A FEASIBILITY STUDY OF ALGORITHMIC TRADING

U.VELLAICHAMY[1], DR.R.JAYAKARTHIK[2]
Research Scholar, Dept. of Computer Science, Vels Institute of Science Technology and Advanced Studies,Chennai, India.
Assistant Professor, Dept. of Computer Science, Vels Institute of Science Technology and Advanced Studies,Chennai, India.
drrjayakarthik@gmail.com

Abstract: ***Algorithmic trading is beginning to develop rapidly in the trading market, more and more algorithms begin to be used in the transaction market. As a form of machine learning, neural network can fully reveal the complex trading market. Based on the characteristics of commodity futures market, according to the rules of futures market, a self-evolving commodity futures trading strategy is proposed. AI strategy has a good performance both in yield and risk. It also proves the feasibility of the model and the strategy.***

Keywords: Algorithmic Trading, Machine Learning, Neural Network.

1. Introduction

Stock exchanges began transitioning from a traditional auction to computerized transactions in the early 1970s. In the late 1980s and early 1990s, Electronic Communication Networks ("ECNs") became increasingly popular for traders looking for more efficient access to the markets. These developments set the stage for algorithmic trading that eventually took humans out of the equation.

AI Algorithmic Trading Server any number of strategies can be deployed. Strategies will be coded purely in Python with Esper code. Esper based strategies make use of a dedicated Esper engine. A strategy can deploy any number of SQL-like Esper statements for time-based market data analysis and signals generation.

Traders and investors can turn precise entry, exit, and money management rules into automated trading systems that allow computers to execute and monitor the trades. One of the biggest attractions of strategy automation is that it can take some of the emotion out of trading since trades are automatically placed once certain criteria are met.

The trade entry and exit rules can be based on simple conditions such as a moving average crossover or they can be complicated strategies that require a comprehensive understanding of the programming language specific to the user's trading platform. They can also be based on the expertise of a qualified programmer.

2. Existing system

Now we will be dealing on the trading platforms or the software used for trading. In order to induce more transparency and efficiency in the trading system, NSE and BSE introduced nationwide online fully automated "Screen Based Trading System". The trading platform used by BSE is called BOLT-Bombay Online Trading. The order of investors is placed on the basis of time and price basis.

The stock market works through a network of exchanges — you may have heard of the New York Stock Exchange or the Nasdaq. Companies list shares of their stock on an exchange through a process called

an initial public offering, or IPO. Investors purchase those shares, which allows the company to raise money to grow its business. Investors can then buy and sell these stocks among themselves, and the exchange tracks the supply and demand of each listed stock.

In January 2018, Finance Minister Arun Jailey said, "The government is examining the matter. A Committee under the chairmanship of the Economic Affairs Department Secretary is deliberating over all issues related to cryptocurrencies to propose specific actions to be taken. The Securities & Exchange Board of India (SEBI) allowed stockbrokers to offer Direct Market Access (DMA) to their institutional clients.

3. Proposed System

AI Algorithmic Trading running on computers could place trades and manage portfolios efficiently, with minimal manual supervision. AI Trading algorithms could generate profits at a speed and at a frequency that was impossible for a human trader to reach.

This reduced travelling time of the signals being sent by the AI Trading algorithms.

The global algorithmic trading market is expected to grow significantly between 2018 and 2026. And that's because cloud-based services for algorithmic trading will start to emerge in the markets.

Then, there's the demand for AI Trading algorithms. It helps algorithms learn from their past experiences, adapt to the market conditions, and hence reduce the risk while making their next trading decision.

The future of trading and dealing is in automation. Traders will be expected to at least have a basic understanding of how these algorithms work.

While regulatory ambiguity continues, some of the biggest banks in the country, including State Bank of India and ICICI Bank, have been experimenting on the use-cases of blockchain.

4. Result and Discussion

Innovative automated execution strategies like Algorithmic Trading gain significant market share on electronic market venues worldwide Implementations of algorithmic trading behavior and allows for modeling latency. As simulations allow for reproducing exactly the same basic situation, an assessment of the impact of algorithmic trading models can be conducted by comparing different simulation runs including and excluding a trader constituting an algorithmic trading model in its trading behavior. By this means the impact of Algorithmic Trading on different characteristics of market outcome can be assessed. The results indicate that large volumes to execute by the algorithmic trader have an increasing impact on market prices.

The future systems could study all the historical data that we have archived over the course of the entire trading history, analyze it with ease to find out the trends, what would work and what would not. It could also teach itself to predict the future markets with ease while trading multiple accounts and strategies to spread risk and reject or accept real-time bids and offers.

If the market does not favor your trading strategy rules, the system's self-learn algorithms would adjust trading to different patterns and alter the rules to match market conditions.It could be capable of checking

out multiple market conditions across the globe simultaneously saving a lot of time and eliminating any possibility of the slightest gap in time or occurrence of an error.

Algorithms could be programmed into the chips directly for increased efficiency and easier communication. Specific global regulation and kill-switches could also be programmed.

Imagine a system so powerful, with a vast reach with Big Data and connectivity like the likes of the IoT rapid internet speed and gigaflops of processing power incorporating structured and unstructured data, utilizing real-time global news feed, with LIVE social media and current and historical stock data across the globe in one algorithmic engine.

Regulations govern and work towards eliminating any threats to that particular market. But in doing so, it has to often stifle with innovation and keep checks in place to avoid malpractices or misuse. It is essential that regulators are well versed in the operation of algorithms and have the flexibility to be able to engage in new legislation where required.

Machine learning adds a layer of intelligence on top of algorithms by providing powerful tools to extract patterns from data processed all across the globe, giving technology the opportunity to study it in real time.

- Quantum Computing
- Cryptocurrency
- Blockchain technology
- Cloud Computing
- Fintechs
- Big Data
- Internet of Things IoT, etc.

5. Conclusions

The purpose of this research work was to investigate if machine learning can be used to monitor algorithmic trading by detecting deviating behavior. Due to the lack of labels, artificial anomalies were generated, using two different approaches: a down sampling strategy and manual construction and manipulation of real data. An important limitation of this study is that the evaluation was not based on ground truth anomalies. Even though generating artificial anomalies were considered to be the best approach given the absence of labels, the results should be carefully interpreted.

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