

ML Model Performance Analysis

Overview

This analysis compares different Memory Sensor model configurations against the base case, examining different level of steps.

Configurations

- Base Case (Default)
- Memory Sensor (50 million steps)
- Memory Sensor (20 million setps)

Metrics Analysis

ELO Rating

ELO Rating Comparison

Configuration	Mean	Std Dev	Min	Max
Base Case	1506.60	66.53	1199.95	1608.24
Memory Sensor 50	1522.45	53.22	1194.28	1601.35
Memory Sensor 20	1280.55	109.63	1167.39	1459.09

Entropy

Entropy Comparison

Configuration	Mean	Std Dev	Min	Max
Base Case	1.57	0.34	1.26	3.29
Memory Sensor 50	1.68	0.31	1.37	3.28

Configuration	Mean	Std Dev	Min	Max
Memory Sensor 20	2.81	0.49	1.85	3.28

Group Cumulative Reward

Group Cumulative Reward Comparison

Configuration	Mean	Std Dev	Min	Max
Base Case	-0.019	0.098	-0.359	0.293
Memory Sensor 50	-0.026	0.095	-0.590	0.307
Memory Sensor 20	-0.036	0.137	-0.615	0.380

Policy Loss

Policy Loss Comparison

Configuration	Mean	Std Dev	Min	Max
Base Case	0.017	0.002	0.010	0.027
Memory Sensor 50	0.017	0.002	0.011	0.028
Memory Sensor 20	0.017	0.002	0.011	0.026

Value Loss

Value Loss Comparison

Configuration	Mean	Std Dev	Min	Max
Base Case	0.130	0.026	0.000	0.160
Memory Sensor 50	0.134	0.022	0.000	0.165
Memory Sensor 20	0.044	0.058	0.000	0.150

Key Observations

0. Goals Scored

Fixed Delta Time: 0.01

Memory Based Sensor 50 million: 105574 goals

Base Case: 111967 goals

1. ELO

- Description
- **Evaluation:**

2. Entropy

- Description
- **Evaluation:**

3. Group Cumulative Rewards

- Description
- **Evaluation:**

4. Policy Loss

- Description
- **Evaluation:**

5. Value Loss

- Description
- **Evaluation:**