seminari di Matematica e Statistica

Multi-objective reward generalization: improving performance of Deep Reinforcement Learning for applications in single-asset trading

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In this talk, we investigate the potential of Multi-Objective, Deep Reinforcement Learning for stock and cryptocurrency single-asset trading: in particular, we consider a Multi-Objective algorithm which generalizes the reward functions and discount factor (i.e., these components are not specified a priori, but incorporated in the learning process). Using several assets (BTCUSD, ETHUSDT, XRPUSDT, AAPL, SPY, NIFTY50), we discuss the reward generalization property of the proposed Multi-Objective algorithm, preliminary statistical evidence for its predictive stability over the corresponding Single-Objective strategy, and its performance for sparse reward mechanisms.

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