tide embedding

Lucy Score = Throughput x Availability x Acc / 10,000. LPD condenses live-fit vs Acc-champ RAM.
[T]=Tween [S]=Split [FP]=FastProxy [L]=Linear [HP]=HeadProxy
done - epoch 1/1 (1 left, 100% overall) - lr unset - 2026-08-23 13:32:58 -
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 - embedding - offline report

Lucy champions (this tide)

Axis	Cell	Score	Soft	Acc	Thru	Avail
hard acc	binary|none|Mesh[T][S][FP]|single|simd	354.94	25.2	29.1	3467.7	40.7
throughput	float32|none|sgd|single|simd	3839.78	24.4	27.4	40828.2	38.6
availability	uint4|none|[T][S][L]Cache|single|simd	436.75	25.0	23.2	3789.8	46.0
lucy score	float32|none|tween|single|simd	4010.49	25.0	27.0	39429.0	40.7
mobile score (trap)	binary|none|sgd|single|simd	1738.37	25.0	27.8	18577.6	37.4
t->50%	int6|none|tween|bicameral|simd	1.50	14.1	18.8	52.2	20.4
acc/sec	int32|none|sgd|single|simd	881.85	25.0	26.0	9486.5	37.1

Lucy axis champions (this tide)

Axis	Mode	DType	Arch	Value
hard_acc	Mesh[T][S]	fp8e5m2	tricameralx3	68.75
throughput	sgd	float32	singlex1	40828.15
availability	[T][S][L]Cache	uint4	singlex1	46.02
score	tween	float32	singlex1	4010.49
soft_acc	Mesh[T][S][FP]	binary	singlex1	25.16
acc_thru	sgd	float32	singlex1	11167.68
realtime	tween	float32	singlex1	16038.63
adapt	tween_chain	uint8	tricameralx3	25.07
keep_learn	tween_chain	fp6	tricameralx3	16.41
acc_per_sec	sgd	int32	singlex1	12.50
time_to_50	tween	int6	bicameralx2	0.08
consistency	sgd	float64	singlex1	100.00
stability	sgd	fp4	singlex1	100.00
mobile_score	sgd	binary	singlex1	37975261~
lpd	[T][S][L]Cache	uint2	tricameralx3	2.44
mspeed	[T][S][HP]	uint4	bicameralx2	1.00
mavail	Mesh[T][S]Sparse	int6	bicameralx2	1.00
mix	[T][S][HP]	uint4	bicameralx2	0.87
gold_std	Mesh[T][S]	uint5	bicameralx2	7.75

Best settings per train mode

Mode	DType	Format	Score	Soft	Acc	Avail	n
tween	float32	none	4010.5	25.0	27.0	40.7	102
sgd	float32	none	3839.8	24.4	27.4	38.6	102
step_sgd	float32	none	3340.3	23.7	22.2	38.1	102
tween_chain	float32	none	3076.8	25.0	25.0	36.5	102
MeshBP	float32	none	2936.1	25.0	21.3	38.8	102
Mesh[T]	float32	none	2511.9	25.0	22.6	35.2	102
step_tween_chain	float32	none	2384.5	25.0	25.9	35.1	102
step_tween	float32	none	2225.7	25.0	23.6	31.5	102
Mesh[T]Chain	float32	none	1974.8	25.0	24.2	35.0	102

Step[T][S]	float32	none	1724.4	25.0	24.6	30.3	102
[T][S][HP]	float32	none	1504.1	25.0	27.1	36.4	102
[T][S]	bfloat16	none	1477.5	25.0	27.6	44.8	102
[T]Alt	float32	none	1301.4	25.0	23.0	27.7	102
[T][S][L]	float32	none	1195.0	25.0	26.4	33.6	102
[T][S][FP]	float32	none	1138.8	25.0	24.5	36.6	102
[T][S][L]Cache	float32	none	1128.3	25.0	22.5	37.1	102
[T][S][HP]Async	float32	none	1039.1	25.0	26.6	35.6	102
Step[T]Alt	float32	none	997.8	25.0	21.7	27.7	102
[T][S]Sparse	float32	none	921.7	25.0	20.2	39.0	102
Mesh[T][S]Sparse	float32	none	746.2	25.0	20.5	39.4	102
Mesh[T][S][FP]	float32	none	735.7	25.0	24.3	39.7	102
Mesh[T][S]	float32	none	704.4	25.0	26.5	36.2	102
Mesh[T]Alt	float32	none	367.6	25.0	30.4	28.5	102

Best dtype per mode

Mode	Winner dtype	Score	Soft	Acc
tween	float32	4010.5	25.0	27.0
sgd	float32	3839.8	24.4	27.4
step_sgd	float32	3340.3	23.7	22.2
tween_chain	float32	3076.8	25.0	25.0
MeshBP	float32	2936.1	25.0	21.3
Mesh[T]	float32	2511.9	25.0	22.6
step_tween_chain	float32	2384.5	25.0	25.9
step_tween	float32	2225.7	25.0	23.6
Mesh[T]Chain	float32	1974.8	25.0	24.2
Step[T][S]	float32	1724.4	25.0	24.6
[T][S][HP]	float32	1504.1	25.0	27.1
[T][S]	bfloat16	1477.5	25.0	27.6
[T]Alt	float32	1301.4	25.0	23.0
[T][S][L]	float32	1195.0	25.0	26.4
[T][S][FP]	float32	1138.8	25.0	24.5
[T][S][L]Cache	float32	1128.3	25.0	22.5
[T][S][HP]Async	float32	1039.1	25.0	26.6
Step[T]Alt	float32	997.8	25.0	21.7
[T][S]Sparse	float32	921.7	25.0	20.2
Mesh[T][S]Sparse	float32	746.2	25.0	20.5
Mesh[T][S][FP]	float32	735.7	25.0	24.3
Mesh[T][S]	float32	704.4	25.0	26.5
Mesh[T]Alt	float32	367.6	25.0	30.4

Best mode per dtype

DType	Winner mode	Score	Soft	Acc
float32	tween	4010.5	25.0	27.0
int2	sgd	1941.2	25.0	30.3
int8	sgd	1928.8	24.4	25.6
uint8	sgd	1911.7	25.0	28.1
int4	sgd	1903.6	25.0	25.8
ternary	sgd	1746.5	24.4	24.7
binary	sgd	1738.4	25.0	27.8
bfloat16	[T][S]	1477.5	25.0	27.6
float64	sgd	1473.6	25.0	25.2

fp4	sgd	1187.8	25.0	24.9
fp8e4m3	sgd	1160.5	25.0	22.1
uint16	sgd	1021.4	25.0	26.2
uint32	sgd	993.5	25.0	28.0
fp8e5m2	sgd	962.5	24.3	21.4
int64	sgd	923.6	25.0	24.8
uint64	sgd	899.2	25.0	21.1
int32	sgd	881.9	25.0	26.0
uint4	sgd	849.6	25.0	20.3
uintptr	sgd	830.7	25.0	25.0
int16	step_sgd	829.5	25.0	24.9
float16	tween_chain	815.2	25.0	26.1
uint2	sgd	798.1	24.4	20.6
complex64	sgd	782.7	25.0	26.1
complex128	sgd	748.5	25.0	26.5
uint	tween	746.3	25.0	27.0
int	tween	681.7	25.0	26.9
nf4	sgd	563.3	24.4	25.6
uint3	sgd	496.1	24.3	24.9
int3	sgd	411.2	23.7	22.4
int5	sgd	389.9	25.0	23.0
uint5	sgd	363.2	25.0	23.5
int6	sgd	347.8	25.0	24.4
uint6	sgd	338.2	24.4	23.3
fp6	sgd	316.1	25.0	24.2

Leaderboard (Lucy Score)

#	Cell	Score	Soft	Acc	Thru	Avail
1	float32|none|tween|single|simd	4010.5	25.0	27.0	39429.0	40.7
2	float32|none|sgd|single|simd	3839.8	24.4	27.4	40828.2	38.6
3	float32|none|step_sgd|single|simd	3340.3	23.7	22.2	37006.9	38.1
4	float32|none|tween_chain|single|simd	3076.8	25.0	25.0	33753.5	36.5
5	float32|none|MeshBP|single|simd	2936.1	25.0	21.3	30337.9	38.8
6	float32|none|Mesh[T]|single|simd	2511.9	25.0	22.6	28555.4	35.2
7	float32|none|step_tween_chain|single|simd	2384.5	25.0	25.9	27180.8	35.1
8	float32|none|step_tween|single|simd	2225.7	25.0	23.6	28268.7	31.5
9	float32|none|Mesh[T]Chain|single|simd	1974.8	25.0	24.2	22544.2	35.0
10	int2|none|sgd|single|simd	1941.2	25.0	30.3	20742.0	37.4
11	int8|none|sgd|single|simd	1928.8	24.4	25.6	21331.2	37.1
12	uint8|none|sgd|single|simd	1911.7	25.0	28.1	18938.9	40.4
13	int4|none|sgd|single|simd	1903.6	25.0	25.8	20525.4	37.1
14	uint8|none|tween|single|simd	1817.5	25.0	24.7	17919.5	40.6
15	int8|none|tween_chain|single|simd	1762.1	25.0	25.0	18753.7	37.6
16	ternary|none|sgd|single|simd	1746.5	24.4	24.7	20073.0	35.7
17	binary|none|sgd|single|simd	1738.4	25.0	27.8	18577.6	37.4
18	float32|none|Step[T][S]|single|simd	1724.4	25.0	24.6	22742.7	30.3
19	ternary|none|Step[T][S]|single|simd	1712.8	25.0	25.6	16525.2	41.4
20	int8|none|Mesh[T]|single|simd	1708.3	25.0	22.5	17484.5	39.1

Leaderboard (SoftAcc)

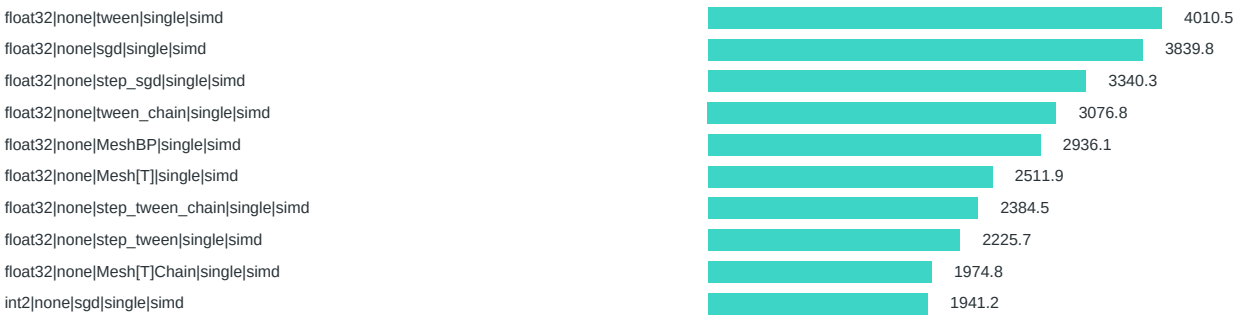
#	Cell	Score	Soft	Acc	Thru	Avail
1	binary|none|step_sgd|single|simd	1591.3	25.1	28.1	17338.0	36.6

2	binary|none|sgd|single|simd	1738.4	25.0	27.8	18577.6	37.4
3	float32|none|[T][S][HP]|single|simd	1504.1	25.0	27.1	16510.2	36.4
4	int2|none|sgd|single|simd	1941.2	25.0	30.3	20742.0	37.4
5	ternary|none|Step[T][S]|single|simd	1712.8	25.0	25.6	16525.2	41.4
6	float64|none|step_sgd|single|simd	1417.2	25.0	27.3	14090.1	40.2
7	binary|none|[T][S]|single|simd	1450.7	25.0	26.0	15722.5	36.9
8	float32|none|step_tween_chain|single|simd	2384.5	25.0	25.9	27180.8	35.1
9	int4|none|Step[T][S]|single|simd	1489.3	25.0	27.0	15007.5	39.7
10	bfloat16|none|[T][S]|single|simd	1477.5	25.0	27.6	13192.8	44.8
11	uint8|none|sgd|single|simd	1911.7	25.0	28.1	18938.9	40.4
12	int8|none|tween_chain|single|simd	1762.1	25.0	25.0	18753.7	37.6
13	int8|none|tween|single|simd	1555.4	25.0	24.2	16911.8	36.8
14	int2|none|tween|single|simd	1638.5	25.0	24.7	17445.2	37.6
15	int4|none|sgd|single|simd	1903.6	25.0	25.8	20525.4	37.1
16	float32|none|tween|single|simd	4010.5	25.0	27.0	39429.0	40.7
17	float32|none|tween_chain|single|simd	3076.8	25.0	25.0	33753.5	36.5
18	float64|none|sgd|single|simd	1473.6	25.0	25.2	14512.7	40.6
19	float32|none|Mesh[T]Chain|single|simd	1974.8	25.0	24.2	22544.2	35.0
20	uint8|none|tween|single|simd	1817.5	25.0	24.7	17919.5	40.6

Leaderboard (hard Acc)

#	Cell	Score	Soft	Acc	Thru	Avail
1	int2|none|sgd|single|simd	1941.2	25.0	30.3	20742.0	37.4
2	uint8|none|sgd|single|simd	1911.7	25.0	28.1	18938.9	40.4
3	binary|none|step_sgd|single|simd	1591.3	25.1	28.1	17338.0	36.6
4	binary|none|sgd|single|simd	1738.4	25.0	27.8	18577.6	37.4
5	bfloat16|none|[T][S]|single|simd	1477.5	25.0	27.6	13192.8	44.8
6	float32|none|sgd|single|simd	3839.8	24.4	27.4	40828.2	38.6
7	float64|none|step_sgd|single|simd	1417.2	25.0	27.3	14090.1	40.2
8	float32|none|[T][S][HP]|single|simd	1504.1	25.0	27.1	16510.2	36.4
9	float32|none|tween|single|simd	4010.5	25.0	27.0	39429.0	40.7
10	int4|none|Step[T][S]|single|simd	1489.3	25.0	27.0	15007.5	39.7
11	ternary|none|tween|single|simd	1429.6	25.0	26.0	16417.9	34.8
12	binary|none|[T][S]|single|simd	1450.7	25.0	26.0	15722.5	36.9
13	float32|none|step_tween_chain|single|simd	2384.5	25.0	25.9	27180.8	35.1
14	int4|none|sgd|single|simd	1903.6	25.0	25.8	20525.4	37.1
15	int8|none|sgd|single|simd	1928.8	24.4	25.6	21331.2	37.1
16	ternary|none|Step[T][S]|single|simd	1712.8	25.0	25.6	16525.2	41.4
17	int4|none|step_sgd|single|simd	1704.6	25.0	25.4	18459.7	36.9
18	float64|none|sgd|single|simd	1473.6	25.0	25.2	14512.7	40.6
19	int8|none|tween_chain|single|simd	1762.1	25.0	25.0	18753.7	37.6
20	float32|none|tween_chain|single|simd	3076.8	25.0	25.0	33753.5	36.5

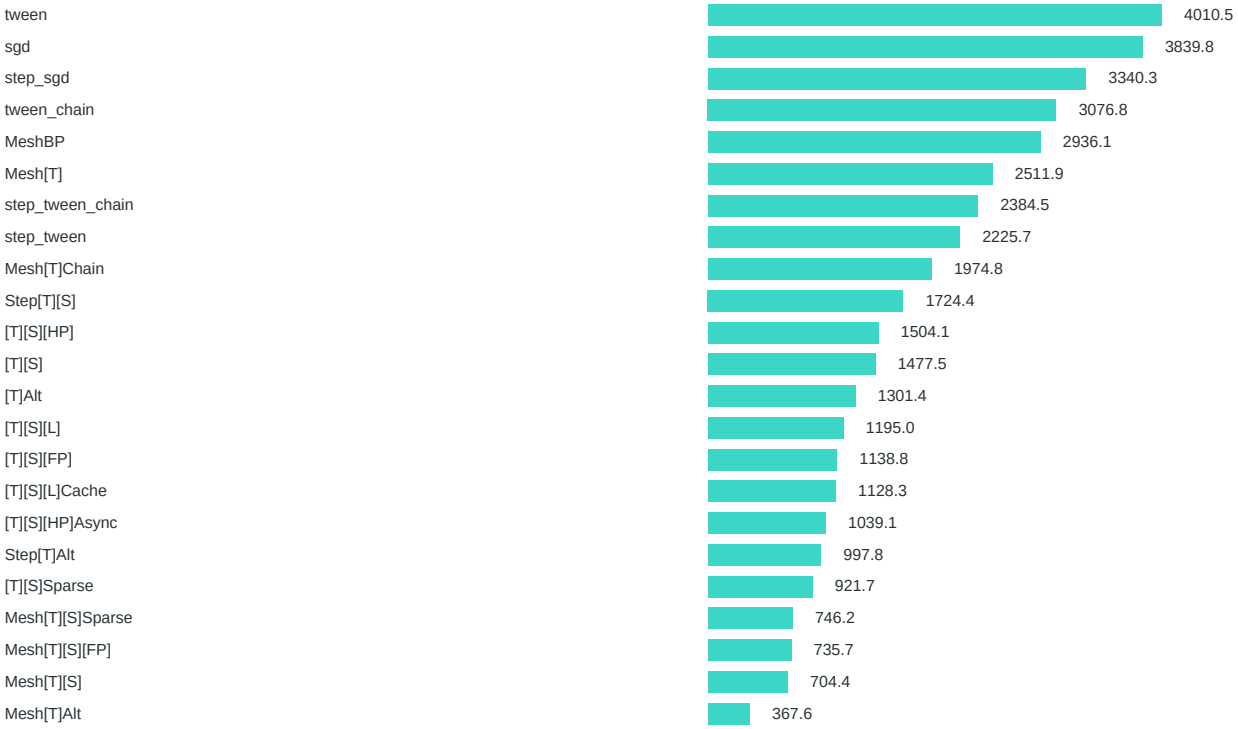
Top scores



int8|none|sgd|single|simd



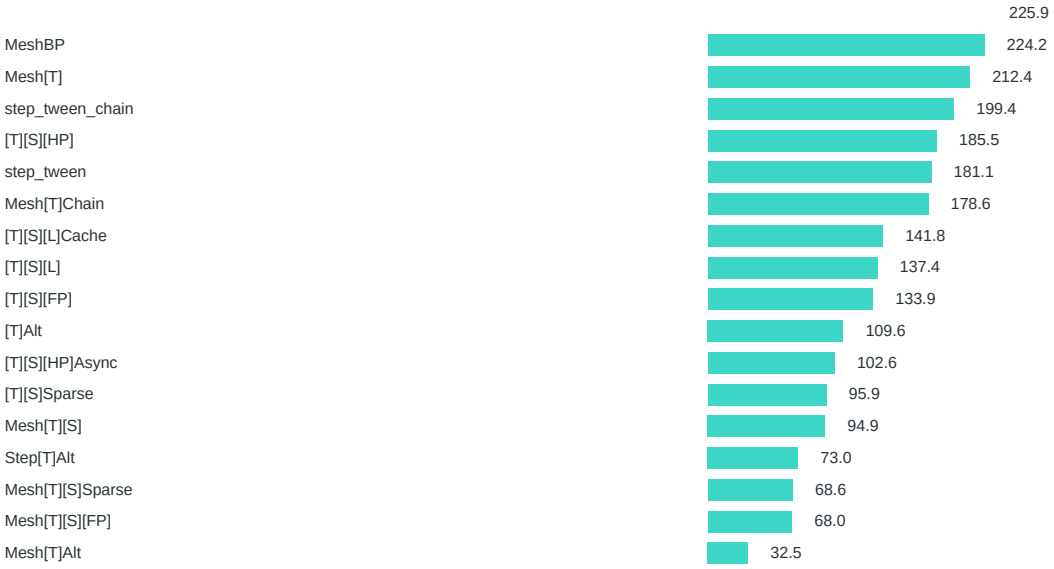
Best settings per mode



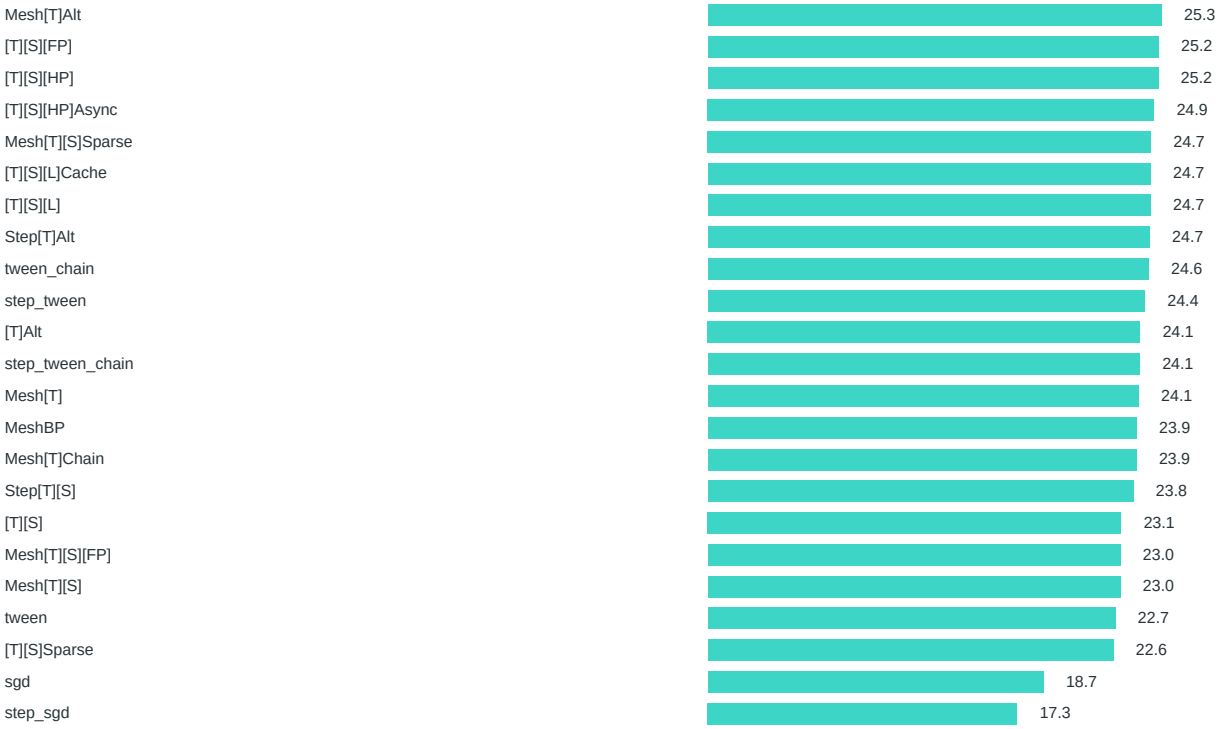
Mean Score by train mode



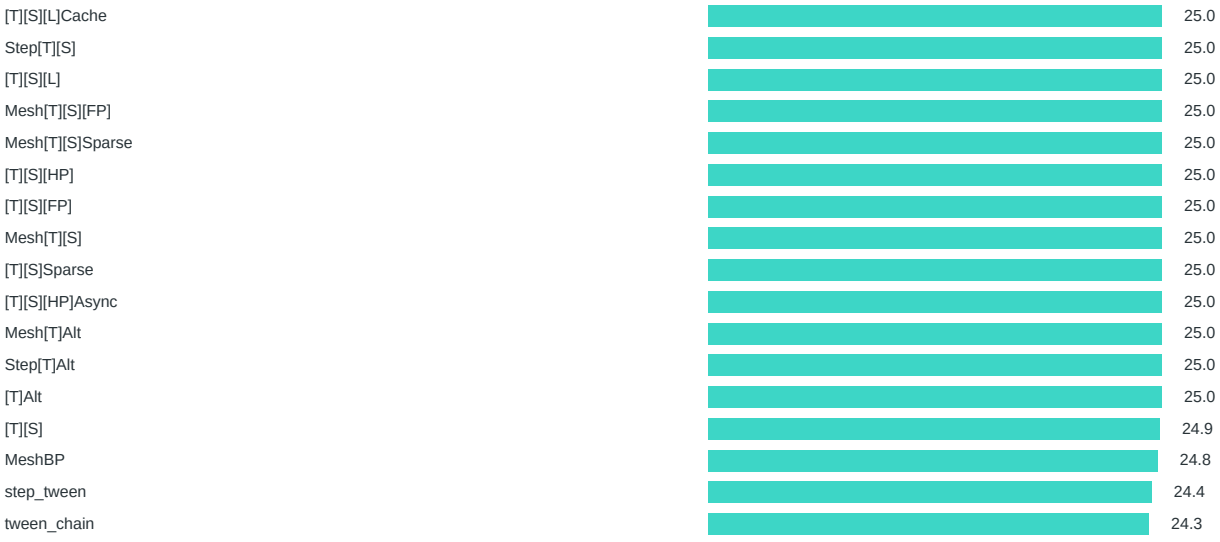
[T][S]



Mean hard Acc by train mode

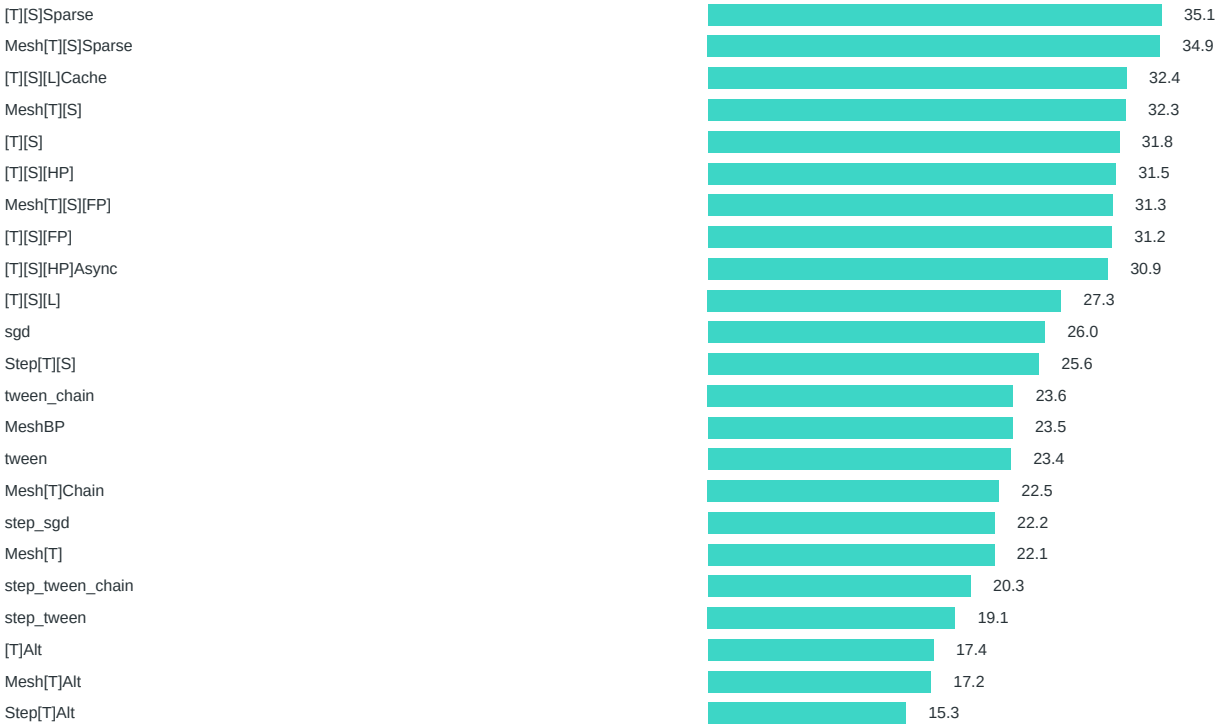


Mean SoftAcc by train mode

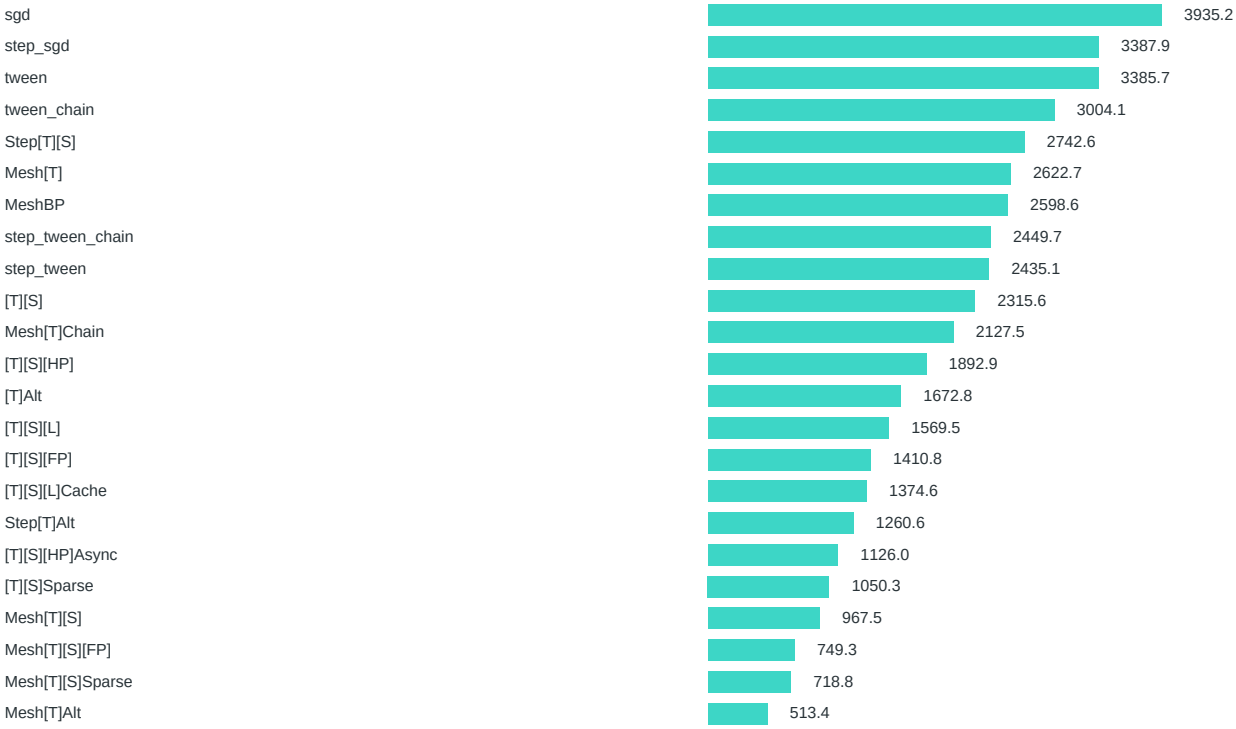




Mean Availability by train mode



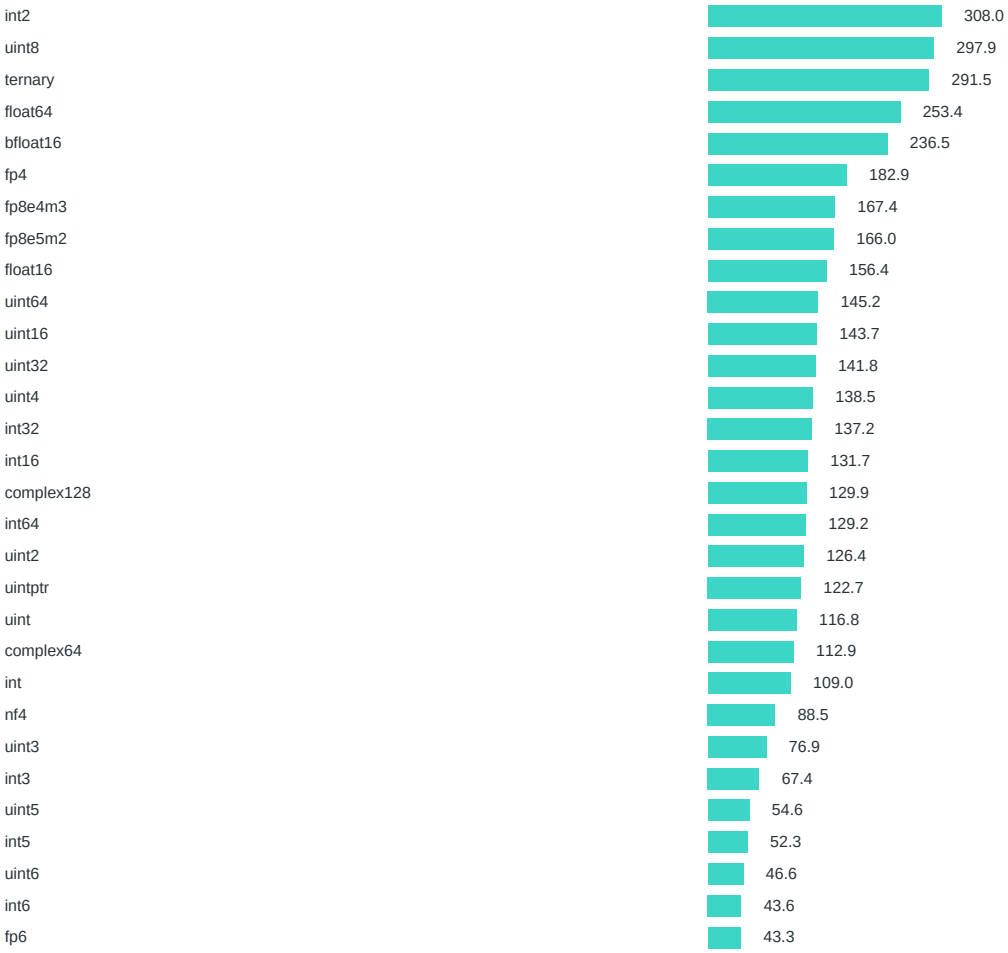
Mean Throughput by train mode



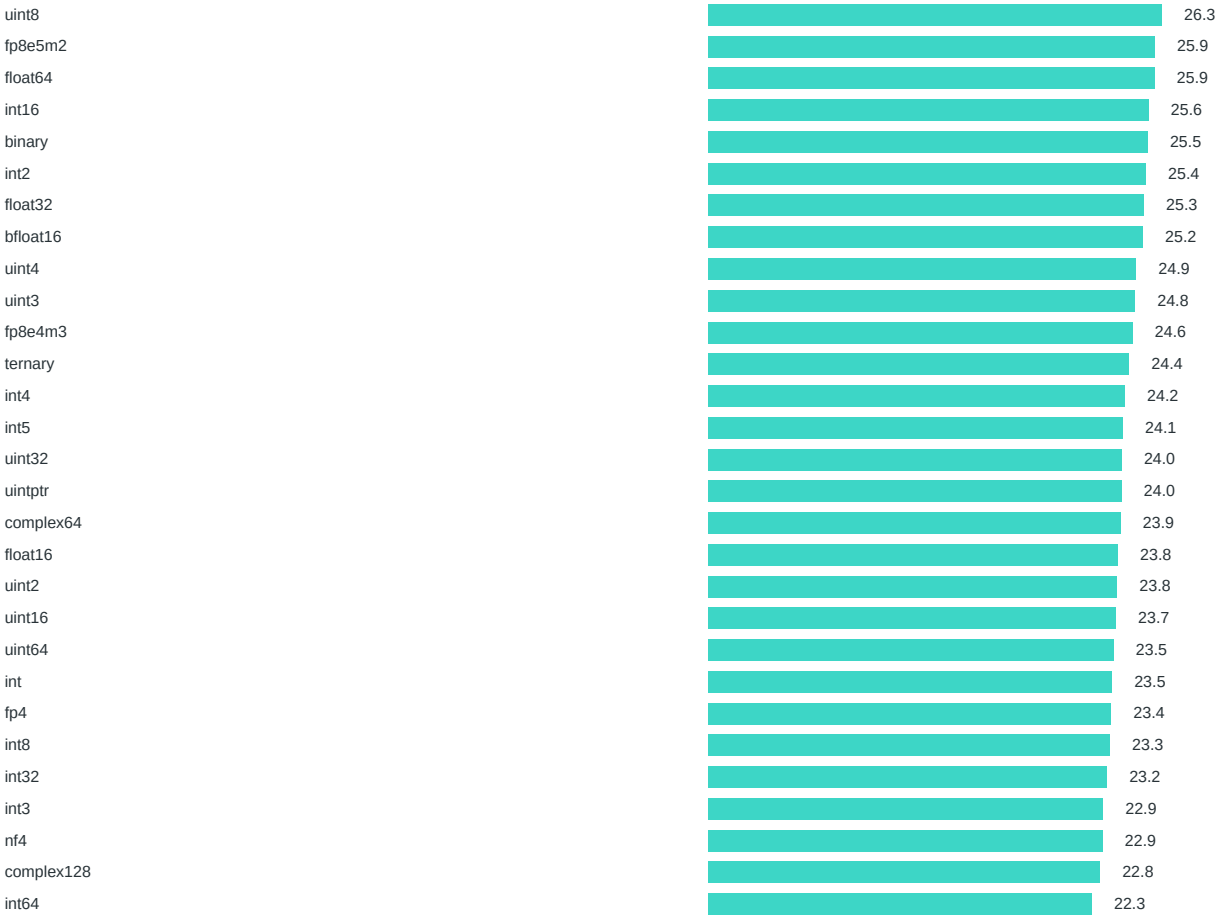
Mean Score by dtype



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	329	384	176	153	215	846	283	275	45	174	231	171
Mesh[T]	220	352	196	124	212	764	380	205	31	236	218	152
Mesh[T]Alt	39	49	21	28	28	150	48	42	6	34	28	15
Mesh[T]Chain	234	292	82	98	180	645	360	205	43	161	214	76
Mesh[T][S]	156	139	46	72	73	256	123	116	37	102	101	75
Mesh[T][S][FP]	78	143	55	58	57	244	100	78	32	97	64	37
Mesh[T][S]Sparse	108	83	42	60	79	216	82	82	20	80	77	48
Step[T]Alt	101	189	52	40	67	293	72	47	17	66	86	31
Step[T][S]	263	541	229	126	277	572	305	282	53	255	288	98
[T]Alt	200	208	46	84	133	403	196	104	23	97	95	56
[T][S]	550	517	277	131	209	446	253	248	67	191	198	156
[T][S][FP]	149	186	99	99	101	382	226	183	41	153	142	81
[T][S][HP]	189	312	179	74	154	555	309	210	56	193	232	145
[T][S][HP]Async	127	194	55	71	90	380	131	131	45	104	137	49
[T][S][L]	164	265	121	101	138	430	209	142	46	156	173	127
[T][S][L]Cache	153	214	108	92	136	357	176	171	55	127	157	108
[T][S]Sparse	96	209	66	55	62	263	162	110	25	122	96	48
sgd	486	654	267	274	268	1455	503	397	103	348	286	177
step_sgd	392	600	219	213	261	1054	523	287	47	256	214	227
step_tween	269	347	96	186	161	707	213	145	26	88	155	128
step_tween_chain	280	362	136	152	140	836	255	168	46	218	173	102
tween	390	471	244	181	270	1467	486	312	50	305	273	248
tween_chain	467	465	174	125	287	1044	433	266	83	285	178	154

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	144	367	85	178	509	32	62	125	423	137	406	118
Mesh[T]	130	466	90	165	318	60	61	135	522	92	374	162
Mesh[T]Alt	40	57	9	15	34	10	8	23	56	15	80	22
Mesh[T]Chain	107	304	73	140	337	55	44	187	382	88	269	105
Mesh[T][S]	104	159	35	83	187	38	27	84	155	59	142	61
Mesh[T][S][FP]	65	78	37	48	128	27	15	49	76	40	128	47
Mesh[T][S]Sparse	50	120	24	56	90	15	17	59	173	35	110	58
Step[T]Alt	50	103	25	59	119	19	16	33	222	26	161	31
Step[T][S]	186	456	133	173	548	74	63	135	338	122	595	124
[T]Alt	123	222	59	122	157	33	15	86	182	65	205	77
[T][S]	197	365	101	189	498	104	85	158	469	154	391	148
[T][S][FP]	126	298	68	72	230	41	28	83	298	67	264	77
[T][S][HP]	121	197	83	157	282	79	65	218	437	85	276	138
[T][S][HP]Async	75	127	54	85	176	24	26	80	214	56	183	56
[T][S][L]	98	222	76	112	201	45	58	86	204	86	222	108
[T][S][L]Cache	113	328	31	202	258	63	45	93	176	84	243	72
[T][S]Sparse	71	216	42	62	167	29	19	71	200	43	112	76
sgd	274	790	131	309	663	121	114	310	693	199	601	243
step_sgd	277	436	79	217	582	86	55	216	541	159	361	233
step_tween	123	410	75	125	285	50	27	162	424	94	337	133
step_tween_chain	107	324	56	140	318	39	39	176	435	77	492	174
tween	258	546	115	240	555	66	47	198	513	163	501	270
tween_chain	190	491	70	205	510	93	67	205	597	91	250	154

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	226	187	104	206	137	69	74	208	362	184
Mesh[T]	184	114	84	198	175	68	52	204	292	186
Mesh[T]Alt	26	20	12	29	17	7	8	29	68	33
Mesh[T]Chain	169	130	112	146	158	70	43	156	334	77
Mesh[T][S]	95	73	47	96	100	25	31	83	177	72
Mesh[T][S][FP]	46	51	46	67	66	23	20	60	105	47
Mesh[T][S]Sparse	57	38	42	82	56	34	17	74	120	31
Step[T]Alt	72	52	16	61	72	11	10	60	154	51
Step[T][S]	195	149	139	146	220	91	48	264	392	182
[T]Alt	101	57	42	121	68	48	26	64	151	57
[T][S]	173	134	101	139	162	94	54	181	375	166
[T][S][FP]	142	97	62	86	136	38	45	115	229	105
[T][S][HP]	180	124	90	135	257	80	53	184	305	152
[T][S][HP]Async	65	91	72	84	64	39	38	120	165	79
[T][S][L]	129	109	116	132	136	37	47	107	195	70
[T][S][L]Cache	129	194	57	90	140	74	71	104	305	92
[T][S]Sparse	95	76	40	92	102	25	38	110	182	76
sgd	361	229	170	373	233	114	108	257	724	279
step_sgd	223	244	113	253	206	54	73	188	422	224
step_tween	197	175	59	168	156	39	21	152	309	114
step_tween_chain	138	154	80	155	132	50	54	190	444	138
tween	182	215	106	223	177	71	66	210	606	209
tween_chain	120	193	58	177	215	94	75	221	435	200

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	31	24	23	21	27	24	24	25	26	24	20	22
Mesh[T]	23	28	24	22	24	24	30	22	17	26	26	26
Mesh[T]Alt	15	29	21	30	20	29	28	38	18	23	32	32
Mesh[T]Chain	31	23	22	27	23	27	31	27	15	24	21	26
Mesh[T][S]	30	21	25	21	21	25	28	21	13	28	40	20
Mesh[T][S][FP]	15	30	22	16	21	24	23	26	19	24	42	26
Mesh[T][S]Sparse	29	27	22	35	35	23	31	17	26	24	32	30
Step[T]Alt	29	20	28	35	28	30	24	27	20	26	27	28
Step[T][S]	33	32	29	14	31	18	20	19	20	24	22	16
[T]Alt	26	22	18	17	30	25	26	23	17	32	19	20
[T][S]	26	27	25	18	24	23	25	25	18	24	25	25
[T][S][FP]	27	25	26	29	19	29	25	23	10	25	38	34
[T][S][HP]	25	28	20	24	22	24	27	18	21	23	19	25
[T][S][HP]Async	21	26	20	28	22	29	26	31	21	24	29	10
[T][S][L]	21	27	17	39	28	30	29	22	22	30	22	17
[T][S][L]Cache	18	24	32	22	23	34	32	16	18	25	26	31
[T][S]Sparse	28	27	18	25	17	19	21	28	7	26	19	16
sgd	25	27	17	18	19	25	22	20	13	20	18	16
step_sgd	21	24	14	18	17	22	24	16	11	19	17	18
step_tween	29	25	25	25	27	24	22	26	19	22	25	29
step_tween_chain	26	23	23	21	23	23	27	23	22	26	24	20
tween	25	25	27	21	21	27	26	24	17	25	27	25
tween_chain	26	25	26	24	22	25	24	22	27	23	25	26

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	23	28	23	27	25	23	16	23	22	25	26	28
Mesh[T]	23	27	24	23	21	25	25	23	24	21	23	24
Mesh[T]Alt	40	35	24	23	20	17	27	24	18	19	19	24
Mesh[T]Chain	18	24	20	29	18	25	13	28	24	24	28	26
Mesh[T][S]	27	26	21	25	27	17	7	18	22	22	21	19
Mesh[T][S][FP]	28	22	25	20	25	24	19	18	20	22	24	23
Mesh[T][S]Sparse	25	24	23	11	21	15	23	27	26	27	26	32
Step[T]Alt	34	18	20	26	20	47	20	26	25	19	19	17
Step[T][S]	27	19	23	29	25	34	8	18	23	21	25	19
[T]Alt	21	30	27	27	27	32	20	21	18	29	24	20
[T][S]	21	19	23	22	24	16	18	29	23	24	24	18
[T][S][FP]	37	30	21	21	23	18	19	25	26	26	26	22
[T][S][HP]	24	30	20	28	22	43	36	24	24	22	26	25
[T][S][HP]Async	30	28	26	28	24	19	35	26	28	20	25	14
[T][S][L]	26	18	42	16	29	33	20	16	19	28	27	17
[T][S][L]Cache	30	27	13	24	34	22	12	13	27	24	20	22
[T][S]Sparse	21	33	21	25	26	19	18	19	24	22	26	26
sgd	19	24	15	20	24	13	14	19	27	16	24	14
step_sgd	17	22	17	16	22	13	12	16	22	14	21	18
step_tween	24	25	28	25	25	26	20	25	27	27	25	21
step_tween_chain	23	24	23	21	26	32	16	27	21	24	31	24
tween	21	25	24	23	25	20	19	25	24	25	24	23
tween_chain	29	26	26	24	23	23	19	23	24	24	27	26

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	22	25	22	28	19	22	21	23	25	25
Mesh[T]	21	25	19	21	24	28	24	20	28	33
Mesh[T]Alt	36	22	33	26	14	20	17	29	35	23
Mesh[T]Chain	25	25	25	20	28	24	22	23	25	24
Mesh[T][S]	30	22	22	18	26	44	20	18	14	21
Mesh[T][S][FP]	20	28	21	27	26	11	13	28	25	23
Mesh[T][S]Sparse	16	17	31	24	27	27	33	20	26	12
Step[T]Alt	28	20	25	26	33	18	10	17	26	24
Step[T][S]	22	14	40	22	25	30	23	21	25	37
[T]Alt	19	34	39	25	20	18	20	24	29	22
[T][S]	26	22	21	28	27	30	12	27	23	25
[T][S][FP]	28	25	29	29	34	20	18	18	27	27
[T][S][HP]	27	24	21	23	44	22	7	30	29	29
[T][S][HP]Async	24	27	28	26	19	34	14	27	27	29
[T][S][L]	19	25	39	19	30	15	16	32	32	19
[T][S][L]Cache	24	36	24	29	31	27	23	24	26	27
[T][S]Sparse	25	19	11	27	27	15	25	32	32	25
sgd	18	17	14	19	15	13	12	18	23	18
step_sgd	15	17	16	14	15	12	12	15	24	13
step_tween	26	28	23	23	24	19	19	26	27	21
step_tween_chain	27	24	25	31	23	22	17	24	25	26
tween	25	24	19	21	16	16	15	20	24	24
tween_chain	22	27	25	26	26	23	23	25	28	24

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	22	25	25	25
Mesh[T]	25	25	21	25	25	25	25	25	17	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	17	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	23	24	16	17	19	24	23	19	13	21	18	17
step_sgd	19	23	16	17	17	22	24	17	13	19	18	16
step_tween	25	25	25	25	25	25	25	25	20	25	25	25
step_tween_chain	25	25	25	22	25	25	25	25	22	25	25	25
tween	24	25	23	22	22	25	24	24	20	24	24	24
tween_chain	24	25	25	25	24	25	25	24	23	24	23	24

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	22	25	25	25	25	25
Mesh[T]	25	25	21	25	25	25	25	21	25	25	21	25
Mesh[T]Alt	25	25	25	25	25	25	25	25	25	25	25	25
Mesh[T]Chain	21	25	25	25	25	21	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	21
[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	17	24	15	18	23	14	13	18	25	16	23	16
step_sgd	16	22	14	18	23	13	13	17	23	14	23	16
step_tween	25	23	25	25	25	25	22	25	25	25	25	23
step_tween_chain	23	25	25	25	25	25	17	25	25	25	25	25
tween	22	24	23	23	25	20	17	24	24	24	24	21
tween_chain	25	25	24	24	25	25	22	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	22	25	25	25	25	25	25	25	25	25
Mesh[T]	21	25	25	25	25	25	21	25	25	25
Mesh[T]Alt	25	25	25	25	25	25	25	25	25	25
Mesh[T]Chain	25	25	25	21	25	25	21	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	19	18	15	18	17	14	14	20	23	17
step_sgd	16	17	15	15	15	12	12	17	22	14
step_tween	25	25	25	25	25	23	21	25	25	23
step_tween_chain	22	25	25	25	25	25	19	25	25	25
tween	24	22	21	23	20	19	16	20	24	23
tween_chain	22	25	24	25	25	23	24	25	25	24

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	23	21	25	25	23	25	26	22	23	23	23	26
Mesh[T]	19	20	24	23	23	21	25	20	20	24	23	22
Mesh[T]Alt	19	15	17	18	16	16	17	14	19	16	17	18
Mesh[T]Chain	23	20	24	23	22	21	27	20	21	22	24	22
Mesh[T][S]	33	24	35	35	32	27	33	29	36	32	33	34
Mesh[T][S][FP]	30	27	34	34	32	27	31	29	34	34	32	33
Mesh[T][S]Sparse	37	31	36	35	36	33	34	34	34	37	35	36
Step[T]Alt	13	14	17	15	16	15	17	12	14	16	15	15
Step[T][S]	24	23	28	24	25	22	25	23	27	27	25	26
[T]Alt	17	15	19	19	18	15	17	15	17	17	20	18
[T][S]	33	25	32	34	32	26	31	28	36	35	30	35
[T][S][FP]	33	26	32	33	31	25	32	30	33	34	33	34
[T][S][HP]	28	26	33	33	31	28	32	27	34	34	35	34
[T][S][HP]Async	31	28	34	31	33	27	31	27	34	32	31	32
[T][S][L]	27	20	29	30	29	22	30	26	28	30	29	30
[T][S][L]Cache	33	27	34	33	33	27	30	31	37	33	33	35
[T][S]Sparse	35	35	35	35	35	34	36	35	37	36	35	35
sgd	28	22	26	27	26	25	27	23	28	28	27	26
step_sgd	22	19	23	25	22	21	26	20	21	24	21	24
step_tween	20	17	19	20	19	18	20	17	19	18	17	19
step_tween_chain	22	18	21	21	20	22	21	17	21	21	21	22
tween	23	22	24	23	23	25	26	21	25	24	25	27
tween_chain	25	20	23	24	24	25	26	22	25	26	21	25

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	26	18	27	23	20	21	25	24	21	24	20	23
Mesh[T]	24	19	21	21	17	22	23	22	21	22	19	23
Mesh[T]Alt	18	12	15	17	14	20	17	19	16	17	14	19
Mesh[T]Chain	23	19	26	21	19	25	21	24	21	23	19	21
Mesh[T][S]	35	26	31	34	27	37	35	33	26	31	26	34
Mesh[T][S][FP]	32	25	36	32	25	35	32	32	24	30	26	32
Mesh[T][S]Sparse	35	31	36	36	33	34	38	38	33	33	32	35
Step[T]Alt	16	14	15	16	13	13	16	17	17	14	14	14
Step[T][S]	27	24	26	23	26	26	26	26	24	26	24	27
[T]Alt	22	15	20	19	12	19	17	17	14	17	12	19
[T][S]	34	25	32	34	27	35	35	34	27	33	27	32
[T][S][FP]	34	25	35	32	26	32	35	33	25	30	25	33
[T][S][HP]	33	23	35	32	24	35	34	34	25	29	26	33
[T][S][HP]Async	31	24	33	32	25	33	33	31	25	31	25	33
[T][S][L]	28	20	29	30	21	30	30	29	20	27	21	28
[T][S][L]Cache	34	27	32	34	31	33	35	34	25	31	28	32
[T][S]Sparse	36	31	38	34	32	37	36	36	32	34	31	35
sgd	27	20	28	27	20	28	28	27	22	25	20	27
step_sgd	24	21	22	23	20	23	21	22	21	22	17	24
step_tween	19	17	19	19	16	18	19	22	18	21	22	22
step_tween_chain	19	18	21	20	17	20	17	20	22	21	18	22
tween	25	20	24	24	21	24	23	25	21	26	18	23
tween_chain	25	18	25	24	21	27	24	24	22	23	17	24

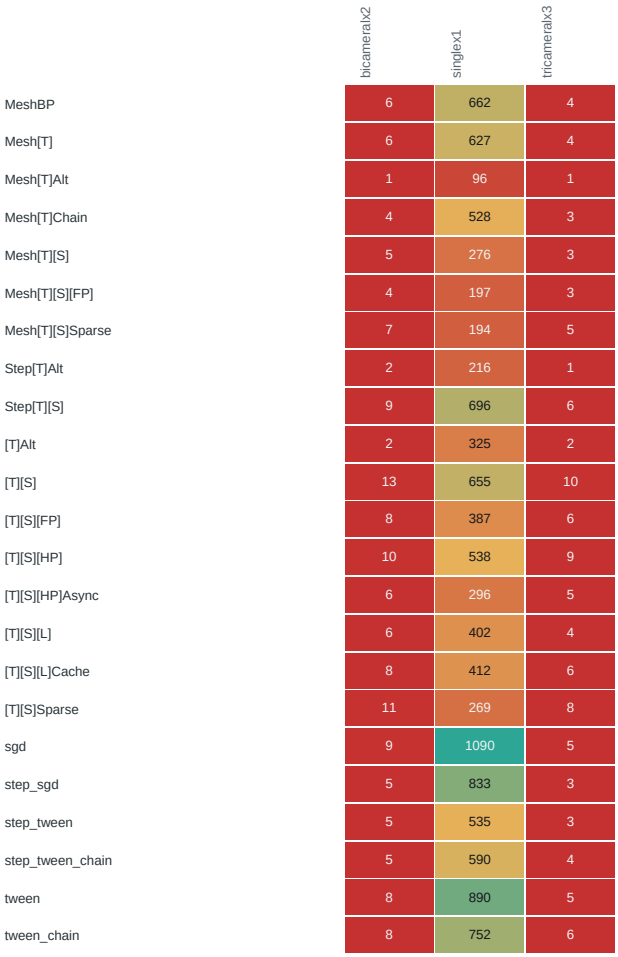
Honesty - mean Avail, every mode x dtype (cols 25-34)

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

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	25	24	25	25	24	23	24	24	24	24
Mesh[T]	23	22	22	22	24	25	21	24	25	22
Mesh[T]Alt	19	18	18	19	19	17	19	19	20	19
Mesh[T]Chain	23	22	23	24	24	25	22	24	25	20
Mesh[T][S]	35	34	33	35	35	35	35	32	29	35
Mesh[T][S][FP]	31	30	36	34	33	33	32	33	28	34
Mesh[T][S]Sparse	36	35	36	37	34	36	35	36	36	35
Step[T]Alt	17	16	14	18	16	15	17	17	16	16
Step[T][S]	27	25	27	26	25	27	26	26	27	26
[T]Alt	18	18	20	18	18	19	19	19	16	19
[T][S]	33	32	34	34	33	34	33	34	30	33
[T][S][FP]	32	32	34	32	33	33	34	31	29	31
[T][S][HP]	33	34	35	34	35	35	34	33	29	32
[T][S][HP]Async	32	33	34	33	32	33	33	33	32	32
[T][S][L]	28	27	33	27	28	29	31	29	25	27
[T][S][L]Cache	33	35	34	34	35	34	35	32	31	35
[T][S]Sparse	36	35	37	36	36	34	38	36	35	36
sgd	28	28	28	27	28	26	28	28	26	28
step_sgd	24	24	22	21	22	21	24	23	21	24
step_tween	21	22	17	20	20	19	16	20	20	19
step_tween_chain	19	22	21	19	19	21	21	22	21	21
tween	24	24	25	25	20	24	22	21	25	24
tween_chain	19	25	21	25	26	25	27	25	24	24

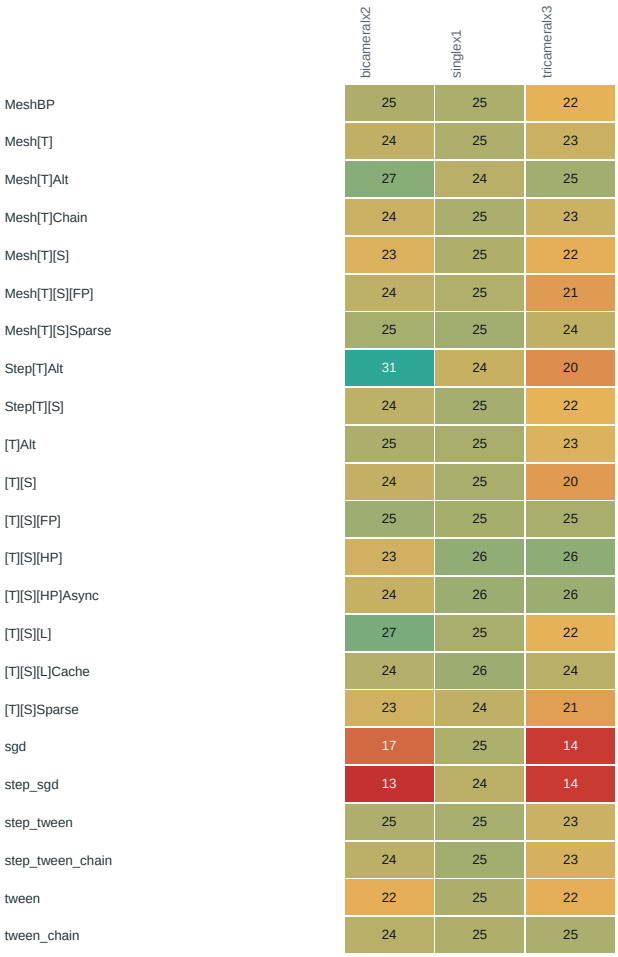
Mean Score, every mode x arch

Mean Score, every mode x arch



Mean hard Acc, every mode x arch

Mean hard Acc, every mode x arch



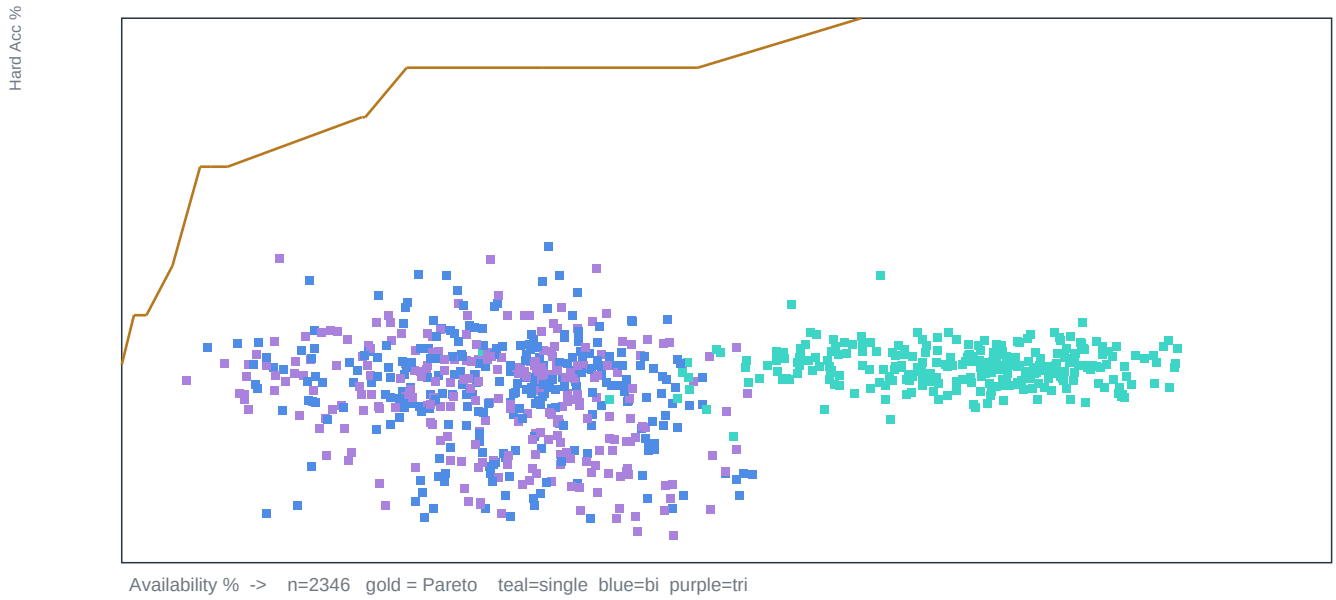
	bicameralx2	singlex1	tricameralx3
MeshBP	25	25	22
Mesh[T]	24	25	23
Mesh[T]Alt	27	24	25
Mesh[T]Chain	24	25	23
Mesh[T][S]	23	25	22
Mesh[T][S][FP]	24	25	21
Mesh[T][S]Sparse	25	25	24
Step[T]Alt	31	24	20
Step[T][S]	24	25	22
[T]Alt	25	25	23
[T][S]	24	25	20
[T][S][FP]	25	25	25
[T][S][HP]	23	26	26
[T][S][HP]Async	24	26	26
[T][S][L]	27	25	22
[T][S][L]Cache	24	26	24
[T][S]Sparse	23	24	21
sgd	17	25	14
step_sgd	13	24	14
step_tween	25	25	23
step_tween_chain	24	25	23
tween	22	25	22
tween_chain	24	25	25

Mean Avail, every mode x arch

Mean Avail, every mode x arch

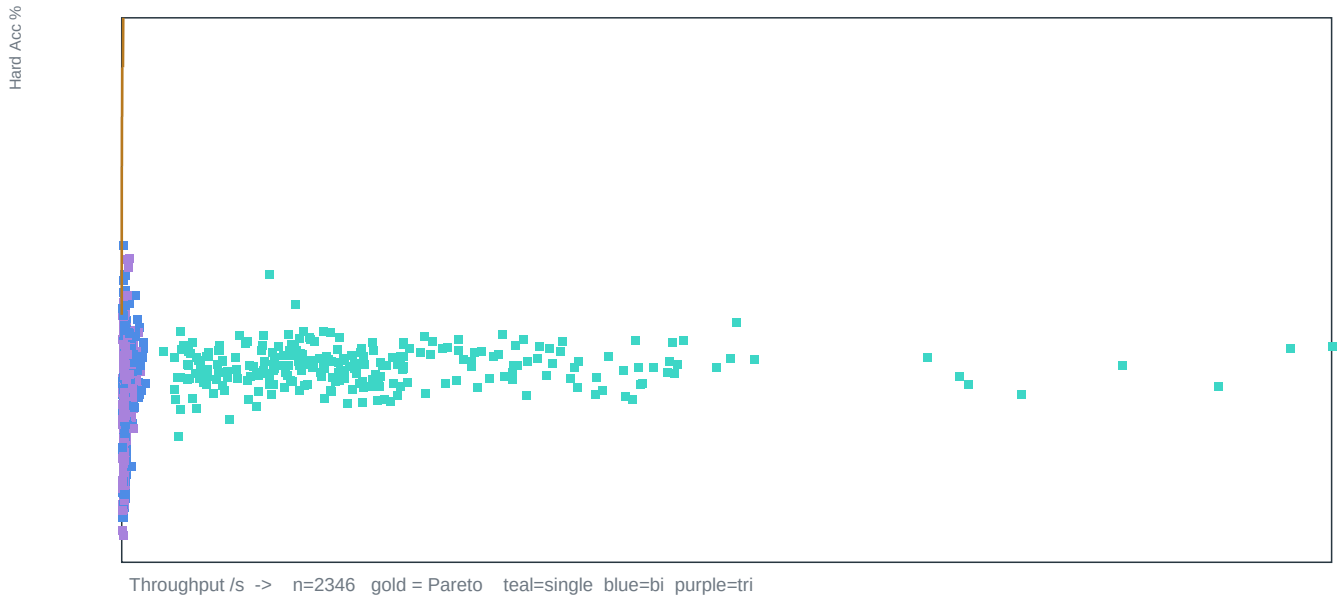
	bicamerax2	singlex1	tricamerax3
MeshBP	18	35	18
Mesh[T]	17	32	17
Mesh[T]Alt	14	25	13
Mesh[T]Chain	17	33	17
Mesh[T][S]	28	40	28
Mesh[T][S][FP]	28	37	28
Mesh[T][S]Sparse	33	38	34
Step[T]Alt	12	23	11
Step[T][S]	21	34	21
[T]Alt	13	26	13
[T][S]	28	39	28
[T][S][FP]	28	37	28
[T][S][HP]	28	38	29
[T][S][HP]Async	28	36	29
[T][S][L]	23	36	23
[T][S][L]Cache	28	41	28
[T][S]Sparse	34	37	34
sgd	21	37	20
step_sgd	16	34	16
step_tween	14	28	14
step_tween_chain	15	31	15
tween	18	34	18
tween_chain	18	34	19

Pillars - Availability vs hard Acc

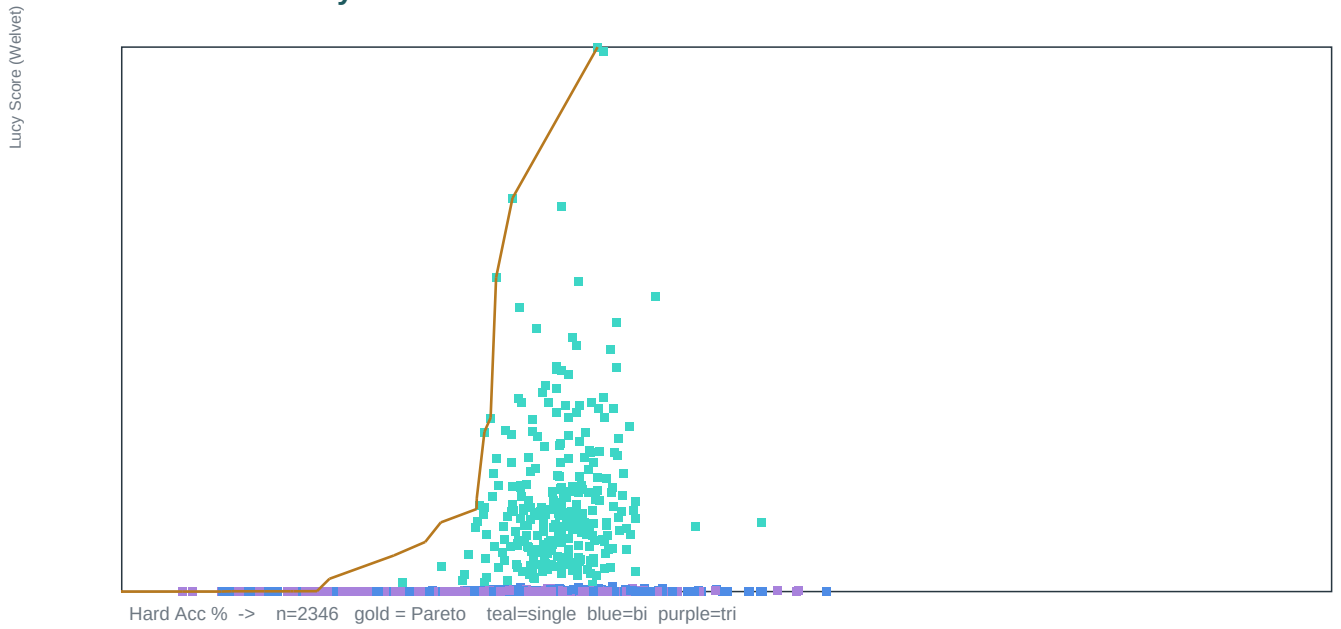


Pillars - Throughput vs hard Acc

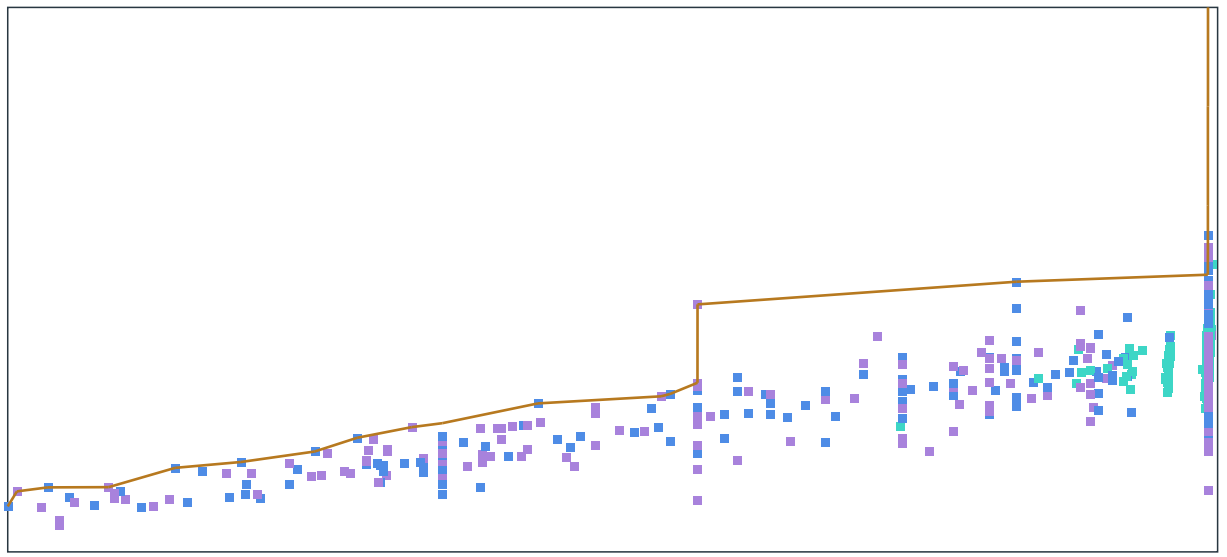
Pillars - Throughput vs hard Acc



Pareto - hard Acc vs Lucy Score

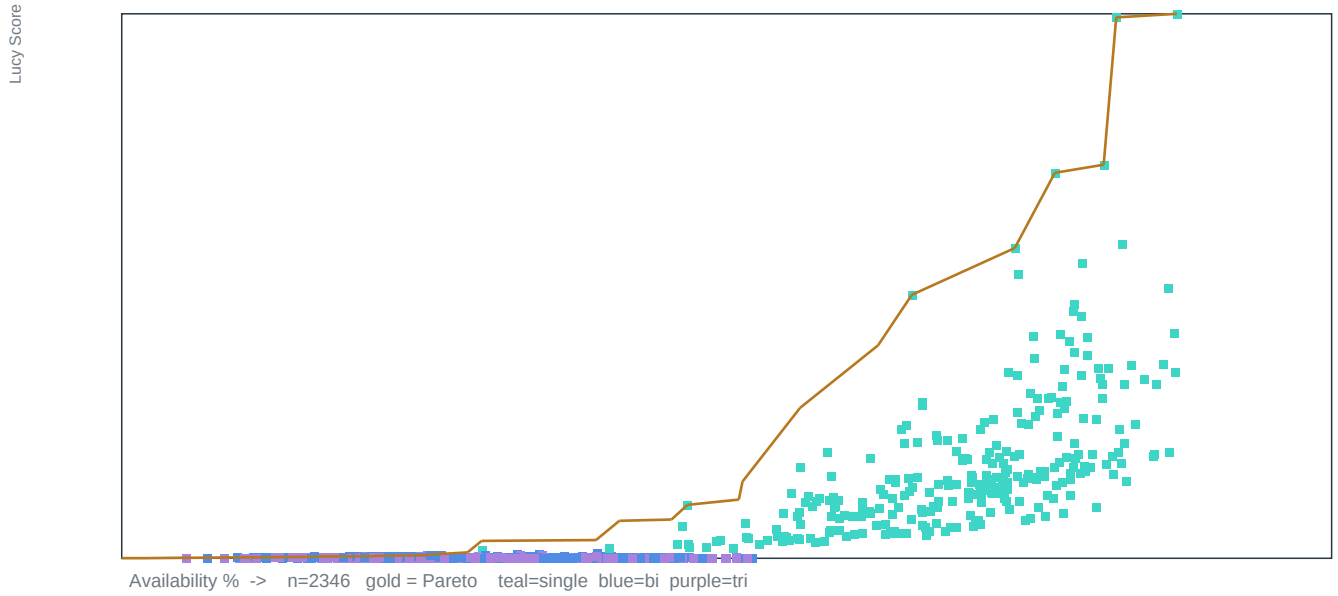


SoftAcc (serve-confidence) vs hard Acc

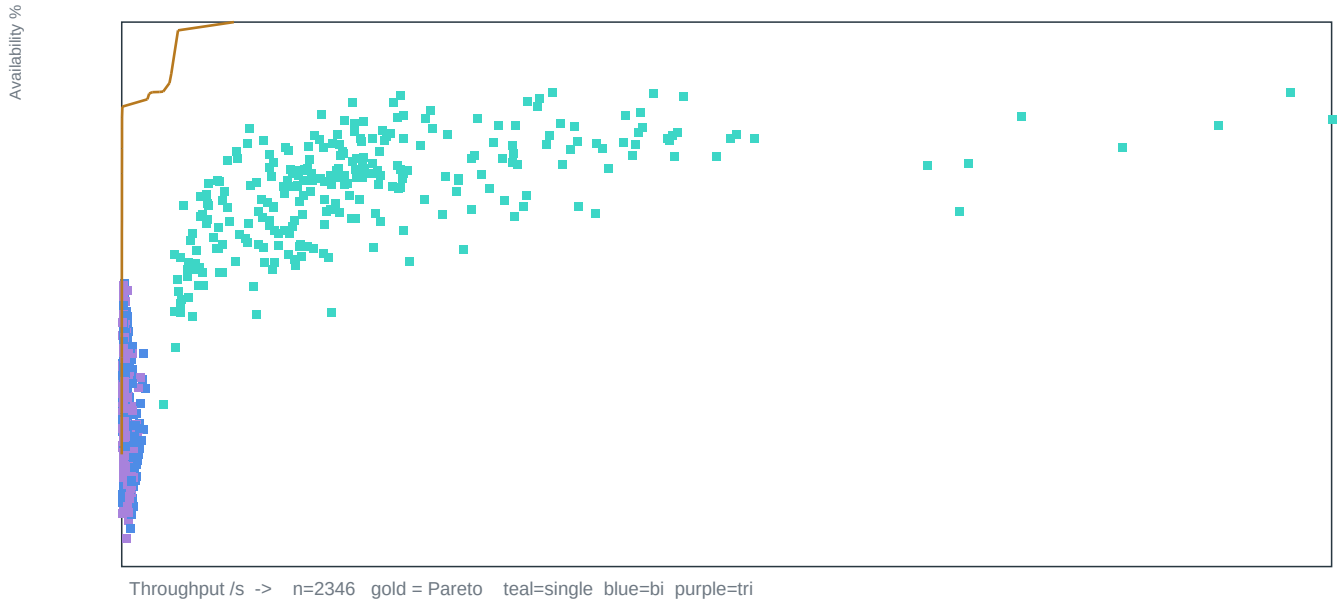



SoftAcc % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

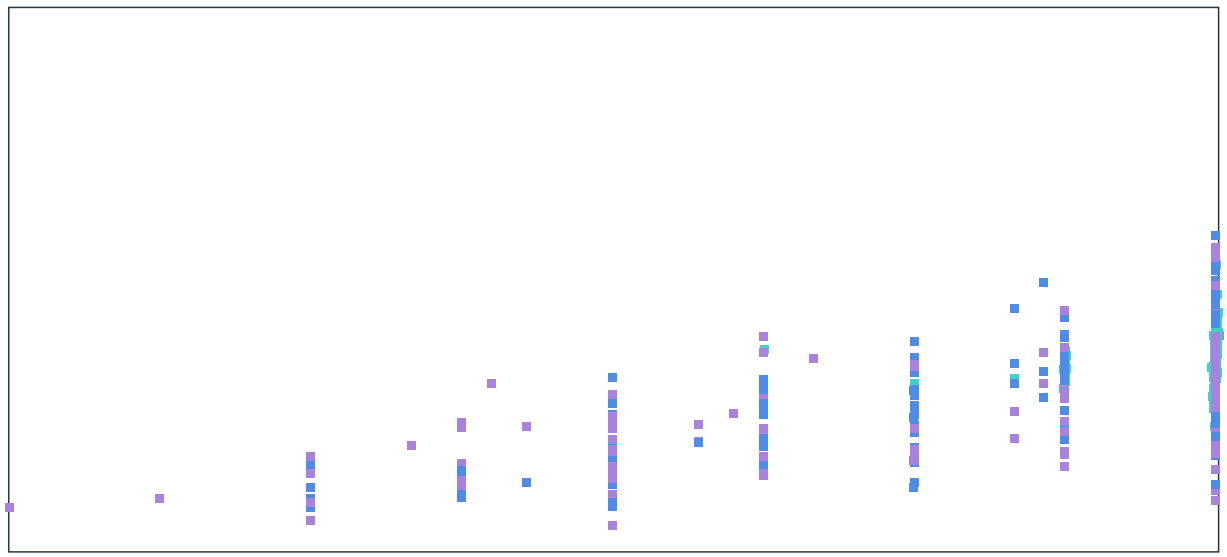
Avail vs Lucy Score (duty clock)



Pillars - Throughput vs Availability



AdaptPct vs hard Acc



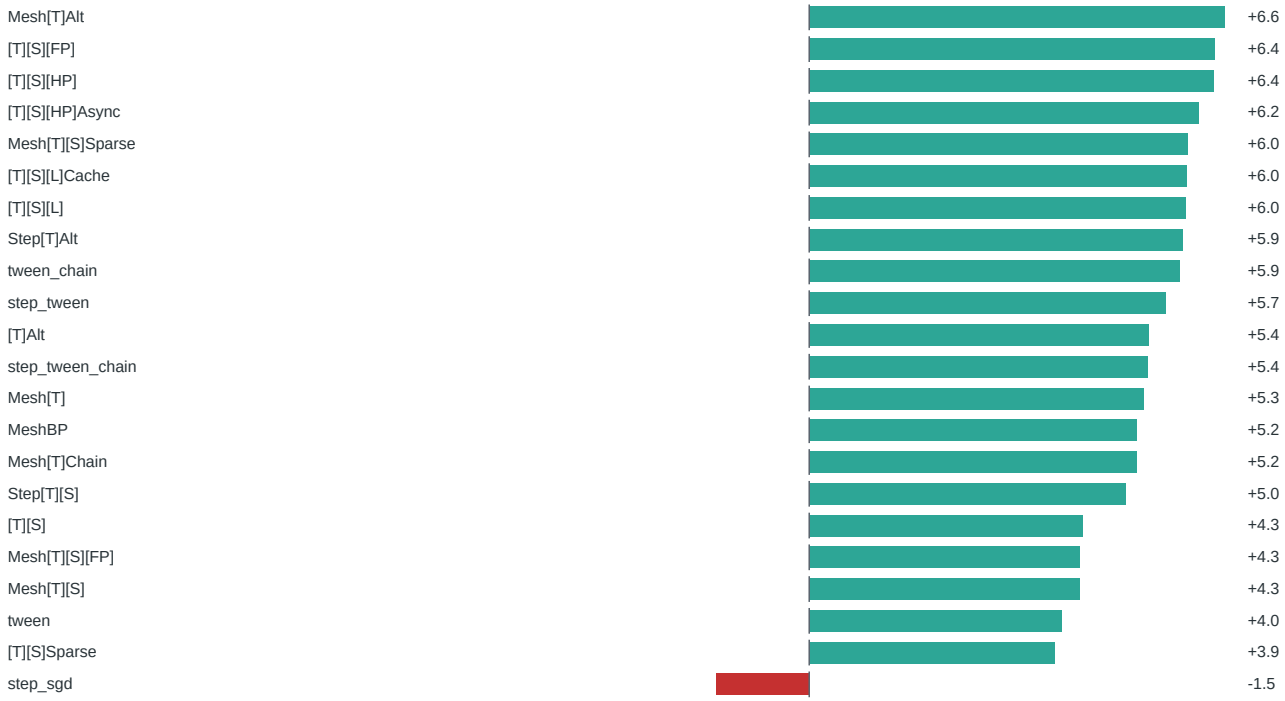

AdaptPct % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

vs sgd - matched dtype x format x arch

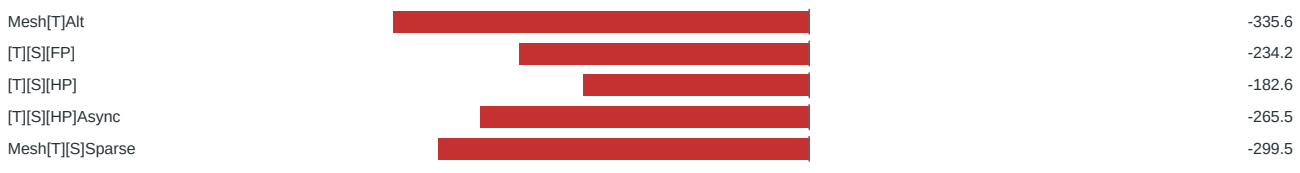
AccDelta is the honest column. ScoreDelta is usually Availability (duty clock), not a better chain rule. Acc win = AccDelta > 0.5. Score win = ScoreDelta > 1. Baseline is discovered from the board, not a frozen StepBP list.

mode	n	AccD	Acc win%	SoftD	AvailD	ThruD	ScoreD	Score win%
Mesh[T]Alt	102	+6.6	64	+6.4	-8.8	-3422	-335.6	0
[T][S][FP]	102	+6.4	66	+6.4	+5.2	-2524	-234.2	32
[T][S][HP]	102	+6.4	66	+6.4	+5.5	-2042	-182.6	41
[T][S][HP]Async	102	+6.2	61	+6.4	+4.9	-2809	-265.5	20
Mesh[T][S]Sparse	102	+6.0	65	+6.4	+8.9	-3216	-299.5	21
[T][S][L]Cache	102	+6.0	67	+6.4	+6.3	-2561	-226.3	25
[T][S][L]	102	+6.0	56	+6.4	+1.3	-2366	-230.7	19
Step[T]Alt	102	+5.9	61	+6.4	-10.7	-2675	-295.0	0
tween_chain	102	+5.9	72	+5.7	-2.4	-931	-112.9	34
step_tween	102	+5.7	71	+5.8	-6.9	-1500	-187.0	4
[T]Alt	102	+5.4	64	+6.4	-8.6	-2262	-258.5	2
step_tween_chain	102	+5.4	71	+5.7	-5.7	-1486	-168.6	5
Mesh[T]	102	+5.3	67	+5.4	-3.9	-1312	-155.7	9
MeshBP	102	+5.2	74	+6.1	-2.5	-1337	-143.9	7
Mesh[T]Chain	102	+5.2	74	+5.6	-3.5	-1808	-189.5	5
Step[T][S]	102	+5.0	64	+6.4	-0.5	-1193	-131.0	36
[T][S]	102	+4.3	62	+6.3	+5.8	-1620	-142.1	52
Mesh[T][S][FP]	102	+4.3	61	+6.4	+5.2	-3186	-300.0	6
Mesh[T][S]	102	+4.3	60	+6.4	+6.2	-2968	-273.1	9
tween	102	+4.0	67	+3.9	-2.6	-549	-67.0	23
[T][S]Sparse	102	+3.9	61	+6.4	+9.0	-2885	-272.2	30
step_sgd	102	-1.5	34	-1.3	-3.9	-547	-87.6	5

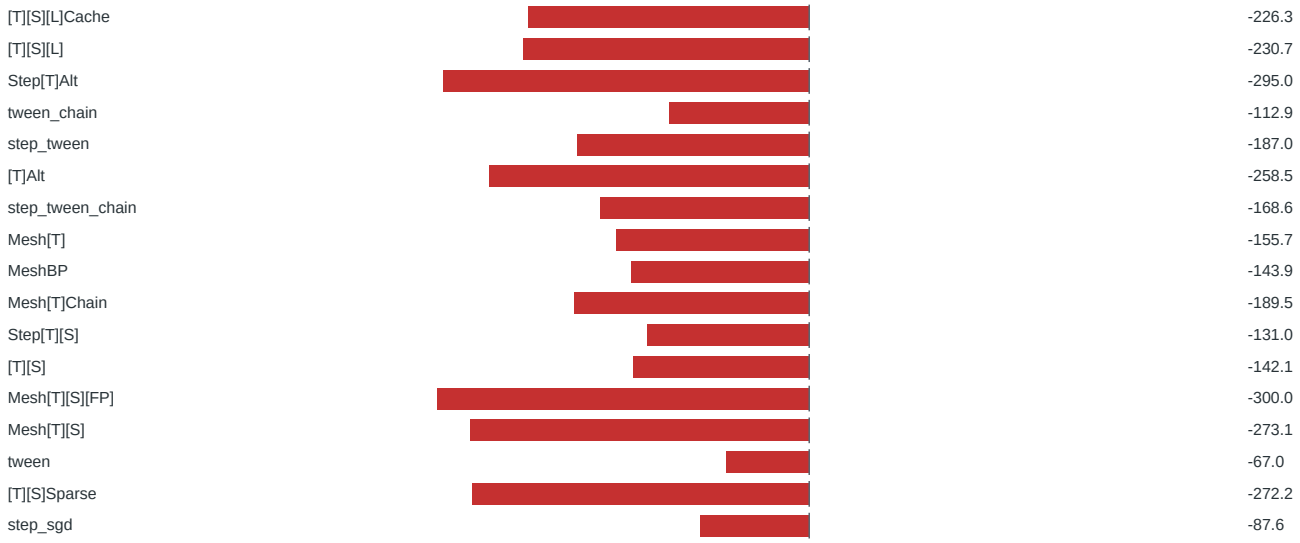
mean AccD vs sgd



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	+5	-3	+7	+4	+8	-1	+1	+6	+13	+4	+3	+6
Mesh[T]	-3	+1	+7	+4	+5	-1	+7	+2	+4	+6	+8	+10
Mesh[T]Alt	-11	+2	+5	+12	+1	+4	+6	+18	+5	+3	+14	+15
Mesh[T]Chain	+6	-3	+5	+9	+3	+2	+9	+7	+2	+4	+3	+10
Mesh[T][S]	+5	-5	+8	+3	+2	+0	+6	+1	-0	+8	+22	+4
Mesh[T][S][FP]	-11	+3	+5	-2	+2	-1	+1	+6	+6	+4	+24	+10
Mesh[T][S]Sparse	+3	+0	+6	+18	+16	-2	+8	-2	+13	+4	+14	+14
Step[T]Alt	+3	-7	+11	+18	+8	+5	+2	+8	+7	+6	+10	+11
Step[T][S]	+7	+6	+12	-4	+12	-7	-3	-1	+7	+4	+5	-0
[T]Alt	+1	-5	+2	-1	+11	-0	+4	+4	+4	+12	+1	+4
[T][S]	+1	+0	+8	+1	+5	-2	+2	+5	+5	+4	+7	+9
[T][S][FP]	+1	-2	+9	+11	-1	+4	+3	+4	-3	+5	+20	+18
[T][S][HP]	-0	+1	+3	+6	+3	-1	+5	-2	+8	+3	+1	+9
[T][S][HP]Async	-4	-1	+3	+11	+3	+4	+4	+11	+8	+4	+12	-6
[T][S][L]	-4	+0	+0	+21	+9	+5	+7	+2	+9	+10	+4	+1
[T][S][L]Cache	-8	-2	+15	+5	+4	+9	+10	-4	+5	+5	+8	+15
[T][S]Sparse	+3	-0	+2	+7	-2	-6	-2	+8	-6	+6	+2	+0
step_sgd	-5	-3	-2	+1	-2	-3	+2	-3	-2	-1	-1	+2
step_tween	+3	-2	+9	+7	+7	-0	-1	+6	+6	+2	+7	+13
step_tween_chain	+1	-3	+6	+3	+4	-1	+5	+3	+9	+6	+7	+4
tween	-1	-1	+10	+3	+2	+2	+3	+5	+4	+5	+9	+9
tween_chain	+1	-2	+9	+6	+3	+0	+2	+3	+14	+3	+7	+10

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	+4	+4	+9	+7	+1	+10	+3	+4	-5	+9	+2	+13
Mesh[T]	+4	+3	+9	+3	-3	+11	+12	+3	-3	+6	-1	+10
Mesh[T]Alt	+21	+12	+10	+3	-4	+3	+14	+4	-9	+4	-5	+10
Mesh[T]Chain	-1	+0	+5	+9	-6	+12	-0	+9	-3	+8	+4	+11
Mesh[T][S]	+8	+3	+7	+4	+3	+4	-6	-1	-5	+7	-3	+5
Mesh[T][S][FP]	+9	-1	+11	+0	+1	+11	+6	-1	-7	+6	-0	+9
Mesh[T][S]Sparse	+6	-0	+9	-10	-3	+1	+9	+7	-2	+12	+2	+18
Step[T]Alt	+15	-5	+5	+6	-4	+33	+6	+7	-2	+3	-5	+3
Step[T][S]	+8	-5	+9	+9	+1	+21	-6	-1	-4	+5	+0	+5
[T]Alt	+2	+6	+12	+7	+3	+19	+7	+2	-10	+14	+0	+6
[T][S]	+2	-4	+8	+1	-0	+2	+5	+9	-5	+8	-0	+4
[T][S][FP]	+19	+6	+7	+1	-1	+4	+6	+6	-2	+10	+2	+8
[T][S][HP]	+5	+6	+5	+8	-2	+29	+22	+4	-4	+6	+2	+11
[T][S][HP]Async	+12	+4	+12	+7	+0	+6	+21	+7	+0	+4	+0	+0
[T][S][L]	+7	-5	+27	-5	+5	+19	+7	-3	-8	+12	+2	+3
[T][S][L]Cache	+12	+3	-1	+4	+10	+9	-2	-7	-0	+9	-5	+8
[T][S]Sparse	+2	+10	+6	+4	+2	+6	+4	-0	-3	+6	+2	+12
step_sgd	-2	-2	+3	-4	-2	-0	-2	-3	-5	-1	-3	+4
step_tween	+5	+1	+13	+5	+1	+12	+6	+6	-0	+12	+0	+7
step_tween_chain	+4	+0	+9	+1	+2	+18	+2	+8	-6	+9	+7	+10
tween	+3	+2	+9	+3	+1	+7	+6	+5	-3	+9	-0	+9
tween_chain	+10	+2	+12	+3	-1	+9	+6	+4	-4	+8	+3	+12

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	+4	+8	+8	+9	+3	+9	+8	+5	+2	+8
Mesh[T]	+3	+7	+4	+2	+9	+15	+12	+2	+4	+15
Mesh[T]Alt	+18	+4	+19	+7	-1	+7	+5	+11	+12	+6
Mesh[T]Chain	+7	+8	+10	+1	+12	+11	+9	+5	+2	+6
Mesh[T][S]	+12	+5	+7	-1	+11	+31	+8	-0	-9	+4
Mesh[T][S][FP]	+2	+11	+7	+8	+10	-1	+1	+10	+2	+5
Mesh[T][S]Sparse	-3	-0	+16	+4	+12	+14	+20	+2	+2	-6
Step[T]Alt	+10	+3	+11	+7	+18	+6	-3	-2	+2	+6
Step[T][S]	+4	-3	+25	+3	+10	+18	+11	+3	+1	+20
[T]Alt	+1	+16	+24	+6	+5	+5	+8	+6	+6	+5
[T][S]	+8	+4	+7	+8	+12	+17	-0	+9	+0	+8
[T][S][FP]	+10	+8	+14	+10	+19	+7	+5	-0	+3	+9
[T][S][HP]	+9	+7	+7	+3	+29	+9	-5	+11	+6	+11
[T][S][HP]Async	+6	+10	+14	+7	+4	+21	+2	+8	+4	+12
[T][S][L]	+1	+7	+24	-0	+15	+3	+4	+13	+8	+2
[T][S][L]Cache	+5	+19	+9	+9	+16	+14	+11	+5	+2	+9
[T][S]Sparse	+7	+2	-3	+7	+12	+3	+13	+14	+9	+7
step_sgd	-3	+0	+1	-5	-0	-1	-0	-4	+1	-4
step_tween	+8	+10	+9	+3	+9	+6	+7	+8	+4	+4
step_tween_chain	+8	+6	+11	+12	+8	+10	+5	+6	+2	+8
tween	+7	+7	+5	+1	+0	+3	+3	+2	+1	+6
tween_chain	+4	+10	+10	+7	+11	+10	+10	+7	+4	+7

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	-157	-270	-91	-121	-53	-610	-220	-123	-58	-174	-55	-6
Mesh[T]	-267	-302	-71	-150	-56	-691	-123	-193	-71	-112	-68	-25
Mesh[T]Alt	-448	-605	-246	-246	-240	-1305	-455	-355	-97	-314	-258	-162
Mesh[T]Chain	-253	-362	-184	-177	-88	-810	-144	-192	-59	-187	-72	-101
Mesh[T][S]	-330	-515	-220	-202	-195	-1199	-380	-281	-66	-245	-185	-102
Mesh[T][S][FP]	-408	-511	-211	-216	-211	-1211	-403	-320	-71	-251	-222	-140
Mesh[T][S]Sparse	-378	-571	-224	-215	-189	-1239	-422	-315	-83	-268	-209	-129
Step[T]Alt	-386	-465	-214	-234	-201	-1162	-431	-350	-86	-282	-199	-146
Step[T][S]	-224	-113	-38	-148	+9	-883	-199	-115	-50	-93	+2	-79
[T]Alt	-286	-445	-220	-190	-135	-1053	-308	-293	-80	-251	-191	-121
[T][S]	+63	-137	+10	-144	-59	-1009	-250	-150	-36	-157	-88	-21
[T][S][FP]	-337	-468	-167	-175	-167	-1073	-278	-215	-62	-195	-143	-96
[T][S][HP]	-297	-341	-88	-200	-114	-900	-195	-187	-46	-155	-53	-32
[T][S][HP]Async	-360	-460	-211	-204	-178	-1076	-372	-266	-58	-244	-149	-128
[T][S][L]	-322	-389	-145	-174	-130	-1025	-294	-256	-57	-192	-113	-50
[T][S][L]Cache	-333	-440	-158	-183	-132	-1098	-328	-227	-47	-221	-128	-69
[T][S]Sparse	-390	-445	-200	-219	-206	-1192	-341	-287	-78	-226	-190	-129
step_sgd	-94	-54	-48	-61	-7	-401	+20	-110	-56	-92	-71	+50
step_tween	-218	-307	-170	-88	-107	-748	-290	-252	-76	-260	-131	-49
step_tween_chain	-206	-292	-130	-122	-128	-619	-248	-229	-57	-130	-113	-75
tween	-96	-183	-23	-93	+2	+12	-18	-86	-53	-43	-12	+71
tween_chain	-19	-189	-92	-149	+19	-411	-70	-131	-19	-63	-108	-23

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	-130	-423	-46	-131	-155	-89	-52	-185	-271	-62	-195	-125
Mesh[T]	-144	-324	-41	-144	-345	-60	-53	-174	-171	-107	-228	-81
Mesh[T]Alt	-233	-734	-122	-294	-629	-111	-106	-286	-638	-183	-521	-221
Mesh[T]Chain	-167	-486	-58	-169	-326	-66	-70	-123	-311	-111	-332	-138
Mesh[T][S]	-169	-631	-96	-226	-477	-82	-87	-226	-538	-140	-460	-182
Mesh[T][S][FP]	-208	-712	-94	-261	-535	-93	-99	-261	-617	-159	-473	-196
Mesh[T][S]Sparse	-224	-670	-107	-253	-573	-106	-97	-251	-520	-164	-491	-185
Step[T]Alt	-224	-687	-106	-250	-544	-102	-98	-277	-472	-173	-440	-212
Step[T][S]	-88	-335	+2	-136	-115	-47	-51	-175	-356	-76	-7	-119
[T]Alt	-151	-568	-72	-187	-506	-88	-99	-224	-511	-133	-397	-166
[T][S]	-76	-425	-30	-120	-165	-17	-29	-152	-225	-45	-211	-95
[T][S][FP]	-148	-492	-63	-237	-433	-80	-86	-226	-395	-131	-338	-166
[T][S][HP]	-153	-594	-48	-152	-382	-42	-49	-92	-257	-114	-325	-105
[T][S][HP]Async	-199	-663	-77	-224	-487	-96	-88	-229	-479	-143	-419	-187
[T][S][L]	-175	-568	-55	-197	-462	-76	-56	-224	-490	-113	-379	-135
[T][S][L]Cache	-160	-462	-100	-107	-406	-57	-69	-217	-517	-115	-358	-171
[T][S]Sparse	-203	-575	-89	-247	-496	-91	-94	-239	-494	-156	-489	-167
step_sgd	+3	-354	-52	-92	-82	-35	-59	-93	-152	-39	-241	-10
step_tween	-151	-380	-56	-184	-379	-71	-87	-148	-269	-105	-264	-110
step_tween_chain	-167	-467	-75	-169	-345	-82	-75	-134	-259	-122	-109	-68
tween	-16	-244	-16	-69	-108	-54	-67	-112	-180	-35	-101	+27
tween_chain	-84	-299	-61	-104	-154	-27	-47	-104	-96	-108	-351	-89

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	-135	-41	-66	-167	-96	-46	-35	-49	-361	-95
Mesh[T]	-177	-115	-86	-176	-58	-47	-56	-53	-432	-93
Mesh[T]Alt	-335	-209	-159	-345	-216	-108	-100	-228	-656	-246
Mesh[T]Chain	-192	-99	-59	-228	-75	-45	-66	-101	-390	-202
Mesh[T][S]	-266	-156	-123	-277	-133	-90	-77	-174	-547	-207
Mesh[T][S][FP]	-315	-178	-124	-306	-167	-91	-88	-196	-619	-232
Mesh[T][S]Sparse	-303	-191	-129	-292	-177	-81	-91	-183	-603	-248
Step[T]Alt	-289	-177	-154	-312	-161	-103	-98	-197	-570	-228
Step[T][S]	-166	-80	-31	-227	-13	-23	-60	+7	-331	-97
[T]Alt	-260	-171	-128	-253	-164	-67	-82	-192	-573	-223
[T][S]	-187	-94	-69	-234	-70	-20	-54	-76	-348	-114
[T][S][FP]	-218	-131	-108	-287	-97	-76	-63	-141	-494	-174
[T][S][HP]	-181	-104	-80	-239	+24	-34	-56	-72	-419	-127
[T][S][HP]Async	-296	-138	-98	-290	-169	-76	-70	-137	-559	-200
[T][S][L]	-232	-119	-54	-242	-96	-78	-61	-149	-529	-209
[T][S][L]Cache	-232	-35	-113	-283	-93	-40	-37	-153	-418	-187
[T][S]Sparse	-266	-152	-130	-281	-131	-89	-70	-146	-542	-203
step_sgd	-138	+15	-57	-121	-27	-60	-36	-69	-302	-55
step_tween	-163	-53	-111	-205	-77	-76	-87	-105	-414	-166
step_tween_chain	-223	-74	-90	-219	-101	-65	-54	-66	-280	-141
tween	-179	-13	-64	-150	-56	-43	-42	-47	-117	-70
tween_chain	-241	-36	-112	-196	-18	-20	-33	-36	-289	-79

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

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

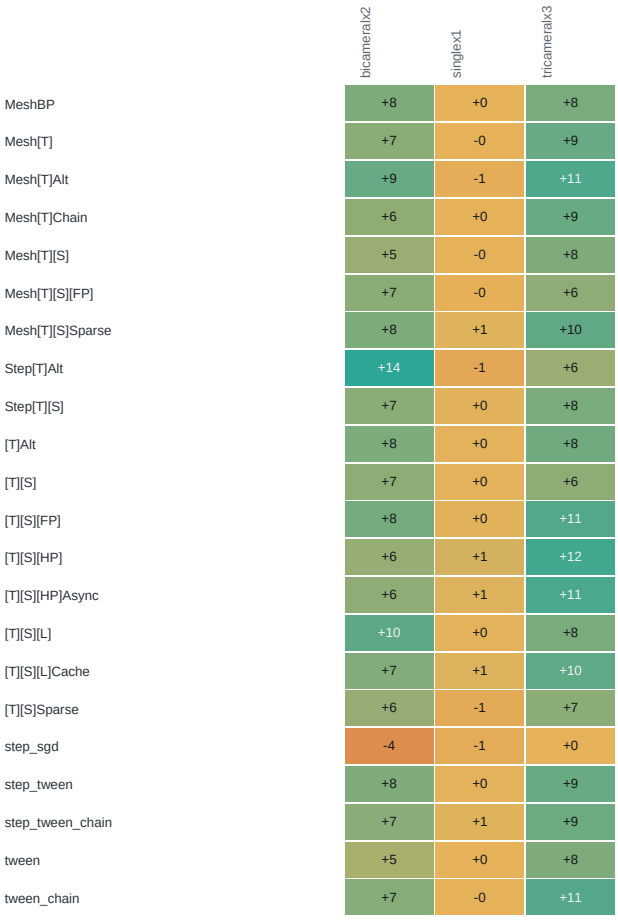
AvailD vs sgd, every mode x dtype (cols 25-34)

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

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

AccD vs sgd, every mode x arch

AccD vs sgd, every mode x arch



Family collapse - Step* vs non-Step

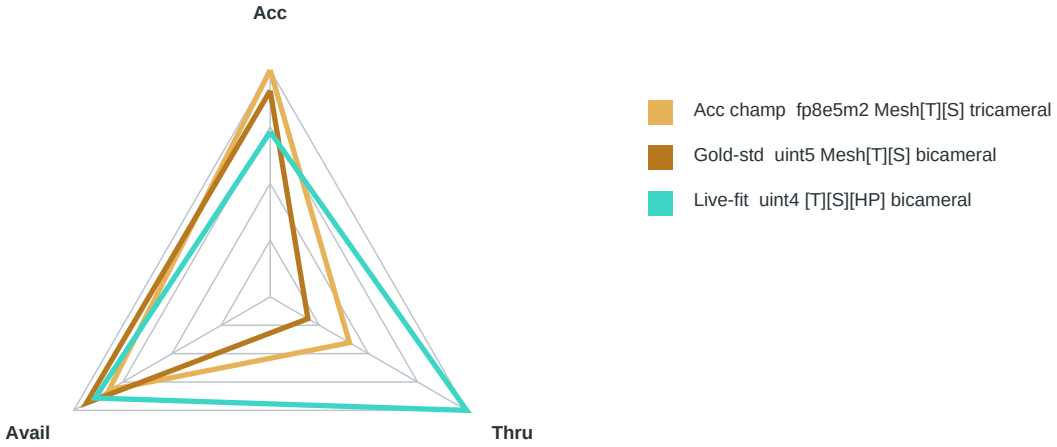
Step* is a 1D pipe (one sample enters layer 0 per tick; output is the sample that entered depth ticks ago). Non-Step of the same family is a full-chain update. AccD is a real scheduler split, not leftover warm-up forwards.

step	plain	n	mean |AccD|
Step[T]Alt	[T]Alt	102	10.87
Step[T][S]	[T][S]	102	8.31
step_sgd	sgd	102	3.36
step_tween	tween	102	4.40
step_tween_chain	tween_chain	102	4.62

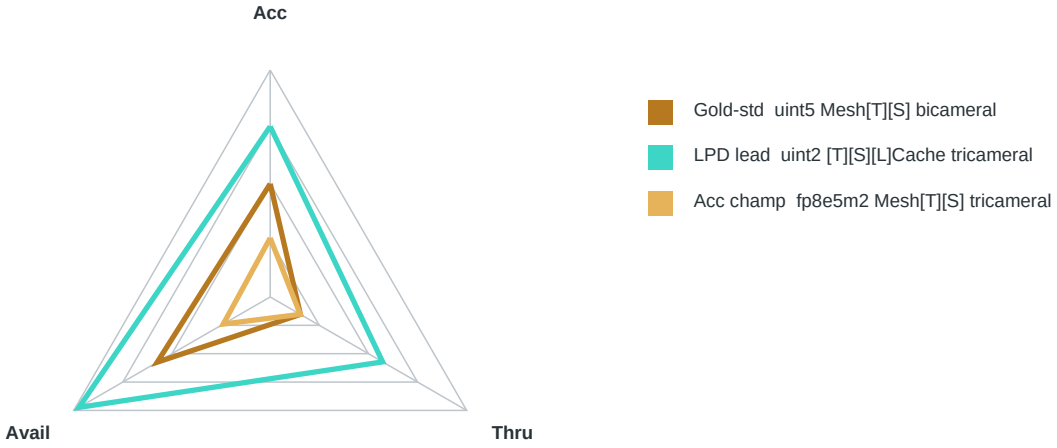
Consciousness - Acc, Throughput, Availability

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 fp8e5m2|none|Mesh[T][S]|tricameral|simd Acc 68.8 Thru 58 Avail 29.8% 16.4 KiB (RAM reference)
Lucy Score champ (T x Avail x Acc) float32|none|tween|single|simd Score 4336.8 Acc 27.0 Soft 25 1.5 KiB
Live-fit champ (best Q) uint4|none|[T][S][HP]|bicameral|simd Acc 50.0 Thru 143 Avail 32.3% 6.2 KiB
Gold-std (2+ pillars, Acc keep >= 80%, then smallest then fastest): uint5|none|Mesh[T][S]|bicameral|simd mode Mesh[T][S] Acc 62.5 Thru 27 7.8 KiB
Board fastest float32|none|sgd|single|simd Thru 40828 (traps may own this) Best availability uint4|none|[T][S][L]Cache|single|simd 46.0%
Learner Thru peak 143 learner Avail peak 36.3%

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
Mesh[T][S]	2	68.8	7.8	58	uint5 Mesh[T][S] bicameral / fp8e5m2 Mesh[T][S] tricameral
Mesh[T][S][FP]	1	62.5	16.4	48	fp8e5m2 Mesh[T][S][FP] tricameral
[T][S][FP]	1	62.5	131.0	62	int [T][S][FP] tricameral

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

Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
near	uint5 Mesh[T][S] bicameral	91	19	94	55	47	2.1	1.15	62.5	27	7.8

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
-	uint2 [T][S][L]Cache tricameral	73	38	84	61	25	4.0	2.44	50.0	54	4.1
-	uint2 [T][S][HP]Async tricameral	73	35	86	60	25	4.0	2.39	50.0	49	4.1
-	uint4 [T][S][HP] bicameral	73	100	89	87	38	2.6	2.28	50.0	143	6.2

-	uint3 [T][S][L] bicameral	73	34	86	60	28	3.5	2.09	50.0	48	4.7
-	uint3 Step[T][S] bicameral	73	44	63	59	28	3.5	2.06	50.0	62	4.7
-	int2 Mesh[T]Alt bicameral	73	40	19	38	19	5.3	2.02	50.0	57	3.1
-	uint2 [T]Alt tricameral	73	31	37	43	25	4.0	1.72	50.0	44	4.1
-	uint5 [T][S] bicameral	73	61	88	73	47	2.1	1.55	50.0	87	7.8
acc	int3 [T][S][L] tricameral	91	25	66	53	38	2.7	1.42	62.5	35	6.1
-	uint4 [T][S][HP] tricameral	73	57	86	71	50	2.0	1.41	50.0	81	8.2
-	int5 [T][S][HP] bicameral	73	39	90	63	47	2.1	1.34	50.0	55	7.7
-	int5 Step[T][S] bicameral	73	51	69	63	47	2.1	1.34	50.0	72	7.7
acc	uint3 [T]Alt tricameral	91	22	52	47	38	2.7	1.25	62.5	31	6.2
acc	fp4 [T][S][HP]Async tricameral	82	43	58	59	50	2.0	1.18	56.2	62	8.2
near	uint5 Mesh[T][S] bicameral	91	19	94	55	47	2.1	1.15	62.5	27	7.8
-	uint5 [T][S][HP]Async bicameral	73	24	93	54	47	2.1	1.15	50.0	34	7.8
-	uint5 Step[T][S] bicameral	73	34	59	53	47	2.1	1.11	50.0	48	7.8
-	int5 [T][S][HP] tricameral	73	34	93	61	62	1.6	0.98	50.0	48	10.2
-	uint6 [T][S]Sparse bicameral	73	21	98	53	57	1.8	0.93	50.0	29	9.3
acc	int5 Step[T]Alt bicameral	91	17	39	39	47	2.1	0.83	62.5	24	7.7

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

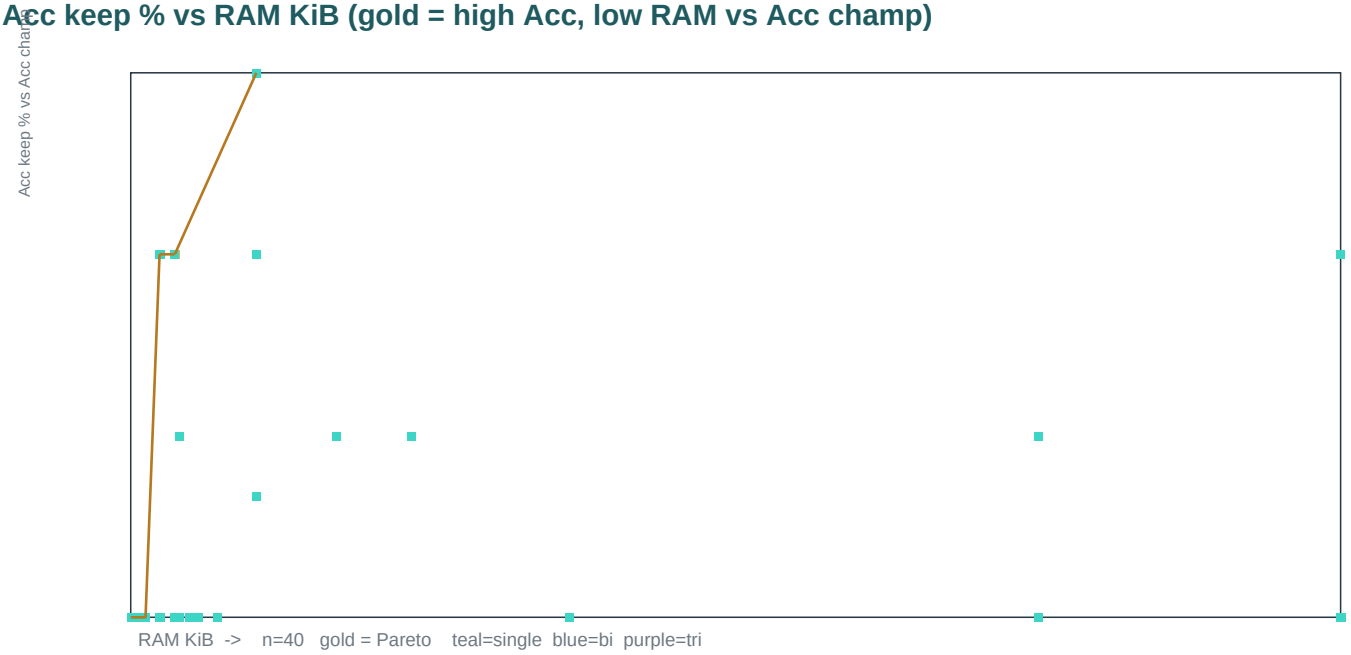
Band	Cell	Acc%	Thru%	Avail%	Q%	LPD	Thru	Avail
-	uint4 [T][S][HP] bicameral	73	100	89	87	2.28	143	32.3
-	int32 [T][S][HP] bicameral	73	98	85	85	0.28	140	30.8
-	uint5 [T][S] bicameral	73	61	88	73	1.55	87	32.1
-	fp8e5m2 [T][S][FP] tricameral	79	60	82	73	0.73	85	29.8
-	uint4 [T][S][HP] tricameral	73	57	86	71	1.41	81	31.2
keep	int [T][S][FP] tricameral	91	43	86	70	0.09	62	31.2
keep	fp8e5m2 Mesh[T][S] tricameral	100	40	82	69	0.69	58	29.8
keep	fp8e5m2 Mesh[T][S][FP] tricameral	91	33	89	65	0.65	48	32.2
-	int5 [T][S][HP] bicameral	73	39	90	63	1.34	55	32.6
-	int5 Step[T][S] bicameral	73	51	69	63	1.34	72	25.0

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	40	100	100	74	0	32.0	0.00	27.8	18578	0.0
trap	binary step_sgd single	41	100	100	74	0	32.0	0.00	28.1	17338	0.0
trap	binary tween single	30	100	100	67	0	32.0	0.00	21.0	17007	0.0
trap	binary tween_chain single	34	100	100	70	0	32.0	0.00	23.3	16002	0.0
trap	binary step_tween single	36	100	86	68	0	32.0	0.00	24.9	13261	0.0
trap	binary step_tween_chain single	34	100	97	69	0	32.0	0.00	23.1	13176	0.0
trap	binary MeshBP single	39	100	99	72	0	32.0	0.00	26.6	11887	0.0
trap	binary Mesh[T] single	39	100	93	71	0	32.0	0.00	26.8	11370	0.0
trap	binary Mesh[T]Chain single	38	100	93	70	0	32.0	0.00	25.9	9844	0.0
trap	binary [T][S] single	38	100	100	72	0	32.0	0.00	26.0	15722	0.0

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

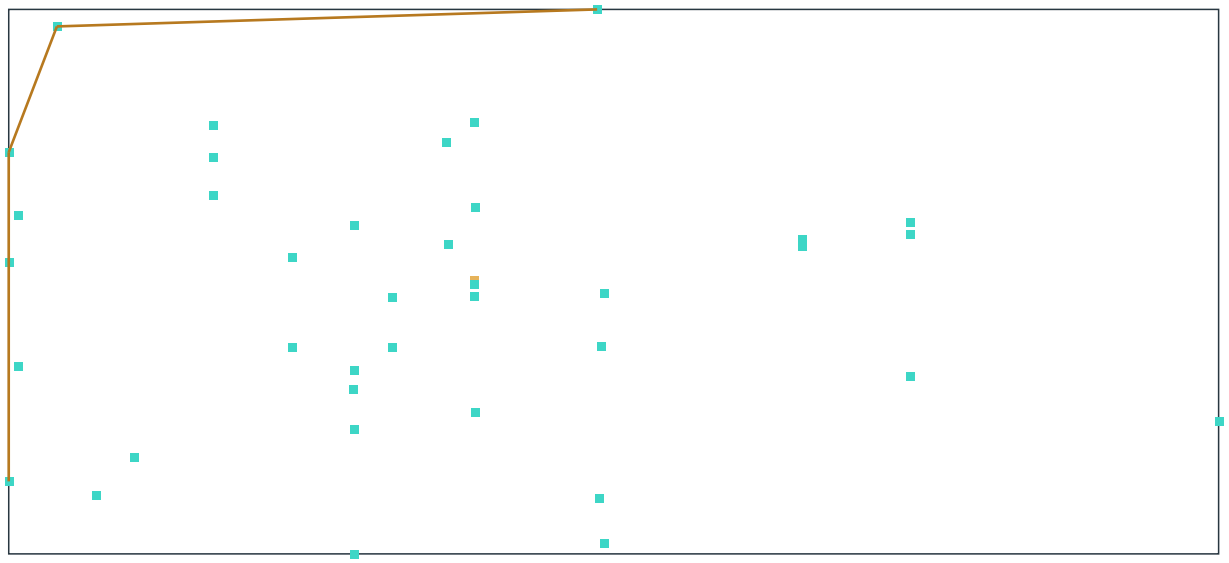
Acc keep % vs RAM KiB (gold = high Acc, low RAM vs Acc champ)



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



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

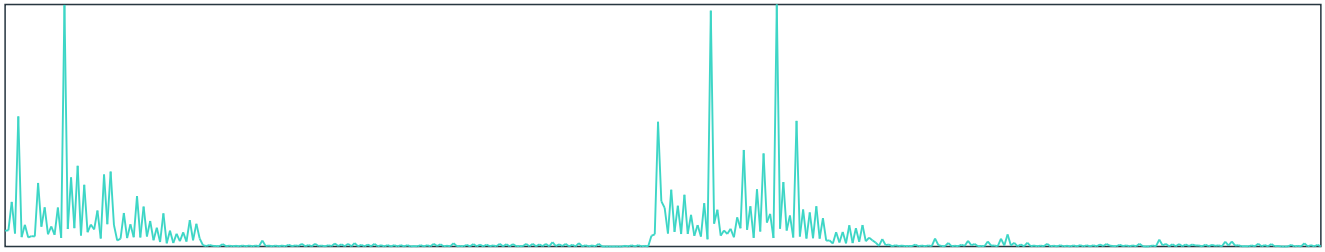


Q %

Top Lucy density (LPD)

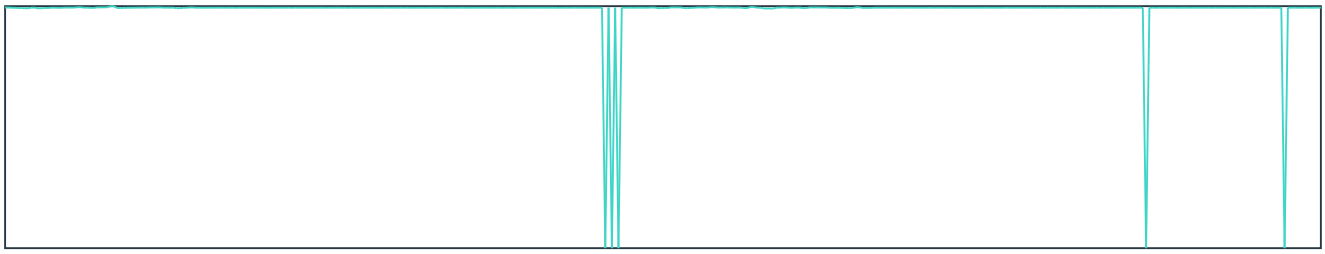


Live pulse (Score)



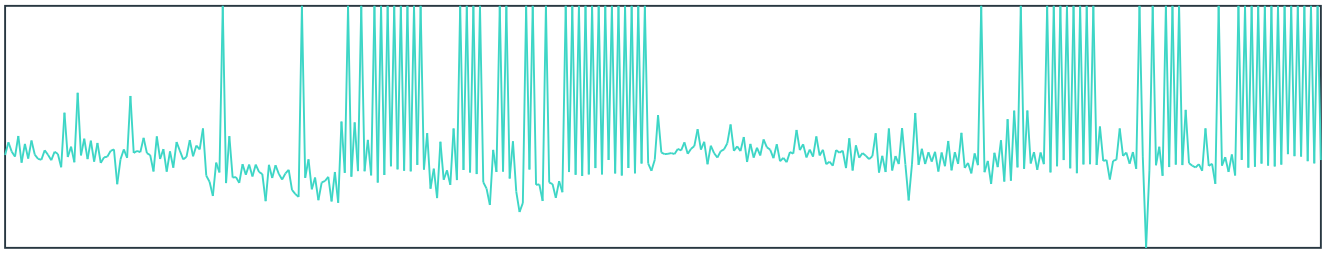
n=400 min=0.00 max=3992.30

Live pulse (SoftAcc)



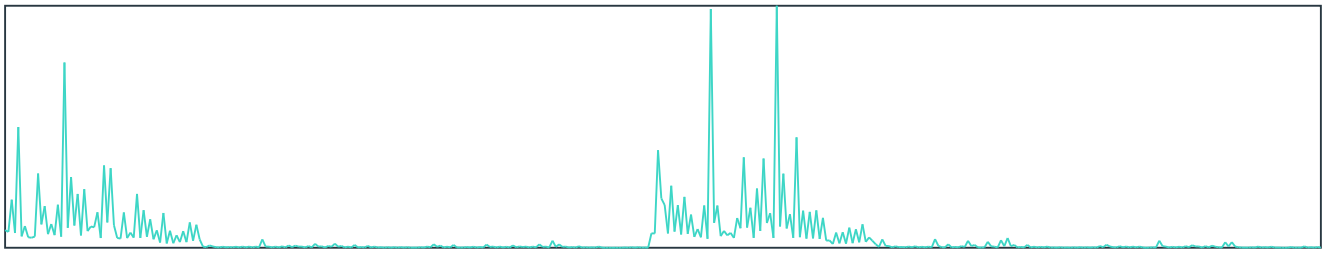
n=400 min=0.00 max=25.16

Live pulse (Availability)



n=400 min=0.00 max=100.00

Live pulse (Throughput)



n=400 min=0.00 max=37288.25

Queue by train mode (this epoch)

Mode	Done	Run	Left	Total