

A WaveNet based model for Portfolio Management by using Deep Reinforcement Learning

Résumé

Portfolio management is a challenging task in its nature because of the abundance of factors that should be simultaneously considered: the investors' risk preferences and constraints, the investment environments and their limitations, and complicated features that affect the future price movements.

In this study, we propose a model based on actor-only reinforcement learning that takes all of these factors into account and provides a significant improvement in the portfolio performance compared to the most recent deep reinforcement learning models. In particular, we build on WaveNet, a model that was originally proposed for generating audio waveforms, to extract the useful information from historical time series of assets for portfolio management. Contrary to the similar previous models, we show that the performance of our approach is not affected by how the assets are permuted when fed into the model, and this could make the output of the model more reliable by practitioners.

☞☞☞ *This conference will be presented in English.*

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