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Predicting Stock Prices Using Data Mining Algorithms in the Stock Market of Iran

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1. Round 1

1.1 Reviewer 1

Reviewer:

The sentence "Investment and activity in the capital market heavily require the examination of various aspects of this activity for precise planning" needs to be clarified. Specify which aspects of the capital market activity are most critical for precise planning.

You state, "ANN is a mathematical model inspired by biological neural networks." This needs further explanation. Provide a brief description of how ANNs function similarly to biological neural networks.

In your description of the LSTM architecture, you refer to "a sigmoid layer, a hyperbolic tangent layer, and pointwise multiplication operations." Please provide a figure or diagram here to visually represent the architecture, which will help in understanding.

The statement "multivariate data influencing stock prices such as trading volume overall index growth percentage historical price data total cash inflow into the stock market and currency prices will be included" is dense. Consider breaking it into a list format for better readability.

It is good practice to explain the pseudo code in more detail. Each step should have a brief explanation of its purpose to ensure readers can follow the logic without ambiguity.

The features of the proposed solution are listed in a table. It would be helpful to include a brief explanation of why each feature (e.g., 'Close', 'Open', 'High', 'Low', 'Volume', 'Date') is relevant for predicting stock prices.

The explanation of MAE, MSE, and RMSE calculations should include the formulas. Although they are provided, explicitly showing them in the context of your study would improve clarity.

Author revised the manuscript and uploaded the updated document.

1.2 Reviewer 2

Reviewer:

You mention, "The transition from an underdeveloped economy to a developed economy requires capital and investment." This statement needs to be supported by referencing specific economic theories or past empirical studies that corroborate this transition process.

The phrase "it can be said that in any ordinary society all individuals seek to increase their welfare" is too general. Consider providing specific examples or studies that show how individual investment behavior is motivated by the desire to increase welfare.

The comparison between RNN and BPNN based on their MAPE values is valuable. However, you should include more context about the datasets and conditions under which these MAPE values were obtained to give readers a better understanding of the performance metrics.

When describing the use of LSTM, you mention "Although RNNs have superiority in retaining information compared to traditional networks..." This statement needs to be supported by a citation of a study that empirically demonstrates this superiority.

You claim that "the LSTM neural network is one of the most effective networks for predicting stock prices." This is a strong statement that needs backing with comparative results from other studies showing the effectiveness of LSTM over other models in similar contexts.

The sentence "The presence of the second layer eliminates the challenge of random weights in the first layer" is somewhat unclear. Explain how adding a second layer addresses the issue of random weights more explicitly.

When stating, "This solution can be enhanced as an application and can be a suitable tool for improving confidence and assisting both small and large investors," provide suggestions or examples of how this application could be implemented in practice.

Author revised the manuscript and uploaded the updated document.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.

2.1

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