

Review of: "Machine Learning Methods in Algorithmic Trading: An Experimental Evaluation of Supervised Learning Techniques for Stock Price"

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Potential competing interests: No potential competing interests to declare.

1. Abstract:

The abstract is a well-constructed summary of the research. It gives a general overview of the methods, and findings the paper presents. I would suggest to only add a summary of the data that was used.

2. Introduction:

The introduction is too short. It does give a very basic introduction to the Machine Learning side of the paper; however, it does not give any motivation as to why this research may be of use in the industrial or academic setting. It also does not introduce the data at all. For a non-specialist the subtleties of time series data are not understood. The introduction should be extended with a more in-depth discussion of both the motivation, the data that will be used, and an expansion on the methodologies of Machine Learning.

3. Related Works:

Like the introduction, the related works provide a very basic overview of the current literature. However, it is severely lacking in a critical analysis of these works and so the reader is left wanting when trying to evaluate the novelty of the research paper. This is desperately needed. Without this critical analysis of the current state of research it is hard to evaluate the paper's impact on the research area. Moreover, the total number of references needs increasing too. The paper combines multiple areas of research, meaning research should be collated from all areas the paper includes.

4. Benchmark Methodology:

This section does provide a solid foundation for the methodologies of the paper. However, the description of the data collection is lacking. There is no detail of the specific sources, nor the financial instruments used, nor the length of time these were taken over. The paper never alludes to the type of financial time series used. The treatment of equity pricing series versus the treatment of bond or FX data is widely different due to the underlying processes that create the time series. This therefore needs to be detailed in the discussions of the paper. Moreover, the paper states that they do not have validation dataset. This is questionable, as the author's do not provide any alternative method for preventing the machine learning algorithm from over fitting.

5. Problem Formulation:

The authors state that they wish to predict movements of cryptocurrency and stock assets. The reason for these assets is not clear. Firstly, there are numerous types of stock assets, which has been chosen? Secondly, cryptocurrency and stock assets have very different underlying dynamics. One is based on the value of for example, a company, whilst the other is based on pure sentiment of investors. Therefore, the methodologies are inappropriate to use upon both simultaneously.

The algorithm discussion section needs further details. While the authors present an average qualitative description of the algorithm, the algorithms need a proper demonstration of the mathematics behind them. Without this the reader is lost as to how these algorithms work and are implemented.

6. Results and Discussion of Results:

This again has a very average demonstration of the results. However, the authors do not present the results for each data set they have used. The results therefore do not give the insight the authors portray. The discussion of the results is also far too short. They provide no critical analysis of their work and so the reader cannot take anything meaningful from this paper.

7. Potential Limitations:

Again, the authors provide no meaning limitations of their research, without this critical analysis the paper does not seem as strong as it could be.

8. Trading Bot:

This section seems utterly pointless. The authors provide no quantitative results, and again there is no critical analysis of the results. Likewise, there are no results presented.

9. Conclusion:

The conclusion does indeed conclude the paper, but as the paper does not critically analyse, nor demonstrate the results gathered during this research. The data is not discussed, nor are the different results given from the different asset classes.

10. Future Directions:

I would not move on with the research until a proper review of this paper has been carried out. The research question shows promise, and the two distinctly different asset classes are intriguing, but this has not been shown in the paper, in it's current form.