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MASTER'S THESIS PRESENTATION

Active Automatically Managed Deep Portfolios with Cryptocurrency Assets

WHEN
May 5, 2022
3:00 PM

WHERE
Zoom Meeting
For ZOOM presentations, details will be provided in an email announcement for this seminar.

Jarrod Dominguez, MS candidate

Reinforcement learning (RL) provides a novel framework from which to approach the problem of stochastic asset allocation. In this thesis, we develop a model under which the agent is tasked with producing a profitable portfolio with desirable risk characteristics. We construct a quasi-general portfolio optimization problem which uses a Markov Decision Process to model the agent and environment interaction. We perform an empirical analysis of trained agent success, utilizing a unique multiyear cryptocurrency data set that includes prices and non price related factors. We compare the "best case" performance of three contemporary RL algorithms over an out-of-sample three month portfolio management horizon to obtain performance metrics of the algorithms. The resulting agent produced portfolios have many desirable features, including above baseline returns, minimal maximum draw-down, and low realized volatility of returns.

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