ocean test51 farm

Lucy Score = Throughput x Availability x Acc / 10,000. Acc is learning. Availability is the live loop. LPD condenses that into Acc-champ RAM.
[T]=Tween [S]=Split [FP]=FastProxy [L]=Linear [HP]=HeadProxy [F]=Freeze [Sh]=Shadow [A]=Adv [M]=Memory
Generated 2026-09-12 11:09:39. Tides up 2 / 3. This-epoch cells 3922 / 244800.
Learning rate test51=0.05
Holistic best train mode: Step[T][S] best dtype: float64 best arch: singlex1
Suggested default (most Lucy-axis wins): Step[T][S] | float64 | singlex1 (9 axes)
Acc champ flee|3x3x3|dense|fp8e4m3|lr=0.02|cam=1|NormalBP (100.0 Acc, 12.3 KiB). Gold cells (trifecta >=80% at <=20% Acc-champ RAM): none yet

Train mode votes

Key	Layers	Mean Score
Step[T][S]	1	1553.61
sgd	1	679.42

DType votes

Key	Layers	Mean Score
float64	2	1116.51

Arch votes

Key	Layers	Mean Score
singlex1	2	1116.51

Lucy axis champions (ocean-wide)

Axis	Tide	Mode	DType	Arch	Value
hard_acc	c1	sgd	float16	bicameralx2	100.00
throughput	c2	Step[T][S]	float64	singlex1	2560.91
availability	c2	Step[T][S]	float32	singlex1	99.33
score	c2	Step[T][S]	float64	singlex1	1553.61
soft_acc	c1	sgd	fp8e4m3	singlex1	90.09
acc_thru	c2	Step[T][S]	float64	singlex1	1630.16
realtime	c2	Step[T][S]	float64	singlex1	2405.16
keep_learn	c1	sgd	fp8e5m2	bicameralx2	33.29
acc_per_sec	c1	sgd	fp8e5m2	bicameralx2	33.29
consistency	c1	sgd	float64	singlex1	100.00

Axis	Tide	Mode	DType	Arch	Value
stability	c1	sgd	fp8e5m2	singlex1	100.00
mobile_score	c2	Step[T][S]	float64	singlex1	32302.48
lpd	c2	Step[T][S]	float64	singlex1	0.56
mspeed	c1	sgd	float64	singlex1	1.00
mavail	c1	sgd	int64	singlex1	1.00
mix	c2	Step[T][S]	float64	singlex1	0.91
gold_std	c2	Step[T][S]	float16	singlex1	24.62

Train mode mean Score



DType mean Score



Per-layer best (mode x dtype x arch)

Tide	LR	Mode	DType	Arch	Score	Soft	Acc
c2	0.05	Step[T][S]	float64	singlex1	1553.6	22.0	77.4
c1	0.05	sgd	float64	singlex1	679.4	18.5	62.3

Lucy axes - c2

Axis	Mode	DType	Arch	Value
hard_acc	Step[T][S]	float16	bicameralx2	100.00
throughput	Step[T][S]	float64	singlex1	2560.91
availability	Step[T][S]	float32	singlex1	99.33
score	Step[T][S]	float64	singlex1	1553.61
soft_acc	Step[T][S]	bfloat16	bicameralx2	89.35
acc_thru	Step[T][S]	float64	singlex1	1630.16
realtime	Step[T][S]	float64	singlex1	2405.16
keep_learn	Step[T][S]	float32	tricameralx3	32.79
acc_per_sec	Step[T][S]	float32	tricameralx3	32.79
consistency	Step[T][S]	float64	singlex1	100.00
stability	Step[T][S]	float32	singlex1	100.00
mobile_score	Step[T][S]	float64	singlex1	32302.48

Axis	Mode	DType	Arch	Value
lpd	Step[T][S]	float64	singlex1	0.56
mspeed	Step[T][S]	float64	singlex1	1.00
mavail	Step[T][S]	bfloat16	singlex1	1.00
mix	Step[T][S]	float64	singlex1	0.91
gold_std	Step[T][S]	float16	singlex1	24.62

Lucy axes - c1

Axis	Mode	DType	Arch	Value
hard_acc	sgd	float16	bicameralx2	100.00
throughput	sgd	float64	singlex1	1529.31
availability	sgd	int64	singlex1	92.01
score	sgd	float64	singlex1	679.42
soft_acc	sgd	fp8e4m3	singlex1	90.09
acc_thru	sgd	float64	singlex1	847.55
realtime	sgd	float64	singlex1	1194.46
keep_learn	sgd	fp8e5m2	bicameralx2	33.29
acc_per_sec	sgd	fp8e5m2	bicameralx2	33.29
consistency	sgd	float64	singlex1	100.00
stability	sgd	fp8e5m2	singlex1	100.00
mobile_score	sgd	float64	singlex1	14126.40
lpd	sgd	float64	singlex1	0.28
mspeed	sgd	float64	singlex1	1.00
mavail	sgd	int64	singlex1	1.00
mix	sgd	float64	singlex1	0.90
gold_std	sgd	fp8e4m3	singlex1	12.31

Combined leaderboard

Tide	Cell	Score	Soft	Acc	Avail
c2	chase|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit	1553.6	22.0	77.4	95.3
c2	chase|3x3x3|dense|float64|lr=2|cam=1|StepTweenSplit	1543.4	21.2	77.0	95.6
c2	chase|1x1x1|dense|float64|lr=2|cam=1|StepTweenSplit	1481.5	21.0	74.1	95.1
c2	chase|3x3x3|dense|float64|lr=0.2|cam=1|StepTweenSplit	1089.9	16.4	49.6	94.7
c2	chase|1x1x1|dense|float64|lr=0.2|cam=1|StepTweenSplit	1048.3	15.8	46.3	94.2

Tide	Cell	Score	Soft	Acc	Avail
c2	chase|2x2x2|dense|float64|lr=0.2|cam=1|StepTweenSplit	1043.3	15.9	46.6	94.6
c2	chase|1x1x1|dense|float64|lr=0.2|cam=2|StepTweenSplit	878.7	16.4	50.2	93.4
c2	chase|3x3x3|dense|float64|lr=0.2|cam=2|StepTweenSplit	871.3	16.5	50.4	93.5
c2	chase|2x2x2|dense|float64|lr=0.2|cam=2|StepTweenSplit	848.8	16.0	48.1	93.4
c2	flee|2x2x2|dense|float64|lr=0.02|cam=1|StepTweenSplit	812.1	17.5	81.2	97.5
c2	flee|1x1x1|dense|float64|lr=2|cam=1|StepTweenSplit	757.5	26.8	95.9	97.9
c2	flee|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit	749.8	27.1	97.1	97.7
c1	chase|3x3x3|dense|float64|lr=2|cam=1|NormalBP	679.4	18.5	62.3	80.2
c1	chase|2x2x2|dense|float64|lr=2|cam=1|NormalBP	663.5	18.3	61.2	79.7
c1	chase|1x1x1|dense|float64|lr=2|cam=1|NormalBP	644.4	18.2	59.9	78.9
c1	flee|1x1x1|dense|float64|lr=2|cam=1|NormalBP	542.9	26.6	97.1	86.1
c1	chase|3x3x3|dense|float64|lr=0.2|cam=1|NormalBP	542.4	15.7	47.1	78.9
c1	flee|2x2x2|dense|float64|lr=0.02|cam=1|NormalBP	541.7	20.4	83.2	85.1
c1	flee|1x1x1|dense|float64|lr=0.02|cam=1|NormalBP	540.5	19.3	79.4	85.5
c1	chase|1x1x1|dense|float64|lr=0.2|cam=1|NormalBP	534.2	15.6	46.7	78.5

Score by layer



Mean Score by train mode



Mean hard Acc by train mode



Mean SoftAcc by train mode



Mean Availability by train mode



Mean Throughput by train mode



Mean Score by dtype



Mean hard Acc by dtype



Mean Score by arch



Honesty - mean Score, every mode x dtype



Honesty - mean hard Acc, every mode x dtype

Honesty - mean hard Acc, every mode x dtype



Honesty - mean SoftAcc, every mode x dtype



Honesty - mean Avail, every mode x dtype



Mean Score, every mode x arch

Mean Score, every mode x arch



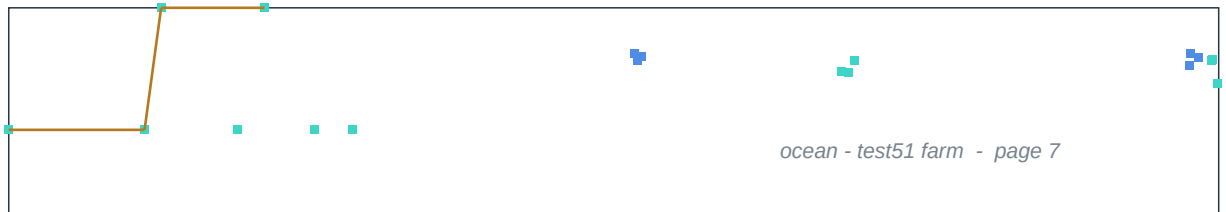
Mean hard Acc, every mode x arch



Mean Avail, every mode x arch



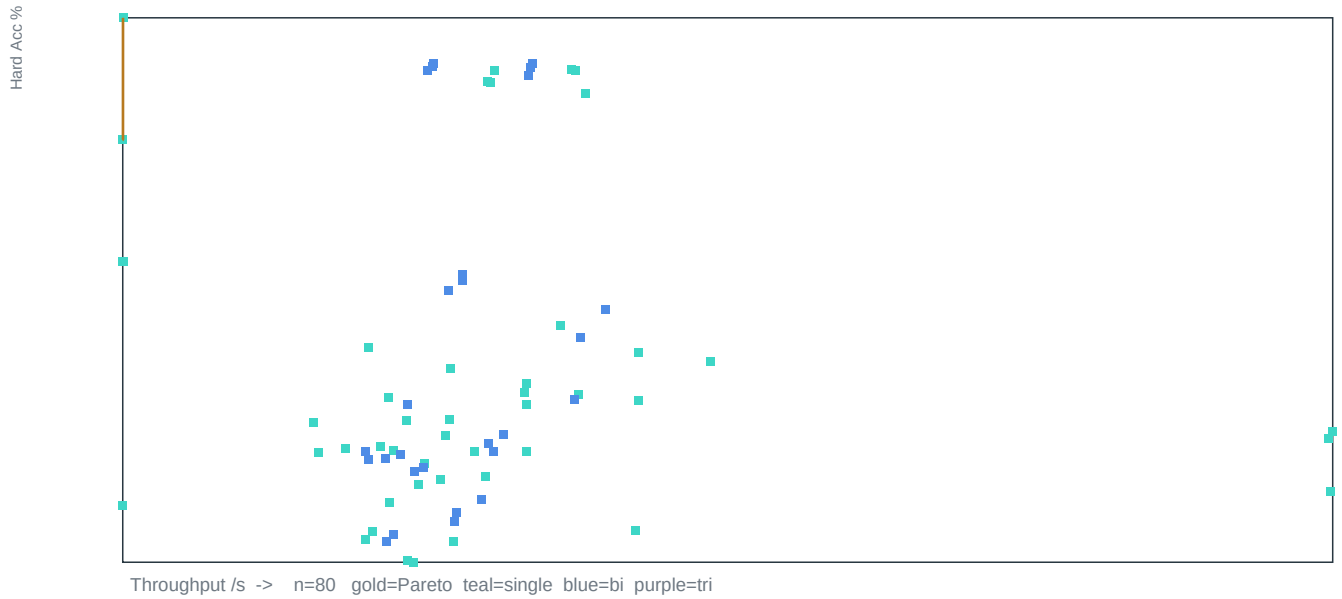
Pillars - Availability vs hard Acc



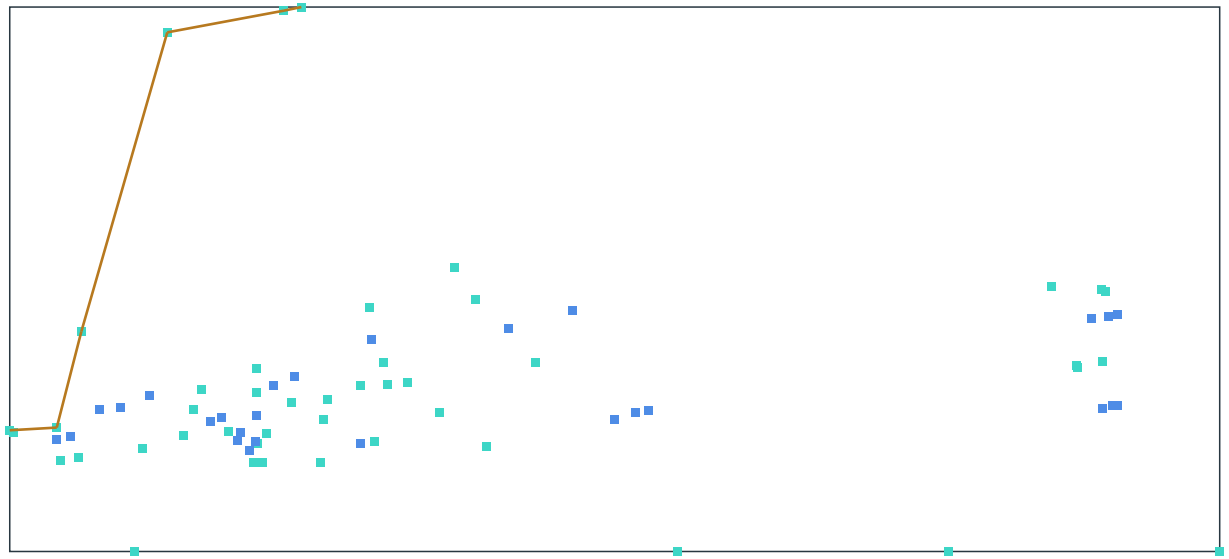
Availability % -> n=80 gold=Pareto teal=single blue=bi purple=tri

Hard Acc %

Pillars - Throughput vs hard Acc



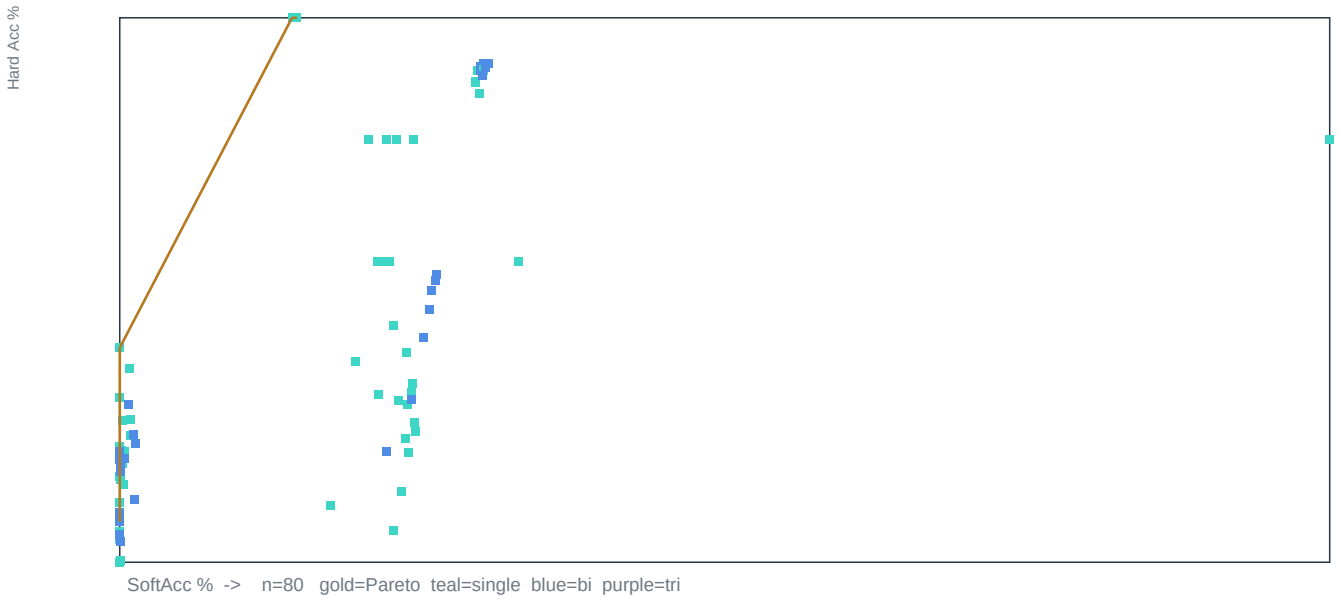
Pareto - hard Acc vs Lucy Score



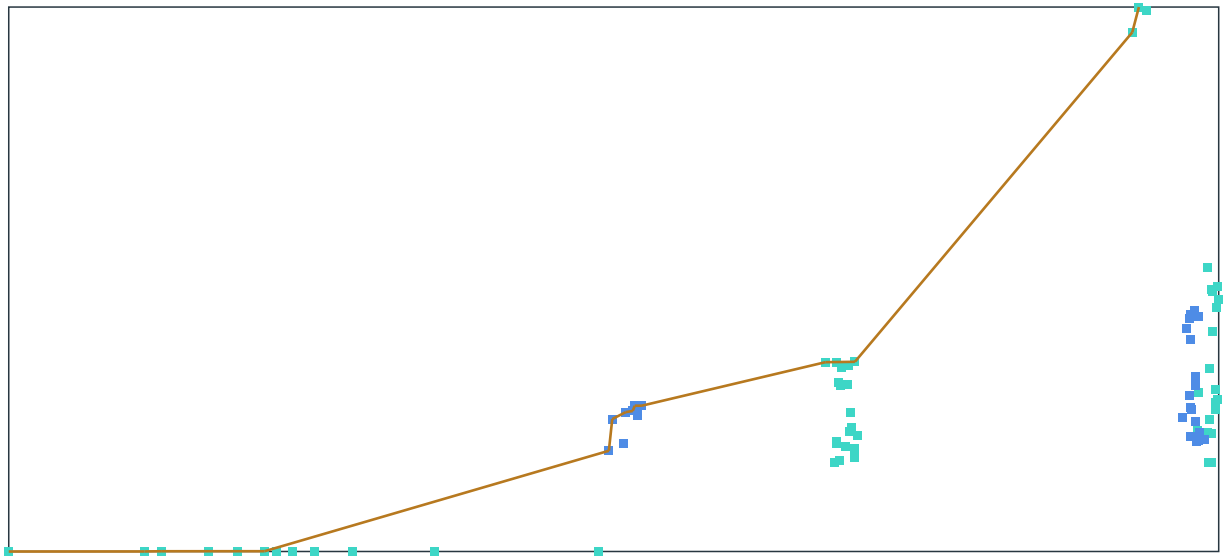
Hard Acc % -> n=80 gold=Pareto teal=single blue=bi purple=tri

Lucy Score (Welvet)

SoftAcc (serve-confidence) vs hard Acc

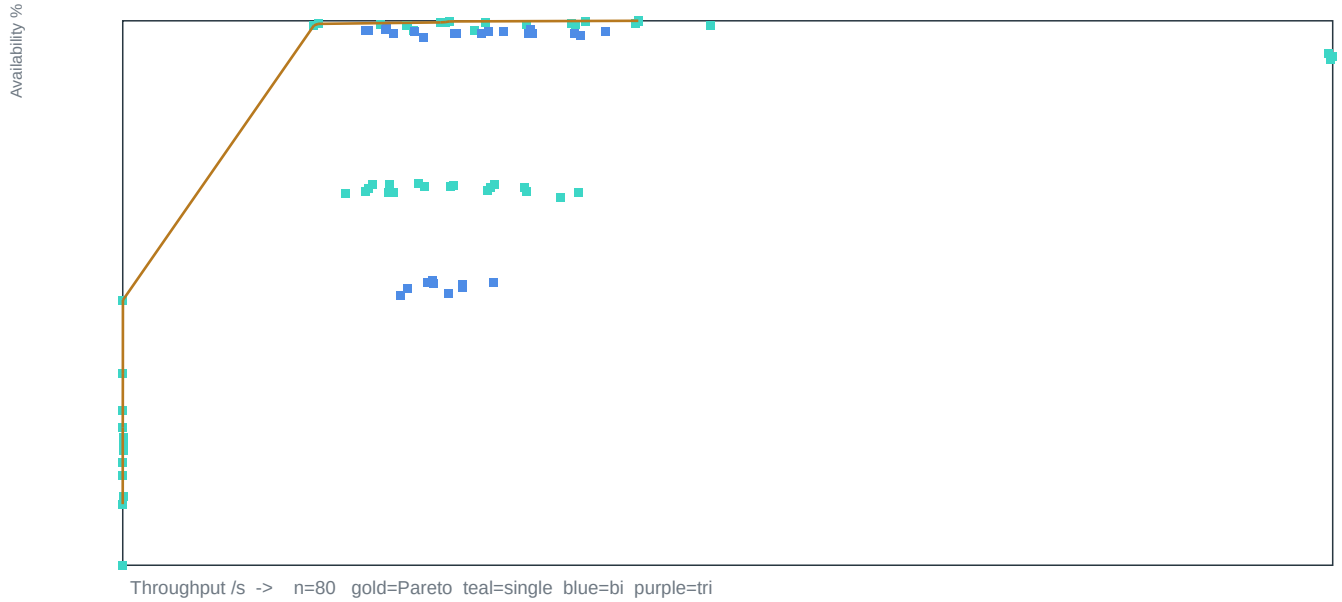


Avail vs Lucy Score (duty clock)




Availability % -> n=80 gold=Pareto teal=single blue=bi purple=tri
Lucy Score

Pillars - Throughput vs Availability



vs sgd - matched dtype x format x arch

Hard AccD is percentage points vs baseline on the same recipe - not Acc-keep%. ScoreD is usually Availability (duty clock). Acc win = Hard AccD > 0.5. Score win = ScoreD > 1. Baseline is discovered from the board. For footprint vs Acc champ use Lean / Acc keep % in Consciousness below.

mode	n	Hard AccD	Acc win%	SoftD	AvailD	ThruD	ScoreD	Score win%
Step[T][S]	40	-3.8	20	-3.4	+14.7	+175	+182.7	70

mean Hard AccD vs sgd (pp)



mean ThruD vs sgd



mean ScoreD vs sgd (duty clock)



mean AvailD vs sgd



Hard AccD vs sgd, every mode x dtype



ScoreD vs sgd, every mode x dtype



AvailD vs sgd, every mode x dtype



Hard AccD vs sgd, every mode x arch / cam

Hard AccD vs sgd, every mode x arch / cam



Consciousness - Acc keep, Throughput, Availability

Synthetic organism / Lucy density: run+train in a small box. Hard Acc = argmax accuracy. Acc keep % = this Acc / Acc-champ Acc (1.0 = matches the best Acc). SoftAcc = serve-confidence (not Score). Score = Thru x Avail x HardAcc / 10,000. Q = geomean Acc-keep/Thru-keep/Avail-keep vs learner peaks. 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 keep >=80% plus Thru or Avail, then smallest then fastest. Lean = Acc keep >=95% of Acc champ, then smallest RAM / fastest Thru / best Avail - sacrifice peak Acc only within that band.

Acc champ (Hard Acc peak) flee|3x3x3|dense|fp8e4m3|lr=0.02|cam=1|NormalBP Hard Acc 100.0 Acc keep 100% Thru 5 Avail 63.5% 12.3 KiB (RAM reference)

Lucy Score champ (T x Avail x Hard Acc) chase|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit Score 1553.6 Hard Acc 77.4 Soft 22 49.2 KiB

Live-fit champ (best Q) chase|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit Hard Acc 77.4 Thru 2106 Avail 95.3% 49.2 KiB

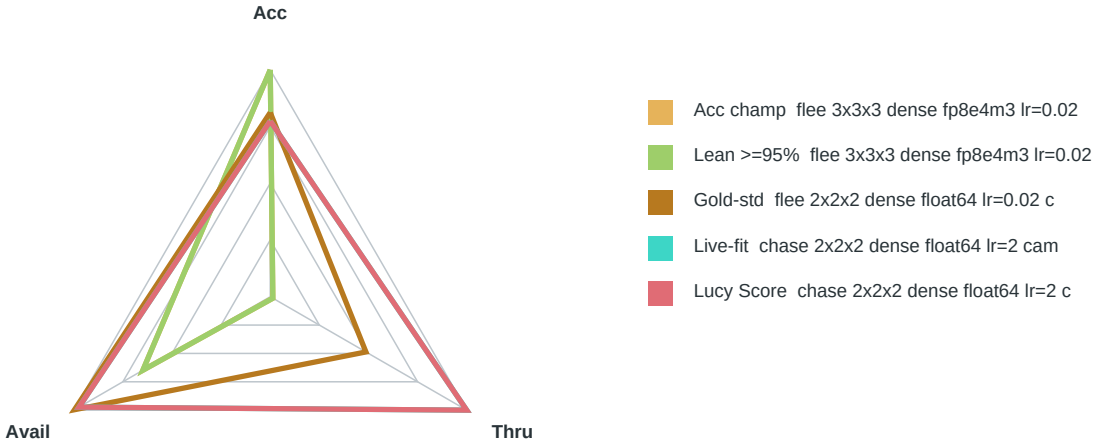
Lean >=95% Acc keep (smallest RAM, then fastest Thru): flee|3x3x3|dense|fp8e4m3|lr=0.02|cam=1|NormalBP mode sgd Hard Acc 100.0 Acc keep 100% Thru 5 Avail 63.5% 12.3 KiB (14 in band)

Gold-std (2+ pillars, Acc keep >= 80%, then smallest then fastest): flee|2x2x2|dense|float64|lr=0.02|cam=1|StepTweenSplit mode Step[T][S] Hard Acc 81.2 Acc keep 81% Thru 1025 49.2 KiB

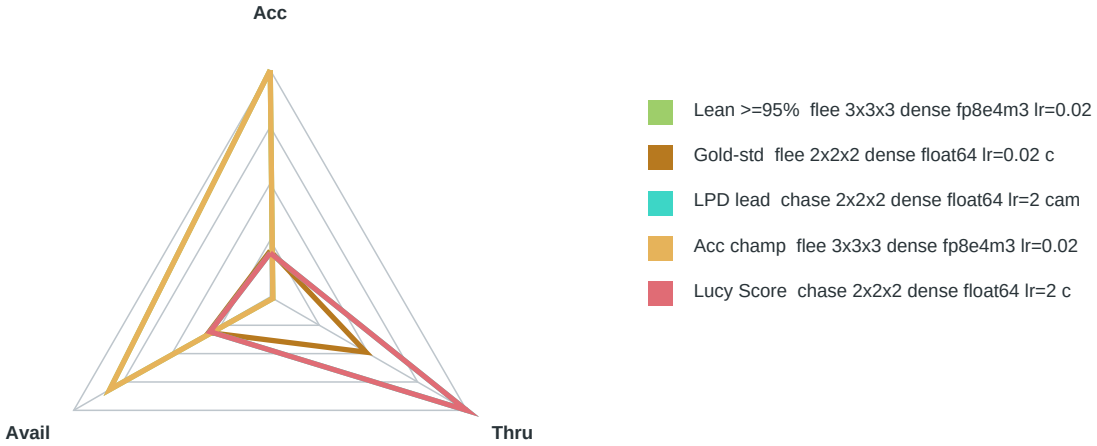
Board fastest chase|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit Thru 2106 (traps may own this) Best availability flee|2x2x2|dense|float64|lr=0.2|cam=1|StepTweenSplit 97.9%

Learner Thru peak 2106 learner Avail peak 97.9% LPD board n=80

Consciousness radar - Acc keep / Thru keep / Avail keep vs learner peaks



Memory density radar - keep 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 / arch	n	Hard Acc	KiB	Thru	Cell
Step[T][S]	10	97.5	49.2	1025	flee 2x2x2 dense float64 lr=0.02 cam=1 StepTweenSplit
sgd	12	97.5	49.2	765	flee 2x2x2 dense float64 lr=0.02 cam=1 NormalBP

Lean >=95% Acc keep - sacrifice peak Acc for footprint (smallest RAM first)

Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
acc	flee 3x3x3 dense fp8e4m3 lr=0.02 cam=1 NormalBP	100	0	65	11	100	1.0	0.11	100.0	5	12.3
acc	flee 2x2x2 dense fp8e4m3 lr=0.2 cam=1 NormalBP	100	0	68	11	100	1.0	0.11	100.0	5	12.3
keep	flee 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	96	38	100	72	400	0.2	0.18	95.9	807	49.2
keep	flee 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	97	38	100	71	400	0.2	0.18	97.1	791	49.2
keep	flee 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	97	37	100	71	400	0.2	0.18	97.2	783	49.2
keep	flee 1x1x1 dense float64 lr=2 cam=1 NormalBP	97	31	88	64	400	0.2	0.16	97.1	650	49.2
keep	flee 2x2x2 dense float64 lr=2 cam=1 NormalBP	96	31	88	64	400	0.2	0.16	96.5	643	49.2
keep	flee 3x3x3 dense float64 lr=2 cam=1 NormalBP	96	30	87	63	400	0.2	0.16	96.5	638	49.2

Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
keep	flee 2x2x2 dense float64 lr=2 cam=2 StepTweenSplit	97	34	99	69	491	0.2	0.14	97.5	716	60.5
keep	flee 1x1x1 dense float64 lr=2 cam=2 StepTweenSplit	97	34	99	69	491	0.2	0.14	97.3	712	60.5
keep	flee 3x3x3 dense float64 lr=2 cam=2 StepTweenSplit	97	34	99	69	491	0.2	0.14	96.8	709	60.5
keep	flee 2x2x2 dense float64 lr=2 cam=2 NormalBP	97	26	81	59	491	0.2	0.12	97.5	543	60.5
keep	flee 1x1x1 dense float64 lr=2 cam=2 NormalBP	97	26	81	59	491	0.2	0.12	97.4	542	60.5
keep	flee 3x3x3 dense float64 lr=2 cam=2 NormalBP	97	25	81	58	491	0.2	0.12	97.1	534	60.5

Lean winners by arch / cam - Acc keep >=95%, then smallest KiB

Mode / arch	n	Hard Acc	KiB	Thru	Cell
bicameralx2	1	97.5	60.5	716	flee 2x2x2 dense float64 lr=2 cam=2 StepTweenSplit
singlex1	1	100.0	12.3	5	flee 3x3x3 dense fp8e4m3 lr=0.02 cam=1 NormalBP

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

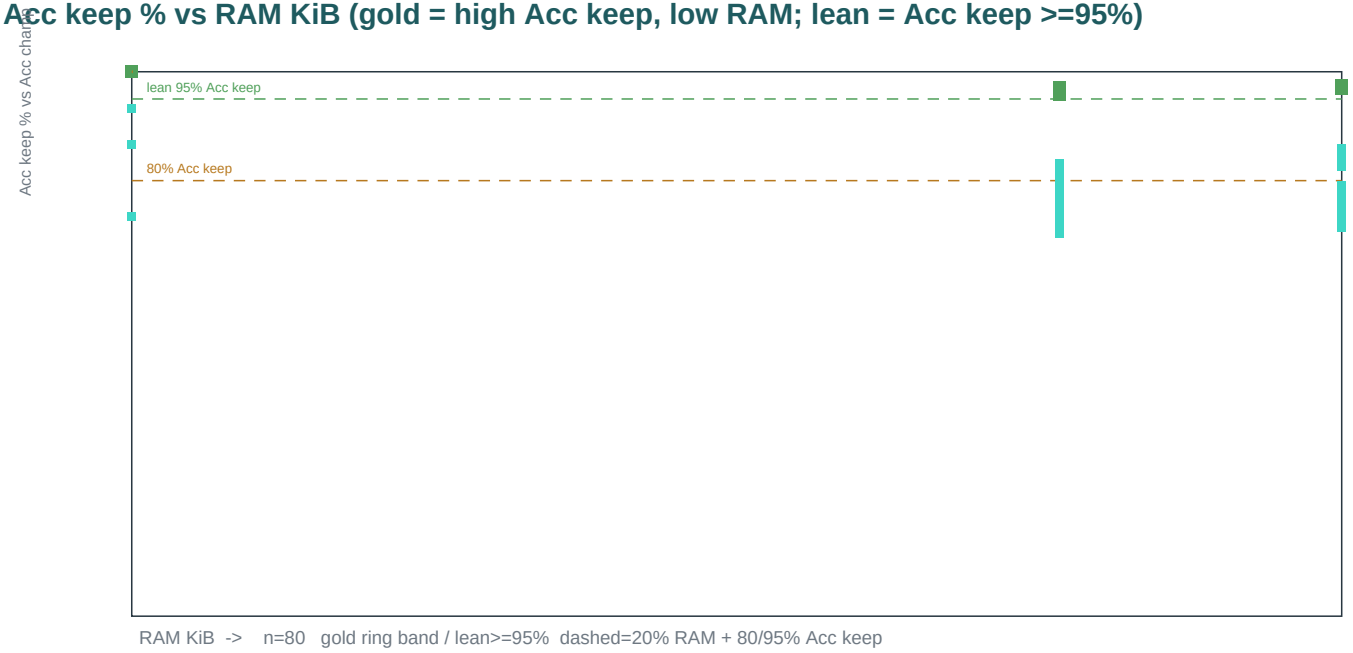
Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
-	chase 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	77	100	97	91	400	0.2	0.23	77.4	2106	49.2
-	chase 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	77	100	98	91	400	0.2	0.23	77.0	2098	49.2
-	chase 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	74	100	97	90	400	0.2	0.22	74.1	2102	49.2
keep	flee 2x2x2 dense float64 lr=0.02 cam=1 StepTweenSplit	81	49	100	73	400	0.2	0.18	81.2	1025	49.2
keep	flee 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	96	38	100	72	400	0.2	0.18	95.9	807	49.2
keep	flee 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	97	38	100	71	400	0.2	0.18	97.1	791	49.2
keep	flee 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	97	37	100	71	400	0.2	0.18	97.2	783	49.2
keep	flee 2x2x2 dense float64 lr=0.2 cam=1 StepTweenSplit	82	43	100	70	400	0.2	0.18	81.7	900	49.2
-	flee 3x3x3 dense float64 lr=0.2 cam=1 StepTweenSplit	79	43	100	70	400	0.2	0.17	79.1	900	49.2
-	flee 1x1x1 dense float64 lr=0.2 cam=1 StepTweenSplit	72	42	100	67	400	0.2	0.17	72.0	894	49.2
keep	flee 1x1x1 dense float64 lr=2 cam=1 NormalBP	97	31	88	64	400	0.2	0.16	97.1	650	49.2
keep	flee 2x2x2 dense float64 lr=0.02 cam=1 NormalBP	83	36	87	64	400	0.2	0.16	83.2	765	49.2
-	flee 1x1x1 dense float64 lr=0.02 cam=1 NormalBP	79	38	87	64	400	0.2	0.16	79.4	796	49.2
keep	flee 2x2x2 dense float64 lr=2 cam=1 NormalBP	96	31	88	64	400	0.2	0.16	96.5	643	49.2
keep	flee 3x3x3 dense float64 lr=2 cam=1 NormalBP	96	30	87	63	400	0.2	0.16	96.5	638	49.2
-	flee 2x2x2 dense float64 lr=20 cam=1 StepTweenSplit	76	33	100	63	400	0.2	0.16	76.3	705	49.2
keep	flee 2x2x2 dense float64 lr=0.2 cam=1 NormalBP	80	34	87	62	400	0.2	0.15	80.0	706	49.2
-	flee 3x3x3 dense float64 lr=0.2 cam=1 NormalBP	80	33	88	61	400	0.2	0.15	79.5	702	49.2
-	flee 1x1x1 dense float64 lr=0.2 cam=1 NormalBP	79	33	87	61	400	0.2	0.15	78.9	705	49.2

Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
-	flee 1x1x1 dense float64 lr=200 cam=1 StepTweenSplit	75	30	100	61	400	0.2	0.15	75.0	635	49.2

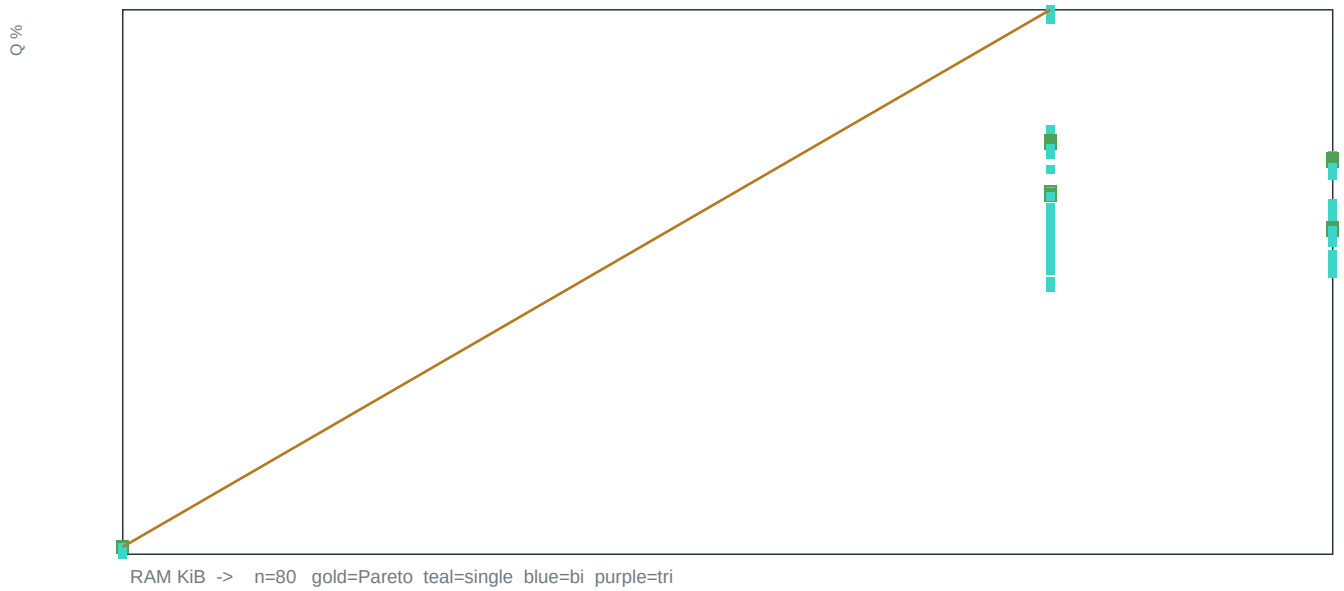
Consciousness rank - Q = geomean Acc-keep / Thru-keep / Avail-keep

Band	Cell	Acc keep%	Thru%	Avail%	Q%	LPD	Thru	Avail
-	chase 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	77	100	97	91	0.23	2106	95.3
-	chase 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	77	100	98	91	0.23	2098	95.6
-	chase 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	74	100	97	90	0.22	2102	95.1
keep	flee 2x2x2 dense float64 lr=0.02 cam=1 StepTweenSplit	81	49	100	73	0.18	1025	97.5
keep	flee 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	96	38	100	72	0.18	807	97.9
keep	flee 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	97	38	100	71	0.18	791	97.7
keep	flee 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	97	37	100	71	0.18	783	97.7
keep	flee 2x2x2 dense float64 lr=0.2 cam=1 StepTweenSplit	82	43	100	70	0.18	900	97.9
-	flee 3x3x3 dense float64 lr=0.2 cam=1 StepTweenSplit	79	43	100	70	0.17	900	97.8
keep	flee 1x1x1 dense float64 lr=0.2 cam=2 StepTweenSplit	84	40	99	69	0.14	843	97.1

Acc keep % vs RAM KiB (gold = high Acc keep, low RAM; lean = Acc keep >=95%)



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



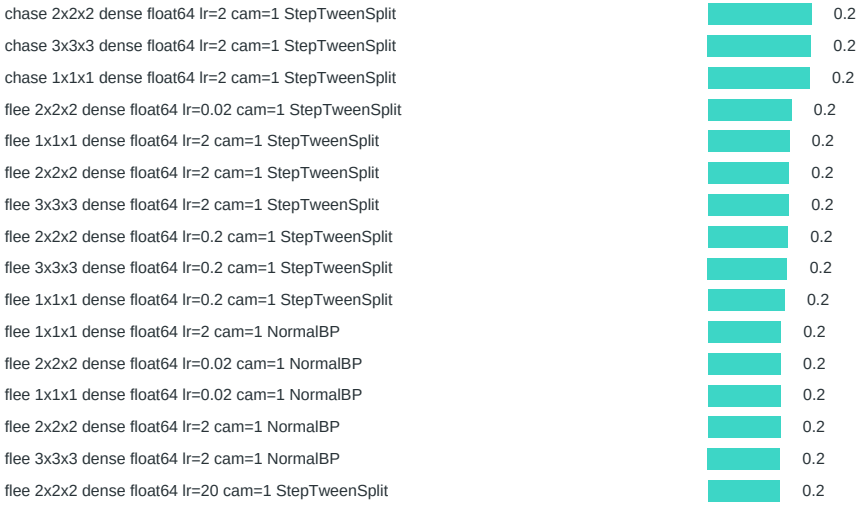
Q% vs shrink vs Acc champ (gold = upper right)



times smaller than Acc champ -> n=80 gold=Pareto teal=single blue=bi purple=tri

Q %

Top Lucy density (LPD)



tide test51

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 [F]=Freeze [Sh]=Shadow [A]=Adv [M]=Memory
running - epoch 1 - lr 0.05 - 2026-09-12 01:09:39 - 0.0.0.0:8080
This epoch 1231 / 122400 cells. Recorded 1231 results. Learning rate 0.05.
Score 0 usually means the cell finished before a Lucy pulse (Hard Acc never sampled). Score is live-fit: Throughput x Availability x Hard Acc. Acc keep % = Hard Acc / Acc-champ Hard Acc.
SoftAcc is serve-confidence only. Lean = Acc keep >=95%, then smallest RAM.
think-race host - tree sweep feeds Tide Lucy reports

Lucy champions (this tide)

Axis	Cell	Score	Soft	Acc	Thru	Avail
hard acc	flee|1x1x1|dense|bfloat16|lr=20|cam=2|StepTweenSplit	6.89	89.3	92.1	8.3	90.1
throughput	chase|1x1x1|dense|float64|lr=0.02|cam=1|StepTweenSplit	541.84	13.9	22.5	2560.9	93.9
availability	shock|2x2x2|dense|float32|lr=1e+06|cam=1|StepTweenSplit	5.90	1.6	30.3	19.6	99.3
lucy score	chase|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit	1553.61	22.0	77.4	2105.5	95.3
mobile score (trap)	chase|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit	1553.61	22.0	77.4	2105.5	95.3
acc/sec	flee|2x2x2|dense|float32|lr=10000|cam=3|StepTweenSplit	42.88	5.1	98.6	45.6	95.4

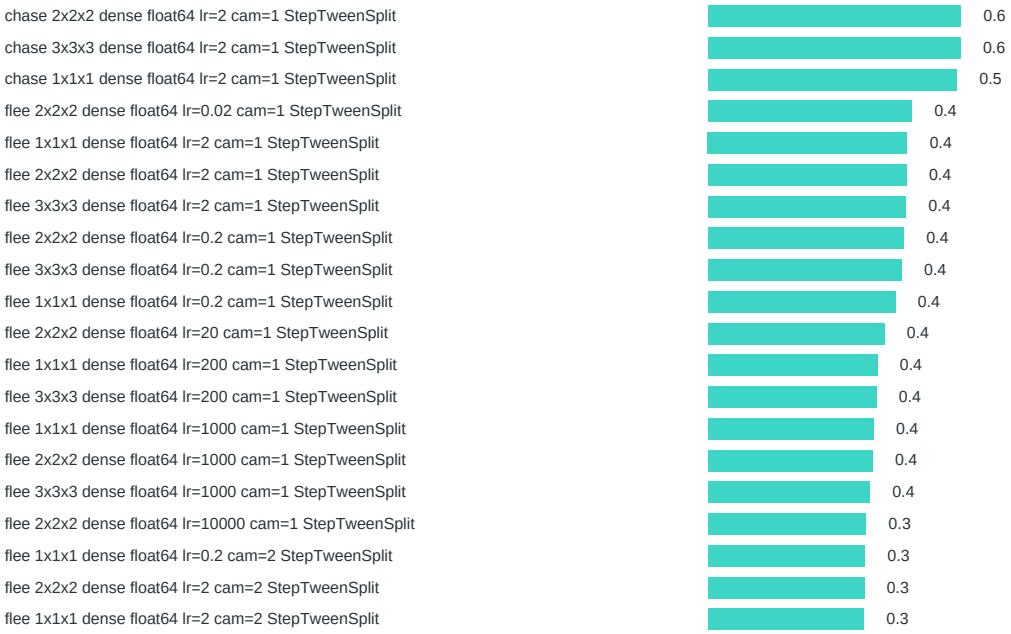
Lucy axes - test51

Axis	Mode	DType	Arch	Value
hard_acc	Step[T][S]	float16	bicameralx2	100.00
throughput	Step[T][S]	float64	singlex1	2560.91
availability	Step[T][S]	float32	singlex1	99.33
score	Step[T][S]	float64	singlex1	1553.61
soft_acc	Step[T][S]	bfloat16	bicameralx2	89.35
acc_thru	Step[T][S]	float64	singlex1	1630.16
realtime	Step[T][S]	float64	singlex1	2405.16
keep_learn	Step[T][S]	float32	tricameralx3	32.79
acc_per_sec	Step[T][S]	float32	tricameralx3	32.79
consistency	Step[T][S]	float64	singlex1	100.00
stability	Step[T][S]	float32	singlex1	100.00
mobile_score	Step[T][S]	float64	singlex1	32302.48
lpd	Step[T][S]	float64	singlex1	0.56
mspeed	Step[T][S]	float64	singlex1	1.00
mavail	Step[T][S]	bfloat16	singlex1	1.00

Axis	Mode	DType	Arch	Value
mix	Step[T][S]	float64	singlex1	0.91
gold_std	Step[T][S]	float16	singlex1	24.62

Models ranked - live-fit + Lucy density

Top LPD (memory density)



Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
-	chase 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	77	100	97	91	163	0.6	0.56	77.4	2106	49.2
-	chase 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	77	100	97	91	163	0.6	0.56	77.0	2098	49.2
-	chase 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	74	100	96	89	163	0.6	0.55	74.1	2102	49.2
keep	flee 2x2x2 dense float64 lr=0.02 cam=1 StepTweenSplit	81	49	99	73	163	0.6	0.45	81.2	1025	49.2
keep	flee 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	96	38	99	71	163	0.6	0.44	95.9	807	49.2
keep	flee 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	97	38	99	71	163	0.6	0.44	97.1	791	49.2
keep	flee 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	97	37	99	71	163	0.6	0.44	97.2	783	49.2
keep	flee 2x2x2 dense float64 lr=0.2 cam=1 StepTweenSplit	82	43	99	70	163	0.6	0.43	81.7	900	49.2
-	flee 3x3x3 dense float64 lr=0.2 cam=1 StepTweenSplit	79	43	99	69	163	0.6	0.43	79.1	900	49.2
-	flee 1x1x1 dense float64 lr=0.2 cam=1 StepTweenSplit	72	42	99	67	163	0.6	0.41	72.0	894	49.2

Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
-	flee 2x2x2 dense float64 lr=20 cam=1 StepTweenSplit	76	33	99	63	163	0.6	0.39	76.3	705	49.2
-	flee 1x1x1 dense float64 lr=200 cam=1 StepTweenSplit	75	30	99	61	163	0.6	0.37	75.0	635	49.2
-	flee 3x3x3 dense float64 lr=200 cam=1 StepTweenSplit	76	29	98	60	163	0.6	0.37	76.3	615	49.2
-	flee 1x1x1 dense float64 lr=1000 cam=1 StepTweenSplit	78	27	99	59	163	0.6	0.37	78.1	571	49.2
-	flee 2x2x2 dense float64 lr=1000 cam=1 StepTweenSplit	77	27	99	59	163	0.6	0.36	77.2	565	49.2
-	flee 3x3x3 dense float64 lr=1000 cam=1 StepTweenSplit	75	26	99	58	163	0.6	0.36	74.8	556	49.2
-	flee 2x2x2 dense float64 lr=10000 cam=1 StepTweenSplit	78	24	99	57	163	0.6	0.35	78.0	498	49.2
keep	flee 1x1x1 dense float64 lr=0.2 cam=2 StepTweenSplit	84	40	98	69	200	0.5	0.35	84.1	843	60.5
keep	flee 2x2x2 dense float64 lr=2 cam=2 StepTweenSplit	97	34	98	69	200	0.5	0.34	97.5	716	60.5
keep	flee 1x1x1 dense float64 lr=2 cam=2 StepTweenSplit	97	34	98	69	200	0.5	0.34	97.3	712	60.5

Best settings per train mode

Mode	Arch	DType	Fmt	Score	Soft	Acc	Avail	t50	Acc/s	KiB	n
Step[T][S]	singlex1	float64	none	1553.6	22.0	77.4	95.3	-	0.00	0.0	1231

Best cell per mode x arch

-

Best dtype per train mode

Mode	Dtype	Score	Soft	Acc	n
StepTweenSplit	float64	1553.6	22.0	77.4	1231

Best quant format per train mode

-

Best train mode per dtype

Dtype	Mode	Score	Soft	Acc	n
float64	Step[T][S]	1553.6	22.0	77.4	360
float32	Step[T][S]	59.9	23.5	83.2	360
float16	Step[T][S]	15.8	13.0	98.1	360
bfloat16	Step[T][S]	8.2	12.9	100.0	151

Best train mode per quant format

-

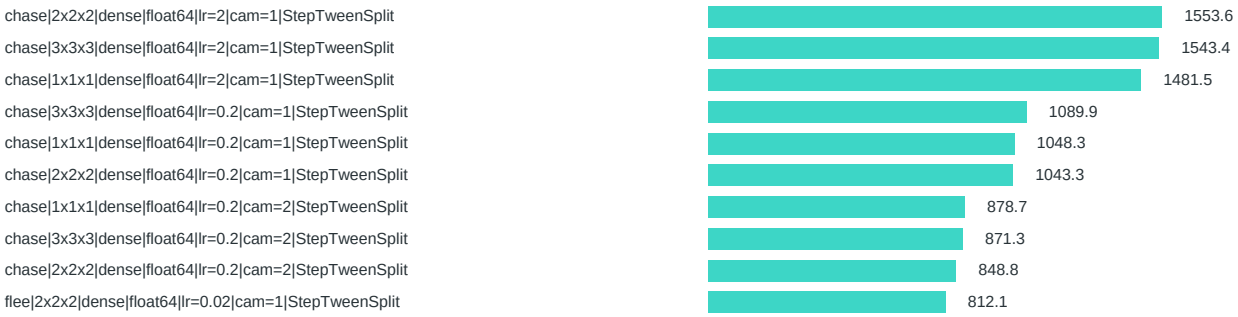
Best format per dtype

-

Leaderboard - test51

#	Cell	Score	Soft	Acc	Thru	Avail
1	chase|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit	1553.6	22.0	77.4	2105.5	95.3
2	chase|3x3x3|dense|float64|lr=2|cam=1|StepTweenSplit	1543.4	21.2	77.0	2097.8	95.6
3	chase|1x1x1|dense|float64|lr=2|cam=1|StepTweenSplit	1481.5	21.0	74.1	2101.8	95.1
4	chase|3x3x3|dense|float64|lr=0.2|cam=1|StepTweenSplit	1089.9	16.4	49.6	2322.5	94.7
5	chase|1x1x1|dense|float64|lr=0.2|cam=1|StepTweenSplit	1048.3	15.8	46.3	2402.5	94.2
6	chase|2x2x2|dense|float64|lr=0.2|cam=1|StepTweenSplit	1043.3	15.9	46.6	2363.9	94.6
7	chase|1x1x1|dense|float64|lr=0.2|cam=2|StepTweenSplit	878.7	16.4	50.2	1875.3	93.4
8	chase|3x3x3|dense|float64|lr=0.2|cam=2|StepTweenSplit	871.3	16.5	50.4	1848.5	93.5
9	chase|2x2x2|dense|float64|lr=0.2|cam=2|StepTweenSplit	848.8	16.0	48.1	1888.6	93.4
10	flee|2x2x2|dense|float64|lr=0.02|cam=1|StepTweenSplit	812.1	17.5	81.2	1025.3	97.5
11	flee|1x1x1|dense|float64|lr=2|cam=1|StepTweenSplit	757.5	26.8	95.9	807.4	97.9
12	flee|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit	749.8	27.1	97.1	790.7	97.7
13	flee|3x3x3|dense|float64|lr=2|cam=1|StepTweenSplit	743.8	27.1	97.2	783.4	97.7
14	flee|2x2x2|dense|float64|lr=0.2|cam=1|StepTweenSplit	719.5	21.3	81.7	899.6	97.9
15	chase|1x1x1|dense|float64|lr=0.2|cam=3|StepTweenSplit	711.8	16.5	50.9	1514.3	92.4
16	flee|3x3x3|dense|float64|lr=0.2|cam=1|StepTweenSplit	696.6	20.8	79.1	900.3	97.8
17	flee|1x1x1|dense|float64|lr=0.2|cam=2|StepTweenSplit	688.2	23.1	84.1	842.8	97.1
18	chase|3x3x3|dense|float64|lr=0.2|cam=3|StepTweenSplit	685.9	16.1	49.2	1503.6	92.7
19	flee|2x2x2|dense|float64|lr=2|cam=2|StepTweenSplit	676.8	27.4	97.5	715.7	97.0
20	flee|1x1x1|dense|float64|lr=2|cam=2|StepTweenSplit	673.1	27.2	97.3	711.5	97.2

Top scores - test51



Top scores - test51



Mean Score by train mode



Mean hard Acc by train mode



Mean SoftAcc by train mode



Mean Availability by train mode



Mean Throughput by train mode



Mean Score by dtype



Mean hard Acc by dtype



Mean Score by arch

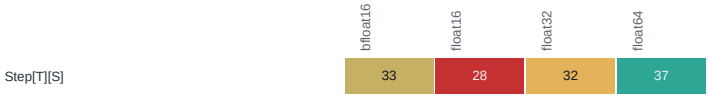


Honesty - mean Score, every mode x dtype

Honesty - mean Score, every mode x dtype



Honesty - mean hard Acc, every mode x dtype

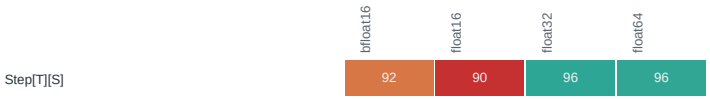


Honesty - mean SoftAcc, every mode x dtype



Honesty - mean Avail, every mode x dtype

Honesty - mean Avail, every mode x dtype



Mean Score, every mode x arch



Mean hard Acc, every mode x arch

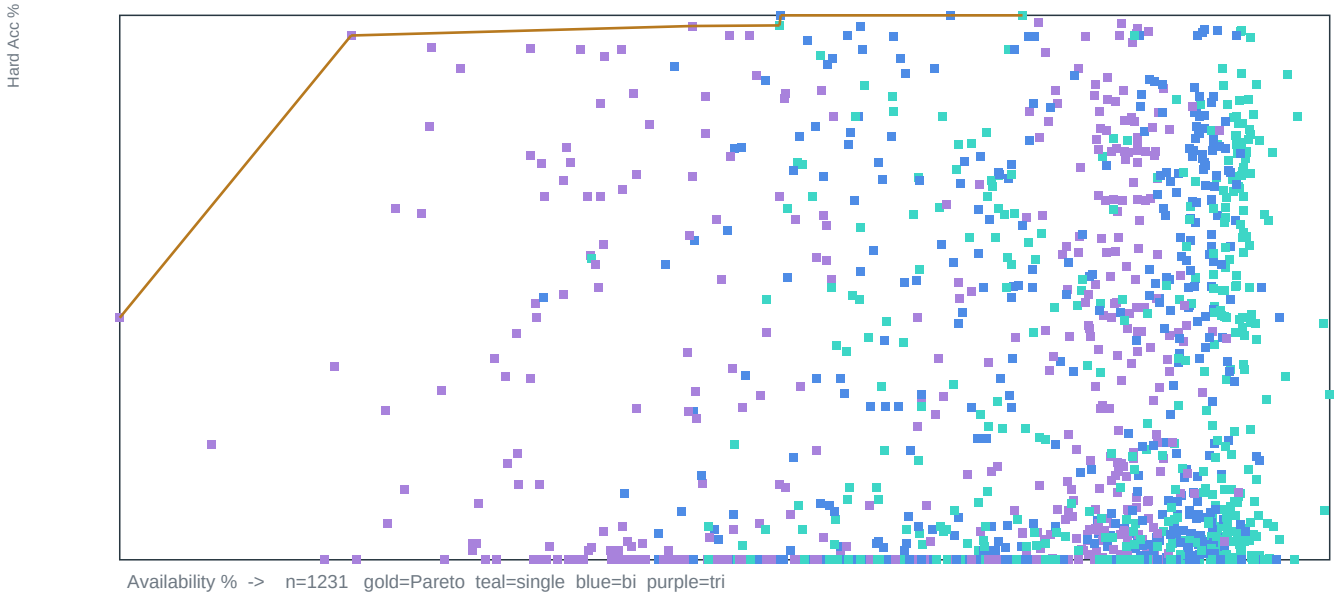


Mean Avail, every mode x arch

Mean Avail, every mode x arch



Pillars - Availability vs hard Acc



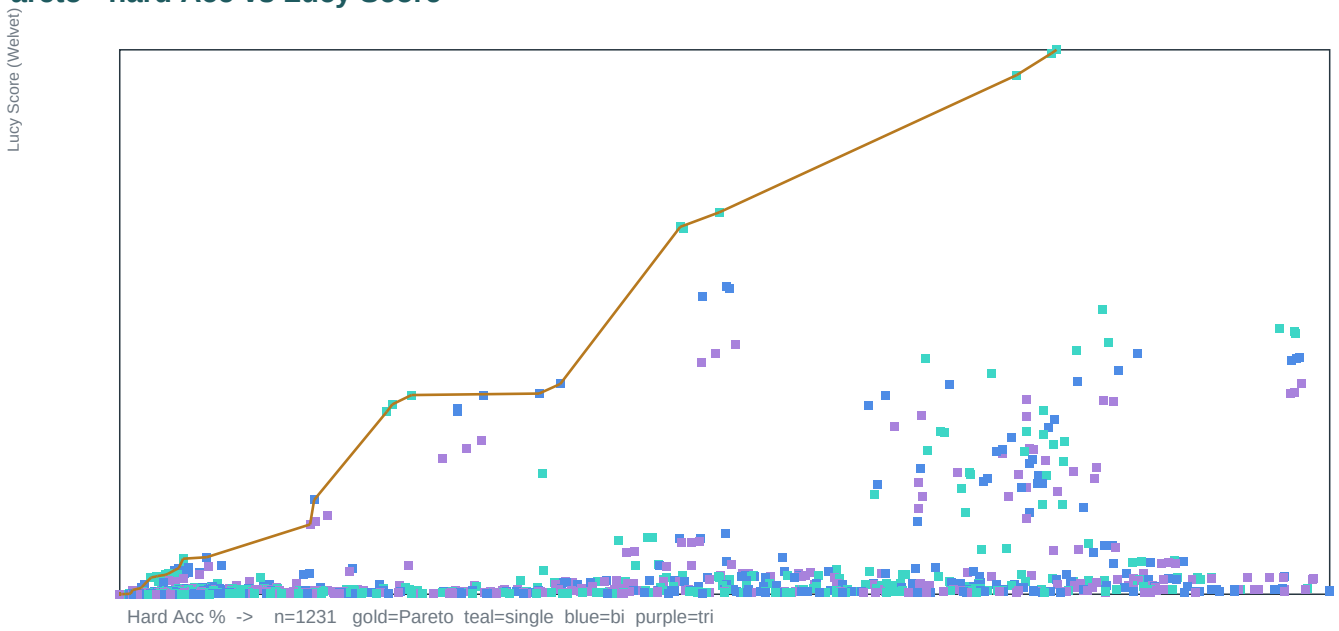
Pillars - Throughput vs hard Acc



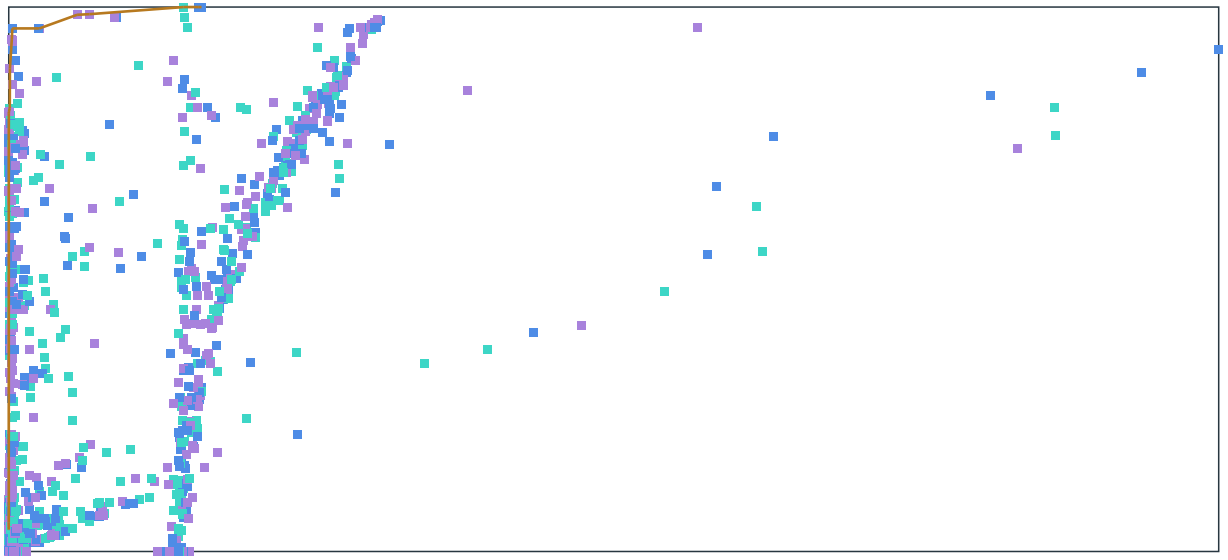
Throughput /s -> n=1231 gold=Pareto teal=single blue=bi purple=tri

Hard Acc %

Pareto - hard Acc vs Lucy Score

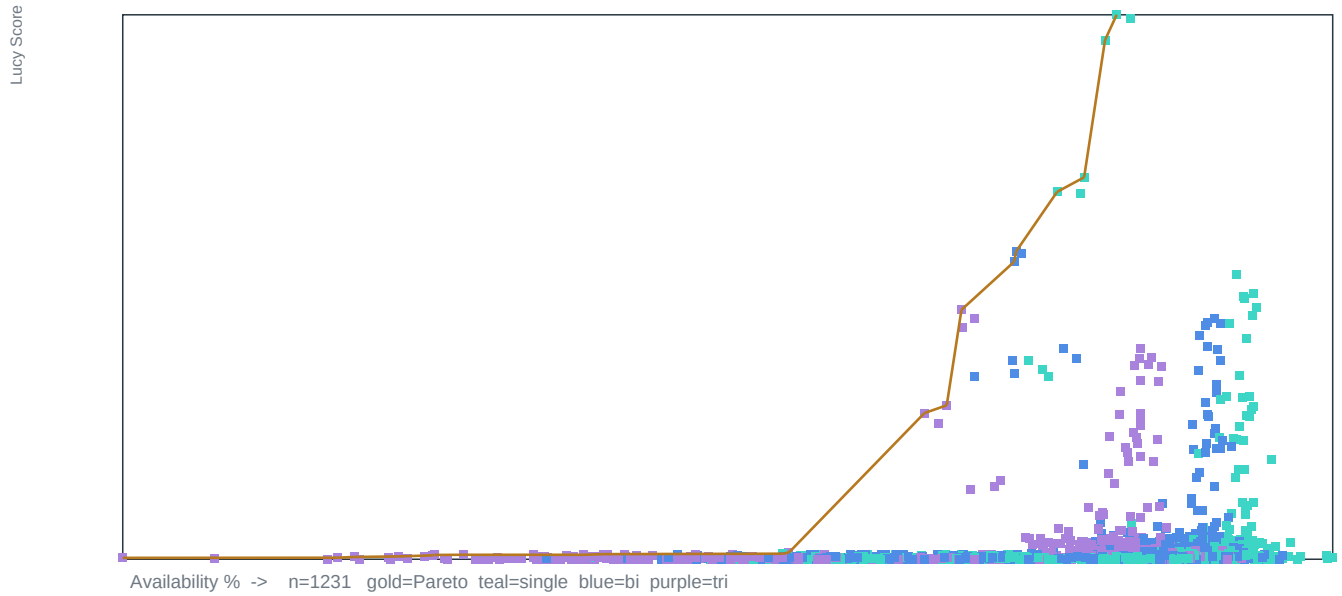


SoftAcc (serve-confidence) vs hard Acc

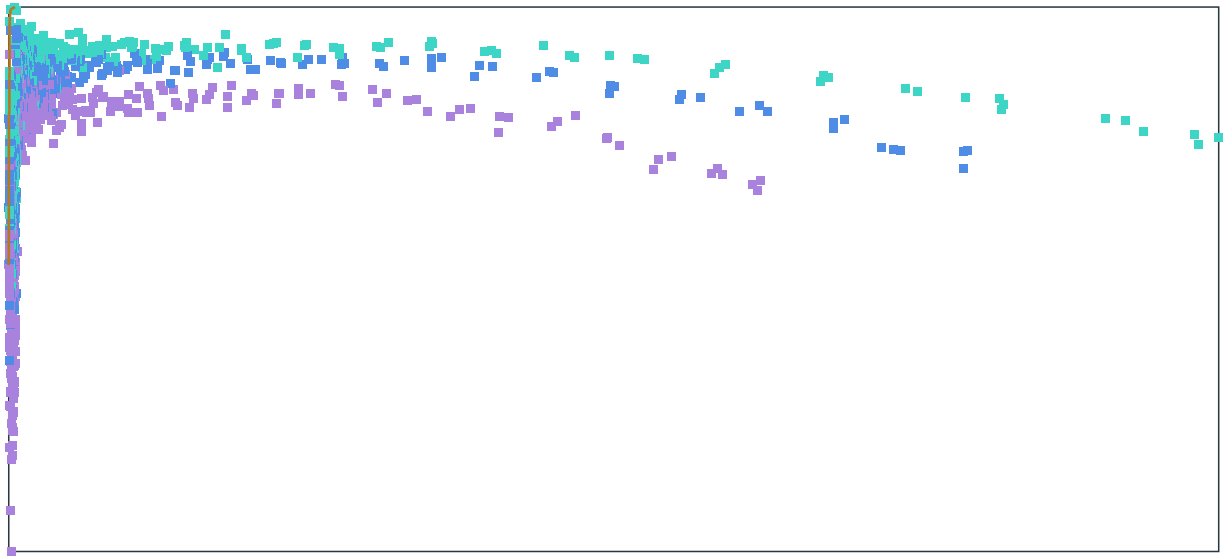



SoftAcc % -> n=1231 gold=Pareto teal=single blue=bi purple=tri
Hard Acc %

Avail vs Lucy Score (duty clock)



Pillars - Throughput vs Availability



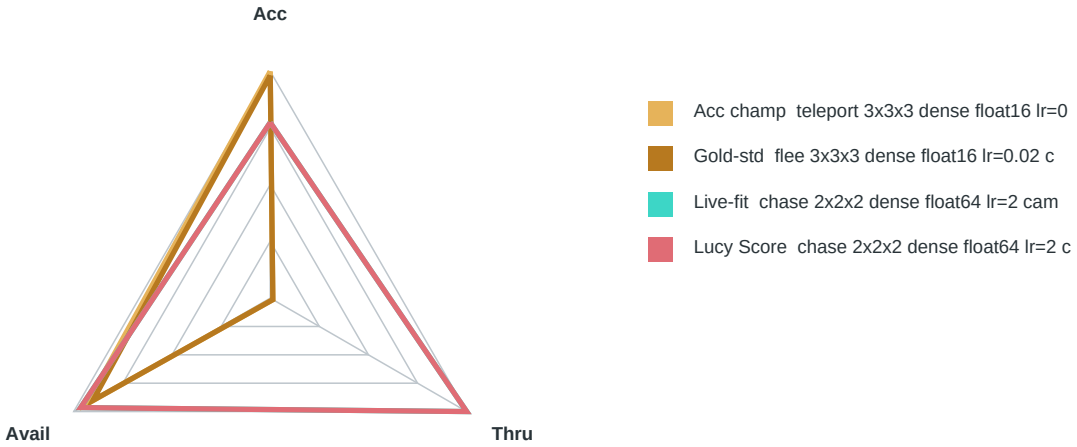
Throughput /s ->   n=1231 gold=Pareto teal=single blue=bi purple=tri

Availability %

Consciousness - Acc keep, 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 (Hard Acc peak) teleport|3x3x3|dense|float16|lr=0.2|cam=2|StepTweenSplit Hard Acc 100.0 Acc keep 100% Thru 13 Avail 92.3% 30.2 KiB (RAM reference)
Lucy Score champ (T x Avail x Hard Acc) chase|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit Score 1553.6 Hard Acc 77.4 Soft 22 49.2 KiB
Live-fit champ (best Q) chase|2x2x2|dense|float64|lr=2|cam=1|StepTweenSplit Hard Acc 77.4 Thru 2106 Avail 95.3% 49.2 KiB
No lean cell yet - need Hard Acc >=95% of Acc champ, then pick smallest RAM / fastest Thru.
Gold-std (2+ pillars, Acc keep >= 80%, then smallest then fastest): flee|3x3x3|dense|float16|lr=0.02|cam=1|StepTweenSplit mode Step[T][S] Hard Acc 98.1 Acc keep 98% Thru 18 24.6 KiB
Board fastest chase|1x1x1|dense|float64|lr=0.02|cam=1|StepTweenSplit Thru 2561 (traps may own this) Best availability shock|2x2x2|dense|float32|lr=1e+06|cam=1|StepTweenSplit 99.3%
Learner Thru peak 2106 learner Avail peak 98.7% LPD board n=1231

Consciousness radar - Acc keep / Thru keep / Avail keep vs learner peaks

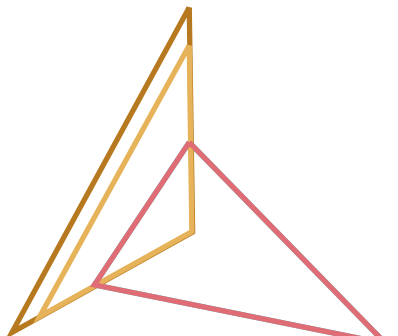


Memory density radar - keep x shrink vs Acc champ (traps sit at origin)



Thru

Avail



Gold-std flee 3x3x3 dense float16 lr=0.02 c

LPD lead chase 2x2x2 dense float64 lr=2 cam

Acc champ teleport 3x3x3 dense float16 lr=0

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 / arch	n	Hard Acc	KiB	Thru	Cell
Step[T][S]	118	100.0	24.6	1025	flee 3x3x3 dense float16 lr=0.02 cam=1 StepTweenSplit / flee 2x2x2 dense float64 lr=0.02 cam=1 StepTweenSplit

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

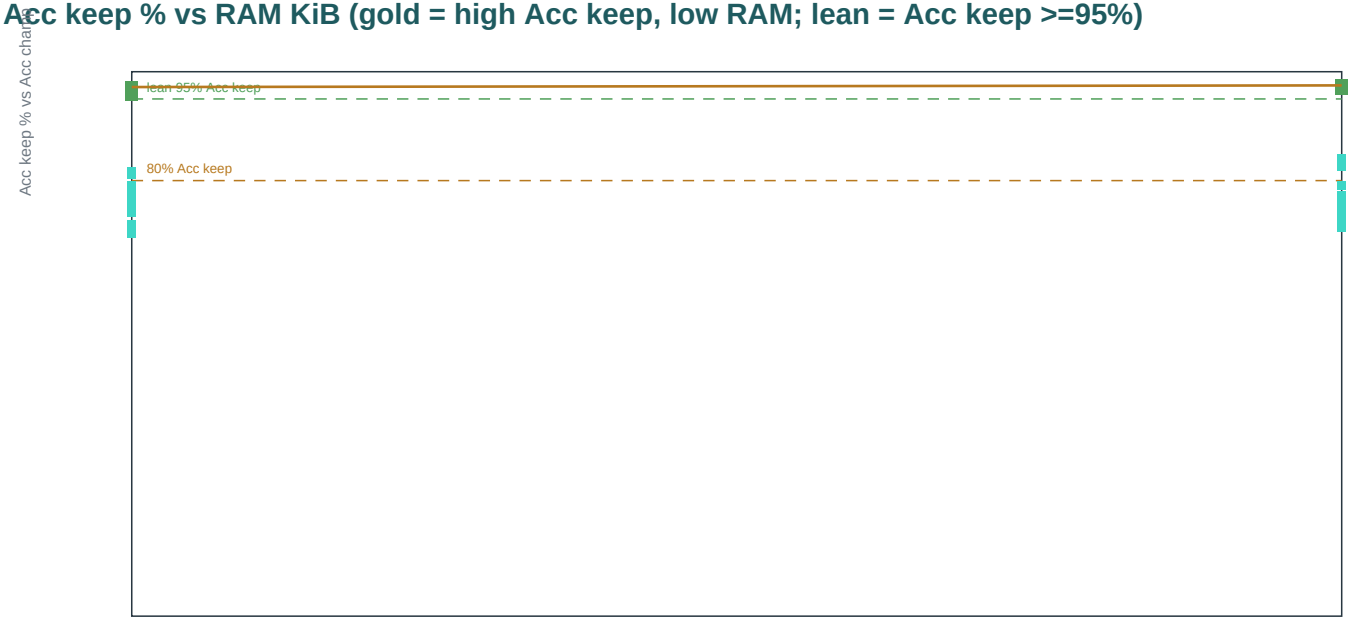
Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
-	chase 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	77	100	97	91	163	0.6	0.56	77.4	2106	49.2
-	chase 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	77	100	97	91	163	0.6	0.56	77.0	2098	49.2
-	chase 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	74	100	96	89	163	0.6	0.55	74.1	2102	49.2
keep	flee 2x2x2 dense float64 lr=0.02 cam=1 StepTweenSplit	81	49	99	73	163	0.6	0.45	81.2	1025	49.2
keep	flee 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	96	38	99	71	163	0.6	0.44	95.9	807	49.2
keep	flee 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	97	38	99	71	163	0.6	0.44	97.1	791	49.2
keep	flee 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	97	37	99	71	163	0.6	0.44	97.2	783	49.2
keep	flee 2x2x2 dense float64 lr=0.2 cam=1 StepTweenSplit	82	43	99	70	163	0.6	0.43	81.7	900	49.2
-	flee 3x3x3 dense float64 lr=0.2 cam=1 StepTweenSplit	79	43	99	69	163	0.6	0.43	79.1	900	49.2
-	flee 1x1x1 dense float64 lr=0.2 cam=1 StepTweenSplit	72	42	99	67	163	0.6	0.41	72.0	894	49.2
-	flee 2x2x2 dense float64 lr=20 cam=1 StepTweenSplit	76	33	99	63	163	0.6	0.39	76.3	705	49.2
-	flee 1x1x1 dense float64 lr=200 cam=1 StepTweenSplit	75	30	99	61	163	0.6	0.37	75.0	635	49.2
-	flee 3x3x3 dense float64 lr=200 cam=1 StepTweenSplit	76	29	98	60	163	0.6	0.37	76.3	615	49.2
-	flee 1x1x1 dense float64 lr=1000 cam=1 StepTweenSplit	78	27	99	59	163	0.6	0.37	78.1	571	49.2
-	flee 2x2x2 dense float64 lr=1000 cam=1 StepTweenSplit	77	27	99	59	163	0.6	0.36	77.2	565	49.2
-	flee 3x3x3 dense float64 lr=1000 cam=1 StepTweenSplit	75	26	99	58	163	0.6	0.36	74.8	556	49.2
-	flee 2x2x2 dense float64 lr=10000 cam=1 StepTweenSplit	78	24	99	57	163	0.6	0.35	78.0	498	49.2
keep	flee 1x1x1 dense float64 lr=0.2 cam=2 StepTweenSplit	84	40	98	69	200	0.5	0.35	84.1	843	60.5
keep	flee 2x2x2 dense float64 lr=2 cam=2 StepTweenSplit	97	34	98	69	200	0.5	0.34	97.5	716	60.5
keep	flee 1x1x1 dense float64 lr=2 cam=2 StepTweenSplit	97	34	98	69	200	0.5	0.34	97.3	712	60.5

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

Band	Cell	Acc keep%	Thru%	Avail%	Q%	LPD	Thru	Avail
-	chase 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	77	100	97	91	0.56	2106	95.3
-	chase 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	77	100	97	91	0.56	2098	95.6
-	chase 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	74	100	96	89	0.55	2102	95.1
keep	flee 2x2x2 dense float64 lr=0.02 cam=1 StepTweenSplit	81	49	99	73	0.45	1025	97.5

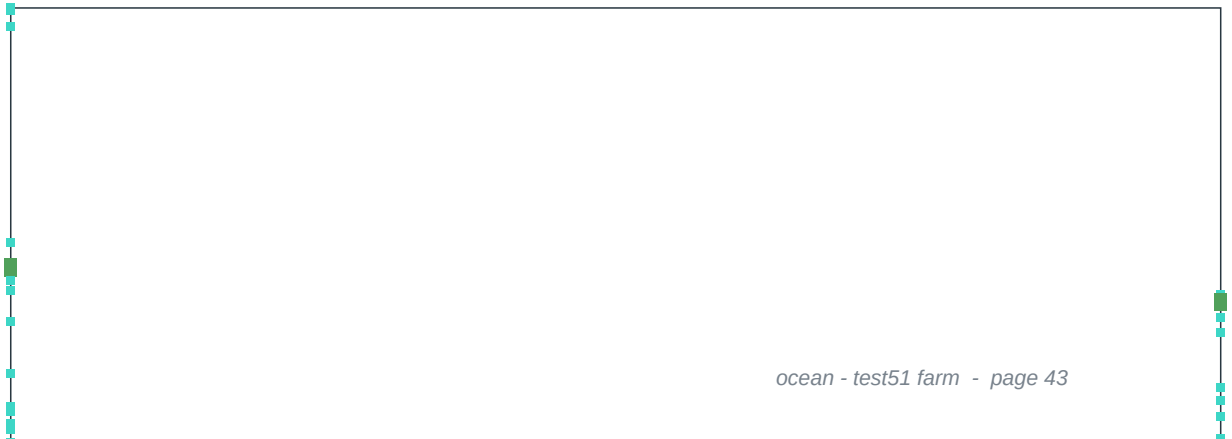
Band	Cell	Acc keep%	Thru%	Avail%	Q%	LPD	Thru	Avail
keep	flee 1x1x1 dense float64 lr=2 cam=1 StepTweenSplit	96	38	99	71	0.44	807	97.9
keep	flee 2x2x2 dense float64 lr=2 cam=1 StepTweenSplit	97	38	99	71	0.44	791	97.7
keep	flee 3x3x3 dense float64 lr=2 cam=1 StepTweenSplit	97	37	99	71	0.44	783	97.7
keep	flee 2x2x2 dense float64 lr=0.2 cam=1 StepTweenSplit	82	43	99	70	0.43	900	97.9
-	flee 3x3x3 dense float64 lr=0.2 cam=1 StepTweenSplit	79	43	99	69	0.43	900	97.8
keep	flee 1x1x1 dense float64 lr=0.2 cam=2 StepTweenSplit	84	40	98	69	0.35	843	97.1

Acc keep % vs RAM KiB (gold = high Acc keep, low RAM; lean = Acc keep >=95%)



RAM KiB -> n=40 gold ring band / lean>=95% dashed=20% RAM + 80/95% Acc keep

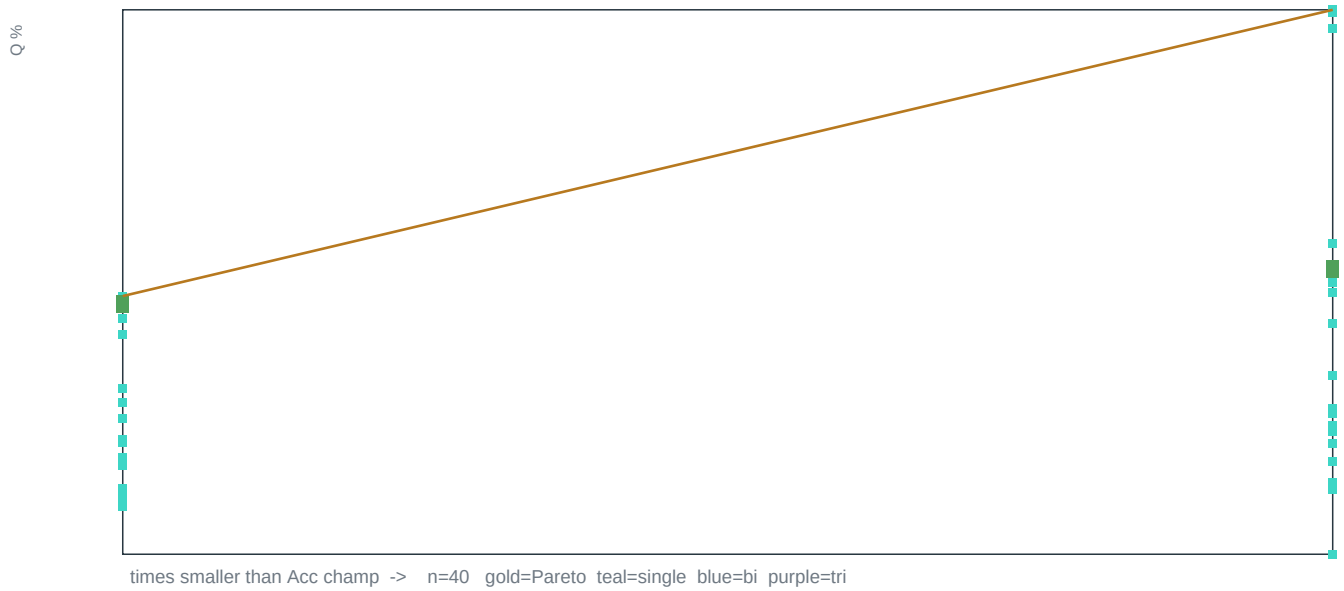
Q% vs RAM KiB (gold = high consciousness, low RAM)



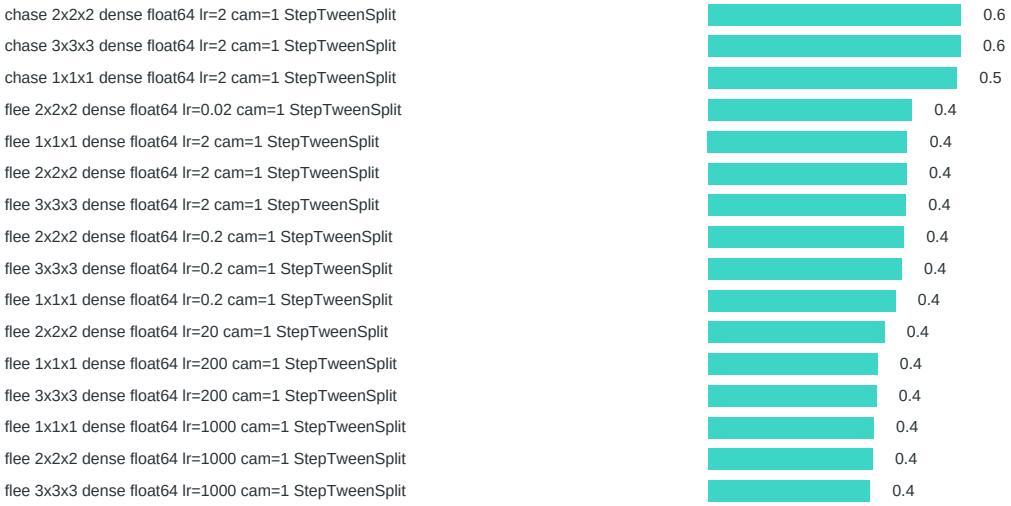
RAM KiB -> n=40 gold=Pareto teal=single blue=bi purple=tri

Q %

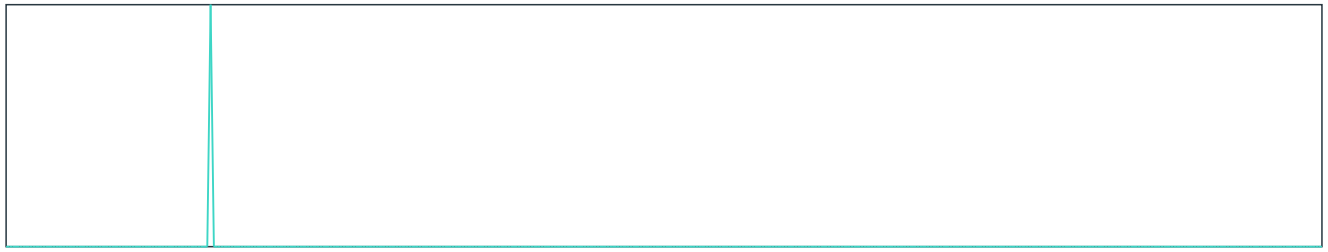
Q% vs shrink vs Acc champ (gold = upper right)



Top Lucy density (LPD)

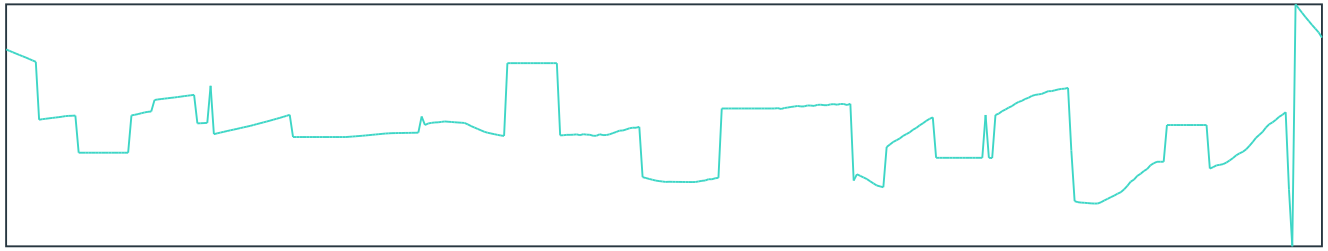


Pulse Score - test51



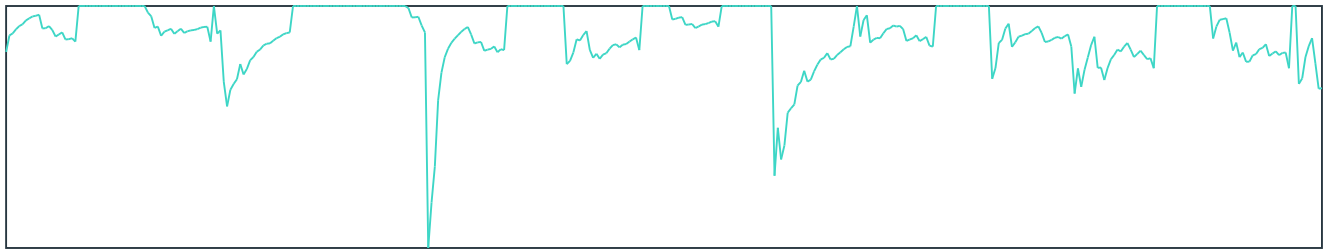
n=400 min=0.00 max=3.68

Pulse SoftAcc - test51



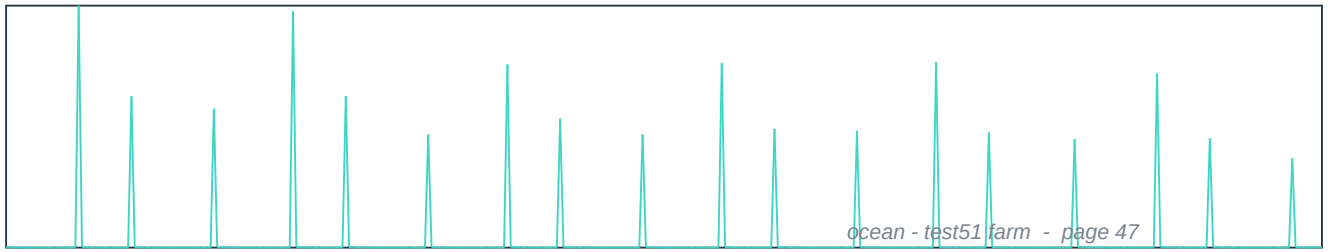
n=400 min=11.20 max=13.95

Pulse Availability - test51



n=400 min=54.60 max=100.00

Pulse Throughput - test51



n=400 min=7.68 max=2849.49

Queue by train mode (this epoch)

Mode	Done	Run	Left	Total
Step[T][S]	1231	1	11008	12240
[T]Alt	0	0	12240	12240
Step[T]Alt	0	0	12240	12240
[T][S][HP]	0	0	12240	12240
[T][S][L]	0	0	12240	12240
[T][S][FP]	0	0	12240	12240
[T][S][L]Cache	0	0	12240	12240
[T][S][HP]Async	0	0	12240	12240
[T][S]Sparse	0	0	12240	12240
Mesh[T][S]	0	0	12240	12240

tide test51

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 [F]=Freeze [Sh]=Shadow [A]=Adv [M]=Memory
running - epoch 1 - lr 0.05 - 2026-09-12 01:09:41 - 0.0.0.0:8080

This epoch 2696 / 122400 cells. Recorded 2696 results. Learning rate 0.05.
Score 0 usually means the cell finished before a Lucy pulse (Hard Acc never sampled). Score is live-fit: Throughput x Availability x Hard Acc. Acc keep % = Hard Acc / Acc-champ Hard Acc.
SoftAcc is serve-confidence only. Lean = Acc keep >=95%, then smallest RAM.
think-race host - tree sweep feeds Tide Lucy reports

Lucy champions (this tide)

Axis	Cell	Score	Soft	Acc	Thru	Avail
hard acc	flee|1x1x1|dense|fp8e4m3|lr=200|cam=1|NormalBP	2.82	90.1	93.3	4.6	65.9
throughput	chase|2x2x2|dense|float64|lr=0.02|cam=1|NormalBP	359.73	14.0	30.1	1529.3	78.1
availability	collect|2x2x2|dense|int64|lr=2|cam=1|NormalBP	1.37	15.0	72.2	2.1	92.0
lucy score	chase|3x3x3|dense|float64|lr=2|cam=1|NormalBP	679.42	18.5	62.3	1359.5	80.2
mobile score (trap)	chase|3x3x3|dense|float64|lr=2|cam=1|NormalBP	679.42	18.5	62.3	1359.5	80.2
acc/sec	chase|3x3x3|dense|fp8e5m2|lr=0.2|cam=2|NormalBP	2.07	13.6	100.0	3.3	62.1

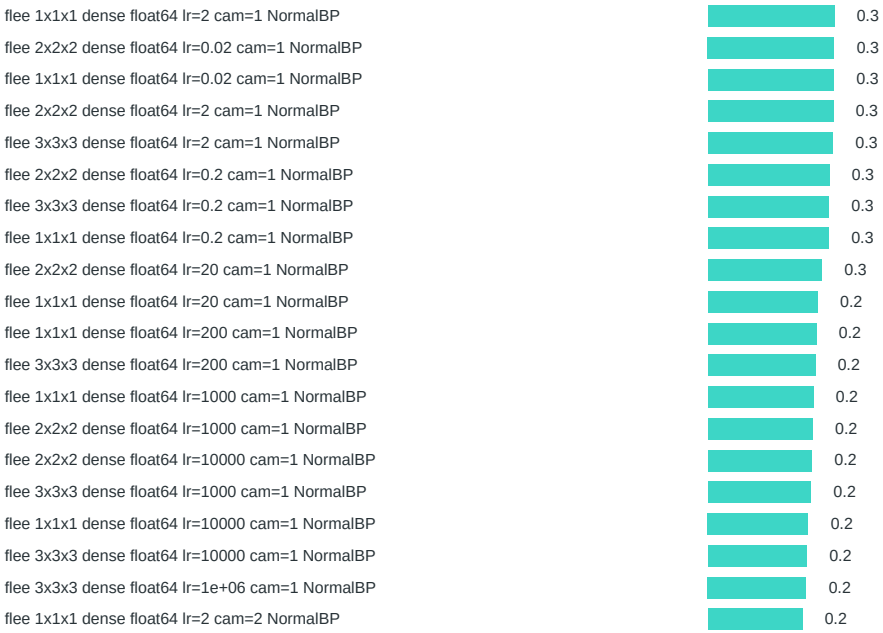
Lucy axes - test51

Axis	Mode	DType	Arch	Value
hard_acc	sgd	float16	bicameralx2	100.00
throughput	sgd	float64	singlex1	1529.31
availability	sgd	int64	singlex1	92.01
score	sgd	float64	singlex1	679.42
soft_acc	sgd	fp8e4m3	singlex1	90.09
acc_thru	sgd	float64	singlex1	847.55
realtime	sgd	float64	singlex1	1194.46
keep_learn	sgd	fp8e5m2	bicameralx2	33.29
acc_per_sec	sgd	fp8e5m2	bicameralx2	33.29
consistency	sgd	float64	singlex1	100.00
stability	sgd	fp8e5m2	singlex1	100.00
mobile_score	sgd	float64	singlex1	14126.40
lpd	sgd	float64	singlex1	0.28
mspeed	sgd	float64	singlex1	1.00
mavail	sgd	int64	singlex1	1.00

Axis	Mode	DType	Arch	Value
mix	sgd	float64	singlex1	0.90
gold_std	sgd	fp8e4m3	singlex1	12.31

Models ranked - live-fit + Lucy density

Top LPD (memory density)



Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
keep	flee 1x1x1 dense float64 lr=2 cam=1 NormalBP	97	82	94	90	326	0.3	0.28	97.1	650	49.2
keep	flee 2x2x2 dense float64 lr=0.02 cam=1 NormalBP	83	96	92	90	326	0.3	0.28	83.2	765	49.2
-	flee 1x1x1 dense float64 lr=0.02 cam=1 NormalBP	79	100	93	90	326	0.3	0.28	79.4	796	49.2
keep	flee 2x2x2 dense float64 lr=2 cam=1 NormalBP	96	81	93	90	326	0.3	0.28	96.5	643	49.2
keep	flee 3x3x3 dense float64 lr=2 cam=1 NormalBP	96	80	93	90	326	0.3	0.28	96.5	638	49.2
keep	flee 2x2x2 dense float64 lr=0.2 cam=1 NormalBP	80	89	93	87	326	0.3	0.27	80.0	706	49.2
-	flee 3x3x3 dense float64 lr=0.2 cam=1 NormalBP	80	88	93	87	326	0.3	0.27	79.5	702	49.2
-	flee 1x1x1 dense float64 lr=0.2 cam=1 NormalBP	79	89	93	87	326	0.3	0.27	78.9	705	49.2
keep	flee 2x2x2 dense float64 lr=20 cam=1 NormalBP	81	72	93	82	326	0.3	0.25	80.8	574	49.2
-	flee 1x1x1 dense float64 lr=20 cam=1 NormalBP	71	73	93	79	326	0.3	0.24	71.4	579	49.2

Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
-	flee 1x1x1 dense float64 lr=200 cam=1 NormalBP	76	66	93	78	326	0.3	0.24	75.6	529	49.2
-	flee 3x3x3 dense float64 lr=200 cam=1 NormalBP	75	65	94	77	326	0.3	0.24	74.5	517	49.2
-	flee 1x1x1 dense float64 lr=1000 cam=1 NormalBP	79	59	93	76	326	0.3	0.23	79.2	467	49.2
-	flee 2x2x2 dense float64 lr=1000 cam=1 NormalBP	76	60	93	75	326	0.3	0.23	76.3	474	49.2
keep	flee 2x2x2 dense float64 lr=10000 cam=1 NormalBP	82	54	93	74	326	0.3	0.23	82.0	431	49.2
-	flee 3x3x3 dense float64 lr=1000 cam=1 NormalBP	74	59	94	74	326	0.3	0.23	73.5	468	49.2
-	flee 1x1x1 dense float64 lr=10000 cam=1 NormalBP	72	55	94	72	326	0.3	0.22	71.9	438	49.2
-	flee 3x3x3 dense float64 lr=10000 cam=1 NormalBP	72	53	93	71	326	0.3	0.22	71.5	426	49.2
-	flee 3x3x3 dense float64 lr=1e+06 cam=1 NormalBP	76	49	93	70	326	0.3	0.22	76.5	390	49.2
keep	flee 1x1x1 dense float64 lr=2 cam=2 NormalBP	97	68	86	83	400	0.2	0.21	97.4	542	60.5

Best settings per train mode

Mode	Arch	DType	Fmt	Score	Soft	Acc	Avail	t50	Acc/s	KiB	n
sgd	singlex1	float64	none	679.4	18.5	62.3	80.2	-	0.00	0.0	2696

Best cell per mode x arch

-

Best dtype per train mode

Mode	Dtype	Score	Soft	Acc	n
sgd	float64	679.4	18.5	62.3	2696

Best quant format per train mode

-

Best train mode per dtype

Dtype	Mode	Score	Soft	Acc	n
float64	sgd	679.4	18.5	62.3	360
float32	sgd	43.8	21.9	81.5	360
float16	sgd	12.9	26.1	98.0	360
bfloat16	sgd	6.3	13.8	100.0	360
fp8e4m3	sgd	3.1	12.8	100.0	360
fp8e5m2	sgd	2.3	13.2	100.0	360
int64	sgd	1.9	19.5	88.9	360
int32	sgd	1.4	16.7	100.0	176

Best train mode per quant format

-

Best format per dtype

-

Leaderboard - test51

#	Cell	Score	Soft	Acc	Thru	Avail
1	chase|3x3x3|dense|float64|lr=2|cam=1|NormalBP	679.4	18.5	62.3	1359.5	80.2
2	chase|2x2x2|dense|float64|lr=2|cam=1|NormalBP	663.5	18.3	61.2	1361.2	79.7
3	chase|1x1x1|dense|float64|lr=2|cam=1|NormalBP	644.4	18.2	59.9	1362.2	78.9
4	flee|1x1x1|dense|float64|lr=2|cam=1|NormalBP	542.9	26.6	97.1	649.5	86.1
5	chase|3x3x3|dense|float64|lr=0.2|cam=1|NormalBP	542.4	15.7	47.1	1458.4	78.9
6	flee|2x2x2|dense|float64|lr=0.02|cam=1|NormalBP	541.7	20.4	83.2	765.3	85.1
7	flee|1x1x1|dense|float64|lr=0.02|cam=1|NormalBP	540.5	19.3	79.4	796.3	85.5
8	chase|1x1x1|dense|float64|lr=0.2|cam=1|NormalBP	534.2	15.6	46.7	1455.5	78.5
9	flee|2x2x2|dense|float64|lr=2|cam=1|NormalBP	532.1	26.5	96.5	642.6	85.8
10	flee|3x3x3|dense|float64|lr=2|cam=1|NormalBP	527.1	26.5	96.5	637.9	85.6
11	chase|2x2x2|dense|float64|lr=0.2|cam=1|NormalBP	507.8	15.3	44.5	1447.6	78.9
12	chase|2x2x2|dense|float64|lr=2|cam=2|NormalBP	495.8	19.1	66.6	1007.1	73.9
13	chase|3x3x3|dense|float64|lr=2|cam=2|NormalBP	487.1	19.5	68.4	984.0	72.3
14	flee|2x2x2|dense|float64|lr=0.2|cam=1|NormalBP	483.5	21.8	80.0	706.3	85.5
15	flee|3x3x3|dense|float64|lr=0.2|cam=1|NormalBP	479.3	21.7	79.5	702.3	85.8
16	chase|1x1x1|dense|float64|lr=2|cam=2|NormalBP	477.7	19.2	66.8	989.2	72.3
17	flee|1x1x1|dense|float64|lr=0.2|cam=1|NormalBP	475.8	21.4	78.9	705.0	85.6
18	flee|3x3x3|dense|float64|lr=0.02|cam=1|NormalBP	458.3	17.1	68.3	781.1	85.9
19	flee|1x1x1|dense|float64|lr=2|cam=2|NormalBP	417.9	26.9	97.4	542.5	79.1
20	flee|2x2x2|dense|float64|lr=2|cam=2|NormalBP	417.6	27.1	97.5	543.0	78.9

Top scores - test51



Top scores - test51



Mean Score by train mode



Mean hard Acc by train mode



Mean SoftAcc by train mode



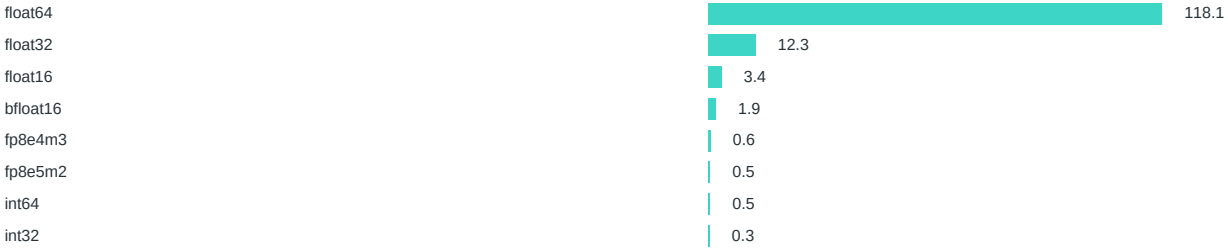
Mean Availability by train mode



Mean Throughput by train mode



Mean Score by dtype



Mean hard Acc by dtype

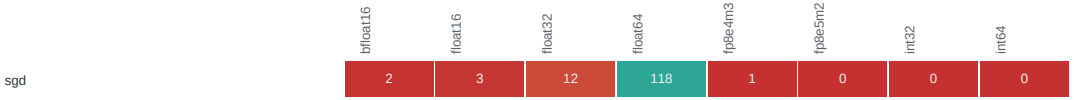


Mean Score by arch

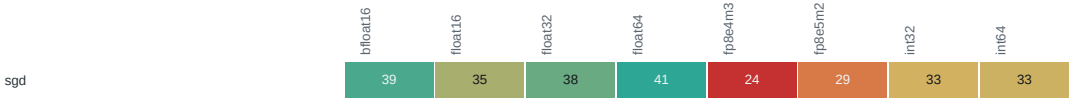


Honesty - mean Score, every mode x dtype

Honesty - mean Score, every mode x dtype



Honesty - mean hard Acc, every mode x dtype

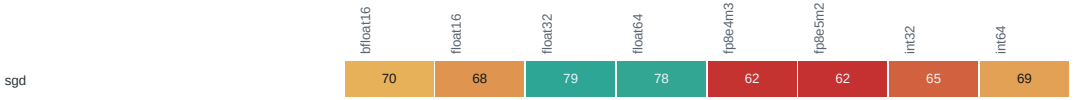


Honesty - mean SoftAcc, every mode x dtype



Honesty - mean Avail, every mode x dtype

Honesty - mean Avail, every mode x dtype



Mean Score, every mode x arch



Mean hard Acc, every mode x arch

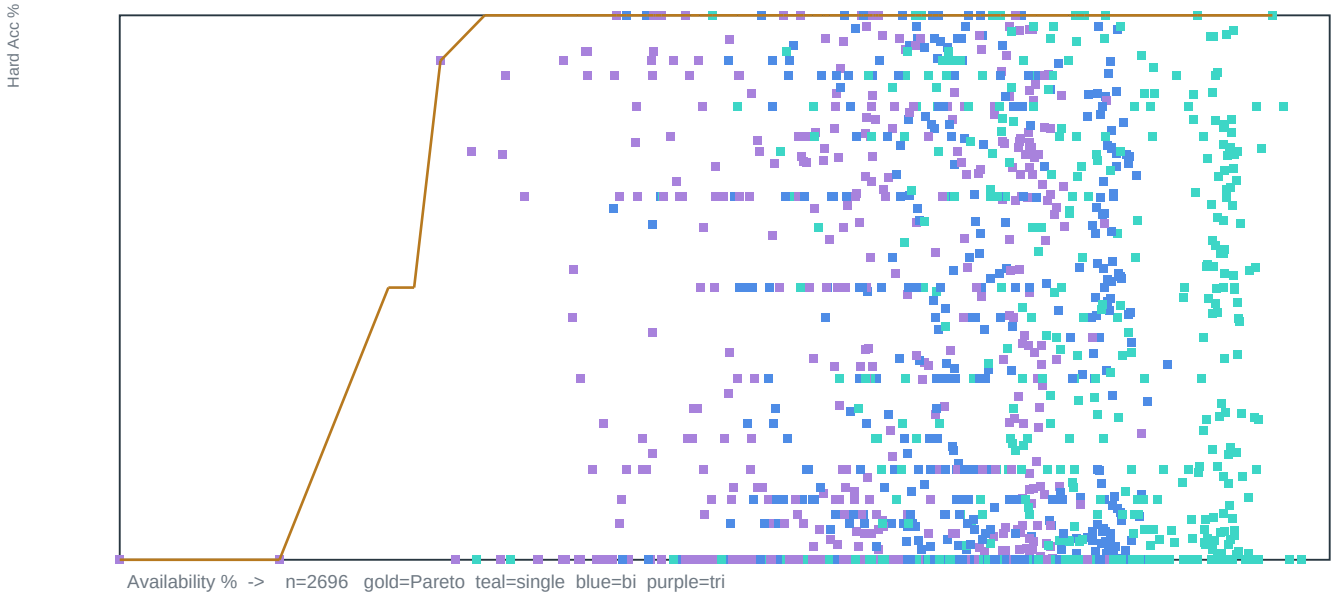


Mean Avail, every mode x arch

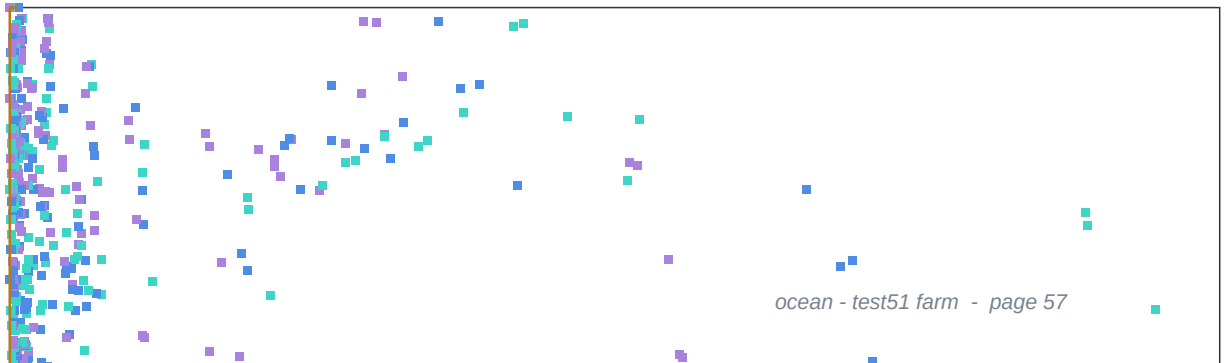
Mean Avail, every mode x arch



Pillars - Availability vs hard Acc



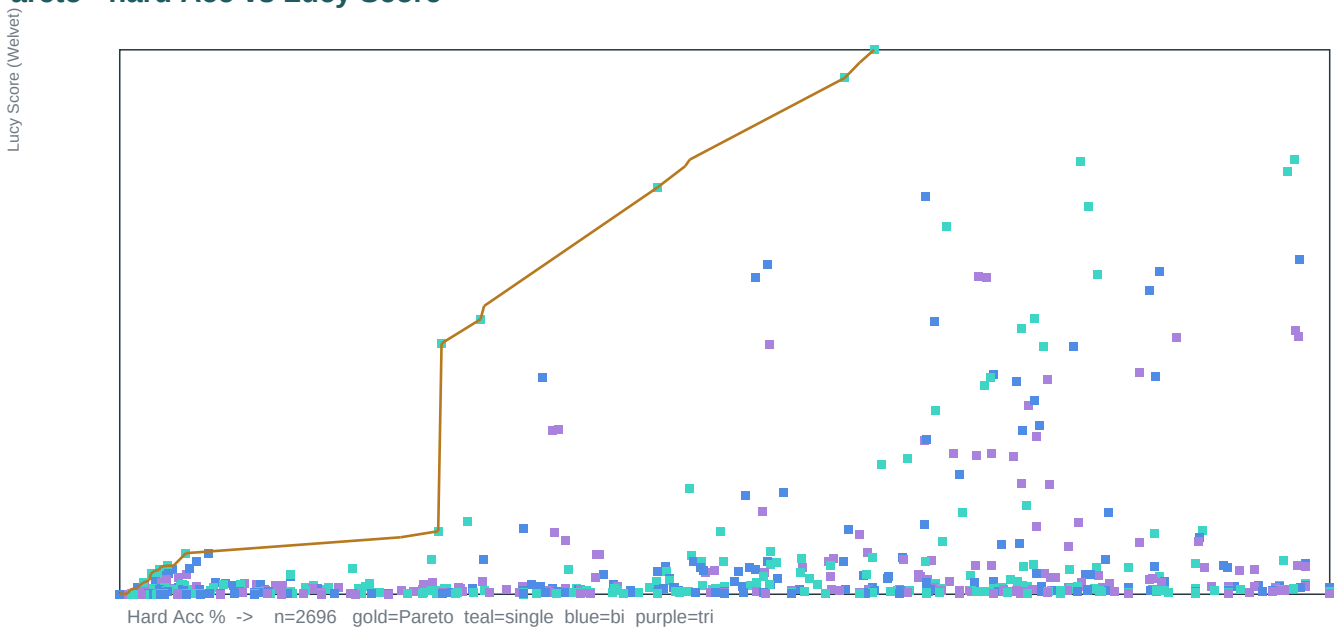
Pillars - Throughput vs hard Acc



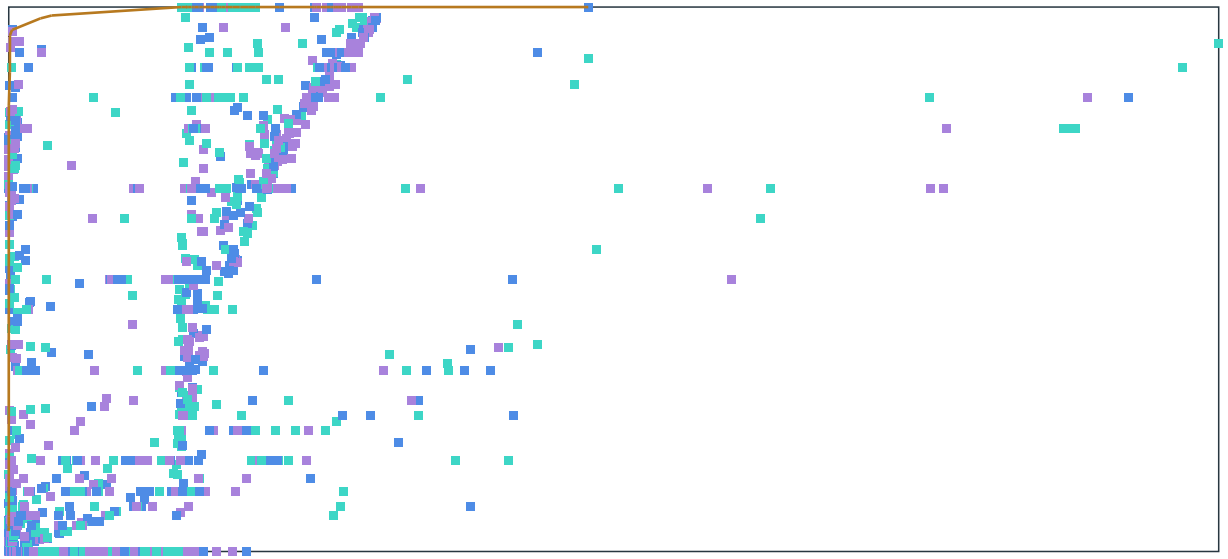
Throughput /s -> n=2696 gold=Pareto teal=single blue=bi purple=tri

Hard Acc %

Pareto - hard Acc vs Lucy Score

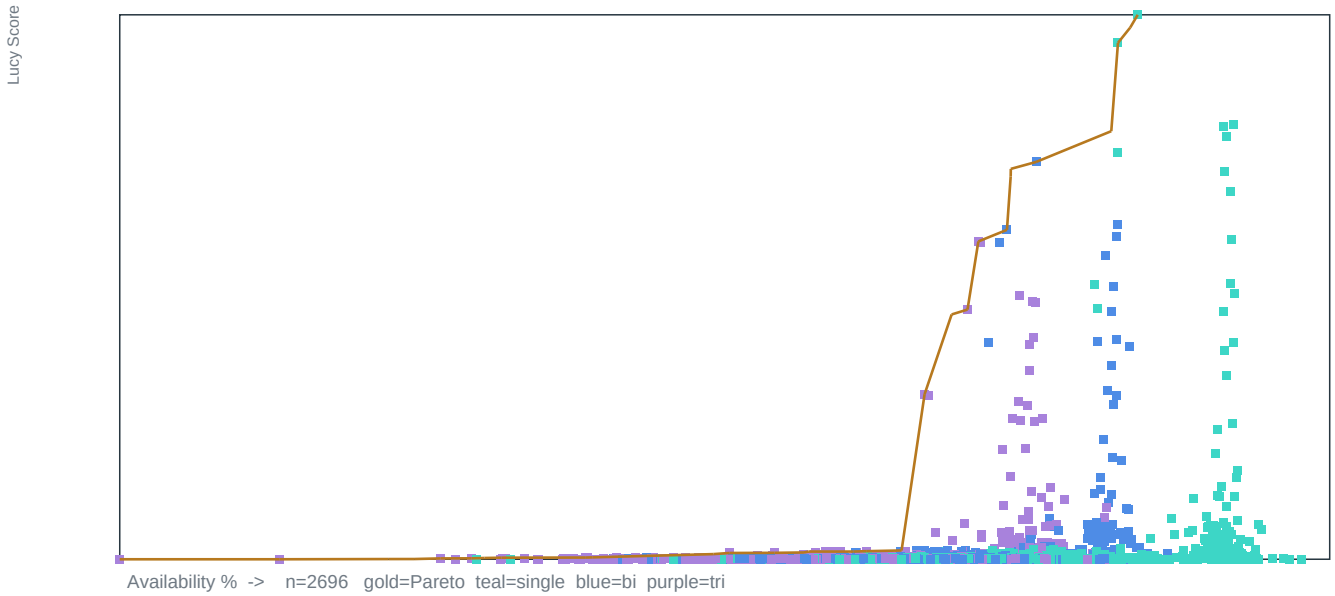


SoftAcc (serve-confidence) vs hard Acc

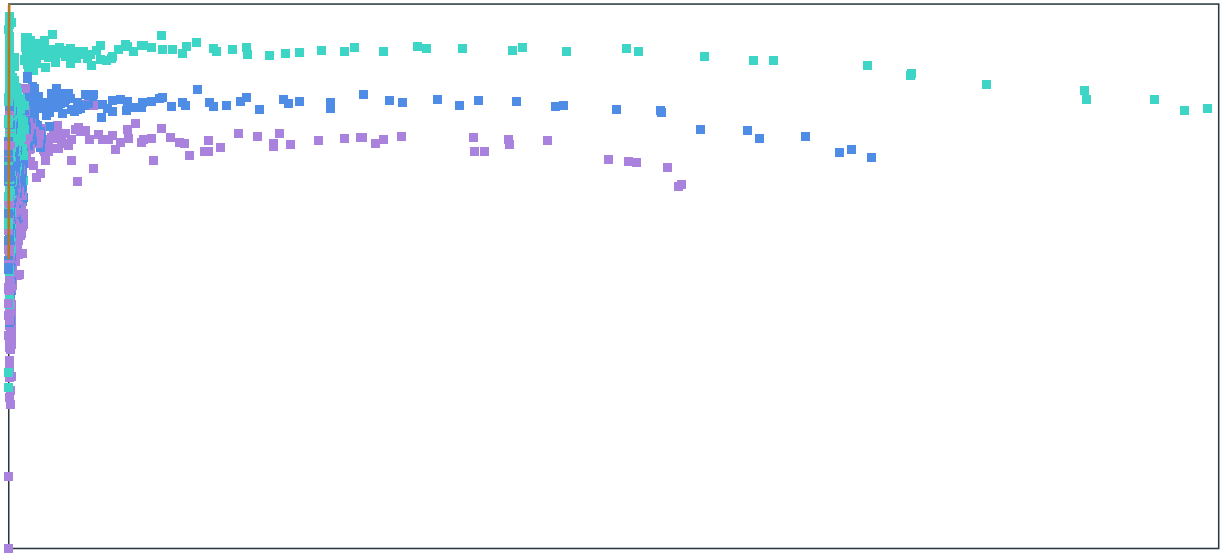



SoftAcc % -> n=2696 gold=Pareto teal=single blue=bi purple=tri
Hard Acc %

Avail vs Lucy Score (duty clock)



Pillars - Throughput vs Availability



Throughput /s -> n=2696 gold=Pareto teal=single blue=bi purple=tri

Availability %

Consciousness - Acc keep, 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 (Hard Acc peak) collect|3x3x3|dense|fp8e4m3|lr=20|cam=2|NormalBP Hard Acc 100.0 Acc keep 100% Thru 4 Avail 67.9% 15.1 KiB (RAM reference)

Lucy Score champ (T x Avail x Hard Acc) chase|3x3x3|dense|float64|lr=2|cam=1|NormalBP Score 679.4 Hard Acc 62.3 Soft 18 49.2 KiB

Live-fit champ (best Q) flee|1x1x1|dense|float64|lr=2|cam=1|NormalBP Hard Acc 97.1 Thru 650 Avail 86.1% 49.2 KiB

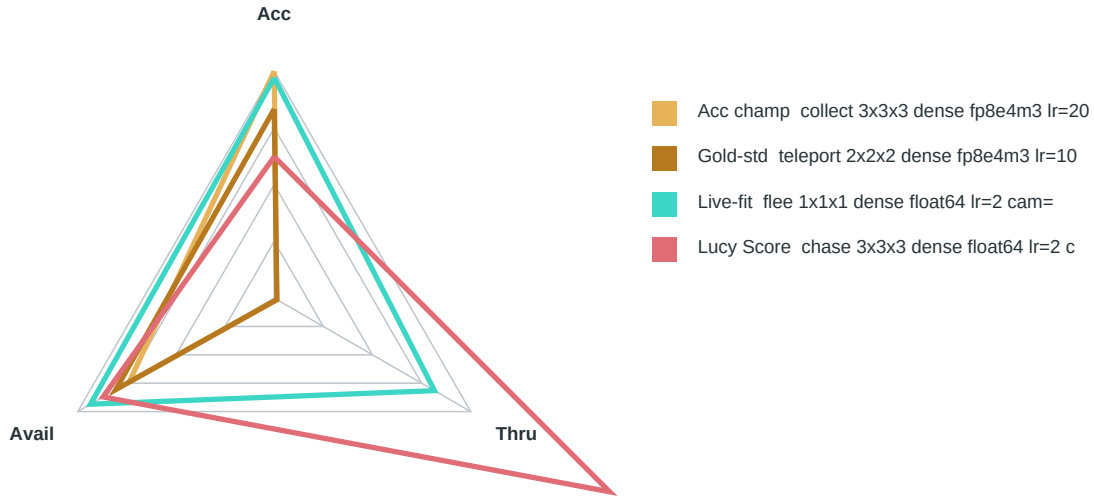
No lean cell yet - need Hard Acc >=95% of Acc champ, then pick smallest RAM / fastest Thru.

Gold-std (2+ pillars, Acc keep >= 80%, then smallest then fastest): teleport|2x2x2|dense|fp8e4m3|lr=10000|cam=1|NormalBP mode sgd Hard Acc 83.3 Acc keep 83% Thru 3 12.3 KiB

Board fastest chase|2x2x2|dense|float64|lr=0.02|cam=1|NormalBP Thru 1529 (traps may own this) Best availability collect|2x2x2|dense|int64|lr=2|cam=1|NormalBP 92.0%

Learner Thru peak 796 learner Avail peak 92.0% LPD board n=2696

Consciousness radar - Acc keep / Thru keep / Avail keep vs learner peaks

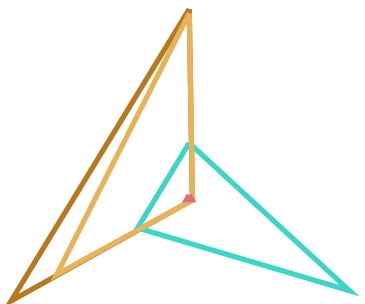


Memory density radar - keep x shrink vs Acc champ (traps sit at origin)



Thru

Avail



Gold-std teleport 2x2x2 dense fp8e4m3 lr=10

LPD lead flee 1x1x1 dense float64 lr=2 cam=

Acc champ collect 3x3x3 dense fp8e4m3 lr=20

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 / arch	n	Hard Acc	KiB	Thru	Cell
sgd	108	100.0	12.3	765	teleport 2x2x2 dense fp8e4m3 lr=10000 cam=1 NormalBP / flee 2x2x2 dense float64 lr=0.02 cam=1 NormalBP

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

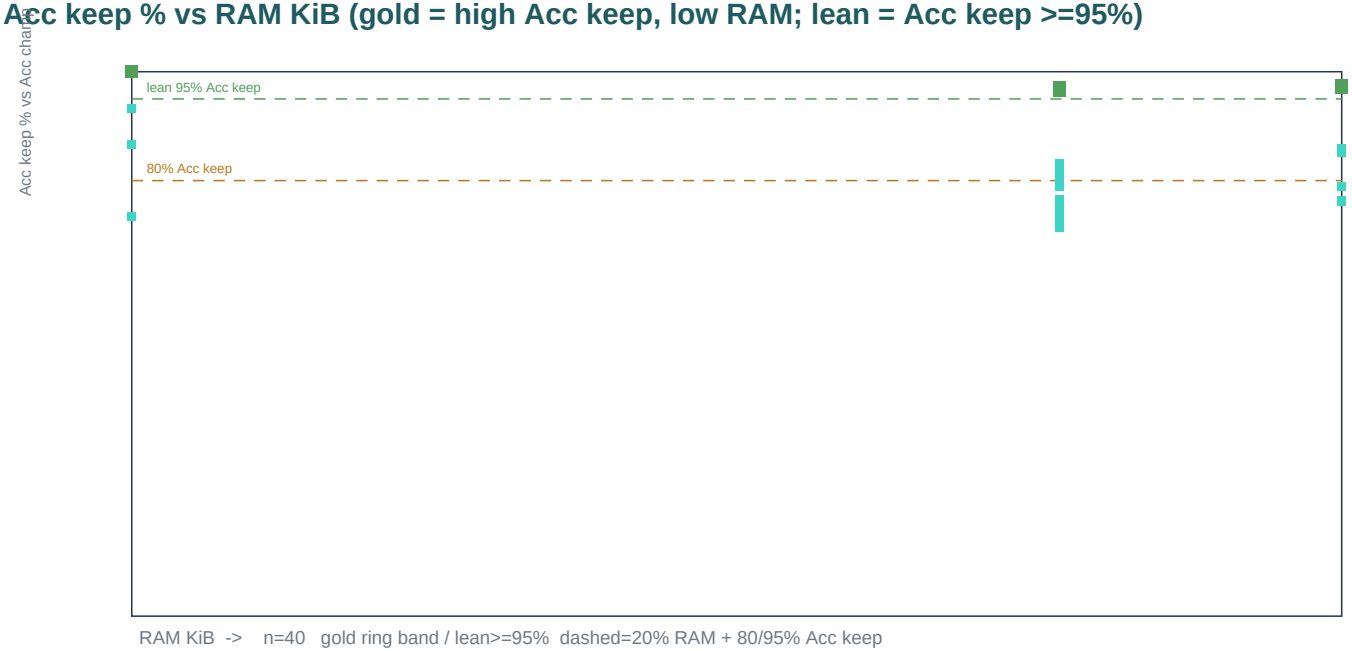
Band	Cell	Acc keep%	Thru%	Avail%	Q%	RAM%	xSmall	LPD	Hard Acc	Thru	KiB
keep	flee 1x1x1 dense float64 lr=2 cam=1 NormalBP	97	82	94	90	326	0.3	0.28	97.1	650	49.2
keep	flee 2x2x2 dense float64 lr=0.02 cam=1 NormalBP	83	96	92	90	326	0.3	0.28	83.2	765	49.2
-	flee 1x1x1 dense float64 lr=0.02 cam=1 NormalBP	79	100	93	90	326	0.3	0.28	79.4	796	49.2
keep	flee 2x2x2 dense float64 lr=2 cam=1 NormalBP	96	81	93	90	326	0.3	0.28	96.5	643	49.2
keep	flee 3x3x3 dense float64 lr=2 cam=1 NormalBP	96	80	93	90	326	0.3	0.28	96.5	638	49.2
keep	flee 2x2x2 dense float64 lr=0.2 cam=1 NormalBP	80	89	93	87	326	0.3	0.27	80.0	706	49.2
-	flee 3x3x3 dense float64 lr=0.2 cam=1 NormalBP	80	88	93	87	326	0.3	0.27	79.5	702	49.2
-	flee 1x1x1 dense float64 lr=0.2 cam=1 NormalBP	79	89	93	87	326	0.3	0.27	78.9	705	49.2
keep	flee 2x2x2 dense float64 lr=20 cam=1 NormalBP	81	72	93	82	326	0.3	0.25	80.8	574	49.2
-	flee 1x1x1 dense float64 lr=20 cam=1 NormalBP	71	73	93	79	326	0.3	0.24	71.4	579	49.2
-	flee 1x1x1 dense float64 lr=200 cam=1 NormalBP	76	66	93	78	326	0.3	0.24	75.6	529	49.2
-	flee 3x3x3 dense float64 lr=200 cam=1 NormalBP	75	65	94	77	326	0.3	0.24	74.5	517	49.2
-	flee 1x1x1 dense float64 lr=1000 cam=1 NormalBP	79	59	93	76	326	0.3	0.23	79.2	467	49.2
-	flee 2x2x2 dense float64 lr=1000 cam=1 NormalBP	76	60	93	75	326	0.3	0.23	76.3	474	49.2
keep	flee 2x2x2 dense float64 lr=10000 cam=1 NormalBP	82	54	93	74	326	0.3	0.23	82.0	431	49.2
-	flee 3x3x3 dense float64 lr=1000 cam=1 NormalBP	74	59	94	74	326	0.3	0.23	73.5	468	49.2
-	flee 1x1x1 dense float64 lr=10000 cam=1 NormalBP	72	55	94	72	326	0.3	0.22	71.9	438	49.2
-	flee 3x3x3 dense float64 lr=10000 cam=1 NormalBP	72	53	93	71	326	0.3	0.22	71.5	426	49.2
-	flee 3x3x3 dense float64 lr=1e+06 cam=1 NormalBP	76	49	93	70	326	0.3	0.22	76.5	390	49.2
keep	flee 1x1x1 dense float64 lr=2 cam=2 NormalBP	97	68	86	83	400	0.2	0.21	97.4	542	60.5

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

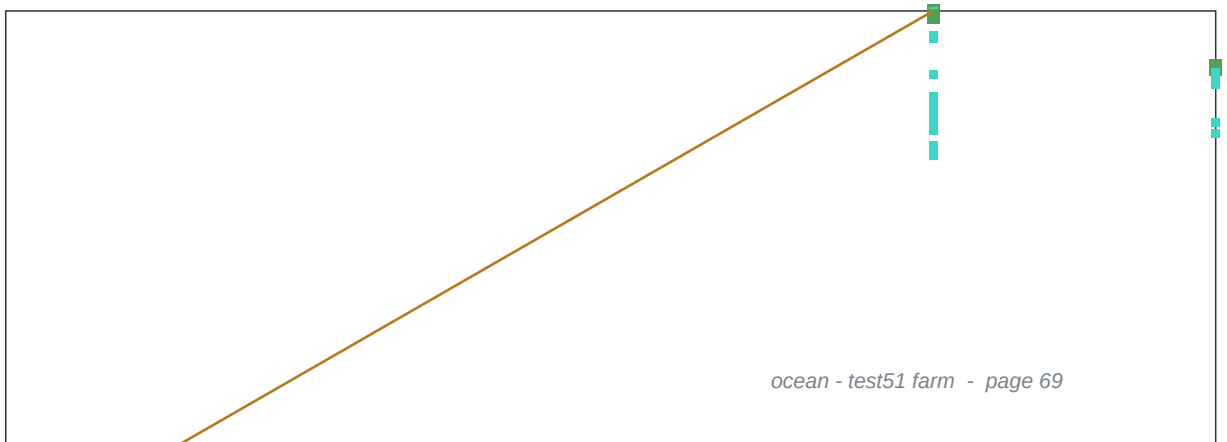
Band	Cell	Acc keep%	Thru%	Avail%	Q%	LPD	Thru	Avail
keep	flee 1x1x1 dense float64 lr=2 cam=1 NormalBP	97	82	94	90	0.28	650	86.1
keep	flee 2x2x2 dense float64 lr=0.02 cam=1 NormalBP	83	96	92	90	0.28	765	85.1
-	flee 1x1x1 dense float64 lr=0.02 cam=1 NormalBP	79	100	93	90	0.28	796	85.5
keep	flee 2x2x2 dense float64 lr=2 cam=1 NormalBP	96	81	93	90	0.28	643	85.8

Band	Cell	Acc keep%	Thru%	Avail%	Q%	LPD	Thru	Avail
keep	flee 3x3x3 dense float64 lr=2 cam=1 NormalBP	96	80	93	90	0.28	638	85.6
keep	flee 2x2x2 dense float64 lr=0.2 cam=1 NormalBP	80	89	93	87	0.27	706	85.5
-	flee 3x3x3 dense float64 lr=0.2 cam=1 NormalBP	80	88	93	87	0.27	702	85.8
-	flee 1x1x1 dense float64 lr=0.2 cam=1 NormalBP	79	89	93	87	0.27	705	85.6
keep	flee 1x1x1 dense float64 lr=2 cam=2 NormalBP	97	68	86	83	0.21	542	79.1
keep	flee 2x2x2 dense float64 lr=2 cam=2 NormalBP	97	68	86	83	0.21	543	78.9

Acc keep % vs RAM KiB (gold = high Acc keep, low RAM; lean = Acc keep >=95%)



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



RAM KiB -> n=40 gold=Pareto teal=single blue=bi purple=tri

Q %

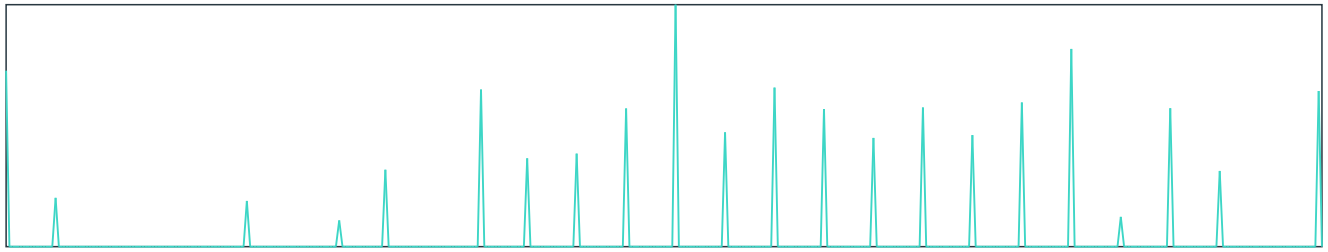
Q% vs shrink vs Acc champ (gold = upper right)



Top Lucy density (LPD)

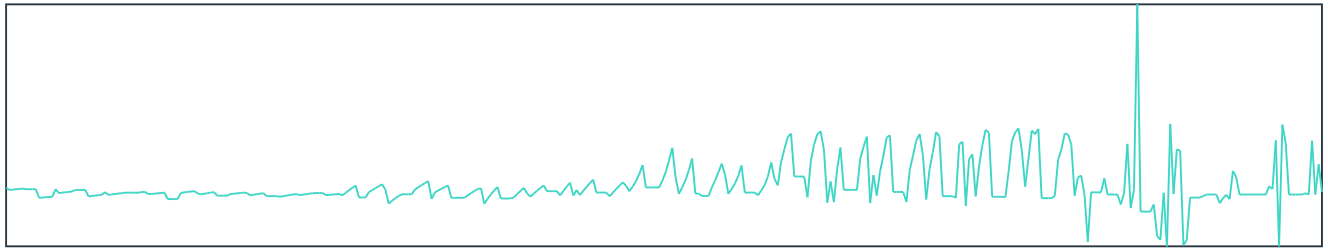


Pulse Score - test51



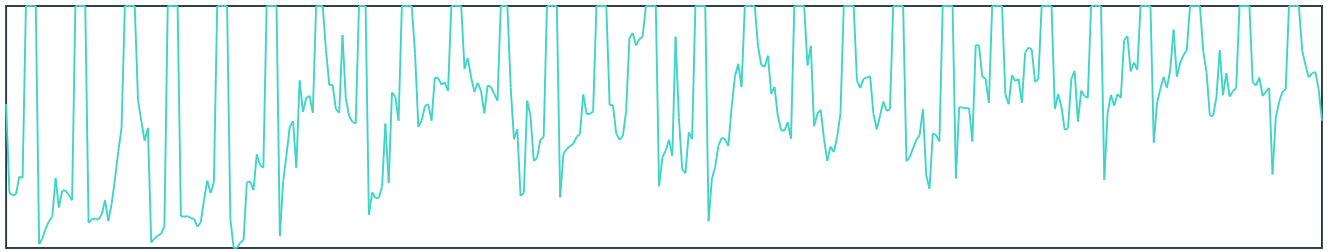
n=400 min=0.00 max=1.36

Pulse SoftAcc - test51



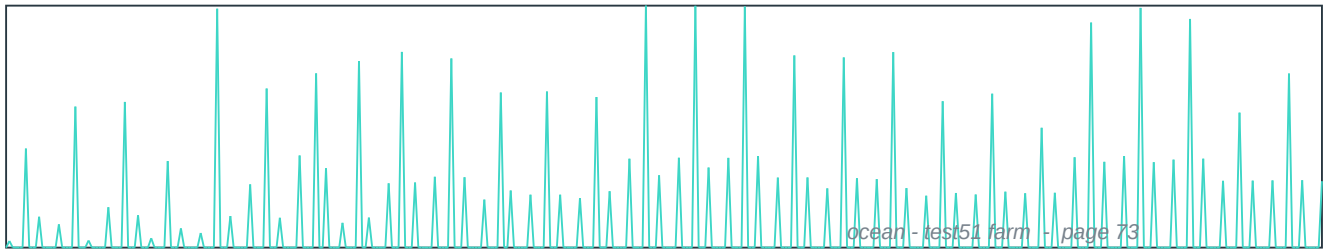
n=400 min=0.00 max=58.39

Pulse Availability - test51



n=400 min=9.34 max=100.00

Pulse Throughput - test51



n=400 min=1.31 max=2424.56

Queue by train mode (this epoch)

Mode	Done	Run	Left	Total
sgd	2696	1	9543	12240
step_sgd	0	0	12240	12240
tween	0	0	12240	12240
tween_chain	0	0	12240	12240
step_tween	0	0	12240	12240
step_tween_chain	0	0	12240	12240
MeshBP	0	0	12240	12240
Mesh[T]	0	0	12240	12240
Mesh[T]Chain	0	0	12240	12240
[T][S]	0	0	12240	12240