

DAY 10 : ALPHA BENCHMARK VERDICT

This document summarizes the benchmark evaluation of a PPO-based trading agent against trivial baselines under identical market conditions and out-of-sample evaluation.

Does alpha exist?

No. The RL agent fails to achieve a positive Sharpe ratio and does not demonstrate statistically defensible alpha.

Against which baseline(s)?

The RL agent does not outperform either the Buy & Hold strategy or the Random baseline when evaluated under identical conditions.

At what risk cost?

The RL agent maintains near-zero drawdowns and minimal portfolio volatility, indicating a highly risk-averse policy that prioritizes capital preservation over return generation.

Conclusion:

Under the current reward structure, the RL agent learns risk avoidance rather than return-seeking behaviour. While learning is present, no meaningful alpha is observed.