	25.0	25.6	48783.8	44.9
availability	ternary|none|[T][S]Sparse|bicameral|simd	577.24	25.0	19.4	4345.2	53.2
lucy score	float32|none|sgd|single|simd	5471.31	25.0	25.6	48783.8	44.9
mobile score (trap)	binary|none|tween|single|simd	4377.91	24.7	23.5	37992.7	46.7
acc/sec	nf4|none|sgd|single|simd	1807.58	25.1	27.5	18306.2	39.4

Lucy axis champions (this tide)

Axis	Mode	DType	Arch	Value
hard_acc	Mesh[T][S][FP]	fp6	tricameralx3	47.92
throughput	sgd	float32	singlex1	48783.81
availability	[T][S]Sparse	ternary	bicameralx2	53.15
score	sgd	float32	singlex1	5471.31
soft_acc	[T][S]Sparse	binary	singlex1	25.72
acc_thru	Step[T][S]	float32	singlex1	14428.20
realtime	sgd	float32	singlex1	21906.20
adapt	step_sgd	binary	singlex1	25.48
keep_learn	tween	ternary	singlex1	12.62
acc_per_sec	sgd	nf4	singlex1	12.52
consistency	sgd	float64	singlex1	100.00
stability	sgd	fp4	singlex1	100.00
mobile_score	tween	binary	singlex1	38254795~
lpd	[T][S]	ternary	singlex1	7.90
mspeed	Step[T][S]	float32	singlex1	1.00
mavail	Mesh[T][S]Sparse	float64	tricameralx3	1.00
mix	Step[T][S]	float32	singlex1	0.86
gold_std	[T][S]Sparse	uint6	tricameralx3	0.28

Best settings per train mode

Mode	DType	Format	Score	Soft	Acc	Avail	n
sgd	float32	none	5471.3	25.0	25.6	44.9	102
tween	float32	none	5394.2	25.0	27.7	46.6	102
tween_chain	float32	none	5282.0	25.0	27.9	47.3	102
step_sgd	float32	none	5080.3	25.1	30.6	43.9	102
Mesh[T]	float32	none	5015.5	24.8	26.7	46.6	102
step_tween	float32	none	4994.0	25.0	27.3	45.3	102
Step[T][S]	float32	none	4926.4	25.0	33.6	45.9	102
MeshBP	float32	none	4892.1	25.0	24.6	46.9	102
step_tween_chain	float32	none	4679.2	25.0	24.9	44.9	102
Mesh[T]Chain	float32	none	4010.6	25.0	27.6	47.0	102
[T]Alt	float32	none	3353.4	25.1	29.9	42.0	102

[T][S][HP]	float32	none	3295.0	25.1	31.1	48.4	102
[T][S]	float32	none	3115.9	25.2	32.2	47.0	102
[T][S][FP]	float32	none	2622.5	25.0	14.3	49.8	102
[T][S][L]	float32	none	2471.6	24.8	21.2	47.0	102
Step[T]Alt	float32	none	2433.2	24.8	14.3	39.5	102
[T][S][L]Cache	float32	none	2205.4	25.0	32.4	48.4	102
[T][S][HP]Async	float32	none	1827.8	25.0	22.7	47.5	102
[T][S]Sparse	float32	none	1778.8	25.0	29.3	48.9	102
Mesh[T][S]	float32	none	1708.6	25.0	16.8	50.6	102
Mesh[T][S][FP]	float32	none	1296.3	24.9	23.5	49.0	102
Mesh[T][S]Sparse	float32	none	1105.9	24.9	22.6	47.7	102
Mesh[T]Alt	float32	none	1030.1	24.8	23.0	41.8	102

Best dtype per mode

Mode	Winner dtype	Score	Soft	Acc
sgd	float32	5471.3	25.0	25.6
tween	float32	5394.2	25.0	27.7
tween_chain	float32	5282.0	25.0	27.9
step_sgd	float32	5080.3	25.1	30.6
Mesh[T]	float32	5015.5	24.8	26.7
step_tween	float32	4994.0	25.0	27.3
Step[T][S]	float32	4926.4	25.0	33.6
MeshBP	float32	4892.1	25.0	24.6
step_tween_chain	float32	4679.2	25.0	24.9
Mesh[T]Chain	float32	4010.6	25.0	27.6
[T]Alt	float32	3353.4	25.1	29.9
[T][S][HP]	float32	3295.0	25.1	31.1
[T][S]	float32	3115.9	25.2	32.2
[T][S][FP]	float32	2622.5	25.0	14.3
[T][S][L]	float32	2471.6	24.8	21.2
Step[T]Alt	float32	2433.2	24.8	14.3
[T][S][L]Cache	float32	2205.4	25.0	32.4
[T][S][HP]Async	float32	1827.8	25.0	22.7
[T][S]Sparse	float32	1778.8	25.0	29.3
Mesh[T][S]	float32	1708.6	25.0	16.8
Mesh[T][S][FP]	float32	1296.3	24.9	23.5
Mesh[T][S]Sparse	float32	1105.9	24.9	22.6
Mesh[T]Alt	float32	1030.1	24.8	23.0

Best mode per dtype

DType	Winner mode	Score	Soft	Acc
float32	sgd	5471.3	25.0	25.6
int8	tween_chain	4914.3	24.9	24.8
int4	tween	4608.6	25.0	26.0
int2	tween_chain	4470.8	25.2	29.3
binary	tween	4377.9	24.7	23.5
ternary	tween_chain	4332.1	25.1	22.9
uint8	tween_chain	4123.4	24.9	22.9
bfloat16	Step[T][S]	3895.6	25.0	28.1
fp4	tween_chain	3767.0	25.0	24.8
float64	tween	3562.8	25.1	29.3
fp8e5m2	tween_chain	3454.0	24.9	21.8

fp8e4m3	tween_chain	3451.2	25.1	25.4
float16	tween_chain	3441.9	25.0	25.0
uint64	tween_chain	3018.9	24.9	24.3
uint32	tween_chain	2919.8	25.0	24.8
uint16	tween_chain	2890.6	25.0	24.7
int16	tween_chain	2839.3	25.0	25.3
int32	tween_chain	2741.7	25.0	25.8
uint4	tween_chain	2687.5	25.0	22.4
uint2	tween_chain	2676.8	25.0	25.6
int64	tween_chain	2634.8	25.0	25.6
uintptr	tween_chain	2611.7	25.0	27.9
complex128	tween_chain	2606.8	25.0	25.4
uint	tween_chain	2453.9	25.0	23.3
complex64	tween_chain	2379.5	25.0	25.7
int	tween_chain	2343.3	25.1	26.3
nf4	tween_chain	2009.8	24.9	23.7
uint3	tween_chain	1693.5	24.9	23.8
int3	tween_chain	1581.9	25.1	23.7
uint5	tween_chain	1349.5	25.0	24.6
int5	tween_chain	1319.0	25.0	26.0
uint6	tween_chain	1166.0	25.1	28.6
int6	tween_chain	1130.6	25.0	25.2
fp6	tween_chain	1090.4	25.0	27.2

Leaderboard (Lucy Score)

#	Cell	Score	Soft	Acc	Thru	Avail
1	float32|none|sgd|single|simd	5471.3	25.0	25.6	48783.8	44.9
2	float32|none|tween|single|simd	5394.2	25.0	27.7	46268.6	46.6
3	float32|none|tween_chain|single|simd	5282.0	25.0	27.9	44605.2	47.3
4	float32|none|step_sgd|single|simd	5080.3	25.1	30.6	46234.0	43.9
5	float32|none|Mesh[T]|single|simd	5015.5	24.8	26.7	43379.8	46.6
6	float32|none|step_tween|single|simd	4994.0	25.0	27.3	44195.1	45.3
7	float32|none|Step[T][S]|single|simd	4926.4	25.0	33.6	42914.6	45.9
8	int8|none|tween_chain|single|simd	4914.3	24.9	24.8	41955.0	47.0
9	float32|none|MeshBP|single|simd	4892.1	25.0	24.6	41722.0	46.9
10	int8|none|tween|single|simd	4742.0	25.0	23.8	40656.2	46.7
11	float32|none|step_tween_chain|single|simd	4679.2	25.0	24.9	41637.9	44.9
12	int4|none|tween|single|simd	4608.6	25.0	26.0	39620.3	46.6
13	int4|none|tween_chain|single|simd	4600.9	25.1	24.1	39169.9	46.9
14	int2|none|tween_chain|single|simd	4470.8	25.2	29.3	38469.6	46.1
15	int8|none|Step[T][S]|single|simd	4405.6	24.8	23.6	37853.3	46.9
16	binary|none|tween|single|simd	4377.9	24.7	23.5	37992.7	46.7
17	ternary|none|tween_chain|single|simd	4332.1	25.1	22.9	37395.8	46.1
18	int8|none|Mesh[T]|single|simd	4325.5	25.0	23.7	37112.5	46.7
19	int8|none|sgd|single|simd	4312.4	25.0	24.6	40987.9	42.1
20	int8|none|step_sgd|single|simd	4301.7	25.0	27.1	39203.1	43.9

Leaderboard (SoftAcc)

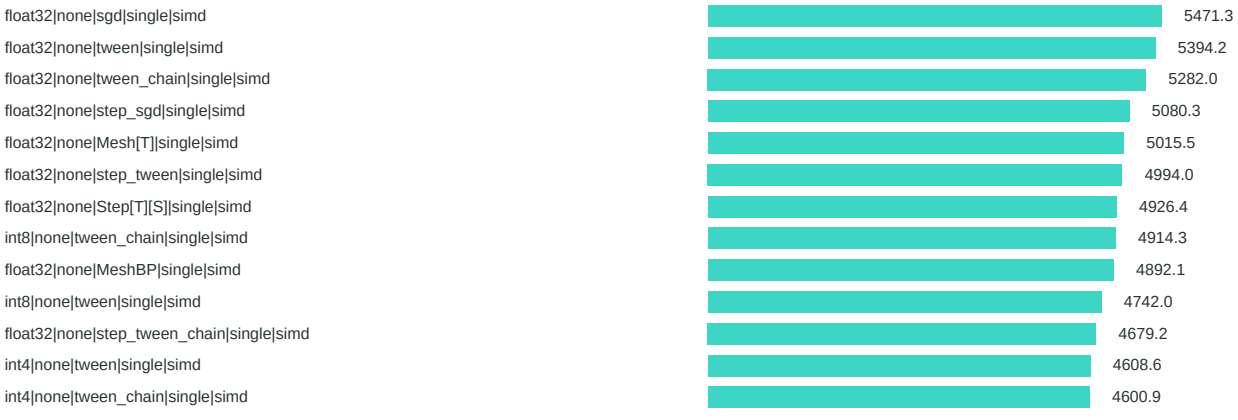
#	Cell	Score	Soft	Acc	Thru	Avail
1	ternary|none|Step[T][S]|single|simd	3950.7	25.3	25.6	33793.6	46.3
2	int2|none|tween_chain|single|simd	4470.8	25.2	29.3	38469.6	46.1
3	ternary|none|tween_chain|single|simd	4332.1	25.1	22.9	37395.8	46.1

4	int4|none|Step[T][S]|single|simd	4208.8	25.1	26.2	35684.3	47.0
5	int2|none|tween|single|simd	4117.8	25.1	27.4	37550.8	43.7
6	int8|none|step_tween_chain|single|simd	4045.9	25.1	29.3	35972.5	44.8
7	float32|none|step_sgd|single|simd	5080.3	25.1	30.6	46234.0	43.9
8	int4|none|tween_chain|single|simd	4600.9	25.1	24.1	39169.9	46.9
9	int4|none|Mesh[T]|single|simd	3949.3	25.0	28.0	34629.6	45.5
10	int2|none|sgd|single|simd	3940.6	25.0	26.4	38554.7	40.8
11	int8|none|MeshBP|single|simd	4101.1	25.0	29.5	35055.6	46.7
12	binary|none|tween_chain|single|simd	4211.5	25.0	25.1	36253.6	46.4
13	float32|none|tween|single|simd	5394.2	25.0	27.7	46268.6	46.6
14	float32|none|tween_chain|single|simd	5282.0	25.0	27.9	44605.2	47.3
15	int8|none|step_sgd|single|simd	4301.7	25.0	27.1	39203.1	43.9
16	float32|none|Mesh[T]Chain|single|simd	4010.6	25.0	27.6	34148.9	47.0
17	float32|none|step_tween_chain|single|simd	4679.2	25.0	24.9	41637.9	44.9
18	float32|none|Step[T][S]|single|simd	4926.4	25.0	33.6	42914.6	45.9
19	int8|none|step_tween|single|simd	4040.7	25.0	25.8	36173.9	44.7
20	bfloat16|none|Step[T][S]|single|simd	3895.6	25.0	28.1	33003.3	47.2

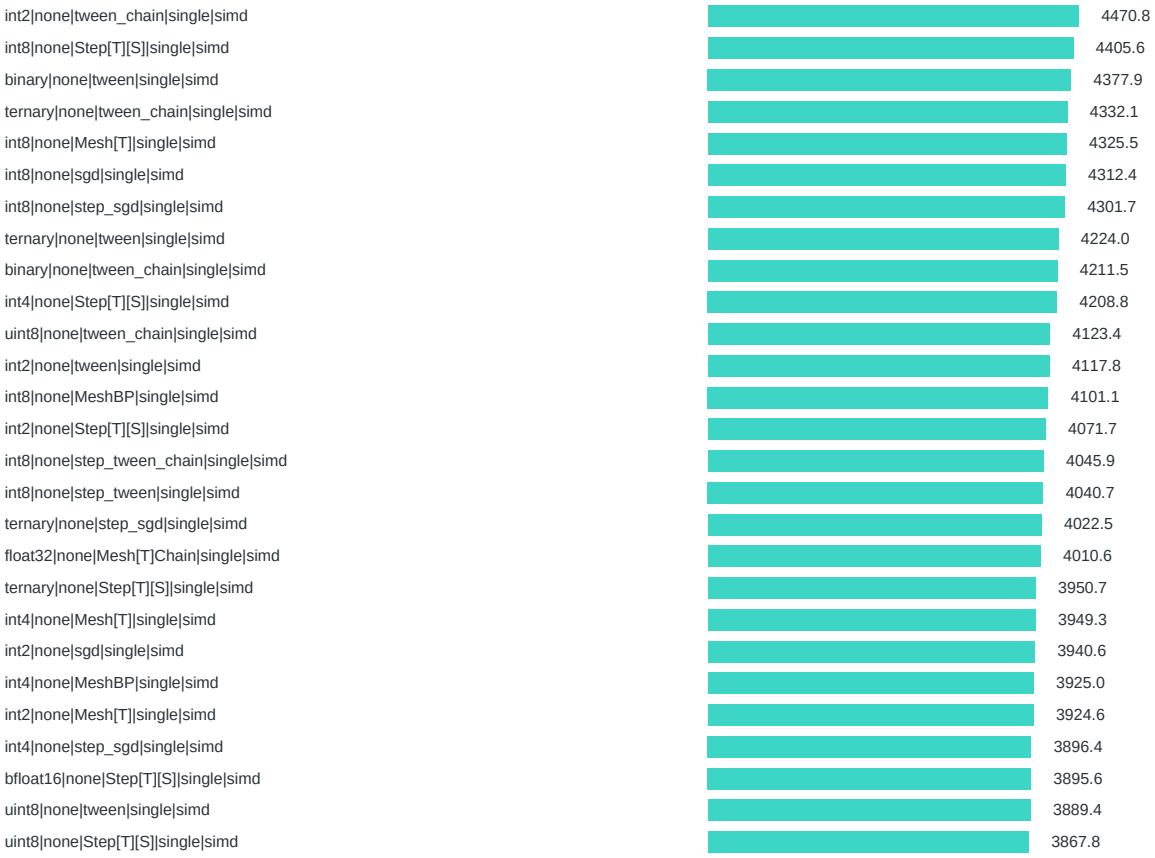
Leaderboard (hard Acc)

#	Cell	Score	Soft	Acc	Thru	Avail
1	float32|none|Step[T][S]|single|simd	4926.4	25.0	33.6	42914.6	45.9
2	float32|none|step_sgd|single|simd	5080.3	25.1	30.6	46234.0	43.9
3	int8|none|MeshBP|single|simd	4101.1	25.0	29.5	35055.6	46.7
4	int2|none|tween_chain|single|simd	4470.8	25.2	29.3	38469.6	46.1
5	int8|none|step_tween_chain|single|simd	4045.9	25.1	29.3	35972.5	44.8
6	bfloat16|none|Step[T][S]|single|simd	3895.6	25.0	28.1	33003.3	47.2
7	int4|none|Mesh[T]|single|simd	3949.3	25.0	28.0	34629.6	45.5
8	float32|none|tween_chain|single|simd	5282.0	25.0	27.9	44605.2	47.3
9	float32|none|tween|single|simd	5394.2	25.0	27.7	46268.6	46.6
10	float32|none|Mesh[T]Chain|single|simd	4010.6	25.0	27.6	34148.9	47.0
11	int2|none|tween|single|simd	4117.8	25.1	27.4	37550.8	43.7
12	float32|none|step_tween|single|simd	4994.0	25.0	27.3	44195.1	45.3
13	int8|none|step_sgd|single|simd	4301.7	25.0	27.1	39203.1	43.9
14	float32|none|Mesh[T]|single|simd	5015.5	24.8	26.7	43379.8	46.6
15	int2|none|sgd|single|simd	3940.6	25.0	26.4	38554.7	40.8
16	int4|none|Step[T][S]|single|simd	4208.8	25.1	26.2	35684.3	47.0
17	int4|none|tween|single|simd	4608.6	25.0	26.0	39620.3	46.6
18	int8|none|step_tween|single|simd	4040.7	25.0	25.8	36173.9	44.7
19	float32|none|sgd|single|simd	5471.3	25.0	25.6	48783.8	44.9
20	ternary|none|Step[T][S]|single|simd	3950.7	25.3	25.6	33793.6	46.3

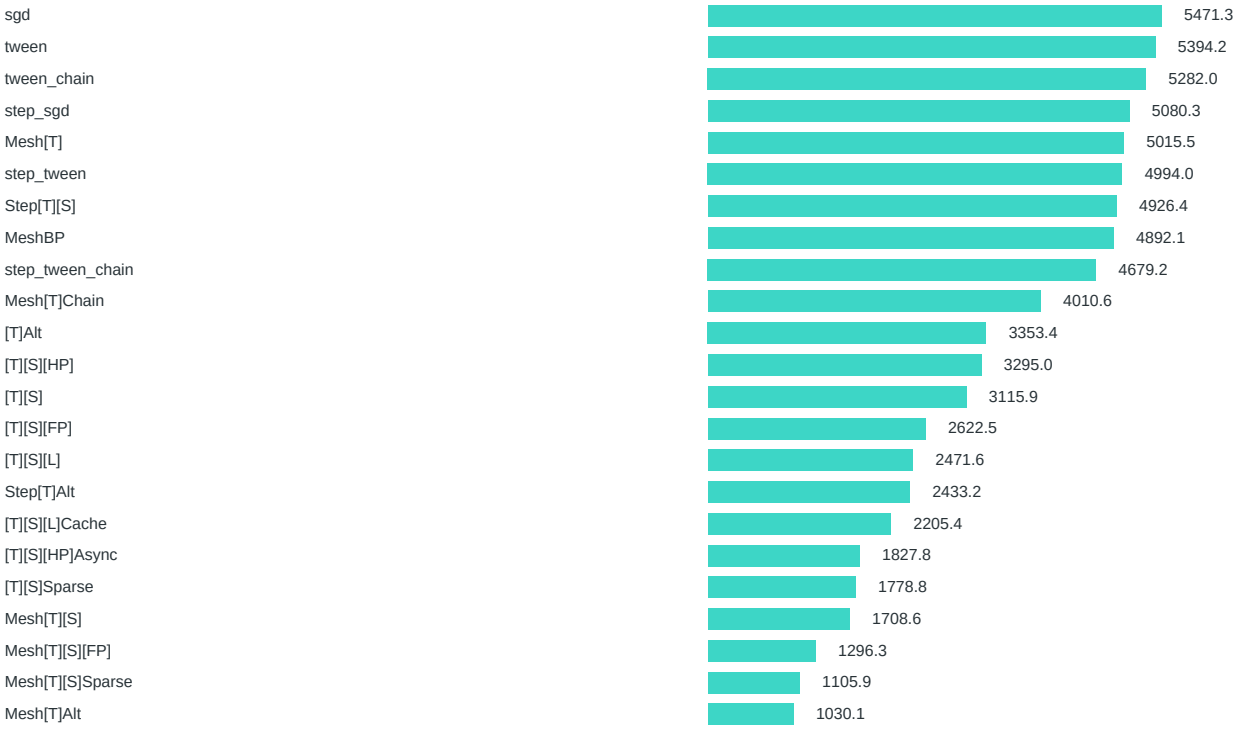
Top scores



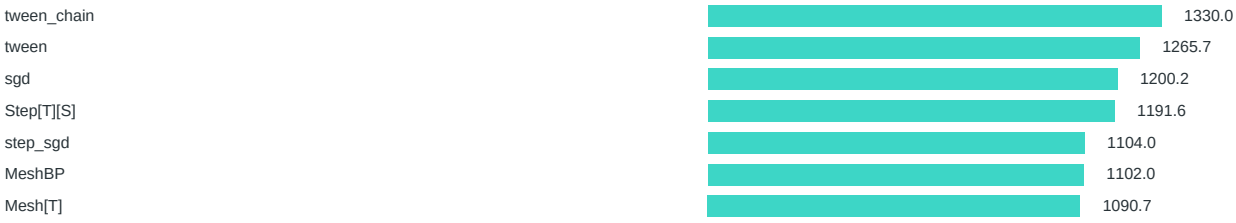
Top scores



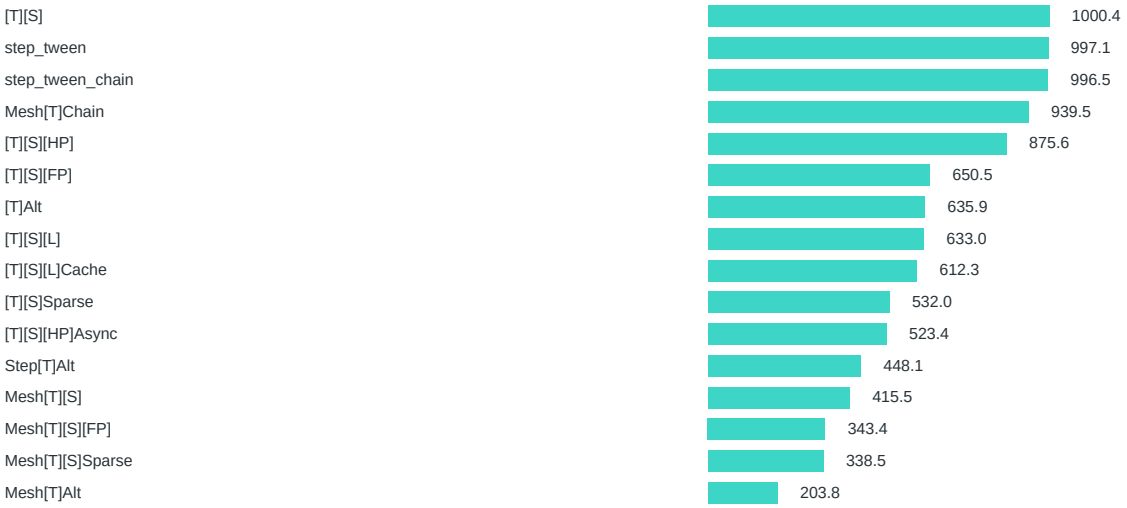
Best settings per mode



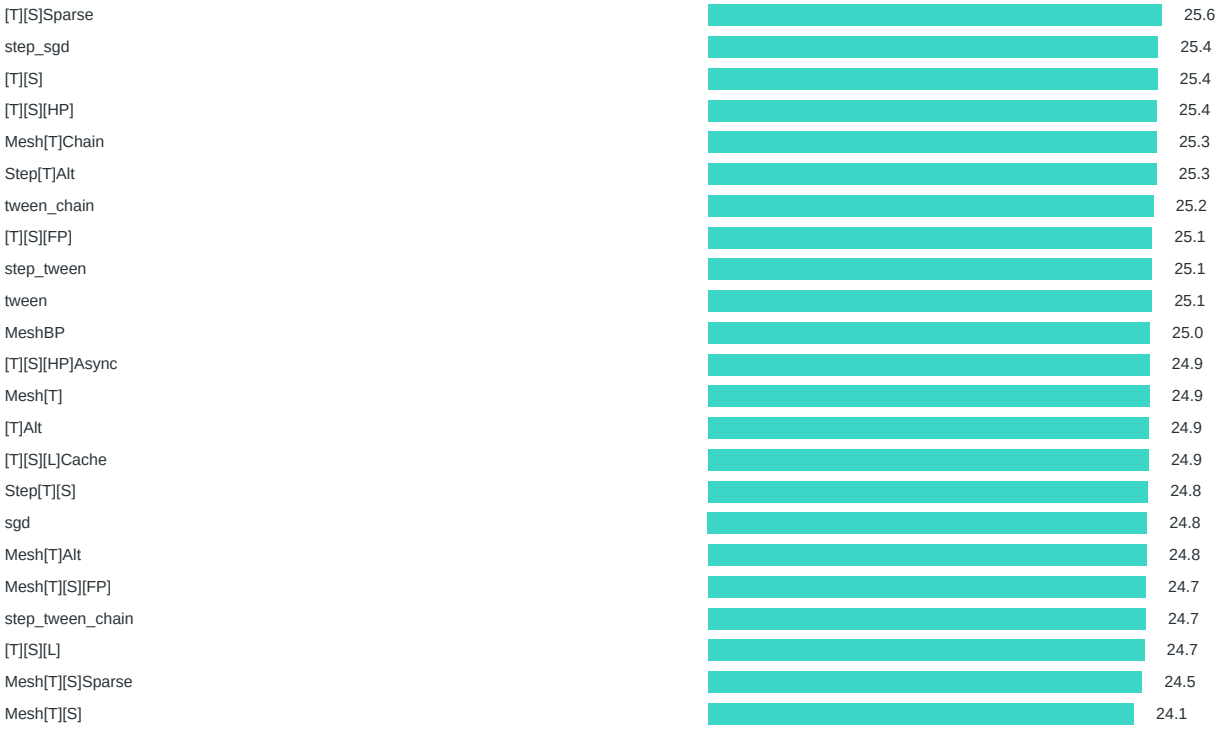
Mean Score by train mode



Mean Score by train mode



Mean hard Acc by train mode



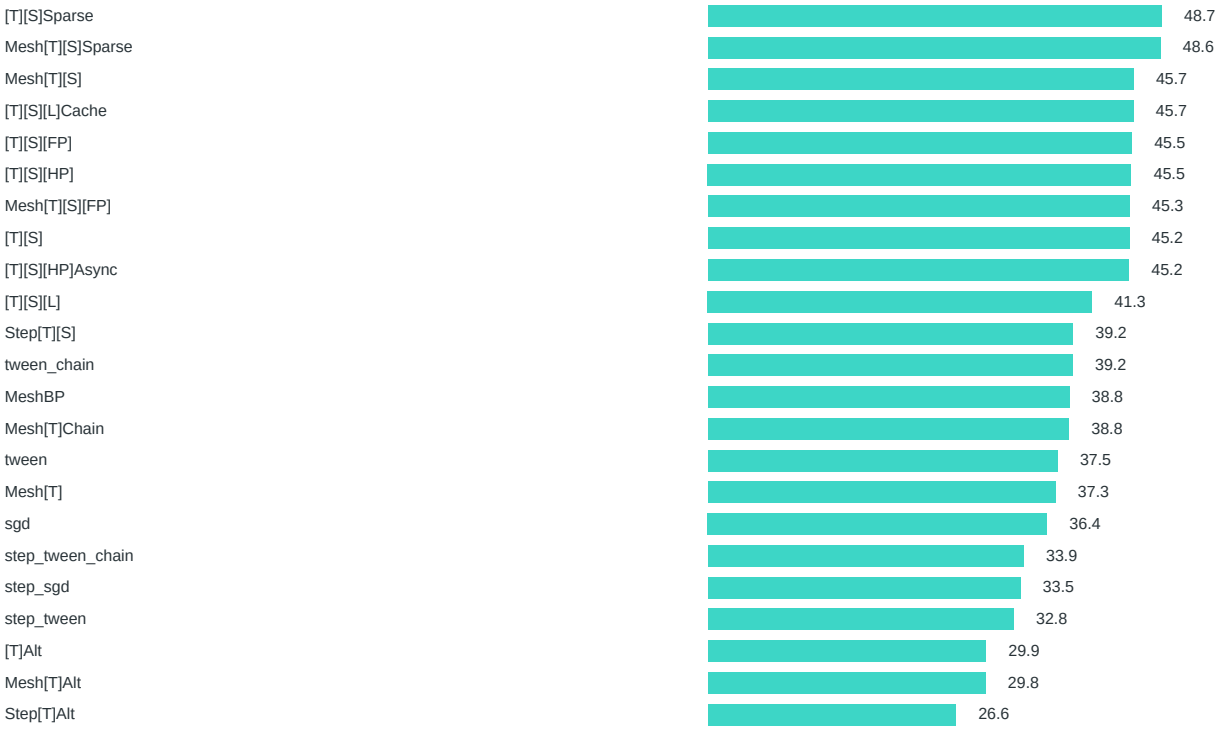
Mean SoftAcc by train mode



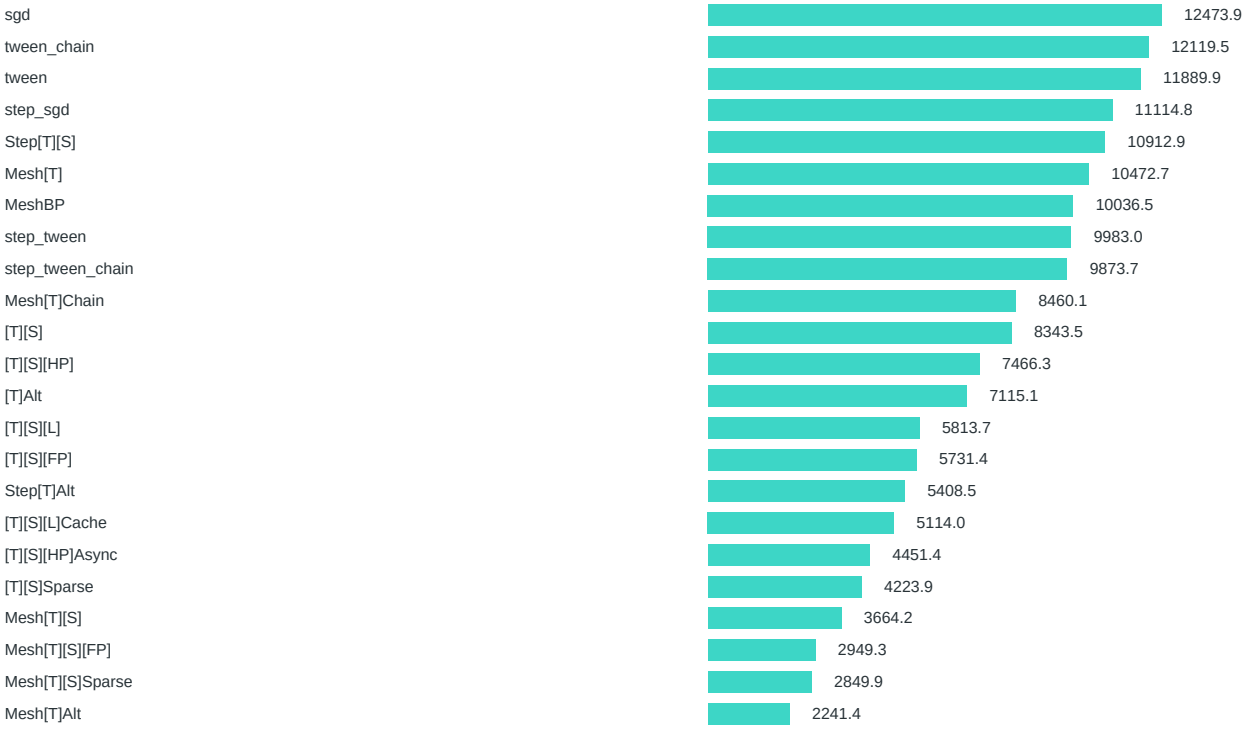
Mean SoftAcc by train mode



Mean Availability by train mode



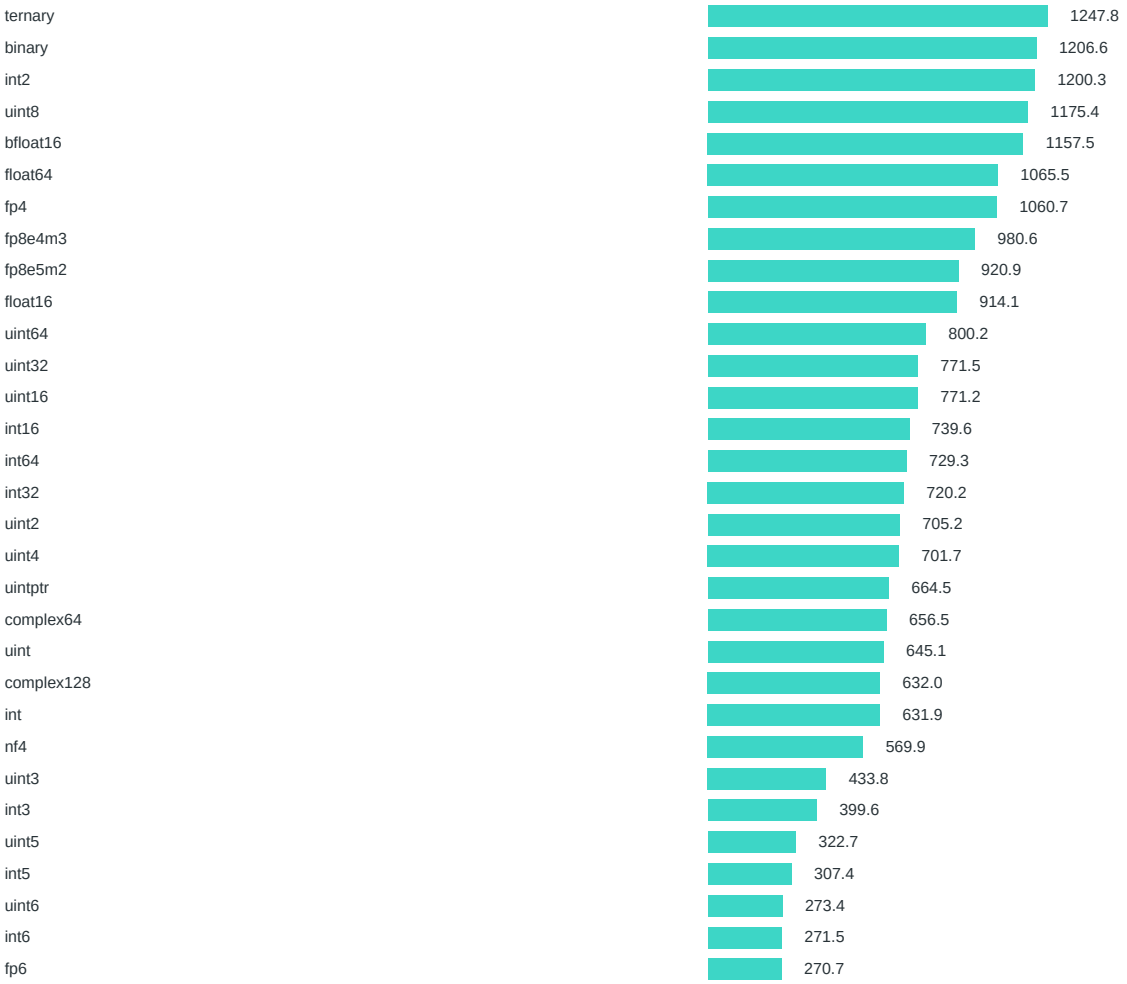
Mean Throughput by train mode



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	1476	1582	938	945	1249	2122	1516	1327	411	1178	1360	911
Mesh[T]	1723	1600	820	783	1320	2353	1586	1445	278	1516	1430	993
Mesh[T]Alt	314	346	138	149	280	439	260	284	70	245	291	123
Mesh[T]Chain	1278	1375	793	842	1102	1972	1253	1168	310	1461	1040	743
Mesh[T][S]	502	581	334	295	425	689	633	544	188	665	418	396
Mesh[T][S][FP]	472	521	271	286	350	590	538	475	180	438	337	287
Mesh[T][S]Sparse	548	537	318	285	329	640	473	452	127	400	345	231
Step[T]Alt	815	746	286	359	502	715	634	622	100	553	518	328
Step[T][S]	1813	1863	987	748	1449	2957	799	1620	372	1834	1228	877
[T]Alt	774	923	515	504	590	1710	933	821	193	801	1069	400
[T][S]	1357	1586	868	889	1080	1873	1280	1334	436	981	913	744
[T][S][FP]	878	1051	456	713	656	902	1063	885	222	839	721	589
[T][S][HP]	1344	1256	697	619	1066	1996	905	1206	429	931	888	748
[T][S][HP]Async	697	697	423	500	669	915	682	677	152	646	673	474
[T][S][L]	915	918	555	596	787	1121	763	882	229	721	764	474
[T][S][L]Cache	693	898	451	537	779	1305	1021	743	266	675	610	483
[T][S]Sparse	583	774	380	408	702	1068	657	710	187	555	752	415
sgd	1668	1756	1039	1045	1277	2635	1627	1530	472	1264	1189	981
step_sgd	1733	1732	835	956	1164	2594	1618	1520	301	1213	1332	866
step_tween	1609	1582	691	718	1146	2328	1317	1381	247	1077	1329	694
step_tween_chain	1711	1563	698	788	1081	2035	1406	1419	234	1277	1148	784
tween	1753	1921	896	1064	1457	2710	1877	1661	339	1637	1414	910
tween_chain	1966	1945	1147	1071	1565	2666	1665	1691	482	1647	1408	1083

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	1009	1748	555	1017	1703	393	361	883	2051	770	1739	971
Mesh[T]	1247	1289	529	881	1831	375	301	751	1875	770	1673	843
Mesh[T]Alt	212	338	63	154	334	64	45	165	385	110	397	139
Mesh[T]Chain	878	1683	461	886	1421	351	245	908	1456	751	1119	767
Mesh[T][S]	308	602	292	387	596	202	220	432	620	330	619	346
Mesh[T][S][FP]	316	593	192	316	531	156	142	312	506	230	443	298
Mesh[T][S]Sparse	224	520	230	310	454	163	136	311	519	253	477	258
Step[T]Alt	429	684	280	337	780	114	130	311	970	250	857	289
Step[T][S]	1105	1875	465	1243	1879	474	355	1274	1865	979	1844	1152
[T]Alt	526	968	260	433	1083	207	180	490	1319	467	1159	429
[T][S]	956	1419	524	845	1633	468	470	1004	1544	754	2010	905
[T][S][FP]	615	749	474	546	1122	305	278	628	789	518	1214	441
[T][S][HP]	883	1235	419	855	1229	470	312	833	1084	678	1563	619
[T][S][HP]Async	417	826	269	514	802	255	255	429	893	395	717	433
[T][S][L]	527	849	354	559	1072	224	251	585	1075	480	907	489
[T][S][L]Cache	570	950	347	558	743	236	219	459	1009	510	891	510
[T][S]Sparse	529	602	274	561	823	211	234	553	952	369	861	502
sgd	1121	1884	664	1154	1708	506	399	1168	1993	910	1848	1081
step_sgd	910	1710	547	950	1701	365	327	1095	2079	702	1577	884
step_tween	820	1505	360	807	2084	236	308	883	1799	630	1432	773
step_tween_chain	946	1323	408	809	1643	285	249	931	2026	560	1720	676
tween	1214	2019	576	1206	2201	448	360	1153	2091	858	1785	987
tween_chain	1248	2237	647	1237	2044	561	468	1218	2168	832	1845	1045

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	1136	887	631	1096	944	433	422	1141	1671	889
Mesh[T]	1066	1027	553	1059	872	409	348	1132	1566	842
Mesh[T]Alt	214	159	81	191	125	76	54	180	349	155
Mesh[T]Chain	960	684	505	865	806	434	313	944	1423	746
Mesh[T][S]	375	317	263	344	320	181	168	509	626	398
Mesh[T][S][FP]	290	345	185	374	313	155	123	343	430	336
Mesh[T][S]Sparse	355	309	179	369	333	130	148	305	573	269
Step[T]Alt	402	403	201	419	413	122	114	482	713	356
Step[T][S]	972	1206	658	1060	994	447	354	1218	1708	842
[T]Alt	509	496	262	541	569	206	185	564	1066	469
[T][S]	870	921	627	952	835	515	366	957	1280	818
[T][S][FP]	623	576	392	610	607	303	200	828	812	511
[T][S][HP]	793	787	498	890	967	433	353	711	1153	923
[T][S][HP]Async	603	510	327	402	446	195	226	421	811	441
[T][S][L]	583	516	413	608	514	266	174	803	936	610
[T][S][L]Cache	629	641	416	670	601	309	245	497	925	420
[T][S]Sparse	486	389	301	536	483	204	250	560	722	494
sgd	1164	889	694	1197	1015	614	484	1204	1643	985
step_sgd	1080	857	543	1074	991	382	342	1042	1630	883
step_tween	957	898	405	961	911	294	267	1029	1698	726
step_tween_chain	1056	937	486	929	886	327	256	918	1635	728
tween	1254	1208	677	1273	1020	430	346	1275	1842	1171
tween_chain	1360	1258	682	1324	1176	555	546	1341	1822	1271

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	25	24	28	26	26	24	26	24	27	23	25	25
Mesh[T]	25	25	25	25	25	25	28	25	21	25	26	29
Mesh[T]Alt	26	25	23	24	26	28	21	28	31	23	27	24
Mesh[T]Chain	26	26	26	28	26	26	26	24	22	30	24	25
Mesh[T][S]	22	23	20	20	25	23	25	25	21	30	21	25
Mesh[T][S][FP]	27	25	22	24	23	22	25	26	35	24	23	24
Mesh[T][S]Sparse	28	26	24	25	22	27	27	23	23	26	22	23
Step[T]Alt	25	25	25	26	22	23	23	25	29	24	23	30
Step[T][S]	23	28	24	21	25	30	17	24	27	27	23	26
[T]Alt	24	24	29	23	26	28	28	26	23	24	29	20
[T][S]	27	27	26	23	27	27	27	26	25	23	24	25
[T][S][FP]	25	25	23	28	23	20	30	25	23	27	23	24
[T][S][HP]	26	24	22	23	26	28	20	26	29	28	24	27
[T][S][HP]Async	24	23	23	29	26	24	24	26	19	27	27	28
[T][S][L]	28	25	23	25	25	24	23	26	29	24	27	23
[T][S][L]Cache	21	25	22	26	27	25	30	24	26	22	26	25
[T][S]Sparse	21	25	22	24	29	25	24	25	25	24	30	27
sgd	26	25	25	26	23	25	25	25	23	25	23	26
step_sgd	29	24	24	26	26	26	25	25	24	27	26	27
step_tween	24	25	23	28	25	27	24	25	23	25	28	26
step_tween_chain	25	24	22	27	24	25	27	25	25	22	25	26
tween	27	24	23	25	24	26	28	25	24	26	24	25
tween_chain	28	26	25	24	26	26	26	25	25	28	23	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	24	25	25	25	25	23	22	23	27	24	27	23
Mesh[T]	28	22	25	22	24	25	26	22	27	25	25	25
Mesh[T]Alt	28	25	21	25	25	22	22	25	25	24	29	24
Mesh[T]Chain	25	31	25	25	24	25	24	22	23	29	23	26
Mesh[T][S]	19	23	27	23	25	24	27	27	25	26	22	22
Mesh[T][S][FP]	25	29	23	25	24	24	25	28	24	23	23	24
Mesh[T][S]Sparse	18	22	28	24	24	26	24	24	23	27	23	23
Step[T]Alt	23	23	26	21	24	23	27	25	25	29	25	28
Step[T][S]	28	26	22	28	24	31	27	29	23	29	26	27
[T]Alt	24	24	23	22	27	25	26	22	28	26	25	24
[T][S]	27	22	21	24	28	25	29	26	25	27	30	25
[T][S][FP]	25	18	31	24	28	27	29	26	23	26	30	21
[T][S][HP]	27	24	22	29	24	27	23	26	20	29	28	27
[T][S][HP]Async	23	27	23	27	24	25	29	24	26	23	21	26
[T][S][L]	21	24	29	25	29	21	27	25	25	24	25	24
[T][S][L]Cache	24	26	27	27	22	22	23	19	28	25	27	25
[T][S]Sparse	26	20	25	28	26	24	26	29	26	25	25	29
sgd	25	25	25	27	24	25	24	26	24	26	26	25
step_sgd	25	25	25	25	26	27	27	26	26	25	24	26
step_tween	26	23	24	26	29	23	23	25	25	24	23	25
step_tween_chain	26	22	25	25	26	24	23	27	28	25	24	23
tween	25	26	24	26	26	25	24	25	25	25	23	24
tween_chain	24	26	24	23	25	24	25	24	24	23	24	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	27	21	26	25	25	26	26	26	25	25
Mesh[T]	24	23	27	23	25	27	25	26	26	25
Mesh[T]Alt	27	21	23	24	20	27	25	22	25	26
Mesh[T]Chain	26	24	27	25	24	27	26	23	24	25
Mesh[T][S]	24	20	26	23	18	27	25	31	26	28
Mesh[T][S][FP]	23	26	21	24	25	27	21	25	24	26
Mesh[T][S]Sparse	26	24	23	29	26	21	25	26	28	24
Step[T]Alt	24	26	26	27	27	24	29	24	26	29
Step[T][S]	21	26	25	20	22	22	25	27	23	20
[T]Alt	23	24	27	24	27	26	24	22	25	27
[T][S]	24	25	28	25	24	27	21	24	27	24
[T][S][FP]	24	26	25	27	27	23	22	28	21	24
[T][S][HP]	24	24	21	27	29	25	26	22	24	31
[T][S][HP]Async	29	28	25	21	25	23	25	22	27	24
[T][S][L]	25	21	29	25	22	22	18	29	24	24
[T][S][L]Cache	24	28	28	27	26	25	25	22	26	21
[T][S]Sparse	25	21	27	29	26	22	31	28	25	28
sgd	25	23	25	26	24	28	23	25	24	25
step_sgd	27	25	23	25	24	26	27	25	24	24
step_tween	26	25	24	25	26	26	25	27	25	25
step_tween_chain	24	25	25	26	23	25	24	26	24	24
tween	26	25	26	26	24	23	23	26	25	27
tween_chain	27	26	23	25	26	27	28	25	25	27

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

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

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	42	37	40	41	34	33	41	41	40
Mesh[T]	40	39	33	39	39	31	30	40	40	38
Mesh[T]Alt	31	30	26	30	30	26	25	30	33	29
Mesh[T]Chain	41	40	36	40	40	34	33	41	40	40
Mesh[T][S]	45	46	46	45	46	44	44	46	46	46
Mesh[T][S][FP]	45	46	45	46	46	43	42	45	46	46
Mesh[T][S]Sparse	49	48	47	49	49	46	46	49	49	48
Step[T]Alt	27	26	24	27	27	22	22	27	30	26
Step[T][S]	41	40	36	42	41	33	32	41	41	41
[T]Alt	30	30	26	30	30	26	25	30	34	29
[T][S]	45	45	46	44	45	44	44	45	45	45
[T][S][FP]	45	46	45	46	46	44	43	46	46	46
[T][S][HP]	45	46	45	46	45	44	43	46	46	46
[T][S][HP]Async	44	45	45	45	45	44	42	45	47	46
[T][S][L]	43	44	41	43	43	38	36	42	41	44
[T][S][L]Cache	46	46	46	45	45	44	44	46	46	46
[T][S]Sparse	49	49	47	49	49	47	47	49	49	48
sgd	37	37	36	37	37	34	33	37	37	37
step_sgd	34	34	31	35	34	28	27	34	36	33
step_tween	33	33	29	34	33	26	27	33	37	32
step_tween_chain	35	34	30	34	35	28	26	34	38	33
tween	39	39	34	39	39	32	31	39	40	38
tween_chain	41	41	36	41	41	34	33	42	40	41

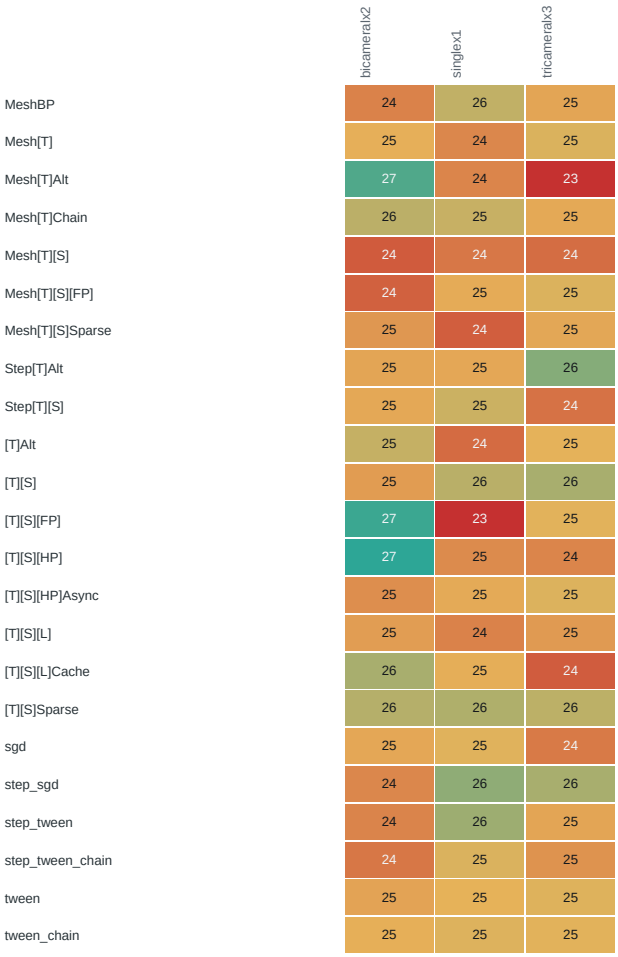
Mean Score, every mode x arch

Mean Score, every mode x arch

	bicameralx2	singlex1	tricameralx3
MeshBP	447	2527	332
Mesh[T]	464	2476	333
Mesh[T]Alt	76	489	47
Mesh[T]Chain	404	2146	269
Mesh[T][S]	233	837	177
Mesh[T][S][FP]	191	690	149
Mesh[T][S]Sparse	226	609	180
Step[T]Alt	139	1107	98
Step[T][S]	543	2655	377
[T]Alt	236	1519	153
[T][S]	492	1885	624
[T][S][FP]	403	1261	287
[T][S][HP]	525	1739	363
[T][S][HP]Async	290	1060	220
[T][S][L]	314	1349	235
[T][S][L]Cache	349	1250	238
[T][S]Sparse	348	992	255
sgd	604	2536	461
step_sgd	448	2522	342
step_tween	395	2335	261
step_tween_chain	350	2346	293
tween	570	2792	435
tween_chain	598	2951	441

Mean hard Acc, every mode x arch

Mean hard Acc, every mode x arch

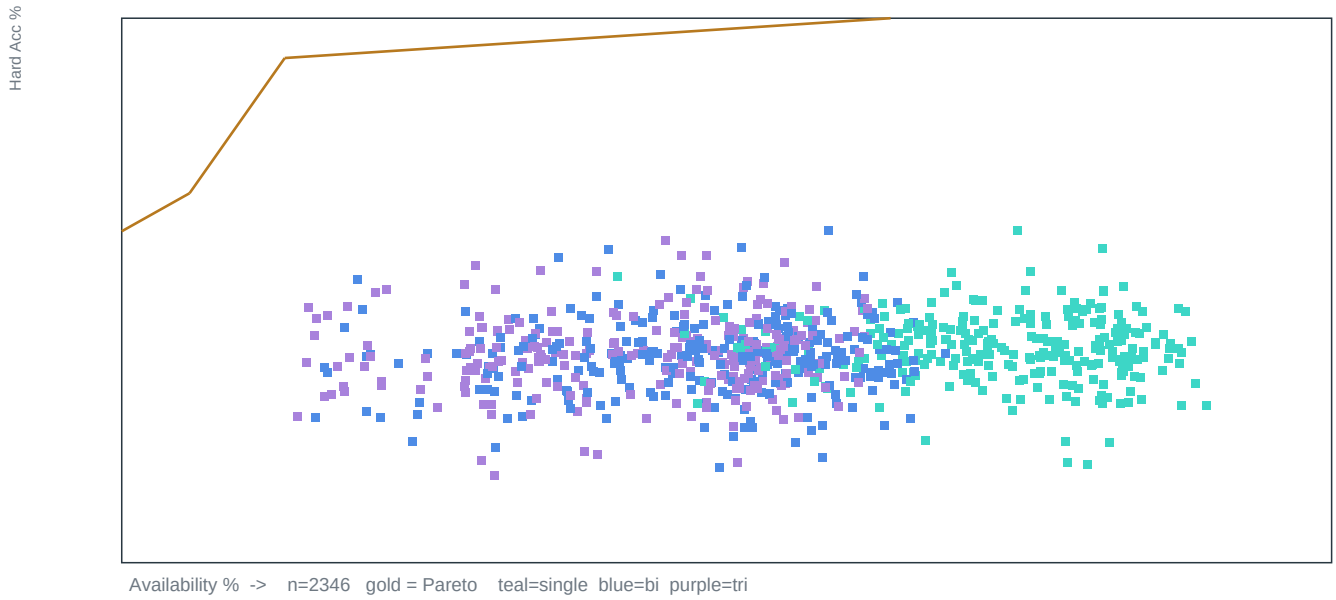


Mean Avail, every mode x arch

Mean Avail, every mode x arch

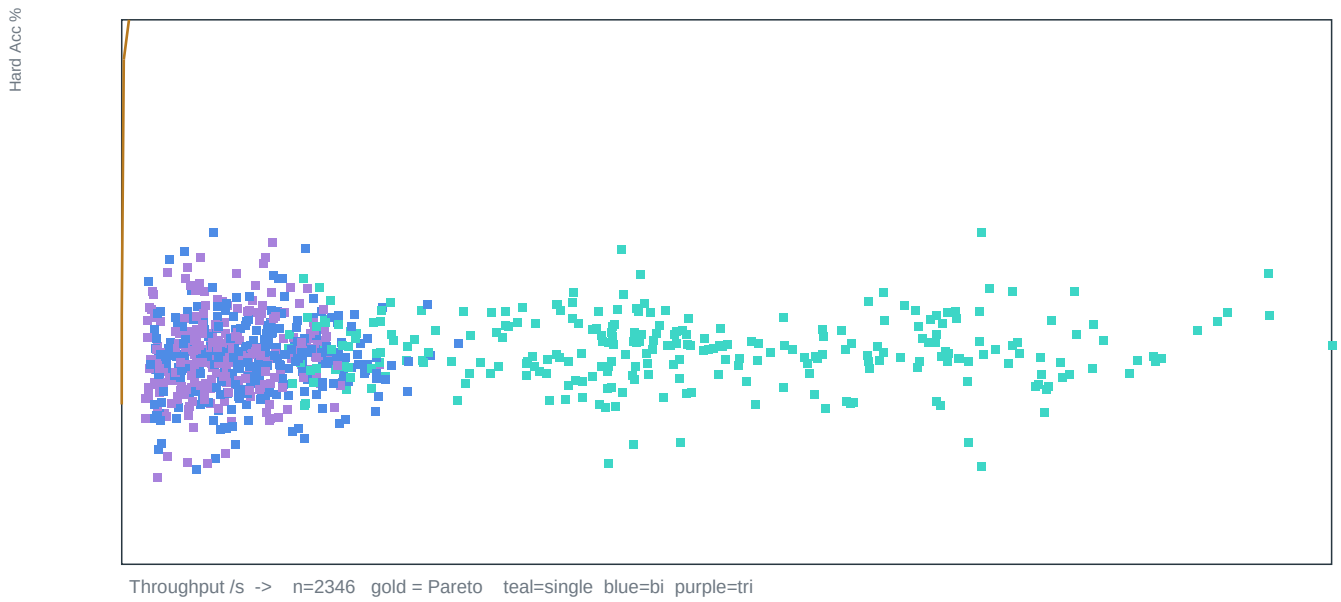
	bicameralx2	singlex1	tricameralx3
MeshBP	36	46	34
Mesh[T]	34	44	33
Mesh[T]Alt	26	39	24
Mesh[T]Chain	36	46	34
Mesh[T][S]	44	49	43
Mesh[T][S][FP]	44	48	43
Mesh[T][S]Sparse	49	49	48
Step[T]Alt	23	35	22
Step[T][S]	37	45	35
[T]Alt	27	39	24
[T][S]	44	48	43
[T][S][FP]	44	49	43
[T][S][HP]	44	49	43
[T][S][HP]Async	44	49	43
[T][S][L]	39	46	38
[T][S][L]Cache	45	49	43
[T][S]Sparse	49	49	48
sgd	35	40	34
step_sgd	31	41	29
step_tween	30	41	28
step_tween_chain	31	42	28
tween	35	44	33
tween_chain	37	46	34

Pillars - Availability vs hard Acc

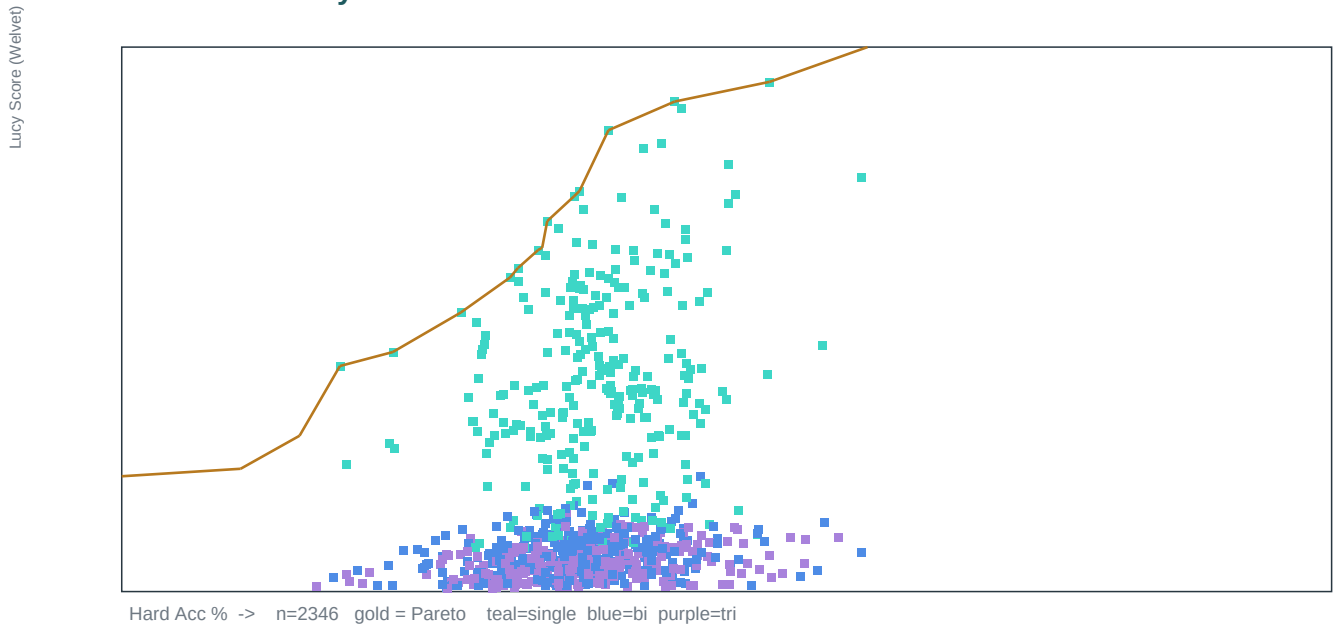


Pillars - Throughput vs hard Acc

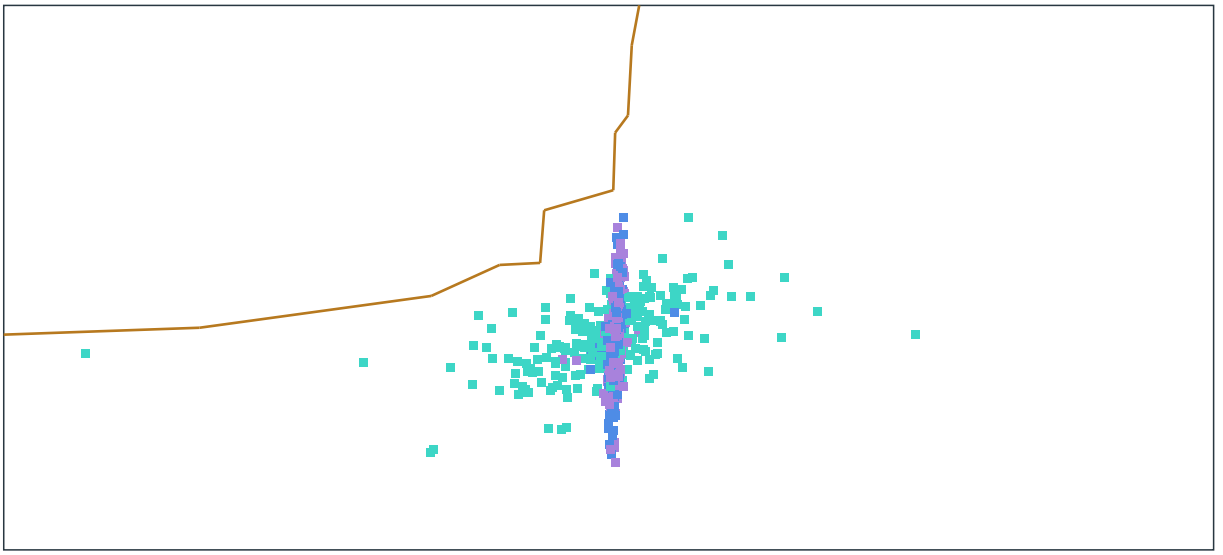
Pillars - Throughput vs hard Acc



Pareto - hard Acc vs Lucy Score

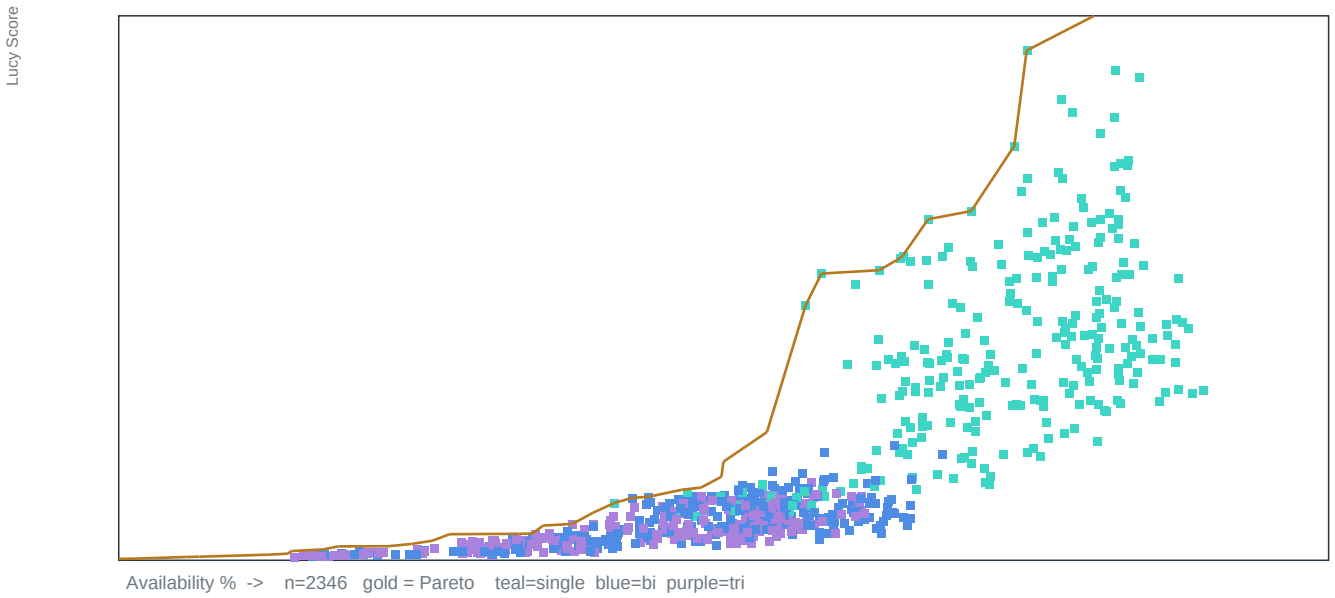


SoftAcc (serve-confidence) vs hard Acc

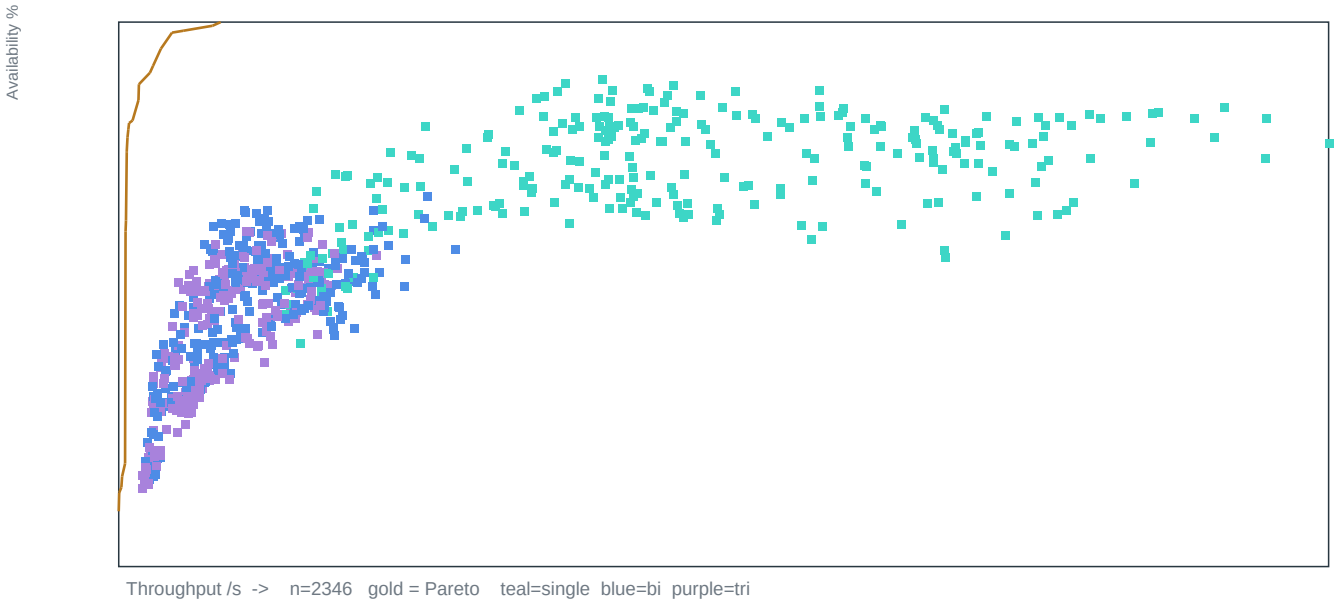



SoftAcc % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

Avail vs Lucy Score (duty clock)



Pillars - Throughput vs Availability



AdaptPct vs hard Acc



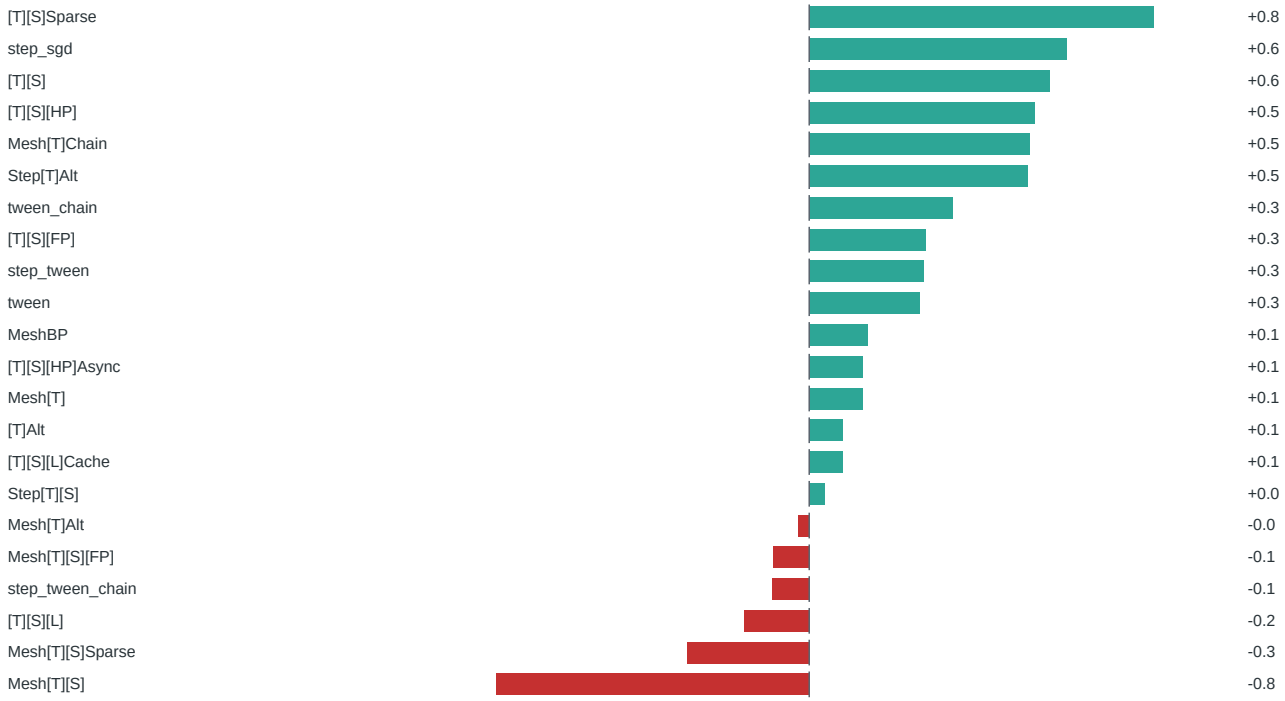

AdaptPct % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

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]Sparse	102	+0.8	51	-0.0	+12.3	-8250	-668.3	1
step_sgd	102	+0.6	48	+0.0	-2.9	-1359	-96.3	21
[T][S]	102	+0.6	50	+0.0	+8.8	-4130	-199.9	30
[T][S][HP]	102	+0.5	50	-0.0	+9.0	-5008	-324.6	14
Mesh[T]Chain	102	+0.5	45	+0.0	+2.3	-4014	-260.7	2
Step[T]Alt	102	+0.5	49	+0.0	-9.8	-7065	-752.2	0
tween_chain	102	+0.3	41	+0.0	+2.7	-354	+129.7	56
[T][S][FP]	102	+0.3	53	-0.0	+9.1	-6742	-549.8	2
step_tween	102	+0.3	49	+0.0	-3.6	-2491	-203.2	9
tween	102	+0.3	47	-0.0	+1.1	-584	+65.5	44
MeshBP	102	+0.1	46	-0.0	+2.4	-2437	-98.2	20
[T][S][HP]Async	102	+0.1	53	+0.0	+8.8	-8022	-676.9	0
Mesh[T]	102	+0.1	45	-0.0	+0.9	-2001	-109.5	15
[T]Alt	102	+0.1	44	-0.0	-6.6	-5359	-564.3	1
[T][S][L]Cache	102	+0.1	41	+0.0	+9.3	-7360	-588.0	0
Step[T][S]	102	+0.0	44	-0.0	+2.8	-1561	-8.6	32
Mesh[T]Alt	102	-0.0	49	-0.0	-6.6	-10233	-996.4	0
Mesh[T][S][FP]	102	-0.1	43	-0.0	+8.9	-9525	-856.9	0
step_tween_chain	102	-0.1	41	-0.0	-2.5	-2600	-203.8	13
[T][S][L]	102	-0.2	47	+0.0	+4.8	-6660	-567.3	0
Mesh[T][S]Sparse	102	-0.3	40	-0.0	+12.2	-9624	-861.8	0
Mesh[T][S]	102	-0.8	36	+0.0	+9.3	-8810	-784.7	0

mean AccD vs sgd



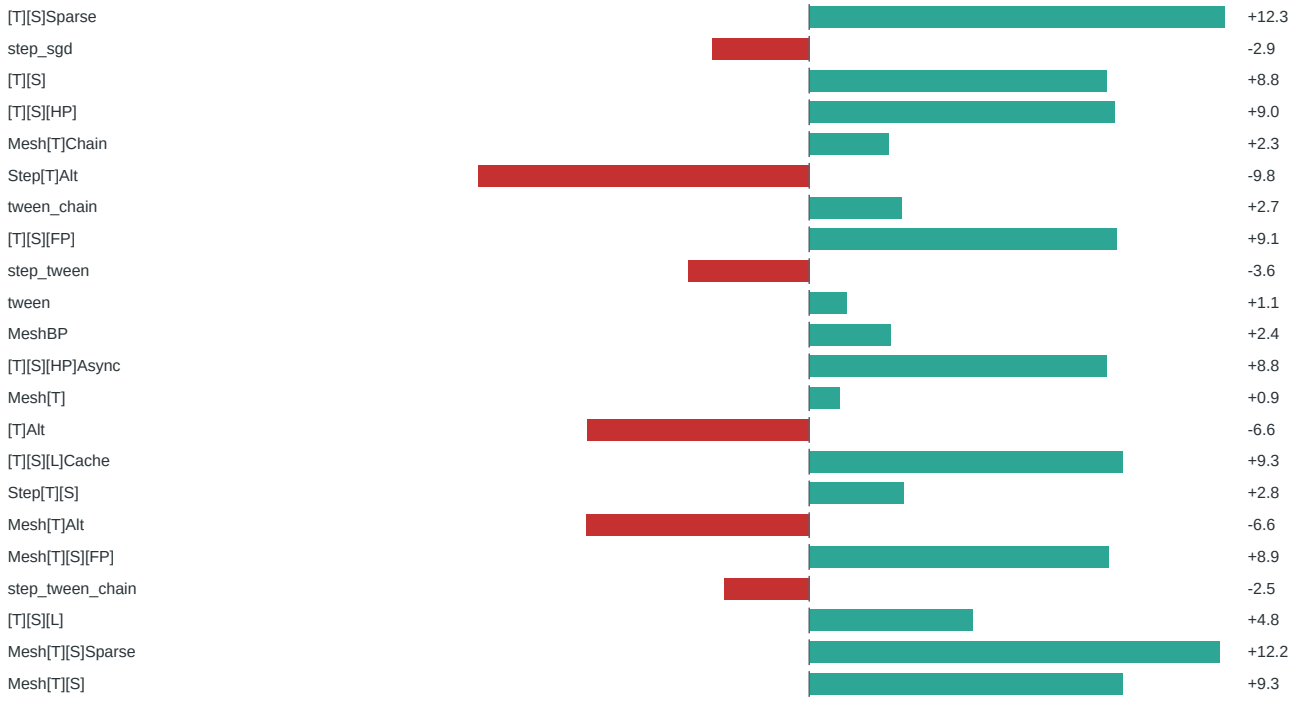
mean ScoreD vs sgd (duty clock)



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	+2	-2	+1	-1	+4	-2	+1	-0
Mesh[T]	-1	-0	+0	-1	+2	+0	+3	-0	-3	-1	+3	+4
Mesh[T]Alt	-0	-0	-2	-2	+3	+2	-3	+3	+8	-2	+4	-2
Mesh[T]Chain	+1	+1	+1	+2	+3	+1	+1	-1	-1	+5	+1	-0
Mesh[T][S]	-4	-2	-5	-6	+1	-2	+0	+0	-2	+5	-2	-1
Mesh[T][S][FP]	+2	+1	-3	-2	+0	-4	+0	+1	+12	-1	+0	-2
Mesh[T][S]Sparse	+2	+1	-1	-0	-2	+2	+2	-2	-1	+0	-1	-2
Step[T]Alt	-1	+1	+1	-0	-1	-3	-1	-0	+6	-2	+0	+5
Step[T][S]	-3	+3	-1	-5	+1	+5	-8	-1	+4	+1	+0	+0
[T]Alt	-2	-1	+4	-3	+2	+3	+3	+1	-1	-1	+6	-6
[T][S]	+2	+2	+1	-3	+4	+1	+2	+1	+2	-2	+1	-1
[T][S][FP]	-0	+0	-2	+2	+0	-5	+5	+0	-0	+2	-0	-2
[T][S][HP]	-0	-1	-2	-3	+3	+3	-4	+1	+6	+2	+1	+2
[T][S][HP]Async	-1	-1	-2	+3	+3	-1	-1	+1	-4	+1	+4	+3
[T][S][L]	+2	+0	-2	-1	+2	-1	-2	+1	+6	-2	+4	-3
[T][S][L]Cache	-4	-0	-3	-0	+4	-0	+5	-1	+3	-3	+3	-1
[T][S]Sparse	-5	+0	-3	-2	+6	-0	-1	+0	+1	-1	+6	+1
step_sgd	+4	-1	-1	-0	+2	+1	+1	+0	+0	+2	+3	+1
step_tween	-1	+0	-1	+2	+1	+1	-0	-0	-0	-1	+4	+0
step_tween_chain	-1	-1	-3	+1	+1	+0	+2	-0	+2	-3	+2	+1
tween	+2	-0	-2	-1	+1	+1	+3	+0	+1	+1	+1	-0
tween_chain	+2	+1	-0	-2	+2	+0	+1	-0	+2	+3	-0	-0

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

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	-2	+1	-1	+0	-1	+3	+1	+1	+1
Mesh[T]	-1	+0	+3	-3	+1	-0	+1	+1	+1	+0
Mesh[T]Alt	+2	-1	-2	-3	-4	-0	+2	-2	+1	+1
Mesh[T]Chain	+1	+1	+2	-1	+0	-1	+3	-1	-1	+0
Mesh[T][S]	-1	-3	+1	-3	-6	-0	+2	+7	+1	+3
Mesh[T][S][FP]	-2	+3	-4	-2	+1	-1	-2	-0	-0	+1
Mesh[T][S]Sparse	+1	+1	-2	+3	+2	-7	+2	+1	+4	-1
Step[T]Alt	-1	+3	+1	+0	+3	-3	+6	-1	+2	+4
Step[T][S]	-4	+3	+0	-6	-2	-6	+2	+3	-1	-5
[T]Alt	-2	+1	+2	-2	+2	-2	+1	-2	+1	+2
[T][S]	-1	+2	+3	-1	-0	-1	-2	-1	+3	-1
[T][S][FP]	-1	+3	+1	+1	+2	-5	-1	+3	-3	-1
[T][S][HP]	-1	+1	-3	+0	+5	-3	+3	-3	-0	+6
[T][S][HP]Async	+4	+5	+1	-5	+1	-5	+2	-3	+2	-0
[T][S][L]	-0	-2	+5	-1	-3	-5	-5	+5	-1	-0
[T][S][L]Cache	-0	+5	+4	+1	+1	-3	+2	-2	+2	-3
[T][S]Sparse	+1	-2	+2	+3	+2	-5	+8	+3	+1	+4
step_sgd	+2	+2	-1	-2	-1	-1	+4	+0	+0	-0
step_tween	+1	+3	-1	-1	+2	-2	+2	+3	+1	+1
step_tween_chain	-1	+3	+0	-0	-1	-2	+1	+1	-1	-0
tween	+1	+2	+1	-0	+0	-5	+0	+1	+1	+2
tween_chain	+2	+3	-2	-1	+1	-1	+5	+1	+1	+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	-192	-174	-101	-100	-28	-513	-111	-203	-61	-86	+171	-70
Mesh[T]	+55	-156	-220	-262	+43	-282	-41	-85	-194	+252	+241	+13
Mesh[T]Alt	-1354	-1410	-901	-896	-996	-2196	-1367	-1246	-402	-1019	-899	-858
Mesh[T]Chain	-390	-381	-246	-203	-175	-663	-373	-362	-162	+197	-149	-238
Mesh[T][S]	-1166	-1175	-705	-750	-852	-1946	-993	-986	-284	-599	-771	-585
Mesh[T][S][FP]	-1195	-1235	-768	-759	-926	-2045	-1088	-1055	-291	-826	-852	-694
Mesh[T][S]Sparse	-1119	-1219	-722	-760	-948	-1995	-1154	-1078	-344	-864	-844	-750
Step[T]Alt	-852	-1010	-753	-686	-774	-1920	-992	-908	-371	-711	-671	-653
Step[T][S]	+145	+107	-52	-297	+172	+322	-828	+90	-99	+570	+39	-104
[T]Alt	-894	-833	-524	-541	-687	-925	-694	-709	-278	-463	-121	-581
[T][S]	-311	-170	-171	-156	-197	-762	-347	-195	-36	-283	-276	-237
[T][S][FP]	-790	-705	-584	-332	-620	-1733	-564	-645	-250	-425	-468	-392
[T][S][HP]	-324	-501	-342	-426	-211	-639	-722	-323	-43	-334	-302	-233
[T][S][HP]Async	-970	-1059	-616	-545	-607	-1720	-944	-853	-319	-618	-516	-507
[T][S][L]	-753	-839	-485	-449	-490	-1515	-863	-648	-243	-543	-425	-507
[T][S][L]Cache	-975	-858	-588	-508	-498	-1330	-606	-787	-206	-590	-580	-498
[T][S]Sparse	-1085	-982	-659	-637	-575	-1567	-969	-820	-285	-709	-437	-566
step_sgd	+66	-24	-204	-89	-112	-41	-9	-10	-170	-51	+143	-115
step_tween	-58	-174	-348	-327	-131	-307	-310	-149	-224	-187	+139	-287
step_tween_chain	+43	-193	-341	-257	-196	-600	-221	-110	-238	+12	-41	-196
tween	+86	+165	-143	+19	+181	+75	+251	+132	-133	+373	+225	-70
tween_chain	+298	+188	+108	+26	+288	+31	+38	+161	+10	+383	+219	+103

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	-112	-136	-108	-137	-5	-113	-38	-285	+58	-140	-109	-110
Mesh[T]	+126	-595	-135	-272	+123	-131	-98	-416	-117	-140	-175	-238
Mesh[T]Alt	-909	-1546	-600	-999	-1375	-442	-354	-1003	-1608	-800	-1451	-943
Mesh[T]Chain	-243	-202	-203	-267	-288	-155	-154	-260	-537	-159	-729	-315
Mesh[T][S]	-813	-1283	-371	-767	-1113	-304	-178	-736	-1373	-580	-1230	-736
Mesh[T][S][FP]	-805	-1291	-472	-838	-1178	-350	-257	-856	-1487	-680	-1405	-784
Mesh[T][S]Sparse	-897	-1364	-434	-843	-1255	-343	-263	-856	-1474	-657	-1371	-823
Step[T]Alt	-692	-1200	-384	-816	-929	-392	-268	-856	-1023	-661	-991	-792
Step[T][S]	-16	-9	-199	+89	+171	-32	-43	+106	-128	+69	-4	+70
[T]Alt	-595	-917	-404	-721	-626	-299	-219	-677	-674	-443	-689	-653
[T][S]	-165	-466	-140	-309	-76	-38	+71	-164	-449	-156	+161	-177
[T][S][FP]	-506	-1135	-190	-608	-586	-202	-120	-540	-1204	-393	-634	-641
[T][S][HP]	-238	-649	-245	-299	-480	-36	-87	-335	-909	-232	-285	-463
[T][S][HP]Async	-704	-1058	-395	-639	-906	-251	-144	-739	-1100	-515	-1132	-648
[T][S][L]	-594	-1035	-310	-595	-636	-282	-148	-583	-917	-430	-942	-593
[T][S][L]Cache	-551	-934	-317	-596	-965	-271	-179	-709	-983	-400	-958	-571
[T][S]Sparse	-592	-1282	-390	-593	-886	-295	-165	-614	-1041	-542	-987	-579
step_sgd	-211	-174	-117	-204	-7	-141	-72	-72	+86	-208	-271	-197
step_tween	-301	-379	-304	-347	+376	-270	-91	-285	-194	-281	-416	-309
step_tween_chain	-175	-561	-256	-344	-65	-221	-149	-237	+33	-350	-128	-406
tween	+93	+134	-88	+52	+492	-58	-38	-15	+98	-52	-64	-95
tween_chain	+127	+353	-17	+83	+336	+55	+69	+50	+175	-78	-3	-36

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	-28	-2	-63	-101	-70	-181	-62	-63	+28	-95
Mesh[T]	-98	+137	-141	-139	-143	-205	-136	-72	-77	-143
Mesh[T]Alt	-950	-731	-613	-1006	-889	-538	-430	-1024	-1294	-830
Mesh[T]Chain	-204	-205	-189	-333	-208	-180	-171	-260	-220	-239
Mesh[T][S]	-789	-572	-431	-853	-694	-433	-316	-695	-1017	-586
Mesh[T][S][FP]	-874	-544	-509	-824	-702	-459	-361	-861	-1214	-649
Mesh[T][S]Sparse	-809	-581	-515	-828	-681	-484	-337	-899	-1070	-716
Step[T]Alt	-762	-486	-493	-779	-602	-493	-370	-722	-931	-629
Step[T][S]	-192	+316	-36	-138	-20	-167	-130	+14	+65	-142
[T]Alt	-655	-393	-432	-656	-446	-408	-299	-640	-577	-515
[T][S]	-294	+32	-67	-245	-180	-100	-118	-247	-363	-167
[T][S][FP]	-541	-313	-302	-587	-408	-311	-284	-376	-831	-473
[T][S][HP]	-371	-102	-196	-307	-48	-181	-131	-493	-491	-62
[T][S][HP]Async	-561	-379	-367	-795	-568	-419	-258	-783	-833	-543
[T][S][L]	-581	-373	-281	-589	-501	-348	-310	-401	-707	-375
[T][S][L]Cache	-535	-248	-278	-528	-414	-305	-239	-707	-718	-564
[T][S]Sparse	-678	-500	-393	-661	-532	-410	-235	-644	-921	-490
step_sgd	-84	-33	-151	-124	-23	-233	-142	-162	-13	-102
step_tween	-207	+9	-289	-236	-103	-320	-217	-175	+55	-259
step_tween_chain	-108	+47	-208	-268	-128	-287	-228	-286	-8	-257
tween	+90	+318	-17	+76	+5	-185	-138	+71	+198	+187
tween_chain	+196	+369	-12	+127	+162	-59	+61	+137	+179	+286

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

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

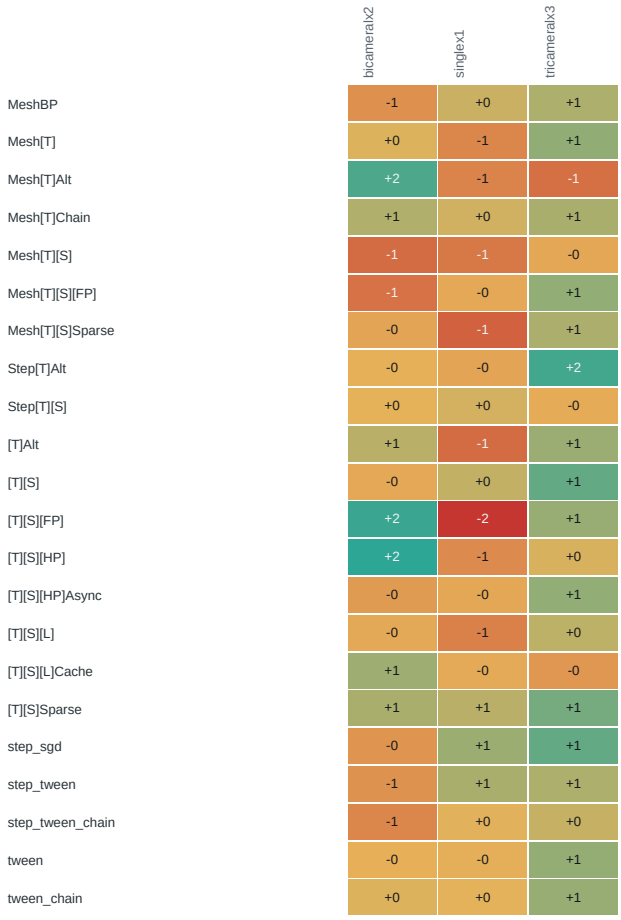
AvailD vs sgd, every mode x dtype (cols 25-34)

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

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

AccD vs sgd, every mode x arch

AccD vs sgd, every mode x arch



Family collapse - Step* vs non-Step

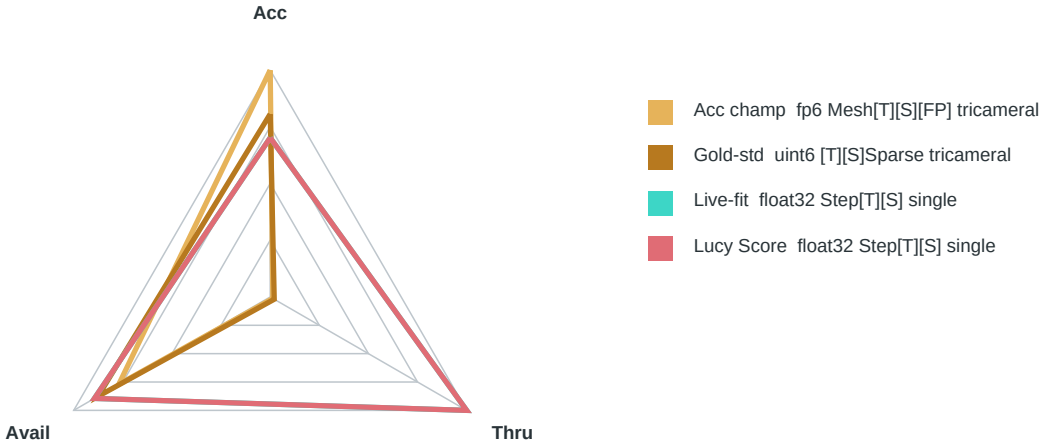
Step* is a 1D pipe (one sample enters layer 0 per tick; output is the sample that entered depth ticks ago). Non-Step of the same family is a full-chain update. AccD is a real scheduler split, not leftover warm-up forwards.

step	plain	n	mean |AccD|
Step[T]Alt	[T]Alt	102	4.99
Step[T][S]	[T][S]	102	4.78
step_sgd	sgd	102	2.23
step_tween	tween	102	2.64
step_tween_chain	tween_chain	102	2.92

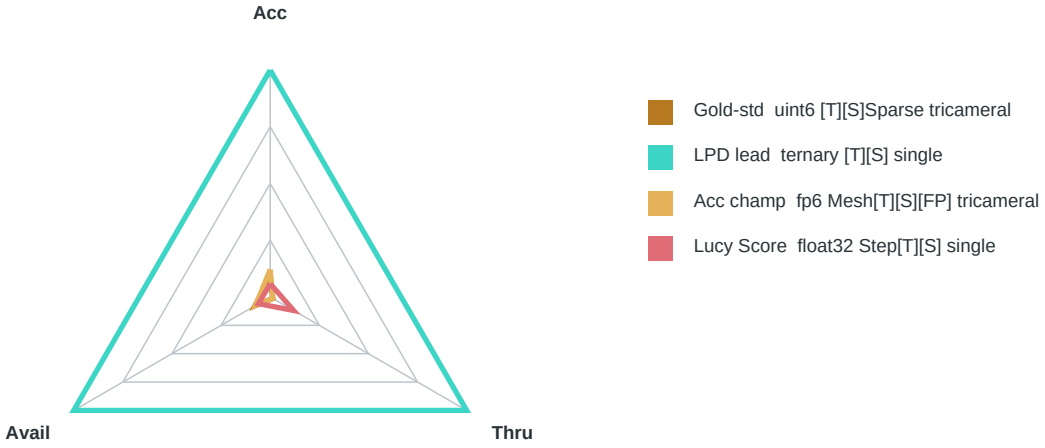
Consciousness - Acc, Throughput, Availability

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 fp6|none|Mesh[T][S][FP]|tricameral|simd Acc 47.9 Thru 548 Avail 39.6% 0.3 KiB (RAM reference)
Lucy Score champ (T x Avail x Acc) float32|none|Step[T][S]|single|simd Score 6627.1 Acc 33.6 Soft 25 0.4 KiB
Live-fit champ (best Q) float32|none|Step[T][S]|single|simd Acc 33.6 Thru 42915 Avail 45.9% 0.4 KiB
Gold-std (2+ pillars, Acc keep >= 80%, then smallest then fastest): uint6|none|[T][S]Sparse|tricameral|simd mode [T][S]Sparse Acc 38.6 Thru 880 0.3 KiB
Board fastest float32|none|sgd|single|simd Thru 48784 (traps may own this) Best availability ternary|none|[T][S]Sparse|bicameral|simd 53.2%
Learner Thru peak 42915 learner Avail peak 51.3%

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
[T][S]Sparse	1	38.6	0.3	880	uint6 [T][S]Sparse 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
-	ternary [T][S] single	75	52	94	72	9	11.0	7.90	36.0	22497	0.0
-	int3 Step[T]Alt single	74	14	66	41	14	7.3	3.04	35.7	6193	0.0
-	nf4 [T]Alt single	72	24	67	49	18	5.5	2.67	34.5	10150	0.0
-	fp8e4m3 Step[T][S] single	70	64	92	75	36	2.8	2.05	33.7	27637	0.1
-	fp8e4m3 Mesh[T]Chain single	71	50	90	69	36	2.8	1.88	33.8	21665	0.1
-	fp8e5m2 [T]Alt single	73	45	79	64	36	2.8	1.75	35.1	19195	0.1
-	ternary [T][S][L]Cache bicameral	70	11	90	41	27	3.7	1.51	33.7	4694	0.1
-	fp8e4m3 Mesh[T][S] single	76	19	96	52	36	2.8	1.43	36.3	8300	0.1
-	nf4 Step[T][S] bicameral	74	9	69	36	55	1.8	0.65	35.3	3839	0.1
-	nf4 [T][S][HP] bicameral	77	7	82	36	55	1.8	0.65	36.9	3030	0.1

Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
-	nf4 [T][S] tricameral	72	11	85	41	67	1.5	0.61	34.4	4805	0.2
-	uint3 [T][S][L] bicameral	74	5	77	29	48	2.1	0.61	35.3	1937	0.1
-	float32 Step[T][S] single	70	100	89	86	145	0.7	0.59	33.6	42915	0.4
-	int3 [T][S][L] tricameral	73	3	68	24	50	2.0	0.49	34.9	1267	0.1
-	fp8e4m3 [T][S]Sparse bicameral	74	7	97	37	109	0.9	0.34	35.2	3026	0.3
-	int6 [T][S] tricameral	73	6	79	33	100	1.0	0.33	34.9	2733	0.3
-	uint5 Mesh[T][S] bicameral	72	2	83	24	76	1.3	0.32	34.4	998	0.2
-	nf4 Step[T]Alt tricameral	77	3	41	20	67	1.5	0.31	36.7	1175	0.2
-	fp8e5m2 [T][S][L]Cache tricameral	73	6	84	33	133	0.8	0.25	34.8	2604	0.3
-	int6 [T][S][FP] tricameral	74	2	77	24	100	1.0	0.24	35.5	1071	0.3

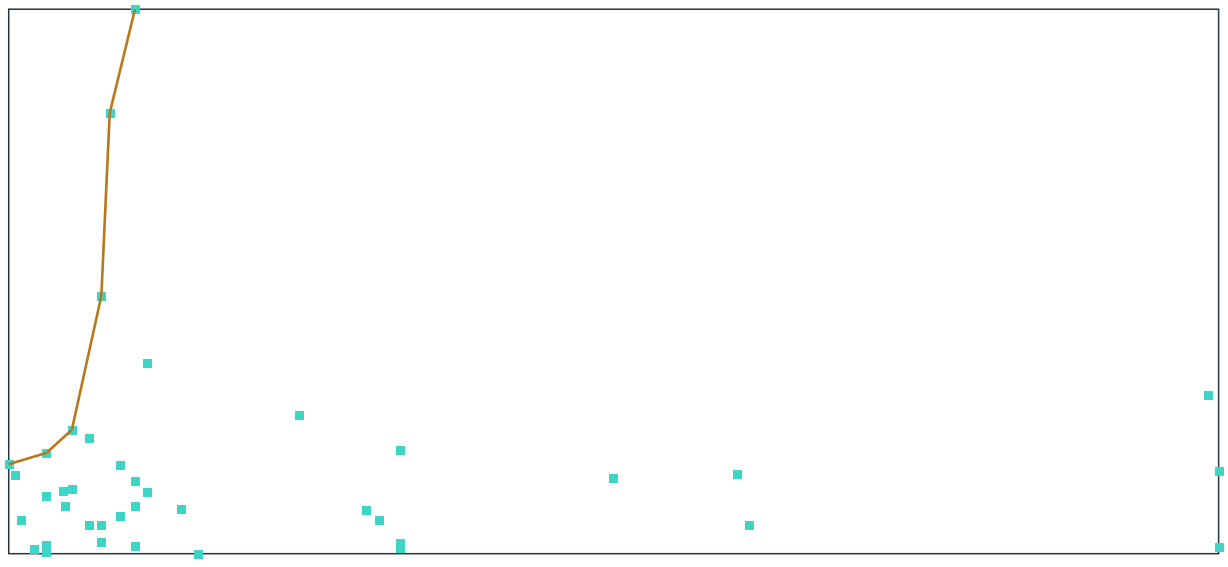
Consciousness rank - Q = geomean Acc/Thru/Avail keep

Band	Cell	Acc%	Thru%	Avail%	Q%	LPD	Thru	Avail
-	float32 Step[T][S] single	70	100	89	86	0.59	42915	45.9
-	fp8e4m3 Step[T][S] single	70	64	92	75	2.05	27637	47.2
-	ternary [T][S] single	75	52	94	72	7.90	22497	48.3
-	fp8e4m3 Mesh[T]Chain single	71	50	90	69	1.88	21665	46.3
-	fp8e5m2 [T]Alt single	73	45	79	64	1.75	19195	40.5
-	float64 [T][S][L]Cache single	76	30	92	59	0.20	12827	47.2
-	complex64 [T][S][FP] single	71	22	99	53	0.18	9228	50.8
-	fp8e4m3 Mesh[T][S] single	76	19	96	52	1.43	8300	49.3
-	float32 Step[T][S] tricameral	75	21	76	49	0.09	8807	38.9
-	nf4 [T]Alt single	72	24	67	49	2.67	10150	34.5

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

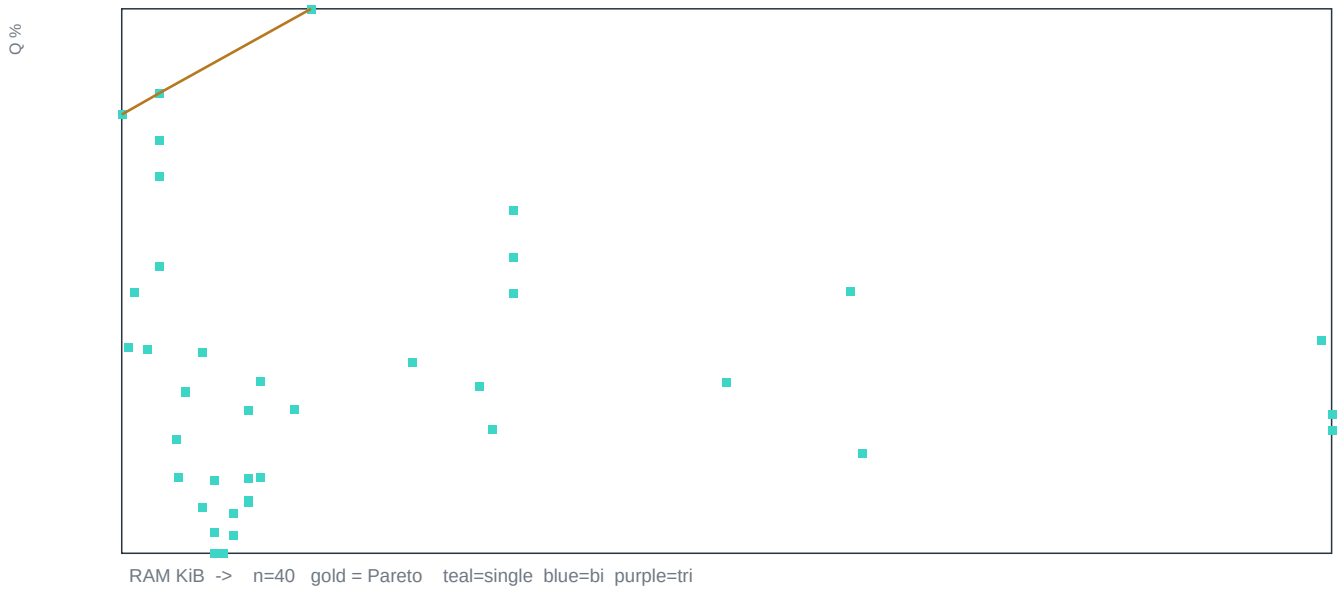
Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
trap	binary sgd single	52	86	78	70	5	22.0	0.00	24.9	37080	0.0
trap	binary step_sgd single	53	82	84	71	5	22.0	0.00	25.4	35290	0.0
trap	binary tween single	49	89	91	73	5	22.0	0.00	23.5	37993	0.0
trap	binary tween_chain single	52	84	90	74	5	22.0	0.00	25.1	36254	0.0
trap	binary step_tween single	52	73	86	69	5	22.0	0.00	24.8	31491	0.0
trap	binary step_tween_chain single	51	75	87	70	5	22.0	0.00	24.5	32257	0.0
trap	binary MeshBP single	53	72	87	69	5	22.0	0.00	25.2	30792	0.0
trap	binary Mesh[T] single	50	75	89	70	5	22.0	0.00	24.1	32141	0.0
trap	binary Mesh[T]Chain single	53	62	90	66	5	22.0	0.00	25.3	26467	0.0
trap	binary [T][S] single	55	51	91	63	5	22.0	0.00	26.6	21785	0.0

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

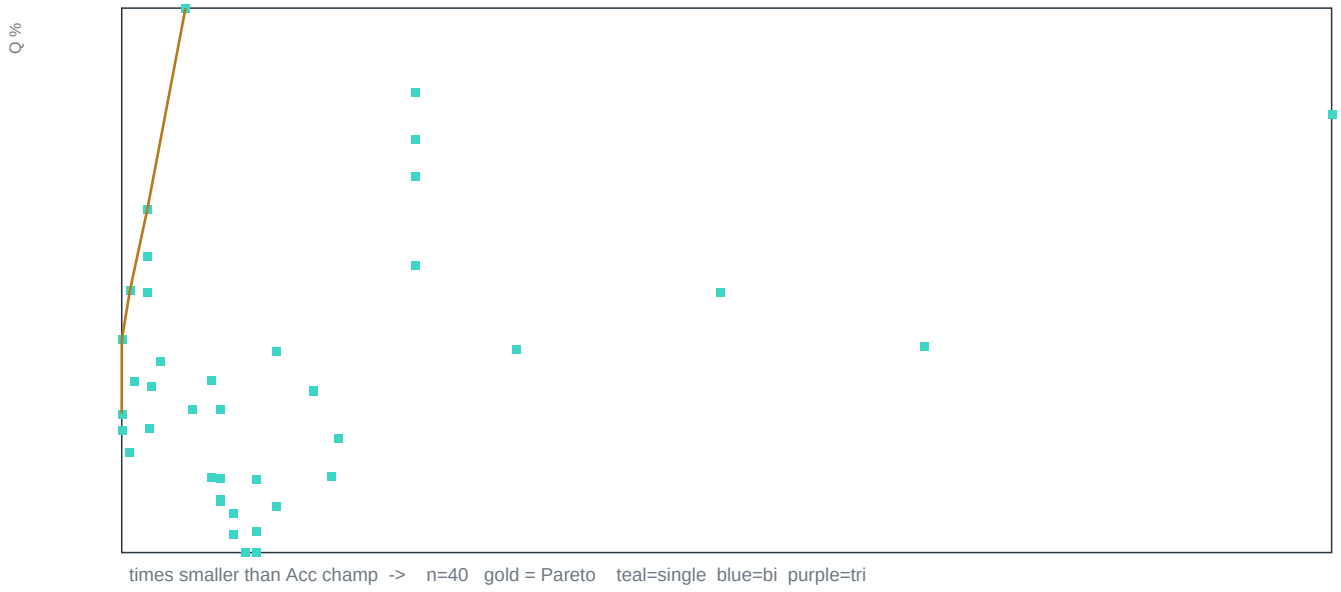



RAM KiB -> n=40 gold = Pareto teal=single blue=bi purple=tri
Acc keep % vs Acc champ

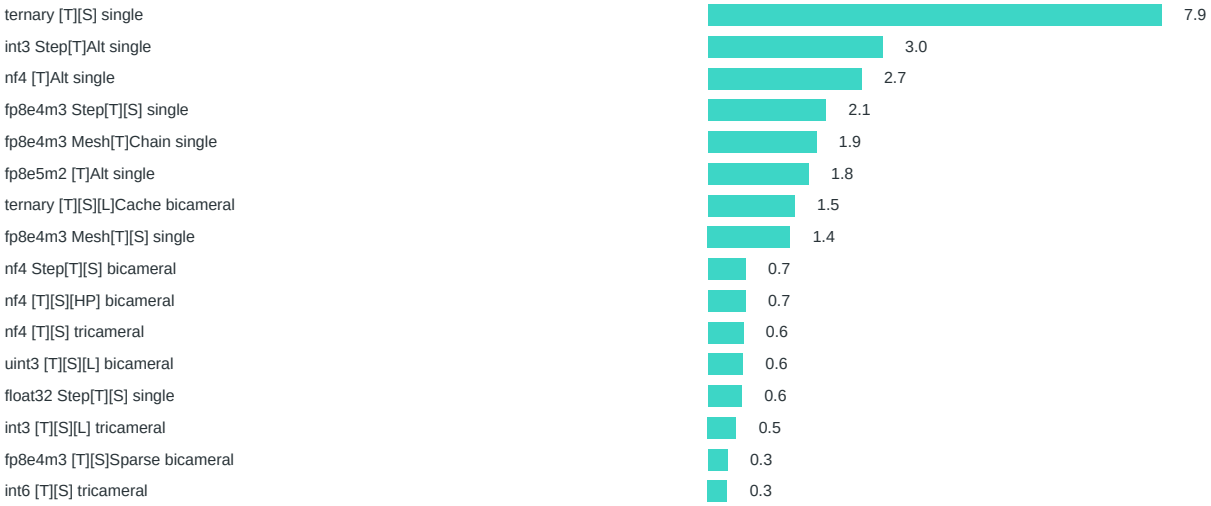
Q% vs RAM KiB (gold = high consciousness, low RAM)



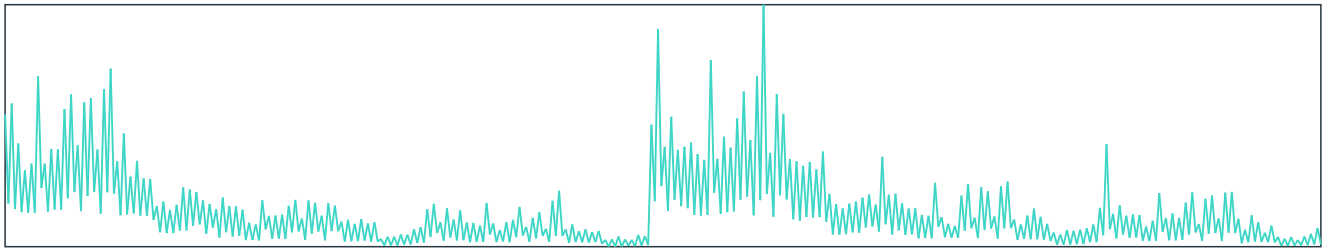
Q% vs shrink vs Acc champ (gold = upper right)



Top Lucy density (LPD)

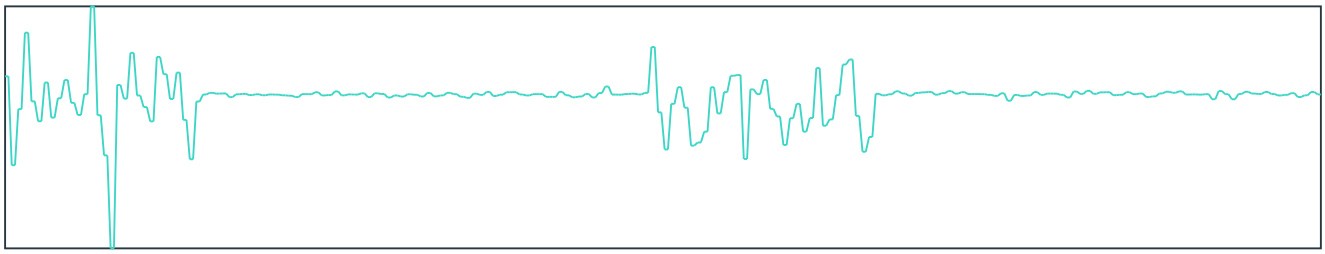


Live pulse (Score)



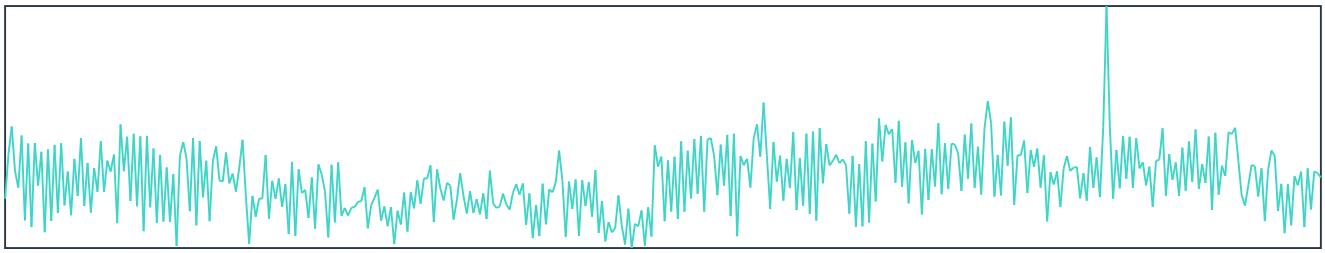
n=400 min=51.59 max=4264.49

Live pulse (SoftAcc)



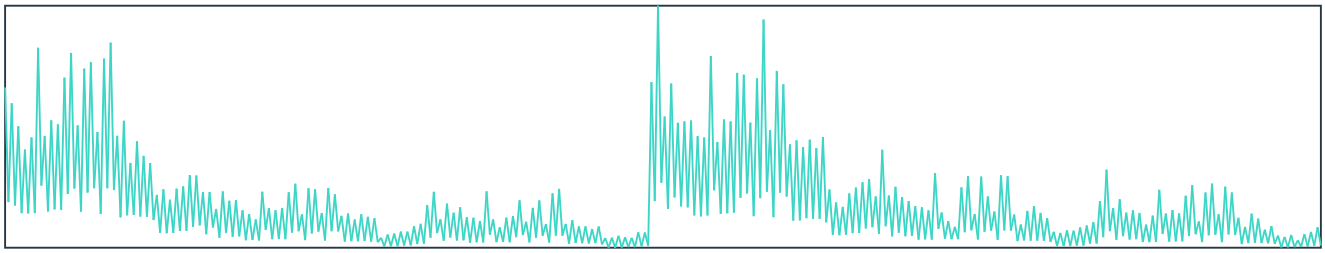
n=400 min=24.40 max=25.34

Live pulse (Availability)



n=400 min=36.35 max=66.38

Live pulse (Throughput)



n=400 min=531.61 max=33159.75

Queue by train mode (this epoch)

Mode	Done	Run	Left	Total