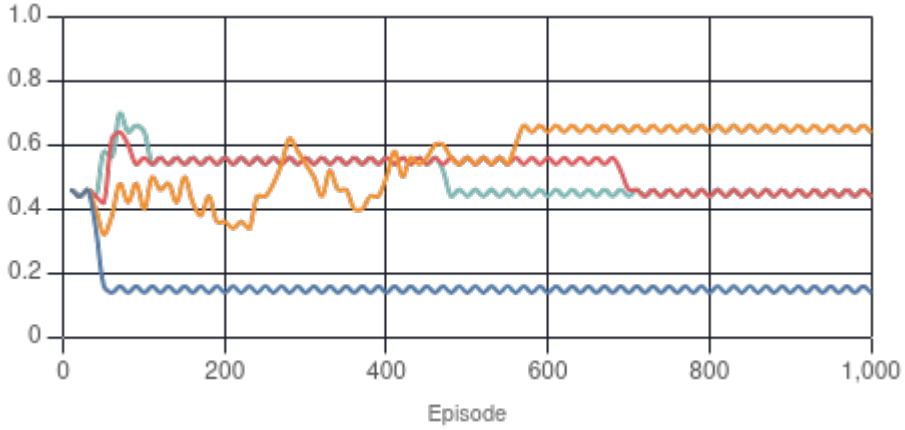
mcfeedback — Experiment 001: Pattern Association

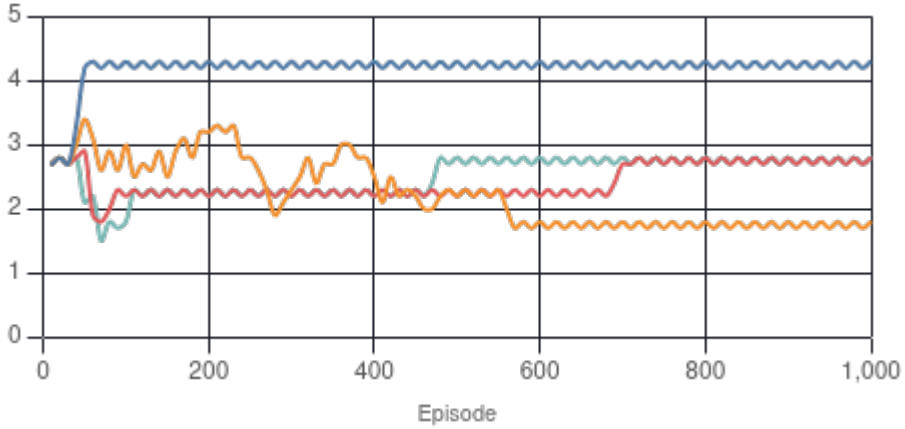
Murray-Claude Feedback Algorithm · Phase 1 · 2026-02-21

Baseline Ambient only Dampening only Full model

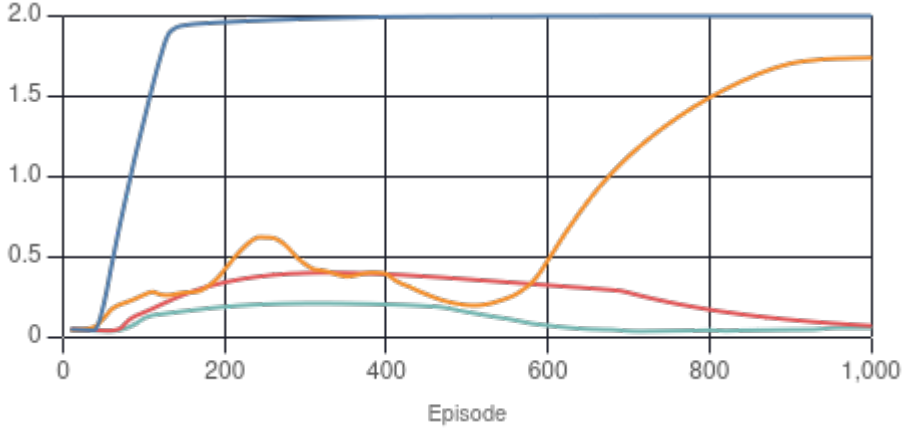
ACCURACY



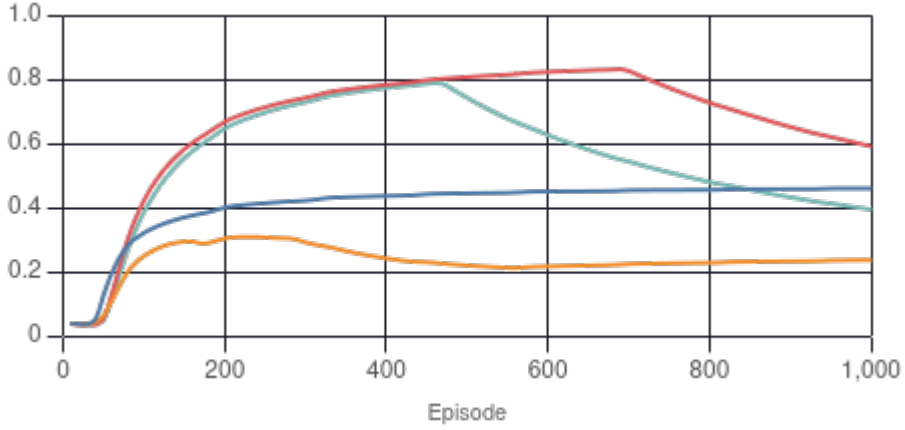
LOSS



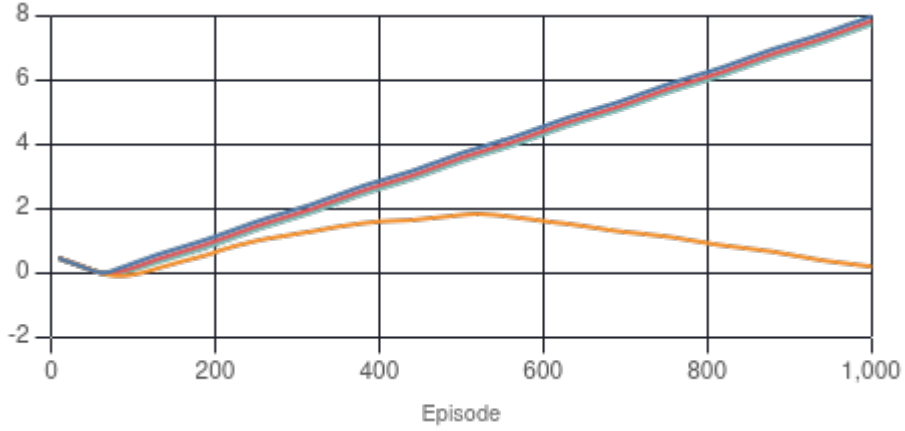
MEAN |WEIGHT|



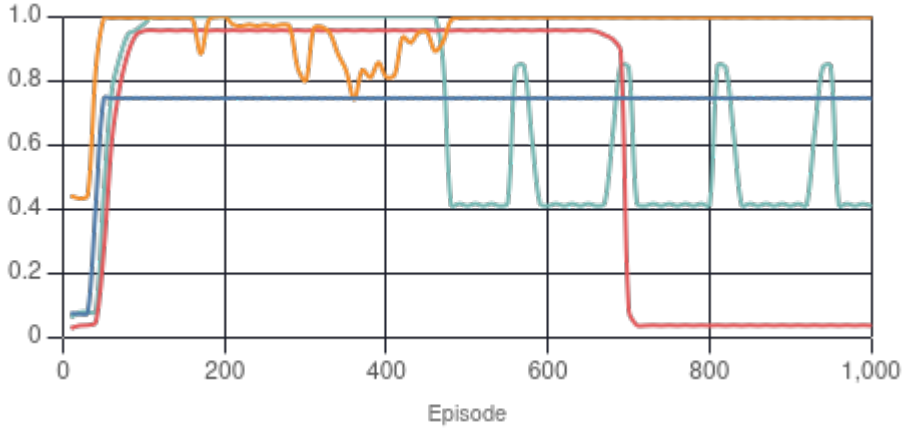
MEAN FIRE RATE



MEAN THRESHOLD



ACTIVE SYNAPSE FRAC



Final Accuracy

Condition	Final Accuracy (avg over 4 patterns)
Baseline	**15.0%**
Ambient only	**65.0%**
Dampening only	**45.0%**
Full model	**45.0%**

Parameters

Orange = differs between conditions · Grey = same across all

Parameter	Baseline	Ambient only	Dampening only	Full model
interClusterConnectionProb	0.5	0.5	0.5	0.5

intraClusterConnectionProb	0.6	0.6	0.6	0.6
chemicalDiffusionRadius	1000	1000	1000	15
chemicalFalloff	constant	constant	constant	inverse
ambientRadius	0	3	0	3
weightDecay	0.005	0.005	0.005	0.005
learningRate	0.01	0.01	0.01	0.01
activityHistoryMinimum	0.1	0.1	0.1	0.1
targetFireRate	0.2	0.2	0.2	0.2
thresholdAdjustRate	0.01	0.01	0.01	0.01
_skipDampening	true	true	—	—

Base Config

Parameter	Value
clustersCount	2
neuronsPerCluster	30
modulatoryPerCluster	2
intraClusterConnectionProb	0.6
interClusterConnectionProb	0.5
clusterSpacing	10
neuronSpread	2
initialThreshold	0.5

targetFireRate	0.2
thresholdAdjustRate	0.01
ambientRadius	3
ambientFalloff	"inverse"
initialWeightRange	[-0.1,0.1]
coActivationStrength	1
coSilenceStrength	0.5
mismatchStrength	-0.5
ambientThreshold	0.3
activityHistoryDecay	0.95
activityHistoryMinimum	0.1
chemicalDiffusionRadius	15
chemicalFalloff	"inverse"
chemicalDecayRate	0.5
positiveRewardStrength	1
negativeRewardStrength	-1
learningRate	0.01
maxWeightDelta	0.1
maxWeightMagnitude	2
weightDecay	0.005
inputSize	5

outputSize	5