Automated Algorithmic Application for Exploring Trading Strategies and Methodologies

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1/24/2023

The global financial market has been constantly evolving with the introduction of new technologies that simplified the trading process and reduced some of the many inefficiencies that have been problematic since the early days of Wall Street. With online brokerages simplifying investing for average people and large institutions investing billions of dollars to reduce their latencies by a few milliseconds, any active market has grown in complexity to a point where making informed investment decisions in the short and medium term has become almost infeasible to everyone except hedge funds, large banks, and institutional investors.

In this sphere, independent investors are usually at a significant disadvantage; since trading institutions dominate high frequency trading with their superior collective of computational resources and analysts, algorithmic trading is reserved for only a miniscule percentage of smaller investors. This leaves most users to make manual decisions that are plagued with inefficiencies naturally caused by human error, bias, and emotion. Money lost on suboptimal trades ends up back in the hands of institutional investors, contributing to the increasingly rampant inequality in wealth distribution in the United States and the rest of the developed world.

The primary objective of this project is to develop a specialized application for analyzing both established and novel strategies used in medium to high frequency trading. These

methods will be initially researched and later tested against historical cryptocurrency market data and evaluated for their risks and effectiveness in gaining capital asset value by consistently executing profitable trades. The purpose of this is to explore options that reclaim retail investor market share by introducing a different take on trading — replacing human decisions with automated actions based on continuous extensive algorithmic analysis.

The secondary objective of this project is to implement the explored trading methods into a real-time scenario with a sandbox account. After determining the performance of certain strategies, running them against a non-historical real-world environment would confirm whether they are feasible in practice. For this stage to be reached, at least one satisfactory method should be present from the primary goal described above. Any tested strategies can be evaluated for their relative earnings compared to the value delta of any market, including but not limited to the S&P 500 and/or the specific crypto market where the transactions took place.

In summary, the broad aim of this project is to help average people stay competitive in today's complex financial markets by providing automated methods of establishing profitable trades. With this, the population's economic majority can begin accumulating assets without fear of negative return on investments because of institutional efforts to make money in a zero-sum market. Reducing the market share of hedge funds and large investors would be the ultimate step in alleviating wealth inequality and would put funds back into the pockets of people and families who need them the most.