

**Reviewer Recommendation and Comments for Manuscript Number MLWA-D-22-00190****Volume-Centred Range Bars: Novel Interpretable Representation of Financial Markets Designed for Machine Learning Applications**

Original Submission  
Ermatita Ermatita, Ph.D.

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**Recommendation:** Major Revision**Custom Review Question(s):**

IMPACT: How would you rate the overall quality of the paper? (Please mark one point)

DATA/RESULTS: Do the data support the conclusions? If your answer is 'no', please address this in the Comments to Author.

DATA/RESULTS: Have the authors deposited data to replicate the figures or results at relevant data repositories?

If a Graphical Abstract was submitted, was it useful? For more information, see [www.elsevier.com/graphicalabstracts](http://www.elsevier.com/graphicalabstracts)

If Highlights were submitted, are they meaningful and an accurate representation of the article? For more information, see [www.elsevier.com/highlights](http://www.elsevier.com/highlights)

**Response**

Ordinary work for this field

Yes

Yes

N/A

N/A

**Reviewer Comments to Author**

Overall, the paper is well written, and for the most part well explained. However, some parts could be improved by applying the suggested comments.

**Abstract:**

The authors investigate "i) whether the proposed representation allows the more efficient design of machine learning models."

1. The authors should adjust the research questions i) in the Abstract with RQ1 in subsection 1.3.
2. The study results have not shown which ML model design is more efficient. This model is more efficient than which ML model?
3. The authors should first state the abbreviation of SHAP to be used.

**Research Gap (subsection 1.1.):**

The authors propose "a new market pattern based on domain knowledge, execution volume, and price action."

4. Can you please explain the reasons for proposing the three patterns? Why not just two or four patterns?
5. It is very important for readers to know why the authors chose SHAP in this study. Why not consider LIME, InterpretML, or something else?
6. The authors need to emphasize the research novelty.

**Conclusion:**

The authors claim that "a new market pattern extraction method suitable for ML is called Volume-Centred Range Bars (VCRB)."

7. The claim is less accurate because the test was only performed on one ML method (CatBoost).

**Minor comments:**

8. Page 6, second line from bottom: "... based on..." not "based no".

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**Response**

Yes

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