tide rmsnorm

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 13:33:00 -
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 - rmsnorm - offline report

Lucy champions (this tide)

Axis	Cell	Score	Soft	Acc	Thru	Avail
hard acc	binary|none|[T][S][L]|single|simd	446.19	26.2	30.4	5525.0	30.9
throughput	float32|none|step_tween_chain|single|simd	1633.99	25.3	29.4	19098.6	33.8
availability	uint|none|[T][S]|single|simd	939.86	24.7	21.6	7655.0	49.7
lucy score	uint8|none|MeshBP|single|simd	1882.89	25.1	29.3	16830.3	44.5
mobile score (trap)	binary|none|[T][S]|single|simd	1521.64	25.9	32.8	15283.7	38.4
t->50%	uint8|none|step_sgd|single|simd	297.48	17.6	23.9	8660.5	19.6
acc/sec	float64|none|tween_chain|single|simd	1372.71	25.7	34.4	14722.5	36.3

Lucy axis champions (this tide)

Axis	Mode	DType	Arch	Value
hard_acc	[T]Alt	uint5	tricameralx3	45.83
throughput	step_tween_chain	float32	singlex1	19098.57
availability	[T][S]	uint	singlex1	49.75
score	MeshBP	uint8	singlex1	1882.89
soft_acc	[T][S][L]	binary	singlex1	26.17
acc_thru	step_sgd	float32	singlex1	6555.64
realtime	MeshBP	uint8	singlex1	7494.93
adapt	MeshBP	float64	singlex1	25.90
keep_learn	tween_chain	bfloat16	singlex1	16.53
acc_per_sec	tween_chain	float64	singlex1	12.70
time_to_50	step_sgd	uint8	singlex1	0.30
consistency	sgd	ternary	singlex1	100.00
stability	tween	fp4	singlex1	100.00
mobile_score	[T][S]	binary	singlex1	13296306~
lpd	[T][S]	binary	singlex1	16.23
mspeed	tween_chain	float32	singlex1	1.00
mavail	Mesh[T][S][FP]	int4	singlex1	1.00
mix	step_sgd	float32	singlex1	0.88
gold_std	[T][S][L]Cache	uint2	singlex1	0.03

Best settings per train mode

Mode	DType	Format	Score	Soft	Acc	Avail	n
MeshBP	uint8	none	1882.9	25.1	29.3	44.5	102
step_sgd	float32	none	1839.4	25.6	36.1	39.5	102
tween_chain	float32	none	1801.2	25.5	34.1	37.8	102
step_tween_chain	float32	none	1634.0	25.3	29.4	33.8	102
tween	fp8e5m2	none	1602.9	25.0	21.2	42.7	102
[T][S]	ternary	none	1562.4	24.4	25.8	37.3	102
sgd	fp4	none	1556.0	23.7	24.4	35.8	102
Step[T][S]	float32	none	1252.0	25.2	24.5	34.8	102
Mesh[T]	uint8	none	1237.3	25.0	25.2	39.0	102

step_tween	uint8	none	1204.3	25.1	28.0	35.7	102
Mesh[T]Chain	bfloat16	none	912.2	25.1	29.0	39.3	102
[T][S][HP]	int4	none	755.3	24.9	21.6	42.8	102
[T][S][FP]	uint8	none	705.2	25.2	28.6	41.5	102
[T]Alt	binary	none	688.4	25.5	29.7	34.7	102
[T][S][L]	int4	none	686.9	25.1	22.1	36.1	102
[T][S][L]Cache	fp4	none	559.4	25.0	25.6	38.7	102
[T][S][HP]Async	uint8	none	474.0	25.1	24.2	39.8	102
Step[T]Alt	float32	none	470.2	25.1	26.4	25.1	102
[T][S]Sparse	int2	none	467.4	25.3	28.2	39.4	102
Mesh[T][S][FP]	int4	none	404.5	25.6	36.5	44.2	102
Mesh[T][S]	binary	none	392.2	25.6	26.4	39.3	102
Mesh[T][S]Sparse	fp4	none	304.2	25.0	25.8	39.4	102
Mesh[T]Alt	ternary	none	223.0	24.7	26.0	30.8	102

Best dtype per mode

Mode	Winner dtype	Score	Soft	Acc
MeshBP	uint8	1882.9	25.1	29.3
step_sgd	float32	1839.4	25.6	36.1
tween_chain	float32	1801.2	25.5	34.1
step_tween_chain	float32	1634.0	25.3	29.4
tween	fp8e5m2	1602.9	25.0	21.2
[T][S]	ternary	1562.4	24.4	25.8
sgd	fp4	1556.0	23.7	24.4
Step[T][S]	float32	1252.0	25.2	24.5
Mesh[T]	uint8	1237.3	25.0	25.2
step_tween	uint8	1204.3	25.1	28.0
Mesh[T]Chain	bfloat16	912.2	25.1	29.0
[T][S][HP]	int4	755.3	24.9	21.6
[T][S][FP]	uint8	705.2	25.2	28.6
[T]Alt	binary	688.4	25.5	29.7
[T][S][L]	int4	686.9	25.1	22.1
[T][S][L]Cache	fp4	559.4	25.0	25.6
[T][S][HP]Async	uint8	474.0	25.1	24.2
Step[T]Alt	float32	470.2	25.1	26.4
[T][S]Sparse	int2	467.4	25.3	28.2
Mesh[T][S][FP]	int4	404.5	25.6	36.5
Mesh[T][S]	binary	392.2	25.6	26.4
Mesh[T][S]Sparse	fp4	304.2	25.0	25.8
Mesh[T]Alt	ternary	223.0	24.7	26.0

Best mode per dtype

DType	Winner mode	Score	Soft	Acc
uint8	MeshBP	1882.9	25.1	29.3
float32	step_sgd	1839.4	25.6	36.1
int8	tween_chain	1719.1	25.5	33.3
fp8e5m2	tween	1602.9	25.0	21.2
ternary	[T][S]	1562.4	24.4	25.8
fp4	sgd	1556.0	23.7	24.4
binary	[T][S]	1521.6	25.9	32.8
bfloat16	sgd	1492.1	23.9	34.2
int4	[T][S]	1490.8	24.6	23.3

int2	tween	1420.5	25.2	26.0
float64	tween_chain	1372.7	25.7	34.4
int16	sgd	1269.8	24.8	33.9
uintptr	sgd	1218.9	25.5	33.3
int64	[T][S]	1152.2	25.3	27.6
uint16	sgd	1128.8	23.0	32.5
uint4	[T][S]	1120.8	25.5	35.0
uint32	sgd	1109.5	24.0	32.1
fp8e4m3	MeshBP	1104.1	25.3	28.0
int32	sgd	1065.1	24.1	31.6
complex128	MeshBP	989.7	25.5	34.6
int	[T][S]	985.2	25.5	38.6
uint	[T][S]	939.9	24.7	21.6
uint64	[T][S]	924.2	25.2	25.0
float16	step_tween_chain	895.3	25.3	30.5
complex64	tween	881.4	23.5	29.0
uint3	[T][S]	803.4	24.8	24.9
uint2	[T][S]	796.6	24.7	24.9
nf4	[T][S]	748.1	25.2	18.9
int3	sgd	696.8	23.2	24.9
uint5	[T][S]	655.8	25.6	32.3
uint6	[T][S]	543.4	24.7	18.2
int6	MeshBP	528.8	25.0	23.8
fp6	sgd	447.2	23.1	29.8
int5	[T][S]	438.2	24.8	18.3

Leaderboard (Lucy Score)

#	Cell	Score	Soft	Acc	Thru	Avail
1	uint8|none|MeshBP|single|simd	1882.9	25.1	29.3	16830.3	44.5
2	float32|none|step_sgd|single|simd	1839.4	25.6	36.1	18175.5	39.5
3	float32|none|tween_chain|single|simd	1801.2	25.5	34.1	18697.5	37.8
4	int8|none|tween_chain|single|simd	1719.1	25.5	33.3	18270.7	36.9
5	float32|none|step_tween_chain|single|simd	1634.0	25.3	29.4	19098.6	33.8
6	fp8e5m2|none|tween|single|simd	1602.9	25.0	21.2	15022.2	42.7
7	ternary|none|[T][S]|single|simd	1562.4	24.4	25.8	17191.4	37.3
8	fp4|none|sgd|single|simd	1556.0	23.7	24.4	18356.9	35.8
9	ternary|none|tween_chain|single|simd	1538.4	24.9	23.7	15958.9	38.7
10	ternary|none|sgd|single|simd	1524.1	24.9	26.0	15636.6	39.2
11	binary|none|[T][S]|single|simd	1521.6	25.9	32.8	15283.7	38.4
12	bfloat16|none|sgd|single|simd	1492.1	23.9	34.2	17525.7	35.6
13	int4|none|[T][S]|single|simd	1490.8	24.6	23.3	13534.5	44.8
14	int2|none|tween|single|simd	1420.5	25.2	26.0	15074.4	37.3
15	int4|none|tween|single|simd	1406.1	23.6	23.8	16732.4	35.6
16	float64|none|tween_chain|single|simd	1372.7	25.7	34.4	14722.5	36.3
17	fp4|none|tween|single|simd	1332.3	25.0	24.9	15566.2	34.2
18	uint8|none|[T][S]|single|simd	1326.9	25.0	25.1	14900.5	35.6
19	int4|none|MeshBP|single|simd	1319.6	25.2	26.4	12997.2	40.3
20	fp8e5m2|none|step_sgd|single|simd	1307.5	24.6	33.3	13812.4	38.4

Leaderboard (SoftAcc)

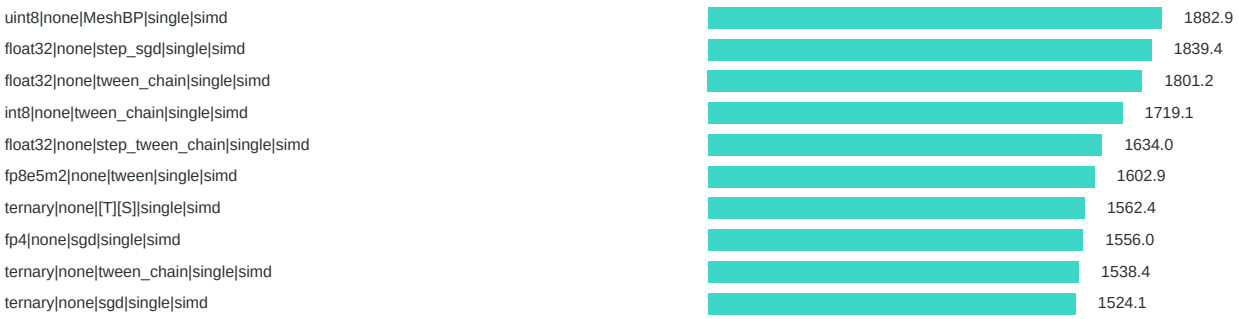
#	Cell	Score	Soft	Acc	Thru	Avail
1	binary|none|[T][S]|single|simd	1521.6	25.9	32.8	15283.7	38.4

2	float64|none|tween_chain|single|simd	1372.7	25.7	34.4	14722.5	36.3
3	float32|none|step_sgd|single|simd	1839.4	25.6	36.1	18175.5	39.5
4	binary|none|step_tween_chain|single|simd	1178.0	25.5	25.9	12367.9	37.3
5	uintptr|none|sgd|single|simd	1218.9	25.5	33.3	12127.5	39.4
6	int8|none|tween_chain|single|simd	1719.1	25.5	33.3	18270.7	36.9
7	float32|none|tween_chain|single|simd	1801.2	25.5	34.1	18697.5	37.8
8	int4|none|Step[T][S]|single|simd	1163.0	25.4	31.4	12788.6	35.7
9	float32|none|step_tween_chain|single|simd	1634.0	25.3	29.4	19098.6	33.8
10	int8|none|step_tween_chain|single|simd	1285.3	25.3	29.7	16098.9	31.6
11	int64|none|[T][S]|single|simd	1152.2	25.3	27.6	11720.8	38.9
12	int2|none|tween|single|simd	1420.5	25.2	26.0	15074.4	37.3
13	bfloat16|none|tween|single|simd	1295.7	25.2	30.9	12714.7	40.4
14	float32|none|Step[T][S]|single|simd	1252.0	25.2	24.5	14287.6	34.8
15	int4|none|MeshBP|single|simd	1319.6	25.2	26.4	12997.2	40.3
16	bfloat16|none|Step[T][S]|single|simd	1211.2	25.2	25.0	11507.1	41.8
17	int2|none|MeshBP|single|simd	1188.8	25.1	32.2	15228.3	31.1
18	uint8|none|MeshBP|single|simd	1882.9	25.1	29.3	16830.3	44.5
19	uint8|none|step_tween|single|simd	1204.3	25.1	28.0	13432.6	35.7
20	uint8|none|Mesh[T]|single|simd	1237.3	25.0	25.2	12674.8	39.0

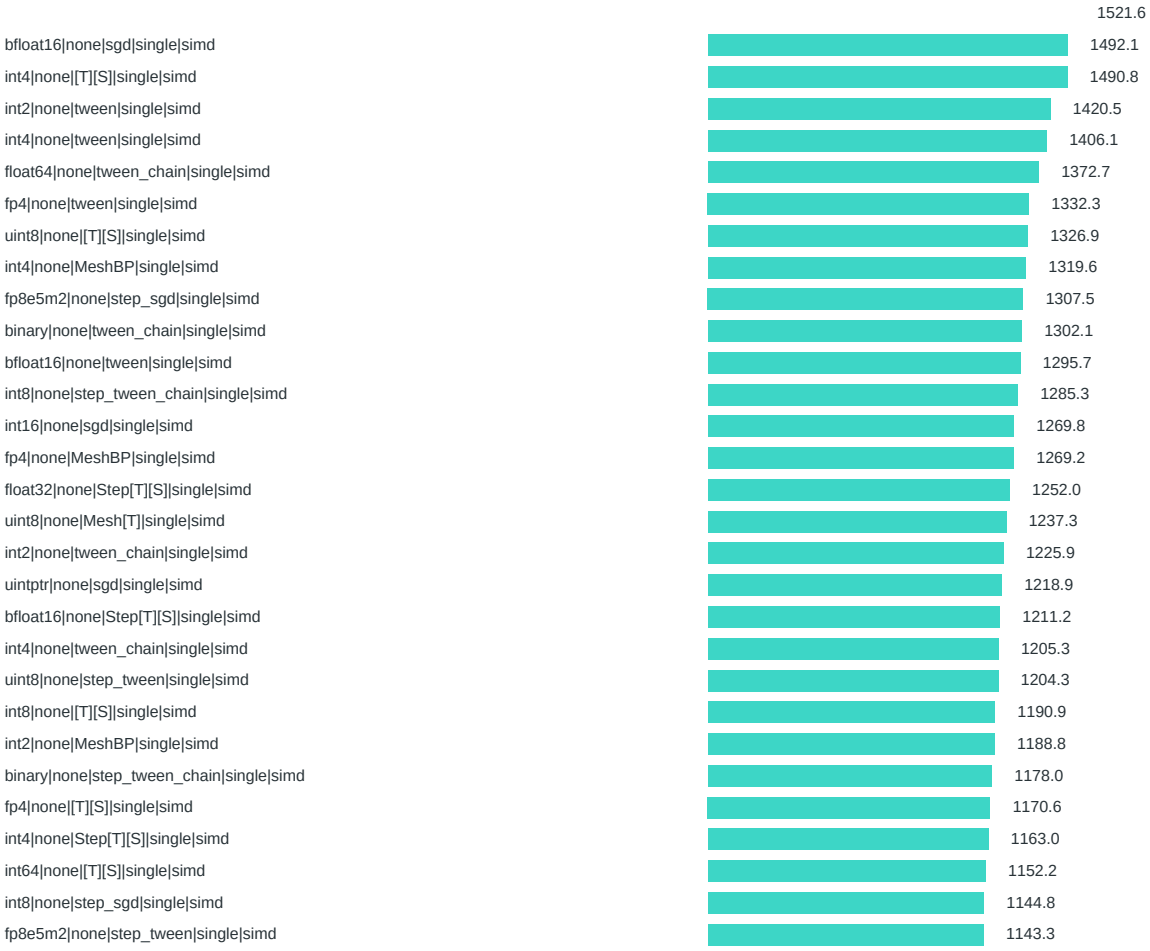
Leaderboard (hard Acc)

#	Cell	Score	Soft	Acc	Thru	Avail
1	float32|none|step_sgd|single|simd	1839.4	25.6	36.1	18175.5	39.5
2	float64|none|tween_chain|single|simd	1372.7	25.7	34.4	14722.5	36.3
3	bfloat16|none|sgd|single|simd	1492.1	23.9	34.2	17525.7	35.6
4	float32|none|tween_chain|single|simd	1801.2	25.5	34.1	18697.5	37.8
5	int16|none|sgd|single|simd	1269.8	24.8	33.9	13349.0	38.3
6	fp8e5m2|none|step_sgd|single|simd	1307.5	24.6	33.3	13812.4	38.4
7	uintptr|none|sgd|single|simd	1218.9	25.5	33.3	12127.5	39.4
8	int8|none|tween_chain|single|simd	1719.1	25.5	33.3	18270.7	36.9
9	binary|none|[T][S]|single|simd	1521.6	25.9	32.8	15283.7	38.4
10	int2|none|MeshBP|single|simd	1188.8	25.1	32.2	15228.3	31.1
11	int4|none|Step[T][S]|single|simd	1163.0	25.4	31.4	12788.6	35.7
12	bfloat16|none|tween|single|simd	1295.7	25.2	30.9	12714.7	40.4
13	int8|none|step_sgd|single|simd	1144.8	22.5	30.8	16050.7	31.6
14	int8|none|step_tween_chain|single|simd	1285.3	25.3	29.7	16098.9	31.6
15	float32|none|step_tween_chain|single|simd	1634.0	25.3	29.4	19098.6	33.8
16	uint8|none|MeshBP|single|simd	1882.9	25.1	29.3	16830.3	44.5
17	uint8|none|step_tween|single|simd	1204.3	25.1	28.0	13432.6	35.7
18	int64|none|[T][S]|single|simd	1152.2	25.3	27.6	11720.8	38.9
19	fp4|none|[T][S]|single|simd	1170.6	25.0	26.6	14392.4	32.5
20	int4|none|tween_chain|single|simd	1205.3	22.3	26.5	16751.4	32.3

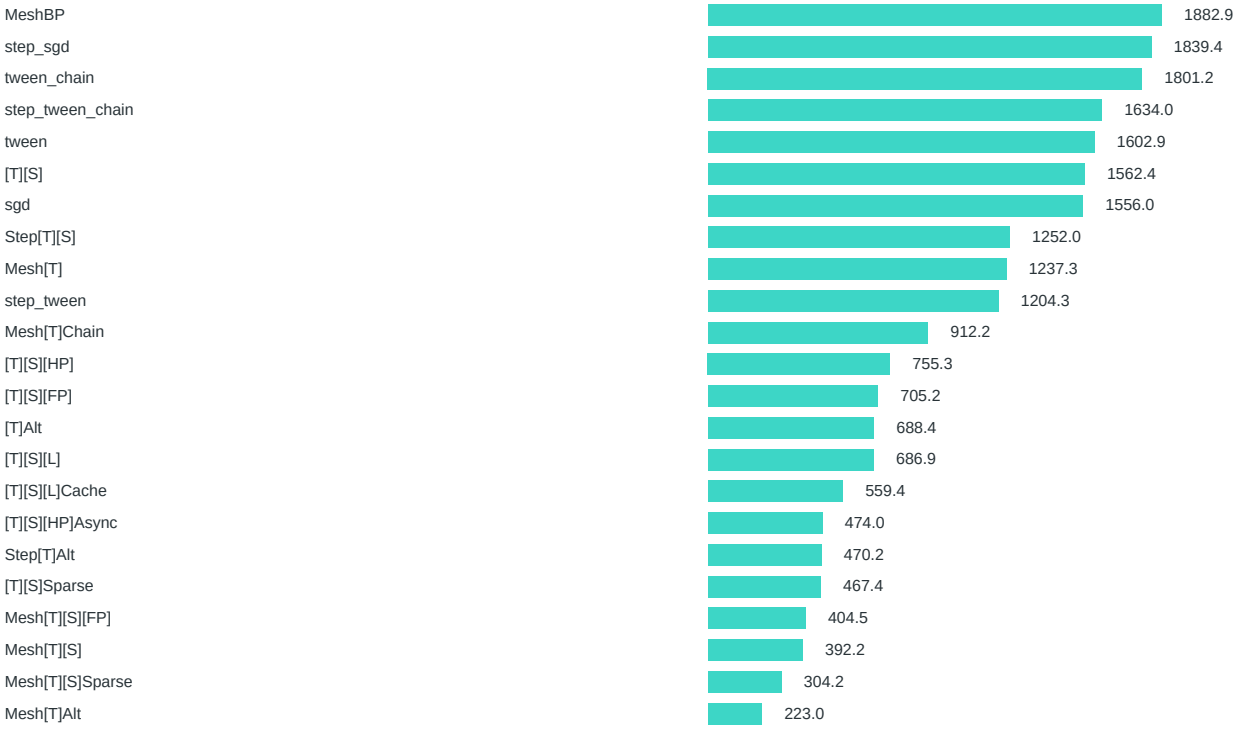
Top scores



binary|none|[T][S]|single|simd



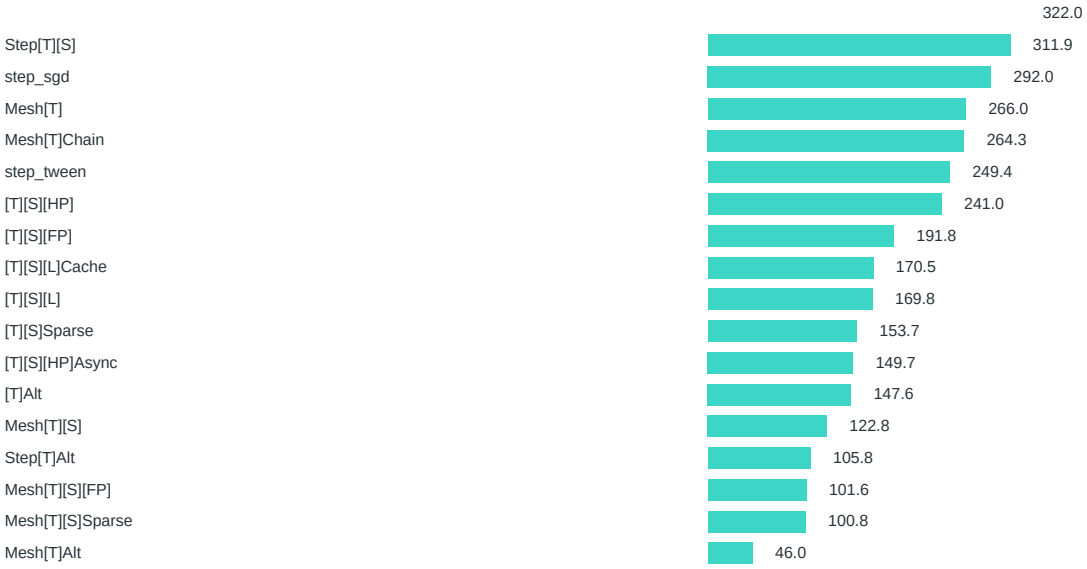
Best settings per mode



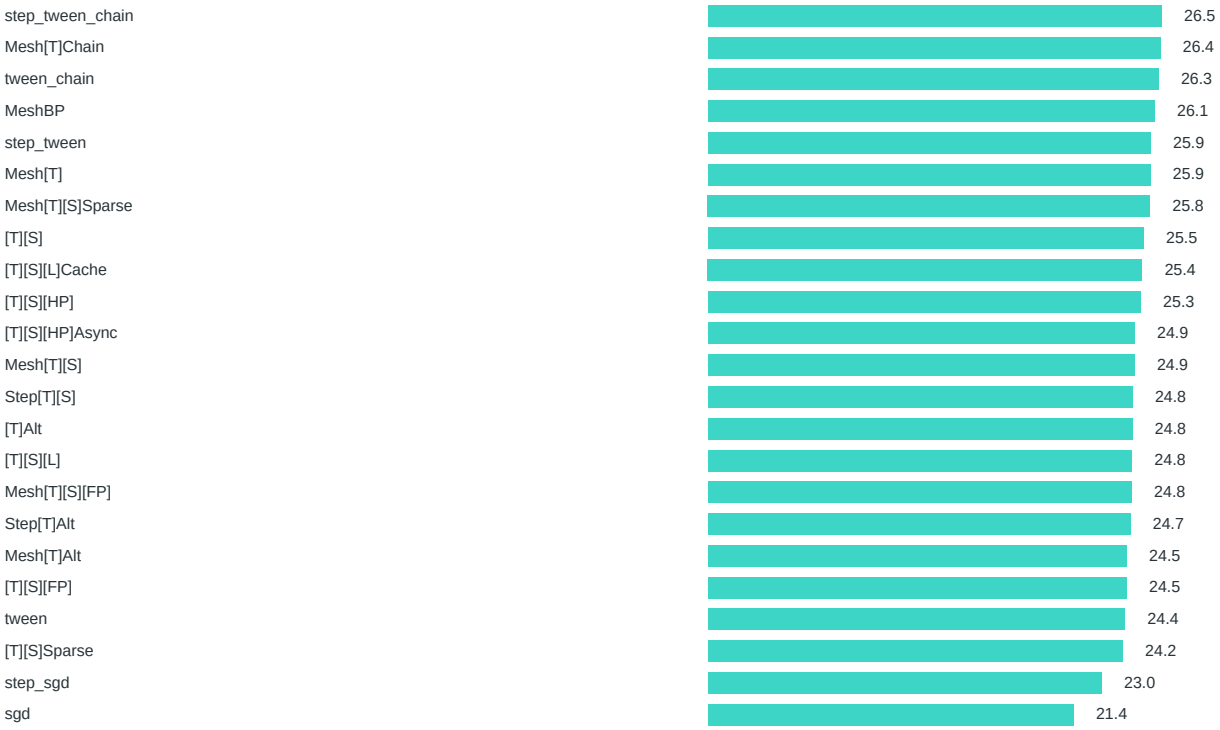
Mean Score by train mode



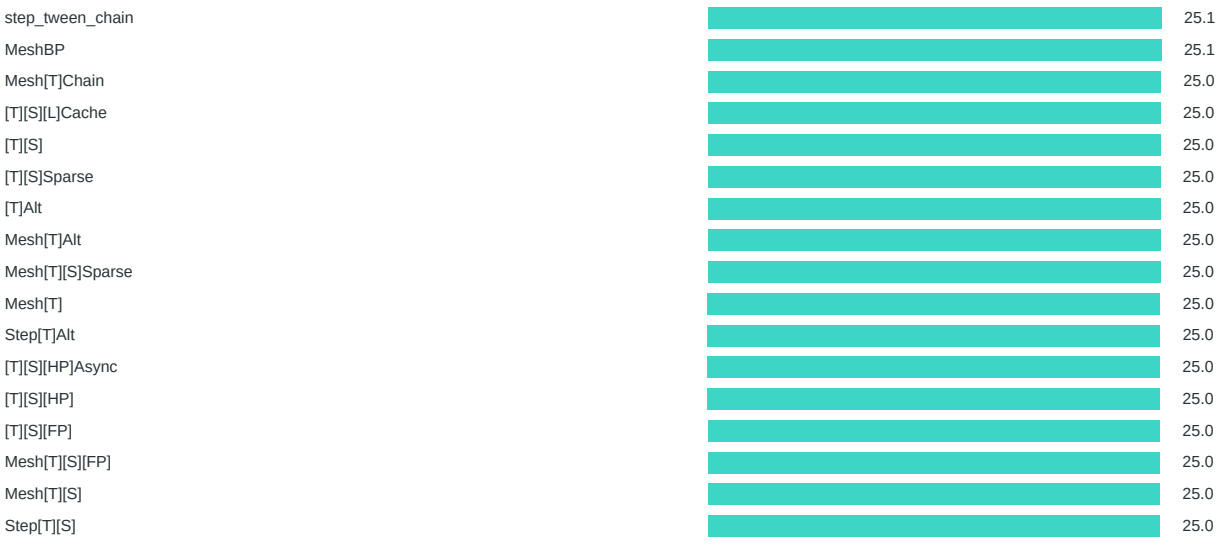




Mean hard Acc by train mode



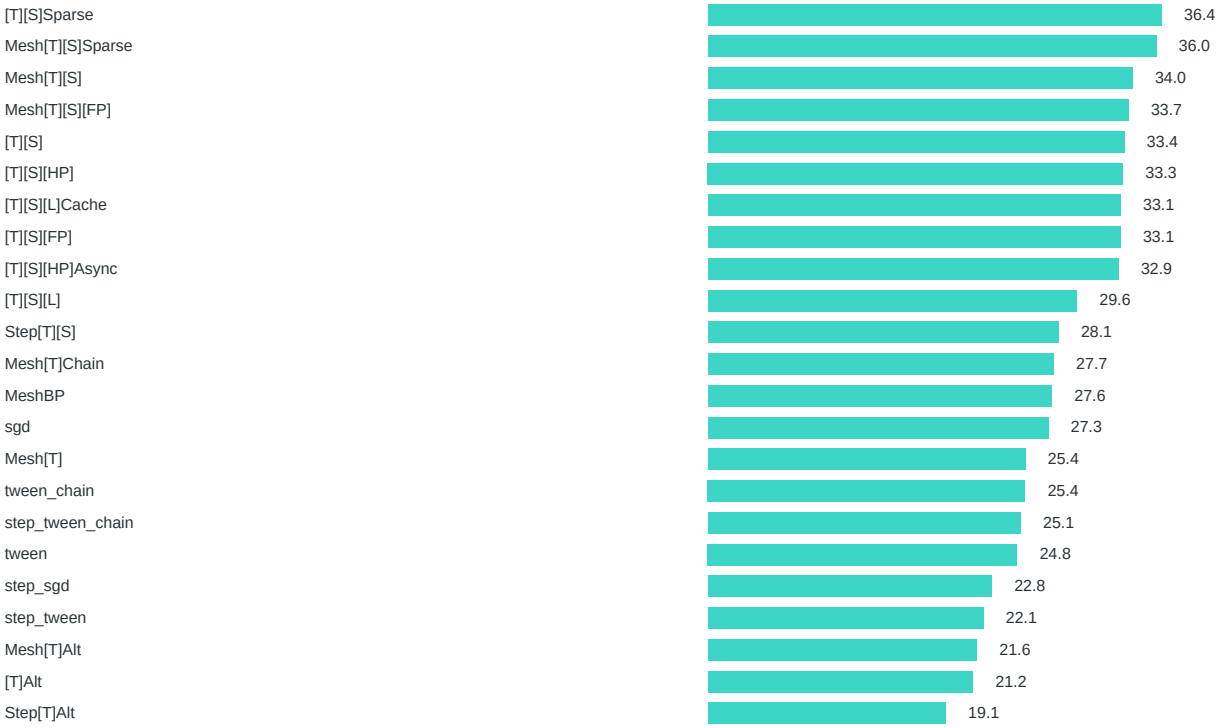
Mean SoftAcc by train mode



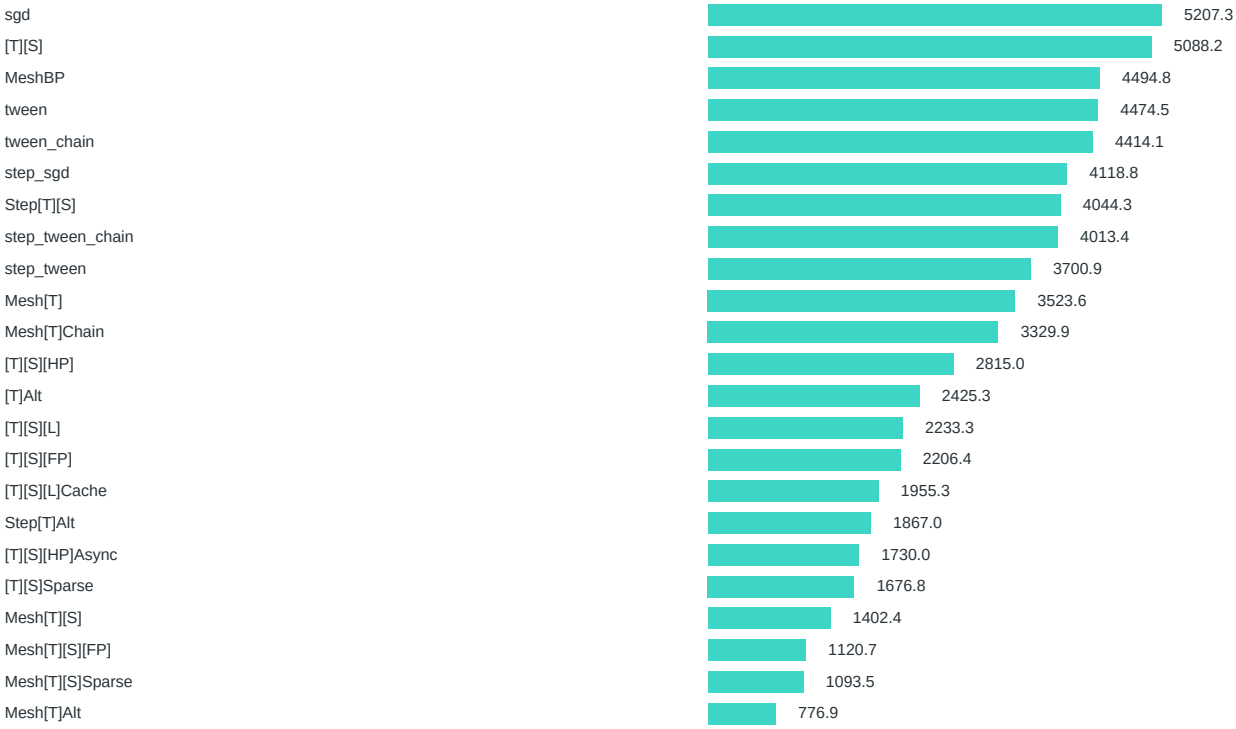
[T][S][L]



Mean Availability by train mode



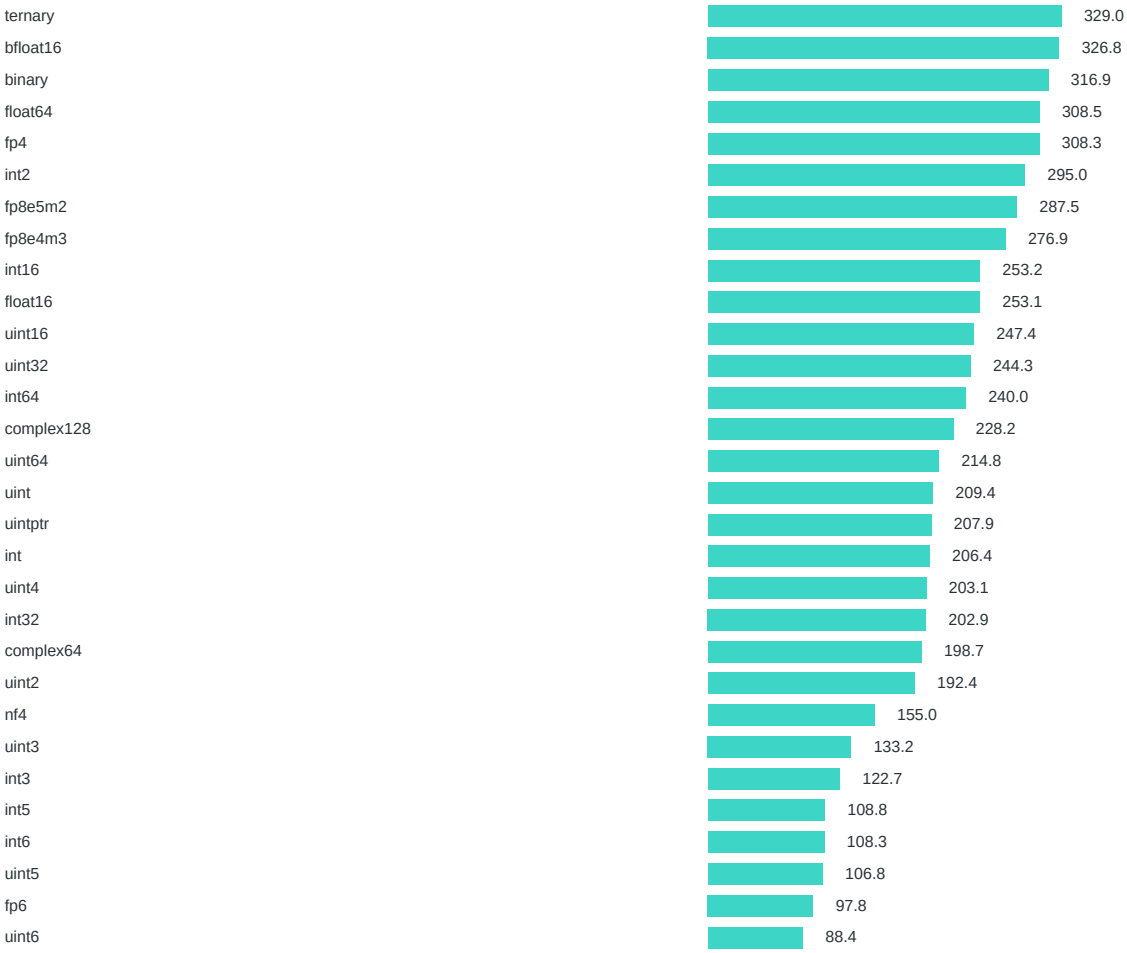
Mean Throughput by train mode



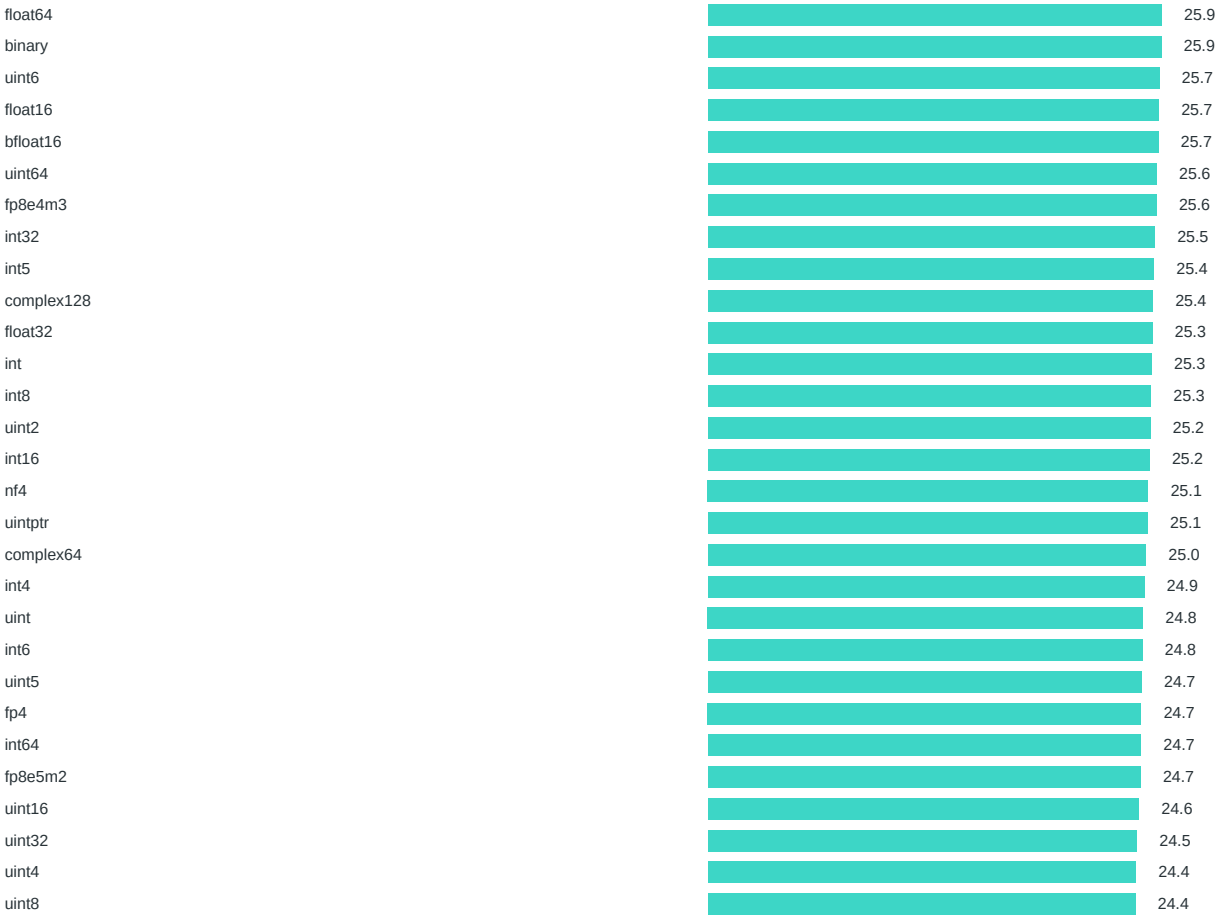
Mean Score by dtype



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	604	272	571	408	285	612	499	574	121	446	416	434
Mesh[T]	289	330	266	296	383	359	538	163	110	445	275	194
Mesh[T]Alt	65	69	32	35	65	63	50	61	22	60	60	39
Mesh[T]Chain	500	378	287	220	368	428	394	222	99	379	366	233
Mesh[T][S]	128	221	130	139	138	196	156	136	71	159	144	93
Mesh[T][S][FP]	137	165	91	90	119	146	85	126	43	132	110	101
Mesh[T][S]Sparse	92	95	78	72	123	178	146	165	41	130	107	104
Step[T]Alt	173	172	54	84	62	222	186	143	31	151	97	122
Step[T][S]	526	393	286	195	331	579	481	358	102	367	263	267
[T]Alt	216	349	180	116	172	180	190	209	70	198	174	146
[T][S]	509	847	565	371	475	587	398	579	193	365	583	619
[T][S][FP]	252	273	152	152	257	263	218	259	66	226	188	217
[T][S][HP]	289	372	263	164	336	380	189	342	137	371	291	158
[T][S][HP]Async	201	286	94	143	257	272	158	198	53	175	132	97
[T][S][L]	234	281	177	129	170	318	171	229	138	221	129	124
[T][S][L]Cache	258	187	129	145	211	287	236	265	63	211	147	161
[T][S]Sparse	152	283	132	135	181	201	269	238	55	133	176	115
sgd	795	360	164	387	255	504	593	738	215	493	427	286
step_sgd	338	233	259	439	409	979	172	387	134	280	682	454
step_tween	367	323	140	76	134	570	371	370	124	273	459	140
step_tween_chain	419	514	305	173	427	862	523	451	152	373	200	275
tween	616	279	436	462	367	587	372	573	133	403	572	239
tween_chain	356	607	458	140	295	942	700	303	78	376	613	127

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	326	673	271	268	681	160	200	460	391	281	512	303
Mesh[T]	265	544	122	223	232	126	114	309	496	158	262	177
Mesh[T]Alt	43	58	25	39	66	20	23	35	81	26	100	32
Mesh[T]Chain	186	244	119	300	409	106	120	241	360	208	288	287
Mesh[T][S]	117	157	80	107	178	83	47	100	190	63	160	86
Mesh[T][S][FP]	64	167	50	94	230	51	50	83	134	113	169	112
Mesh[T][S]Sparse	93	143	60	109	122	68	55	72	111	96	139	87
Step[T]Alt	67	206	59	84	185	48	20	99	243	80	157	69
Step[T][S]	309	408	134	315	600	144	140	284	482	214	509	279
[T]Alt	157	130	59	132	276	96	63	83	248	96	168	124
[T][S]	566	402	238	464	618	157	222	574	691	323	825	384
[T][S][FP]	150	276	138	170	354	113	96	235	292	146	304	133
[T][S][HP]	225	293	164	218	385	108	158	163	208	201	367	201
[T][S][HP]Async	128	236	63	117	197	67	69	112	195	128	135	165
[T][S][L]	210	247	85	141	274	89	66	165	234	137	244	160
[T][S][L]Cache	157	174	73	171	249	116	121	206	220	142	213	148
[T][S]Sparse	155	226	122	118	222	58	69	152	229	107	213	131
sgd	670	234	302	565	206	164	232	146	641	265	740	227
step_sgd	356	161	127	143	279	50	110	435	711	120	437	434
step_tween	236	336	158	112	322	122	128	318	533	161	143	296
step_tween_chain	472	294	155	336	402	168	100	350	611	219	492	172
tween	376	662	180	136	604	157	123	487	452	93	340	341
tween_chain	495	513	39	306	572	233	167	409	883	188	650	465

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	479	311	214	275	305	99	115	415	837	288
Mesh[T]	339	155	149	313	221	87	113	257	492	239
Mesh[T]Alt	57	42	21	45	40	30	12	49	58	40
Mesh[T]Chain	272	190	158	269	255	113	112	293	312	268
Mesh[T][S]	167	150	75	128	79	67	74	135	123	100
Mesh[T][S][FP]	93	107	69	71	86	35	52	96	139	47
Mesh[T][S]Sparse	121	99	74	126	99	48	44	100	130	100
Step[T]Alt	117	91	32	119	73	48	31	64	158	48
Step[T][S]	264	166	162	413	382	192	108	349	354	249
[T]Alt	124	145	136	127	105	45	58	167	183	93
[T][S]	431	429	347	441	605	339	218	418	622	513
[T][S][FP]	172	155	102	146	183	70	106	194	356	105
[T][S][HP]	177	251	180	310	161	132	93	304	331	272
[T][S][HP]Async	150	187	111	138	163	71	69	176	218	128
[T][S][L]	168	84	126	200	175	67	96	166	127	191
[T][S][L]Cache	190	281	111	212	94	82	74	167	222	77
[T][S]Sparse	143	168	74	168	137	96	79	154	219	115
sgd	700	114	201	592	533	227	165	183	613	642
step_sgd	301	210	75	296	147	166	77	184	255	90
step_tween	146	261	106	312	251	80	60	240	571	243
step_tween_chain	298	298	125	354	133	83	57	191	562	406
tween	304	264	237	325	111	51	124	405	580	124
tween_chain	476	267	180	239	333	229	99	235	365	408

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

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

	bfloat16	binary	complex128	complex64	float16	float32	float64	fp4	fp6	fp8e4m3	fp8e5m2	int
MeshBP	27	22	30	26	27	26	25	24	25	26	26	25
Mesh[T]	28	27	26	30	28	27	26	25	26	30	25	26
Mesh[T]Alt	21	22	25	24	23	22	24	25	25	22	26	34
Mesh[T]Chain	28	28	25	24	31	28	29	25	30	31	26	26
Mesh[T][S]	25	26	29	26	23	27	31	26	25	26	24	26
Mesh[T][S][FP]	27	26	27	24	26	24	22	25	20	25	26	26
Mesh[T][S]Sparse	24	22	24	29	25	28	26	26	21	26	24	24
Step[T]Alt	25	30	20	26	25	26	26	26	26	23	26	23
Step[T][S]	29	28	26	22	20	25	32	24	22	27	22	22
[T]Alt	21	29	31	22	25	19	24	23	22	29	24	29
[T][S]	26	26	30	25	28	29	25	26	21	26	27	27
[T][S][FP]	24	26	23	24	26	22	26	25	23	22	27	27
[T][S][HP]	28	27	24	24	24	24	25	25	29	26	19	26
[T][S][HP]Async	28	34	20	29	27	25	26	26	25	25	22	23
[T][S][L]	25	27	25	24	26	28	23	24	28	23	23	27
[T][S][L]Cache	25	22	25	23	30	27	27	25	24	26	21	23
[T][S]Sparse	24	33	26	24	28	19	32	25	19	26	25	23
sgd	23	19	19	19	21	22	24	22	19	21	24	19
step_sgd	24	21	25	25	25	26	21	22	23	23	29	26
step_tween	25	22	25	25	23	27	27	24	28	29	25	26
step_tween_chain	28	26	28	27	27	29	25	25	26	26	26	27
tween	27	23	24	28	25	25	24	24	25	22	23	26
tween_chain	28	28	27	26	28	27	28	26	23	27	28	22

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

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

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	18	18	17	18	18	19	21	22	17	20	21	15
step_sgd	21	22	23	23	21	21	20	22	20	21	24	22
step_tween	25	25	25	25	25	25	25	25	25	25	25	23
step_tween_chain	25	25	25	25	25	25	25	25	25	25	25	25
tween	25	24	23	25	24	24	24	24	24	23	24	24
tween_chain	24	25	25	25	25	25	25	25	23	24	25	22

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	21	16	21	21	16	21	17	18	21	21	23	20
step_sgd	21	18	20	20	20	22	21	21	22	19	22	23
step_tween	25	25	25	25	25	25	25	25	25	25	22	25
step_tween_chain	25	25	25	25	25	25	25	25	25	25	25	25
tween	25	23	24	22	25	24	23	23	25	22	24	24
tween_chain	25	25	25	25	22	25	25	24	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	22	17	21	20	22	18	20	19	20	22
step_sgd	23	20	21	21	20	24	19	20	21	21
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	23	25	23	24	21	23	24	25	24	23
tween_chain	25	25	25	24	25	25	24	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	29	26	33	31	22	27	31	30	22	24	32	31
Mesh[T]	25	27	25	25	29	23	30	21	23	29	27	24
Mesh[T]Alt	22	22	19	22	25	21	22	20	19	21	23	19
Mesh[T]Chain	32	26	31	27	28	27	28	25	25	30	31	29
Mesh[T][S]	32	38	32	34	34	31	32	30	34	35	34	34
Mesh[T][S][FP]	33	36	33	34	33	32	32	32	36	34	33	36
Mesh[T][S]Sparse	34	33	36	34	38	36	38	38	36	42	37	38
Step[T]Alt	20	18	20	19	18	21	19	19	15	24	19	20
Step[T][S]	30	29	28	29	30	32	30	27	23	32	26	30
[T]Alt	23	26	20	21	20	26	26	19	19	26	21	25
[T][S]	31	34	36	30	36	31	34	30	35	34	40	37
[T][S][FP]	35	36	31	34	36	34	34	34	30	35	31	34
[T][S][HP]	32	33	34	30	37	34	29	32	31	35	36	30
[T][S][HP]Async	31	33	31	31	35	38	31	32	32	34	30	29
[T][S][L]	27	32	33	30	30	31	26	28	32	31	26	28
[T][S][L]Cache	37	32	32	33	31	34	36	32	33	37	33	34
[T][S]Sparse	35	36	37	36	35	36	40	37	33	35	39	35
sgd	27	24	25	24	27	26	30	31	23	28	30	21
step_sgd	29	22	24	25	22	26	21	25	21	25	28	26
step_tween	22	22	21	18	17	26	24	24	19	23	30	20
step_tween_chain	26	30	26	25	28	30	29	25	24	26	24	26
tween	27	22	29	28	28	27	25	25	21	25	31	24
tween_chain	21	28	31	24	28	28	26	26	20	26	29	24

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	28	27	27	29	33	26	26	30	28	25	30	24
Mesh[T]	29	29	22	25	24	25	24	27	28	24	25	24
Mesh[T]Alt	24	24	21	21	22	19	22	21	25	18	26	20
Mesh[T]Chain	28	26	25	30	31	25	25	29	27	29	27	27
Mesh[T][S]	36	32	35	33	38	33	35	34	35	32	33	32
Mesh[T][S][FP]	31	36	30	35	35	30	33	34	32	38	40	38
Mesh[T][S]Sparse	36	32	34	36	35	36	38	35	35	37	39	33
Step[T]Alt	19	22	17	18	23	20	13	22	20	16	18	17
Step[T][S]	29	30	25	29	29	25	27	28	28	25	31	27
[T]Alt	20	21	18	23	22	19	19	19	25	21	19	20
[T][S]	39	28	33	32	36	28	27	35	36	32	34	36
[T][S][FP]	31	35	35	33	34	31	35	36	33	34	35	29
[T][S][HP]	32	33	34	31	38	33	35	31	30	33	36	34
[T][S][HP]Async	34	32	30	32	32	32	30	32	32	33	32	36
[T][S][L]	34	31	28	28	31	27	26	31	31	31	28	30
[T][S][L]Cache	32	33	31	37	31	34	37	34	33	31	33	34
[T][S]Sparse	38	35	35	37	38	34	36	39	35	38	36	36
sgd	31	23	29	27	26	24	25	26	29	28	31	27
step_sgd	22	22	17	21	22	18	19	23	29	19	28	25
step_tween	23	23	22	20	23	21	19	23	26	20	21	26
step_tween_chain	29	24	21	25	25	25	21	26	26	25	29	22
tween	30	28	24	20	27	20	21	29	24	19	24	26
tween_chain	28	29	17	31	24	24	22	24	30	24	30	27

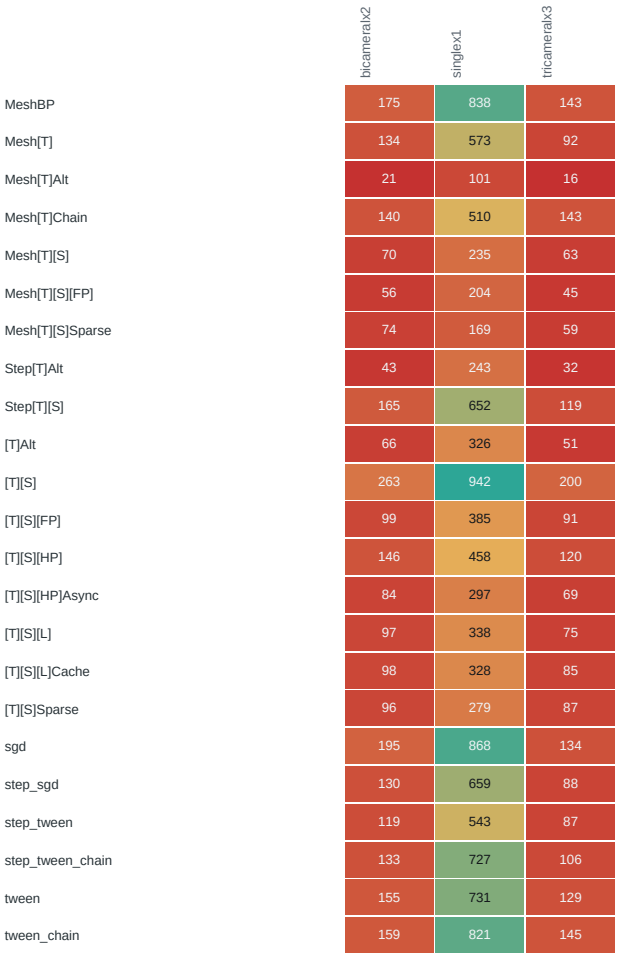
Honesty - mean Avail, every mode x dtype (cols 25-34)

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

	uint16	uint2	uint3	uint32	uint4	uint5	uint6	uint64	uint8	uintptr
MeshBP	31	27	28	23	27	23	22	30	31	25
Mesh[T]	31	24	26	25	27	17	20	26	29	28
Mesh[T]Alt	22	20	20	25	22	22	19	20	22	21
Mesh[T]Chain	28	27	27	27	29	24	25	32	25	27
Mesh[T][S]	37	36	34	36	33	32	36	39	34	34
Mesh[T][S][FP]	34	35	33	32	31	30	32	35	34	35
Mesh[T][S]Sparse	39	35	38	39	36	36	35	33	34	34
Step[T]Alt	20	21	15	23	20	18	19	16	21	17
Step[T][S]	33	26	24	30	32	25	21	32	27	27
[T]Alt	20	22	21	22	20	17	17	24	21	20
[T][S]	36	33	35	35	33	31	32	30	32	34
[T][S][FP]	33	33	32	31	31	30	30	35	34	30
[T][S][HP]	33	34	34	36	29	33	34	34	37	35
[T][S][HP]Async	36	39	39	34	33	32	30	34	35	33
[T][S][L]	33	25	35	34	29	26	29	32	24	30
[T][S][L]Cache	35	34	32	34	29	30	31	36	34	29
[T][S]Sparse	40	37	33	35	37	39	35	38	36	36
sgd	32	24	32	29	32	22	27	25	28	32
step_sgd	26	23	19	23	17	23	16	24	24	20
step_tween	22	20	19	25	24	20	18	23	27	21
step_tween_chain	27	25	23	24	21	20	18	21	30	27
tween	23	27	23	27	21	17	23	32	28	19
tween_chain	27	23	25	25	29	25	20	26	24	23

Mean Score, every mode x arch

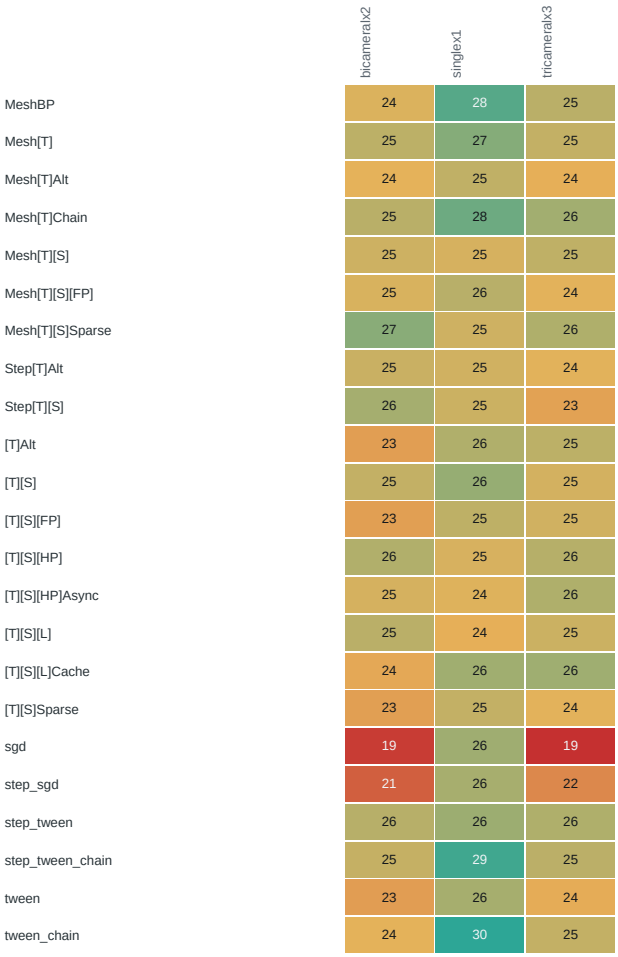
Mean Score, every mode x arch



	bicameralx2	singlex1	tricameralx3
MeshBP	175	838	143
Mesh[T]	134	573	92
Mesh[T]Alt	21	101	16
Mesh[T]Chain	140	510	143
Mesh[T][S]	70	235	63
Mesh[T][S][FP]	56	204	45
Mesh[T][S]Sparse	74	169	59
Step[T]Alt	43	243	32
Step[T][S]	165	652	119
[T]Alt	66	326	51
[T][S]	263	942	200
[T][S][FP]	99	385	91
[T][S][HP]	146	458	120
[T][S][HP]Async	84	297	69
[T][S][L]	97	338	75
[T][S][L]Cache	98	328	85
[T][S]Sparse	96	279	87
sgd	195	868	134
step_sgd	130	659	88
step_tween	119	543	87
step_tween_chain	133	727	106
tween	155	731	129
tween_chain	159	821	145

Mean hard Acc, every mode x arch

Mean hard Acc, every mode x arch

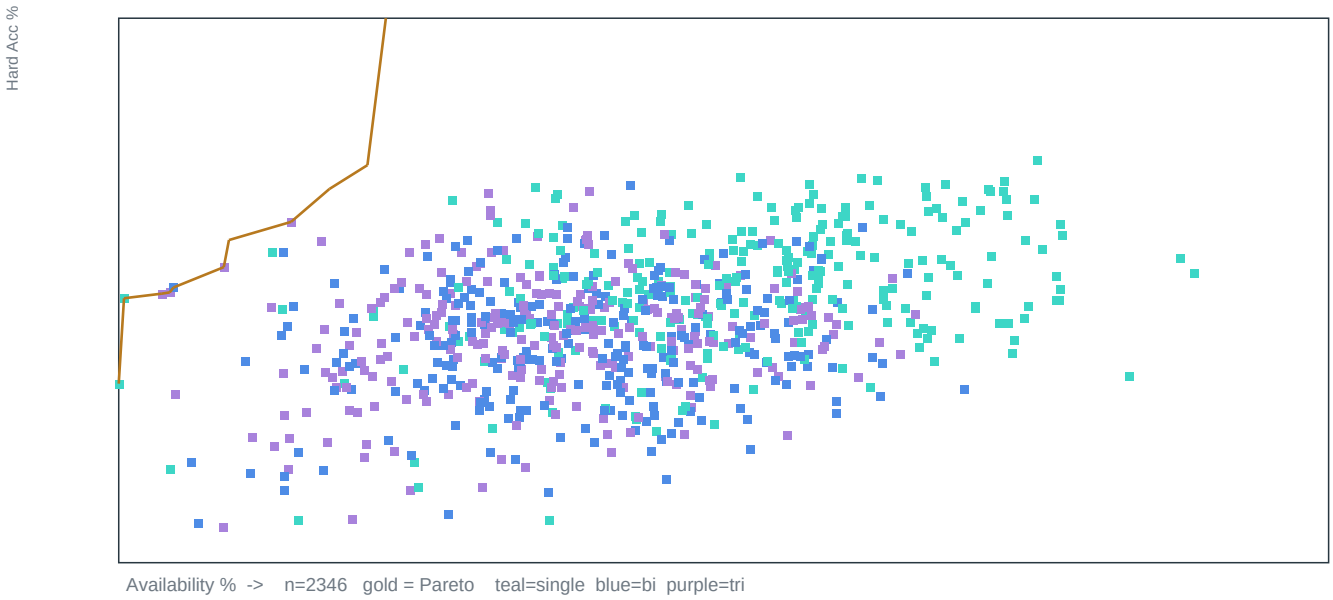


Mean Avail, every mode x arch

Mean Avail, every mode x arch

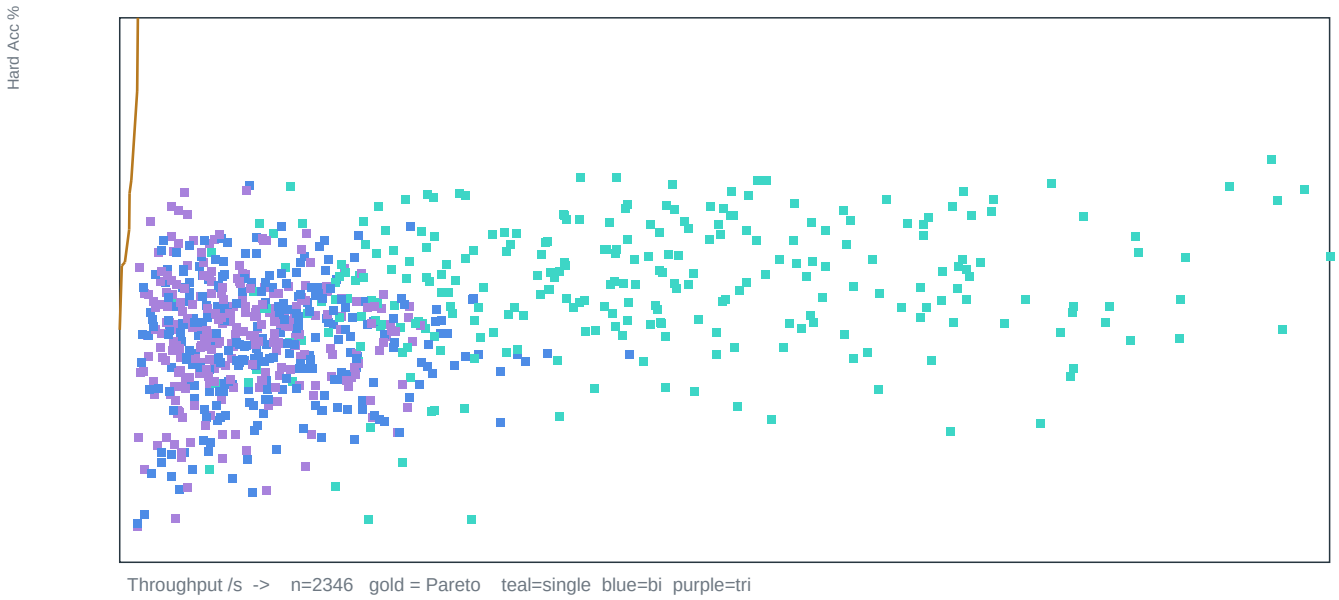
	bicamerax2	singlex1	tricamerax3
MeshBP	25	33	25
Mesh[T]	24	29	23
Mesh[T]Alt	19	25	20
Mesh[T]Chain	27	31	25
Mesh[T][S]	32	37	33
Mesh[T][S][FP]	32	37	32
Mesh[T][S]Sparse	36	36	36
Step[T]Alt	17	23	17
Step[T][S]	27	32	25
[T]Alt	20	25	19
[T][S]	32	37	32
[T][S][FP]	31	37	32
[T][S][HP]	32	35	32
[T][S][HP]Async	32	36	31
[T][S][L]	28	33	28
[T][S][L]Cache	32	34	33
[T][S]Sparse	36	37	36
sgd	27	30	24
step_sgd	22	27	19
step_tween	21	26	19
step_tween_chain	23	29	23
tween	23	29	22
tween_chain	24	29	24

Pillars - Availability vs hard Acc

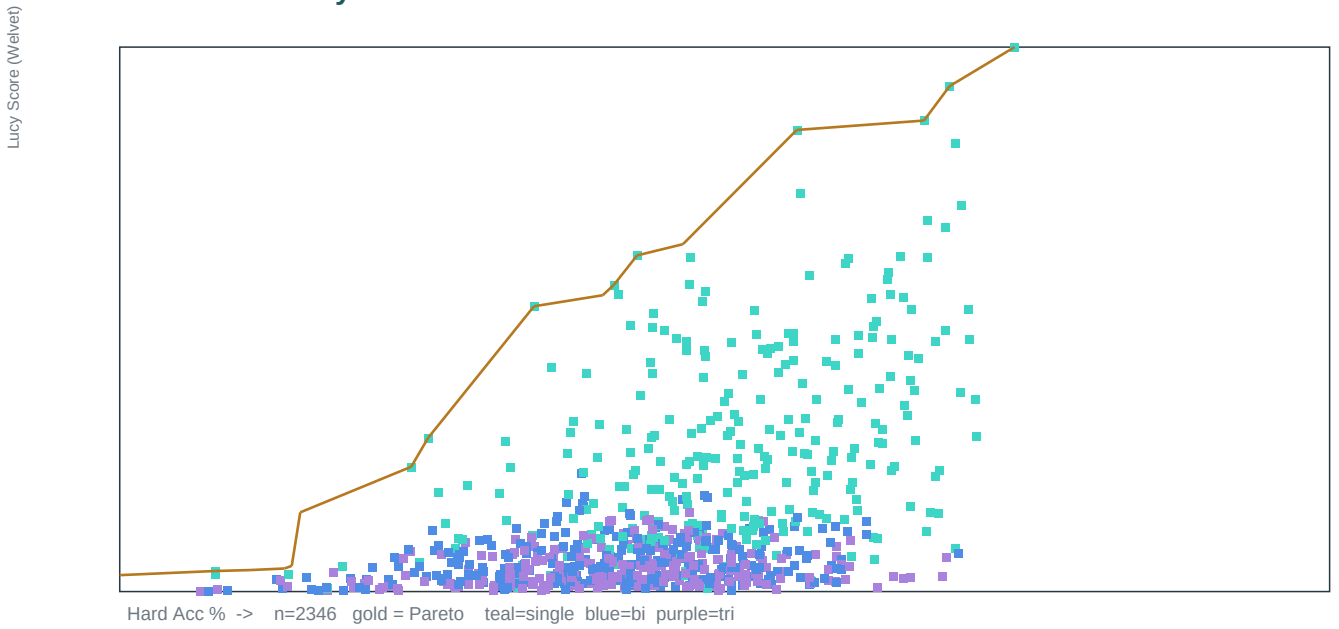


Pillars - Throughput vs hard Acc

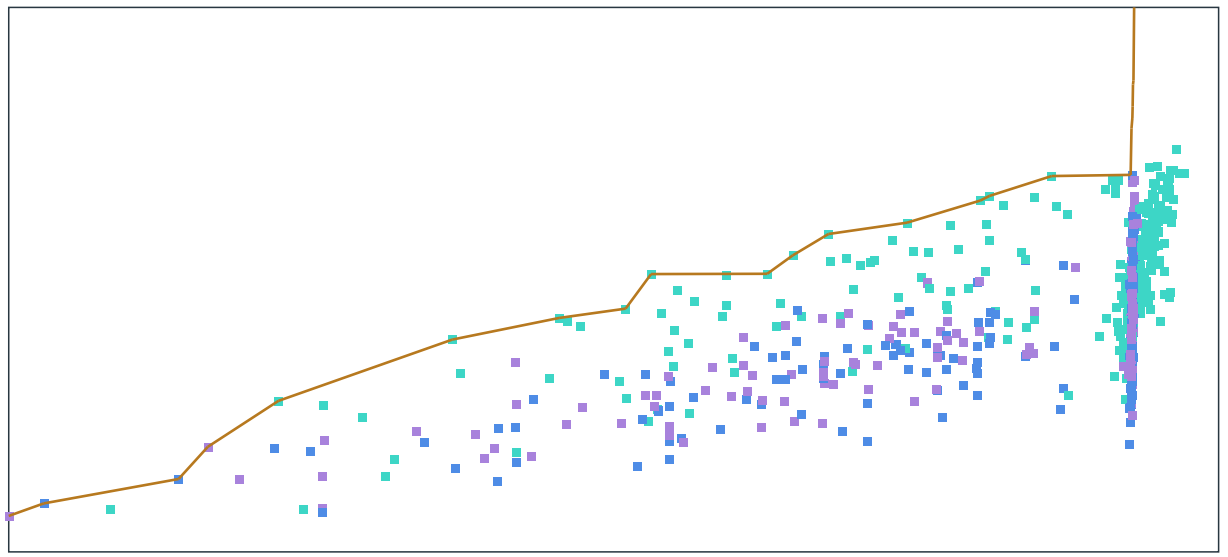
Pillars - Throughput vs hard Acc



Pareto - hard Acc vs Lucy Score

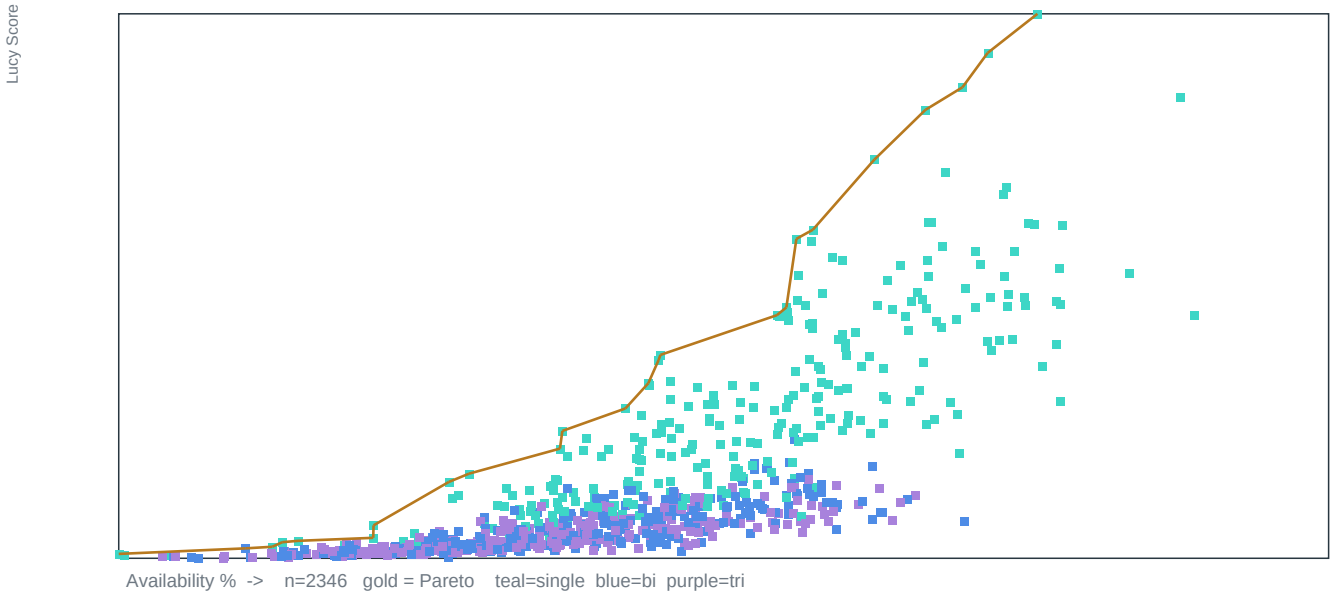


SoftAcc (serve-confidence) vs hard Acc

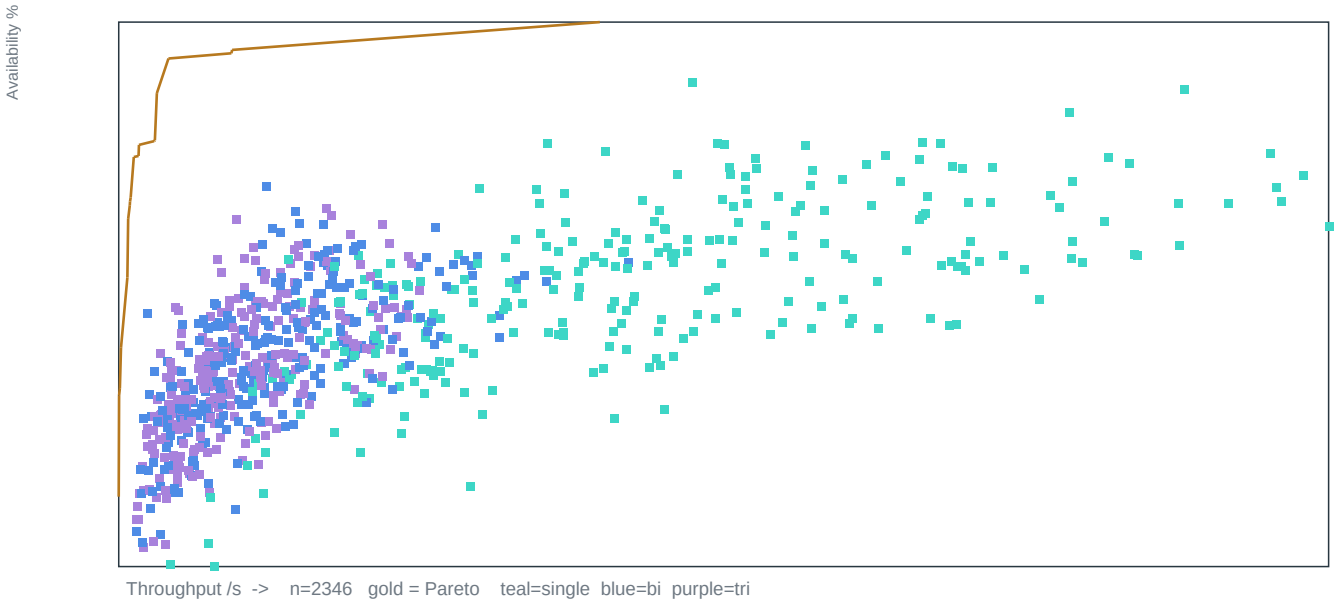



SoftAcc % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

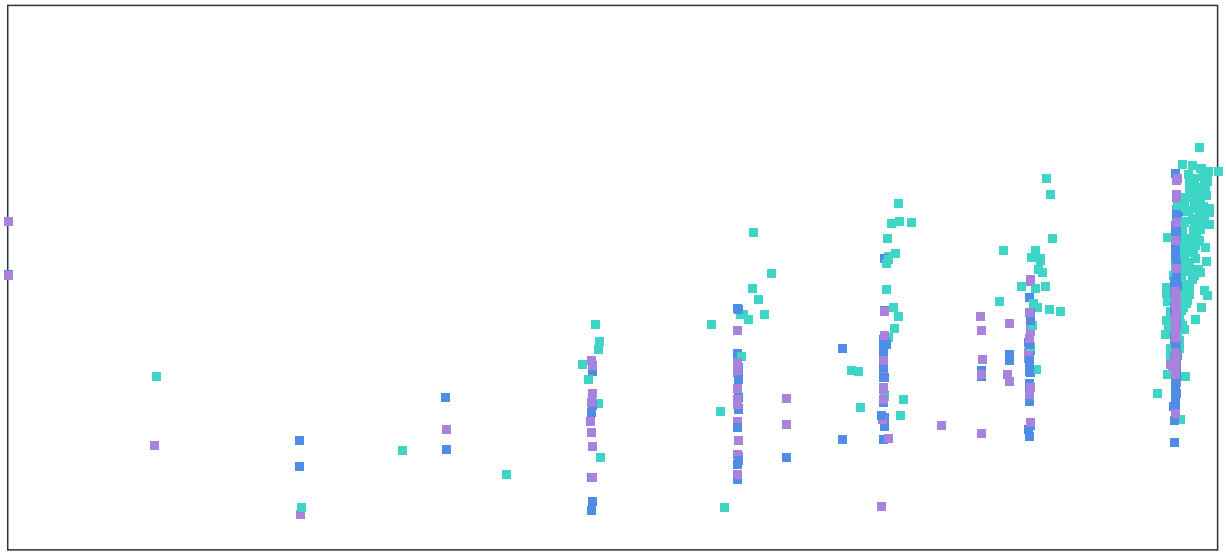
Avail vs Lucy Score (duty clock)



Pillars - Throughput vs Availability



AdaptPct vs hard Acc



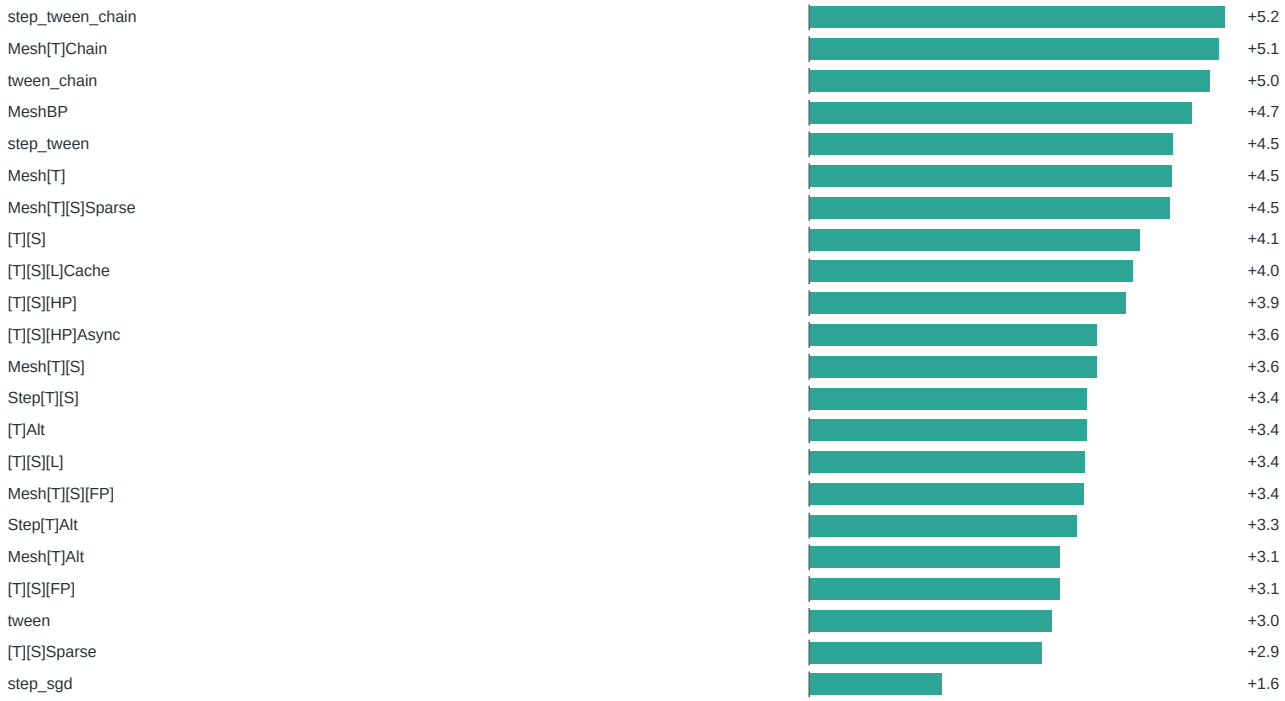

AdaptPct % -> n=2346 gold = Pareto teal=single blue=bi purple=tri
Hard Acc %

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%
step_tween_chain	102	+5.2	77	+5.6	-2.2	-1194	-77.3	36
Mesh[T]Chain	102	+5.1	73	+5.6	+0.4	-1877	-135.0	36
tween_chain	102	+5.0	81	+5.2	-1.9	-793	-24.4	42
MeshBP	102	+4.7	75	+5.6	+0.3	-713	-13.9	46
step_tween	102	+4.5	77	+5.4	-5.2	-1506	-149.9	29
Mesh[T]	102	+4.5	72	+5.6	-1.8	-1684	-133.3	32
Mesh[T][S]Sparse	102	+4.5	73	+5.6	+8.7	-4114	-298.5	16
[T][S]	102	+4.1	75	+5.6	+6.1	-119	+68.9	70
[T][S][L]Cache	102	+4.0	66	+5.6	+5.8	-3252	-228.8	25
[T][S][HP]	102	+3.9	71	+5.5	+6.0	-2392	-158.3	38
[T][S][HP]Async	102	+3.6	65	+5.5	+5.6	-3477	-249.6	21
Mesh[T][S]	102	+3.6	68	+5.5	+6.8	-3805	-276.5	19
Step[T][S]	102	+3.4	63	+5.5	+0.8	-1163	-87.4	40
[T]Alt	102	+3.4	64	+5.6	-6.0	-2782	-251.7	20
[T][S][L]	102	+3.4	65	+5.5	+2.3	-2974	-229.5	25
Mesh[T][S][FP]	102	+3.4	70	+5.5	+6.4	-4087	-297.7	15
Step[T]Alt	102	+3.3	66	+5.5	-8.2	-3340	-293.5	11
Mesh[T]Alt	102	+3.1	61	+5.6	-5.7	-4430	-353.3	1
[T][S][FP]	102	+3.1	63	+5.5	+5.8	-3001	-207.5	26
tween	102	+3.0	65	+4.3	-2.5	-733	-60.7	41
[T][S]Sparse	102	+2.9	63	+5.6	+9.1	-3530	-245.6	25
step_sgd	102	+1.6	57	+1.7	-4.5	-1088	-107.3	32

mean AccD vs sgd



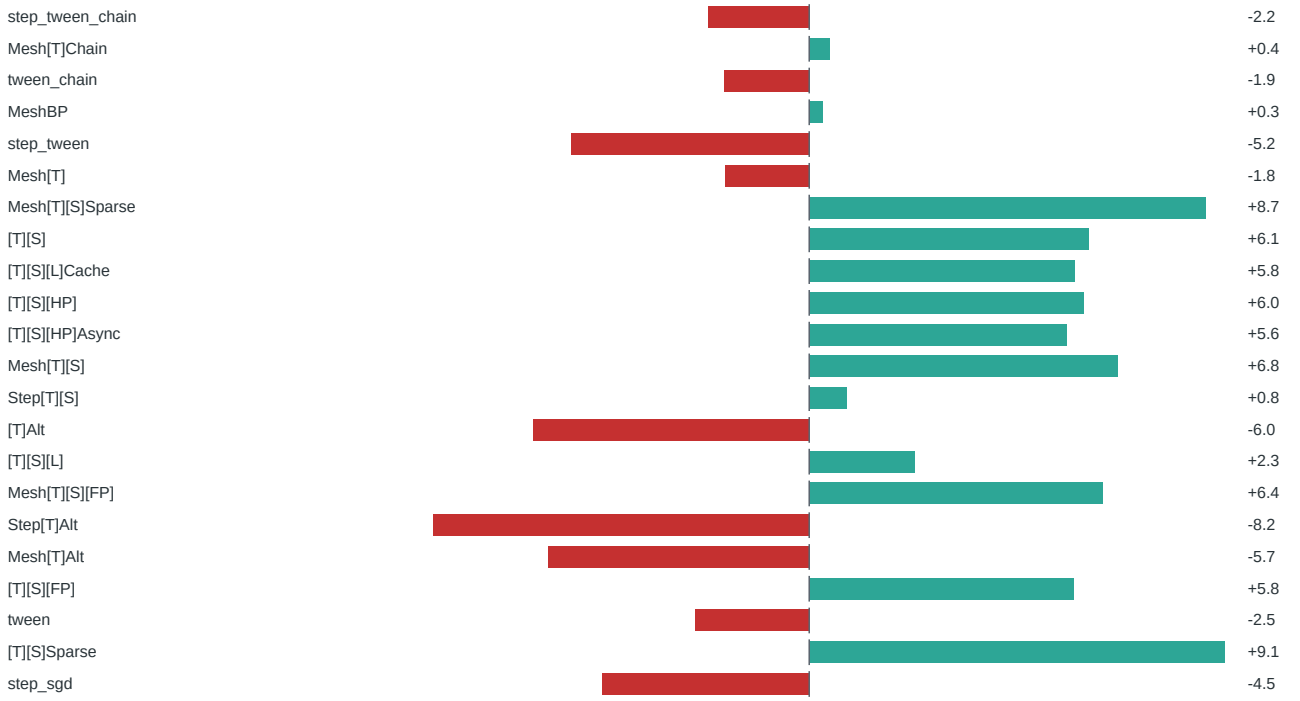
mean ScoreD vs sgd (duty clock)



mean ScoreD vs sgd (duty clock)



mean AvailD vs sgd



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

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

	bfloat16	binary	complex128	complex64	float16	float32	float64	fp4	fp6	fp8e4m3	fp8e5m2	int
MeshBP	+4	+4	+11	+7	+6	+5	+1	+2	+6	+5	+2	+7
Mesh[T]	+5	+9	+7	+11	+7	+5	+2	+3	+7	+9	+1	+7
Mesh[T]Alt	-1	+4	+6	+4	+2	+0	-0	+2	+6	+1	+2	+15
Mesh[T]Chain	+5	+9	+6	+4	+10	+6	+5	+3	+11	+11	+2	+7
Mesh[T][S]	+2	+7	+9	+7	+2	+6	+7	+4	+6	+5	+0	+7
Mesh[T][S][FP]	+5	+7	+7	+5	+5	+3	-2	+3	+1	+5	+2	+7
Mesh[T][S]Sparse	+1	+3	+5	+10	+4	+7	+2	+4	+2	+5	-0	+6
Step[T]Alt	+3	+11	+0	+6	+4	+4	+2	+3	+7	+2	+2	+4
Step[T][S]	+7	+9	+6	+3	-1	+3	+8	+1	+3	+6	-2	+3
[T]Alt	-1	+10	+11	+3	+3	-2	-0	+1	+3	+8	-0	+10
[T][S]	+3	+7	+11	+5	+7	+7	+1	+3	+2	+5	+3	+8
[T][S][FP]	+1	+7	+3	+5	+5	+0	+2	+3	+5	+1	+3	+8
[T][S][HP]	+5	+9	+4	+5	+2	+2	+1	+3	+10	+5	-5	+7
[T][S][HP]Async	+5	+16	+0	+9	+6	+3	+2	+4	+6	+4	-2	+5
[T][S][L]	+3	+9	+6	+5	+5	+6	-1	+1	+9	+2	-1	+8
[T][S][L]Cache	+3	+3	+6	+4	+9	+6	+3	+3	+5	+5	-3	+5
[T][S]Sparse	+1	+15	+6	+4	+7	-3	+8	+3	+0	+5	+1	+4
step_sgd	+1	+3	+5	+6	+4	+5	-3	-0	+5	+2	+5	+7
step_tween	+3	+3	+6	+6	+2	+6	+3	+2	+9	+8	+1	+7
step_tween_chain	+6	+7	+9	+8	+6	+7	+1	+3	+8	+5	+2	+8
tween	+4	+5	+4	+8	+3	+4	-0	+2	+6	+1	-1	+7
tween_chain	+6	+9	+8	+7	+7	+6	+4	+3	+4	+6	+4	+3

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

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

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	-191	-88	+407	+21	+30	+108	-94	-164	-94	-47	-11	+148
Mesh[T]	-506	-29	+103	-91	+128	-145	-55	-575	-105	-48	-152	-92
Mesh[T]Alt	-730	-291	-132	-351	-190	-442	-543	-676	-192	-433	-367	-247
Mesh[T]Chain	-294	+18	+124	-166	+113	-76	-199	-516	-116	-114	-61	-53
Mesh[T][S]	-667	-139	-33	-248	-117	-308	-437	-602	-144	-334	-284	-193
Mesh[T][S][FP]	-658	-195	-72	-296	-137	-359	-508	-611	-172	-361	-317	-185
Mesh[T][S]Sparse	-702	-265	-86	-315	-133	-326	-446	-573	-174	-363	-320	-182
Step[T]Alt	-621	-187	-109	-303	-193	-282	-407	-595	-184	-342	-330	-165
Step[T][S]	-269	+34	+123	-192	+76	+75	-112	-380	-113	-126	-164	-19
[T]Alt	-578	-11	+16	-270	-83	-324	-403	-529	-144	-295	-253	-140
[T][S]	-286	+487	+401	-16	+220	+82	-195	-159	-21	-128	+155	+332
[T][S][FP]	-543	-87	-12	-234	+2	-241	-375	-479	-148	-267	-239	-69
[T][S][HP]	-506	+12	+99	-223	+81	-124	-404	-396	-77	-122	-136	-128
[T][S][HP]Async	-593	-74	-69	-244	+2	-232	-435	-540	-162	-318	-295	-189
[T][S][L]	-560	-78	+14	-258	-85	-186	-422	-509	-77	-272	-299	-162
[T][S][L]Cache	-536	-172	-35	-241	-44	-218	-356	-473	-151	-282	-281	-126
[T][S]Sparse	-643	-76	-32	-252	-74	-303	-324	-500	-160	-360	-251	-171
step_sgd	-457	-127	+96	+52	+154	+475	-421	-351	-81	-213	+255	+167
step_tween	-428	-36	-24	-311	-121	+66	-221	-367	-91	-220	+32	-146
step_tween_chain	-375	+154	+142	-214	+172	+358	-69	-287	-63	-120	-227	-11
tween	-178	-81	+273	+75	+112	+83	-220	-165	-82	-90	+145	-47
tween_chain	-438	+247	+294	-247	+40	+438	+107	-435	-136	-117	+186	-160

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	-344	+439	-31	-297	+476	-4	-32	+314	-250	+16	-228	+76
Mesh[T]	-405	+311	-180	-341	+27	-38	-118	+164	-145	-107	-478	-50
Mesh[T]Alt	-627	-176	-277	-526	-140	-144	-209	-110	-560	-240	-639	-195
Mesh[T]Chain	-484	+10	-184	-265	+203	-57	-112	+96	-282	-57	-452	+60
Mesh[T][S]	-553	-77	-222	-458	-28	-81	-185	-46	-451	-202	-580	-141
Mesh[T][S][FP]	-606	-66	-253	-470	+24	-113	-182	-63	-508	-152	-570	-115
Mesh[T][S]Sparse	-577	-90	-242	-455	-84	-95	-177	-73	-531	-169	-601	-140
Step[T]Alt	-603	-28	-243	-481	-21	-116	-212	-46	-398	-185	-583	-158
Step[T][S]	-361	+174	-169	-249	+394	-20	-92	+139	-159	-51	-231	+51
[T]Alt	-513	-104	-244	-433	+70	-68	-169	-62	-393	-169	-571	-103
[T][S]	-104	+168	-64	-101	+412	-6	-10	+428	+49	+58	+86	+156
[T][S][FP]	-519	+42	-165	-394	+148	-51	-136	+90	-349	-119	-436	-94
[T][S][HP]	-445	+59	-138	-346	+179	-56	-74	+17	-433	-64	-373	-26
[T][S][HP]Async	-542	+2	-239	-448	-9	-97	-163	-33	-446	-137	-604	-62
[T][S][L]	-460	+13	-217	-423	+68	-75	-166	+19	-408	-128	-496	-67
[T][S][L]Cache	-513	-60	-229	-394	+43	-47	-111	+60	-421	-123	-527	-79
[T][S]Sparse	-515	-8	-180	-447	+16	-105	-163	+7	-413	-158	-527	-96
step_sgd	-313	-73	-176	-421	+73	-114	-122	+290	+70	-145	-302	+207
step_tween	-434	+102	-144	-453	+116	-41	-104	+172	-108	-104	-597	+69
step_tween_chain	-198	+60	-148	-229	+197	+5	-132	+204	-31	-46	-248	-55
tween	-294	+428	-122	-428	+398	-7	-109	+341	-189	-172	-400	+114
tween_chain	-175	+279	-263	-259	+367	+70	-65	+264	+242	-77	-89	+238

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	-221	+197	+13	-317	-229	-128	-50	+232	+224	-354
Mesh[T]	-361	+41	-52	-279	-312	-139	-53	+75	-121	-402
Mesh[T]Alt	-643	-72	-180	-547	-493	-196	-153	-133	-555	-602
Mesh[T]Chain	-428	+76	-43	-323	-279	-114	-53	+111	-301	-374
Mesh[T][S]	-533	+36	-126	-464	-454	-160	-92	-48	-490	-541
Mesh[T][S][FP]	-608	-8	-131	-521	-448	-192	-114	-86	-474	-595
Mesh[T][S]Sparse	-579	-15	-127	-466	-435	-178	-122	-82	-483	-542
Step[T]Alt	-583	-24	-169	-473	-460	-179	-134	-119	-455	-594
Step[T][S]	-437	+51	-39	-179	-151	-35	-58	+166	-259	-393
[T]Alt	-576	+31	-65	-464	-429	-182	-108	-16	-430	-549
[T][S]	-269	+315	+146	-150	+72	+112	+53	+236	+9	-129
[T][S][FP]	-528	+41	-99	-446	-350	-156	-60	+11	-257	-537
[T][S][HP]	-523	+137	-21	-282	-372	-95	-73	+121	-282	-370
[T][S][HP]Async	-550	+73	-90	-453	-371	-156	-96	-6	-395	-514
[T][S][L]	-532	-30	-74	-392	-358	-160	-70	-16	-486	-451
[T][S][L]Cache	-511	+167	-90	-380	-440	-144	-92	-15	-391	-565
[T][S]Sparse	-557	+54	-127	-423	-397	-131	-87	-28	-394	-527
step_sgd	-399	+96	-126	-295	-386	-61	-89	+1	-358	-552
step_tween	-554	+146	-95	-280	-282	-147	-106	+57	-42	-399
step_tween_chain	-402	+184	-76	-238	-400	-143	-109	+8	-51	-236
tween	-396	+149	+36	-267	-423	-176	-42	+222	-33	-518
tween_chain	-224	+152	-21	-353	-200	+2	-66	+52	-248	-234

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

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

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

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

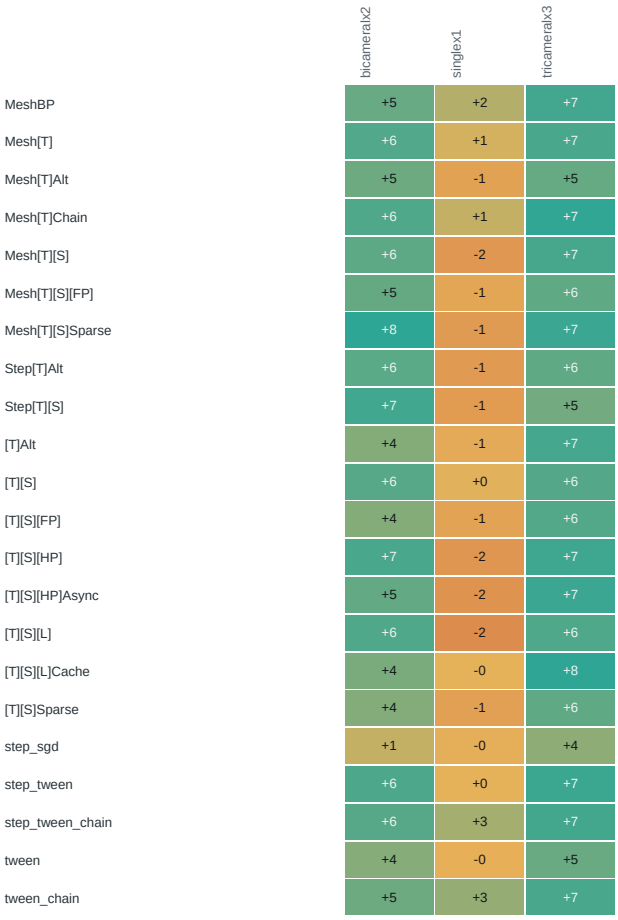
AvailD vs sgd, every mode x dtype (cols 25-34)

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

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

AccD vs sgd, every mode x arch

AccD vs sgd, every mode x arch



Family collapse - Step* vs non-Step

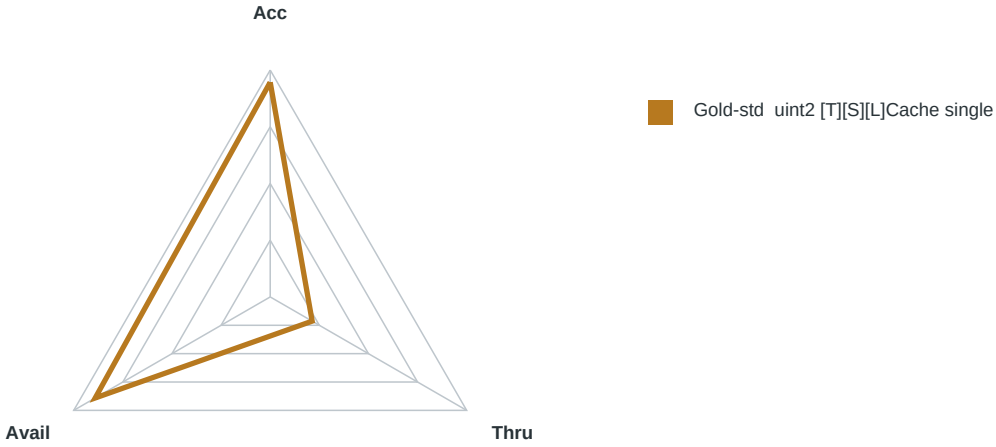
Step* is a 1D pipe (one sample enters layer 0 per tick; output is the sample that entered depth ticks ago). Non-Step of the same family is a full-chain update. AccD is a real scheduler split, not leftover warm-up forwards.

step	plain	n	mean |AccD|
Step[T]Alt	[T]Alt	102	6.02
Step[T][S]	[T][S]	102	5.57
step_sgd	sgd	102	5.09
step_tween	tween	102	3.86
step_tween_chain	tween_chain	102	3.15

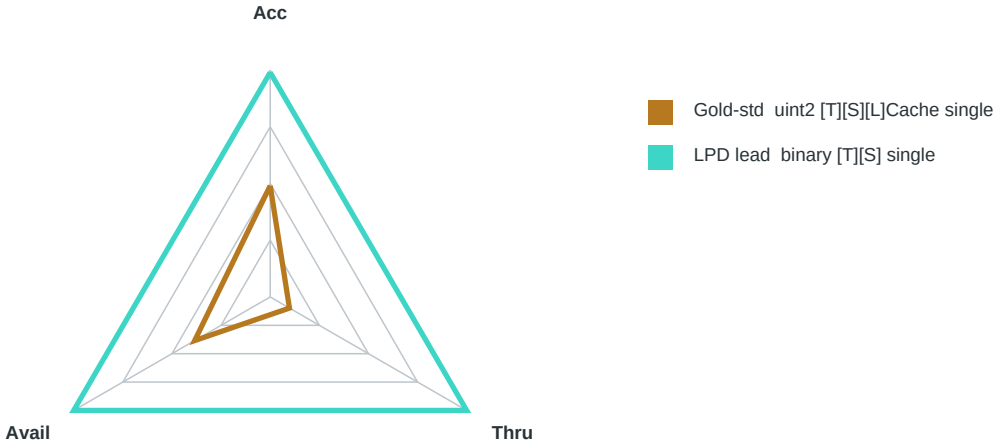
Consciousness - Acc, Throughput, Availability

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 uint5|none|[T]Alt|tricameral|simd Acc 45.8 Thru 387 Avail 16.7% 0.2 KiB (RAM reference)
Lucy Score champ (T x Avail x Acc) float32|none|step_sgd|single|simd Score 2591.1 Acc 36.1 Soft 26 0.4 KiB
Live-fit champ (best Q) float32|none|step_sgd|single|simd Acc 36.1 Thru 18175 Avail 39.5% 0.4 KiB
Gold-std (2+ pillars, Acc keep >= 80%, then smallest then fastest): uint2|none|[T][S][L]Cache|single|simd mode [T][S][L]Cache Acc 43.4 Thru 3993 0.0 KiB
Board fastest float32|none|step_tween_chain|single|simd Thru 19099 (traps may own this) Best availability uint|none|[T][S]|single|simd 49.7%
Learner Thru peak 18697 learner Avail peak 44.2%

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][L]Cache	1	43.4	0.0	3993	uint2 [T][S][L]Cache single
[T][S]Sparse	1	38.0	0.0	1411	binary [T][S]Sparse tricameral
[T][S][FP]	2	38.7	0.0	4775	int4 [T][S][FP] single
[T][S][L]	1	37.7	0.1	2288	fp6 [T][S][L] single
Mesh[T][S]Sparse	2	40.5	0.2	794	int5 Mesh[T][S]Sparse bicameral / int16 Mesh[T][S]Sparse bicameral
[T][S]	2	38.6	0.8	9366	int [T][S] single

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

Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
near	uint2 [T][S][L]Cache single	95	21	89	56	13	7.6	4.31	43.4	3993	0.0
near	int4 [T][S][FP] single	84	26	95	59	20	5.1	3.00	38.7	4775	0.0
near	binary [T][S]Sparse tricameral	83	8	94	39	18	5.5	2.16	38.0	1411	0.0
near	fp6 [T][S][L] single	82	12	89	45	30	3.4	1.52	37.7	2288	0.1

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
-	binary [T][S] single	72	82	87	80	5	20.3	16.23	32.8	15284	0.0
-	binary [T][S][HP]Async single	72	25	85	54	5	20.3	10.92	33.2	4677	0.0
-	binary [T][S]Sparse single	71	23	77	50	5	20.3	10.18	32.6	4285	0.0
-	int2 MeshBP single	70	81	70	74	10	10.2	7.50	32.2	15228	0.0
near	uint2 [T][S][L]Cache single	95	21	89	56	13	7.6	4.31	43.4	3993	0.0
-	uint4 [T][S] single	76	57	93	74	23	4.4	3.23	35.0	10733	0.1
near	int4 [T][S][FP] single	84	26	95	59	20	5.1	3.00	38.7	4775	0.0
-	int4 Mesh[T][S][FP] single	80	19	100	53	20	5.1	2.71	36.5	3575	0.0
-	binary [T][S][L] bicameral	74	11	63	38	15	6.8	2.55	33.8	2149	0.0
-	int3 Mesh[T][S] single	73	8	81	36	15	6.8	2.41	33.5	1427	0.0
acc	binary [T][S][HP]Async bicameral	87	6	71	34	15	6.8	2.28	39.9	1150	0.0
-	uint2 Mesh[T]Alt single	76	7	46	29	13	7.6	2.18	34.9	1230	0.0
-	uint5 [T][S] single	70	38	81	60	28	3.6	2.16	32.3	7118	0.1
near	binary [T][S]Sparse tricameral	83	8	94	39	18	5.5	2.16	38.0	1411	0.0
-	int5 tween_chain single	73	30	67	53	25	4.1	2.14	33.6	5523	0.1
-	int8 tween_chain single	73	98	83	84	39	2.5	2.13	33.3	18271	0.1
-	fp8e5m2 step_sgd single	73	74	87	78	39	2.5	1.97	33.3	13812	0.1
-	int5 step_tween_chain single	72	22	68	48	25	4.1	1.94	32.8	4153	0.1
-	uint5 tween_chain single	74	29	72	53	28	3.6	1.92	33.7	5430	0.1
-	fp8e5m2 tween_chain single	71	61	85	72	39	2.5	1.82	32.6	11452	0.1

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

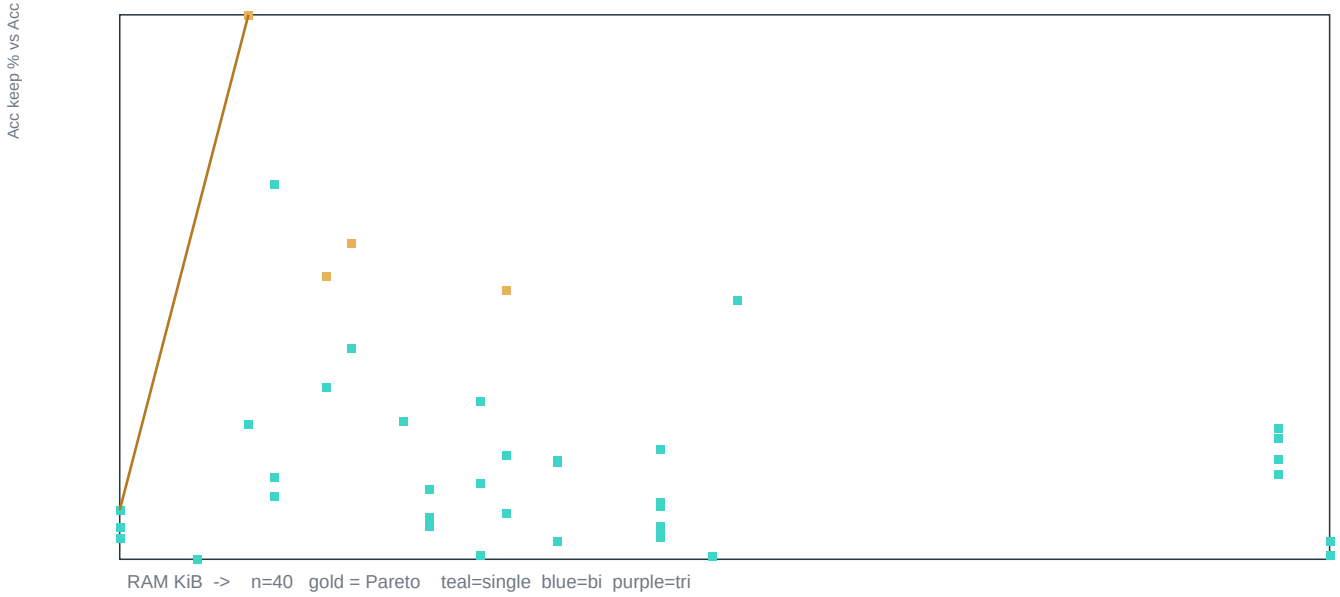
Band	Cell	Acc%	Thru%	Avail%	Q%	LPD	Thru	Avail
-	float32 step_sgd single	79	97	89	88	0.56	18175	39.5
-	float32 tween_chain single	74	100	85	86	0.55	18697	37.8
-	int8 tween_chain single	73	98	83	84	2.13	18271	36.9
-	bfloat16 sgd single	75	94	81	83	1.05	17526	35.6
-	binary [T][S] single	72	82	87	80	16.23	15284	38.4
-	float64 tween_chain single	75	79	82	79	0.25	14723	36.3
-	fp8e5m2 step_sgd single	73	74	87	78	1.97	13812	38.4
-	int16 sgd single	74	71	87	77	0.98	13349	38.3
-	uint16 sgd single	71	74	81	75	0.92	13780	35.7
-	uintptr sgd single	73	65	89	75	0.24	12127	39.4

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

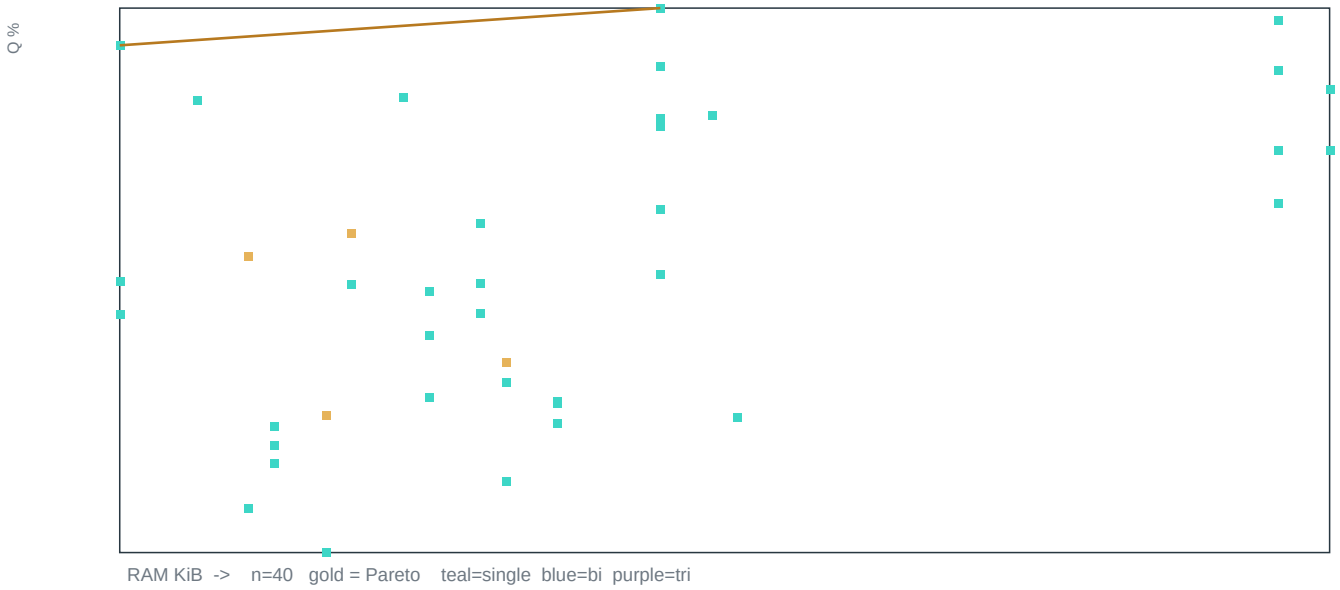
Band	Cell	Acc%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Acc	Thru	KiB
trap	binary sgd single	38	70	59	54	5	20.3	0.00	17.4	13136	0.0
trap	binary step_sgd single	54	42	43	46	5	20.3	0.00	24.6	7884	0.0
trap	binary tween single	54	46	52	51	5	20.3	0.00	24.8	8595	0.0
trap	binary tween_chain single	53	80	80	69	5	20.3	0.00	24.2	14871	0.0
trap	binary step_tween single	44	64	67	57	5	20.3	0.00	20.3	12015	0.0
trap	binary step_tween_chain single	56	66	84	68	5	20.3	0.00	25.9	12368	0.0
trap	binary MeshBP single	53	40	70	53	5	20.3	0.00	24.2	7413	0.0
trap	binary Mesh[T] single	65	41	51	52	5	20.3	0.00	29.9	7710	0.0
trap	binary Mesh[T]Chain single	54	43	61	52	5	20.3	0.00	24.5	8035	0.0
trap	binary Step[T][S] single	47	51	69	55	5	20.3	0.00	21.3	9519	0.0

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

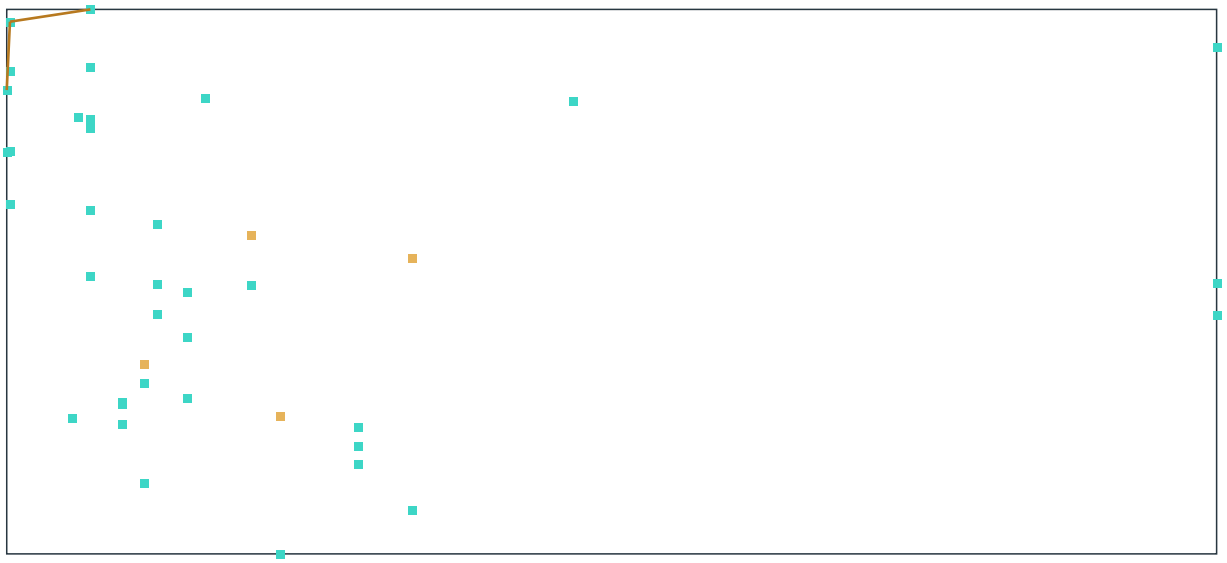
Acc keep % vs RAM KiB (gold = high Acc, low RAM vs Acc champ)



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

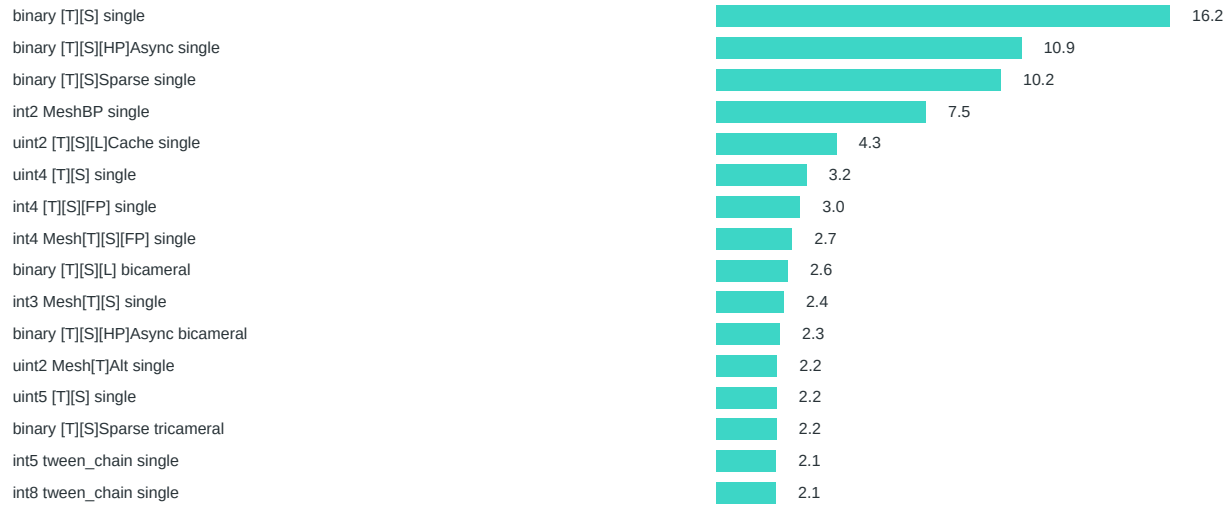


Q% vs shrink vs Acc champ (gold = upper right)

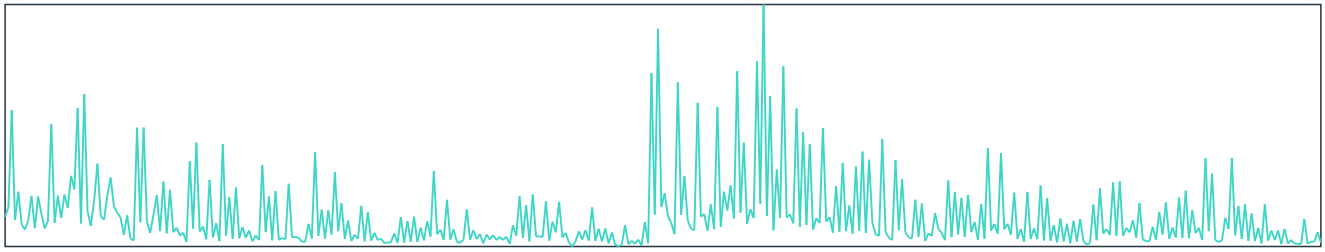


Q %

Top Lucy density (LPD)

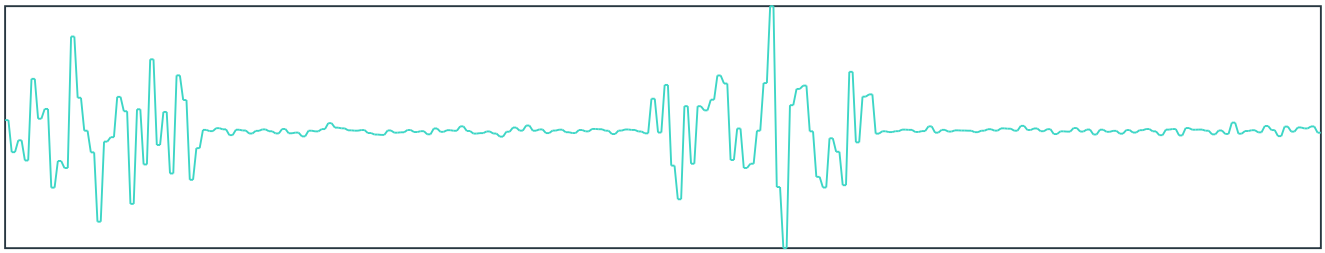


Live pulse (Score)



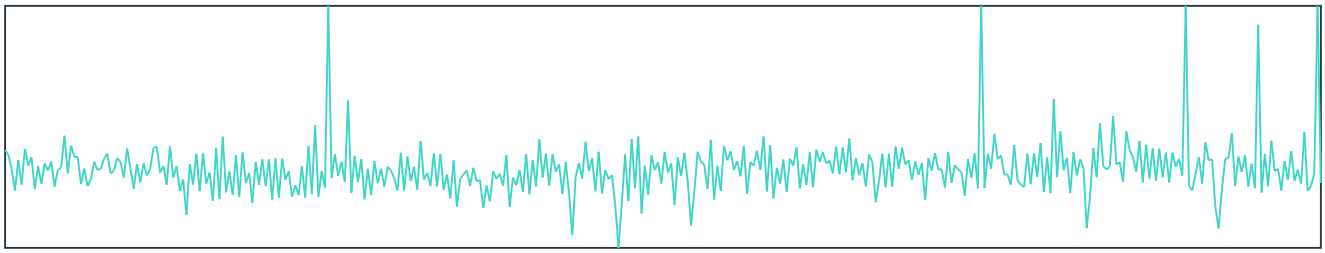
n=400 min=4.27 max=1700.33

Live pulse (SoftAcc)



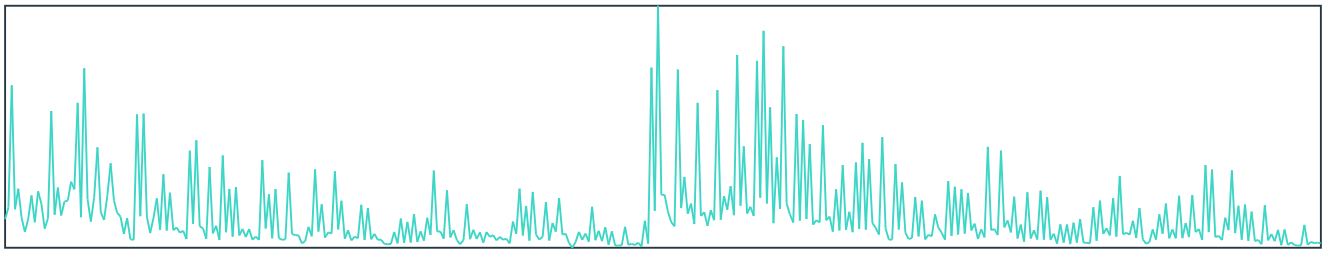
n=400 min=24.26 max=25.78

Live pulse (Availability)



n=400 min=10.66 max=100.00

Live pulse (Throughput)



n=400 min=111.60 max=14473.41

Queue by train mode (this epoch)

Mode	Done	Run	Left	Total