PrimAITE 3.1.0 Learning Benchmark

PrimAITE Dev Team

2024-07-13

1 Introduction

PrimAITE v3.1.0 was benchmarked automatically upon release. Learning rate metrics were captured to be referenced during system-level testing and user acceptance testing (UAT).

The benchmarking process consists of running 5 training session using the same config file. Each session trains an agent for 1000 episodes, with each episode consisting of 128 steps.

The total reward per episode from each session is captured. This is then used to calculate an caverage total reward per episode from the 5 individual sessions for smoothing. Finally, a 25-widow rolling average of the average total reward per session is calculated for further smoothing.

2 System Information

2.1 Python

Version	3.9.13 (tags/v3.9.13:6de2ca5, May 17 2022, 16:36:42) [MSC v.1929 64 bit (AMD64)]

2.2 System

OS	Windows
OS Version	10.0.22631
Machine	AMD64
Processor	Intel64 Family 6 Model 142 Stepping 12, GenuineIntel

2.3 CPU

Physical Cores	4
Total Cores	8
Max Frequency	2304.00Mhz

2.4 Memory

Total	15.68GB
Swap Total	15.68GB

3 Stats

3.1 Benchmark Results

Total Sessions	5
Total Episodes	5005
Total Steps	640000
Av Session Duration (s)	2974.2558
Av Step Duration (s)	0.0929
Av Duration per 100 Steps per 10 Nodes (s)	9.2945

4 Graphs

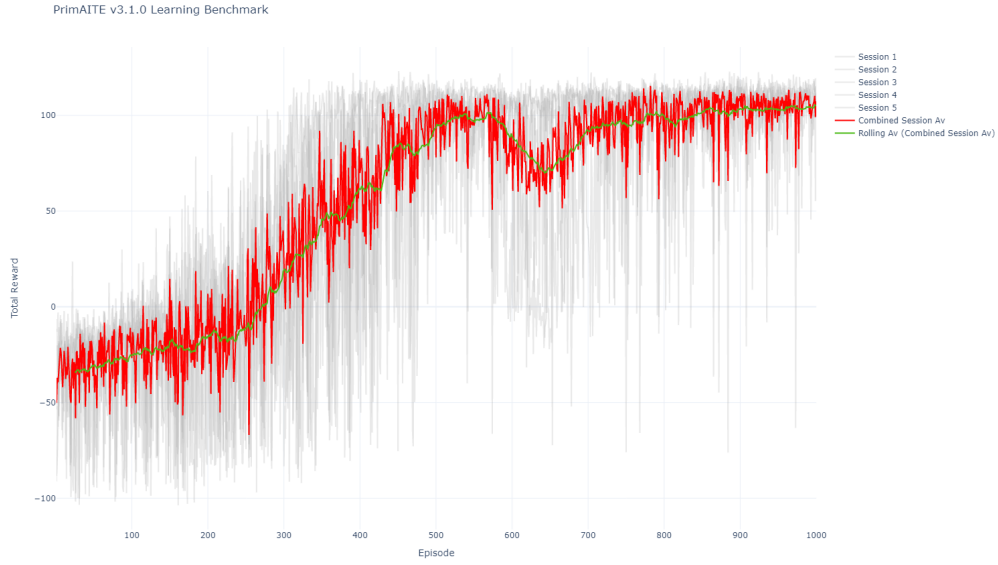## 4.1 v3.1.0 Learning Benchmark Plot

Figure 1: PrimAITE 3.1.0 Learning Benchmark Plot

4.2 Learning Benchmarking of All Released Versions under Major v3.*.*
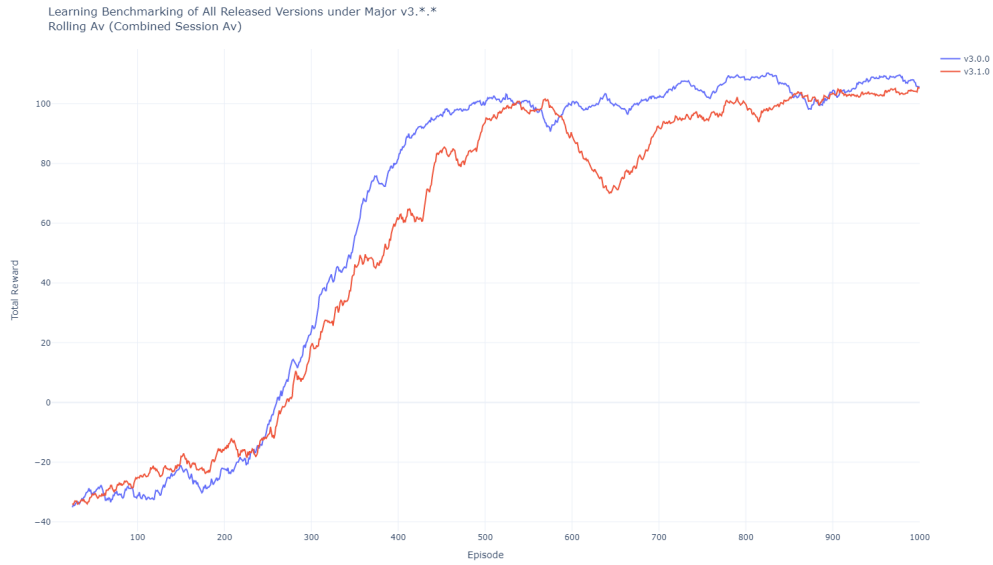

Figure 2: Learning Benchmarking of All Released Versions under Major v3.*.*