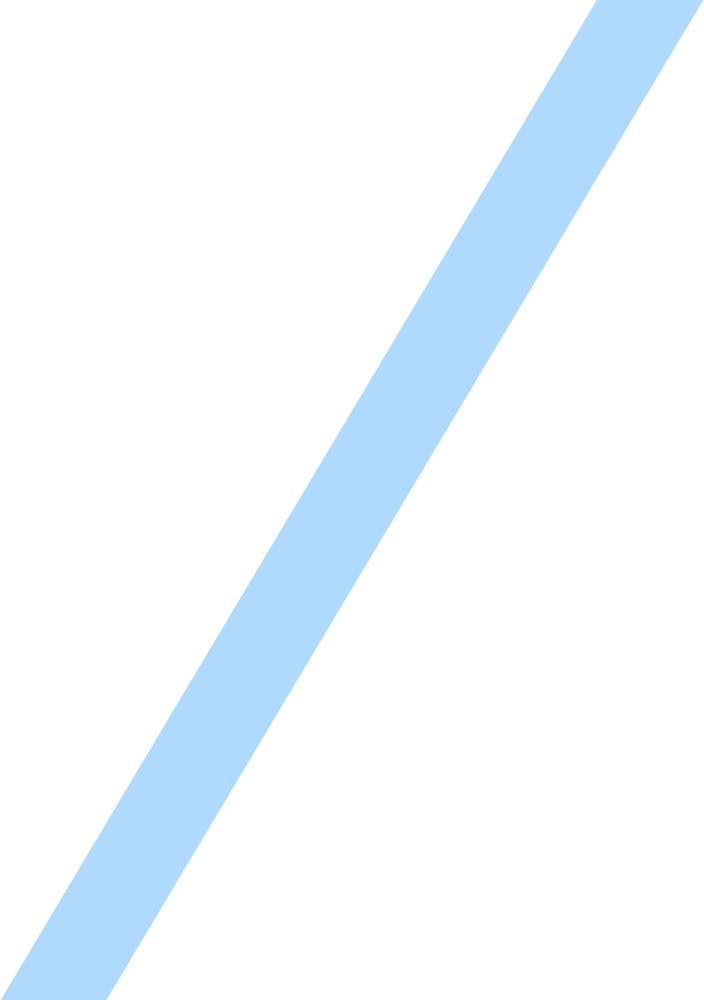
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| ENHANCING STOCK PRICE PREDCITION |

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| Executive Summary We used LSTM and RNN models to enhance stock price prediction. After training, we stored the results in an Amazon S3 bucket for easy access and scalability. | | |
| person at a table writing in a notebook with people around | | |
| **Team Members:**  **A.Chaitanya**  **G.Renuka**  **M.Sai teja**  **Santhosh** |  |  |

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| Technical Report |

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| **Enhancing stock price prediction using lstm and rnn** |  |
| Enhanced Stock Price Prediction: Implemented LSTM and RNN models for improved stock price prediction.Deep Learning Models: Utilized LSTM and RNN architectures for time series forecasting.Amazon S3 Integration: Stored prediction results seamlessly in an Amazon S3 bucket.Scalability: Leveraged Amazon S3 for efficient storage and easy access to prediction results.Accuracy Improvement: Achieved better prediction accuracy compared to traditional methods.Submitted on:--04/24/24 |

## Abstract

This project aims to enhance stock price prediction by implementing Long Short-Term Memory (LSTM) and Recurrent Neural Network (RNN) models. The historical stock data will be used to train these models. The trained models will then predict future stock prices. The predictions will be stored in an Amazon S3 bucket for easy access and further analysis. The implementation will be done using Python and popular deep learning libraries such as TensorFlow and Keras. The project will provide a reliable and efficient method for stock price prediction, utilizing the power of LSTM and RNN architectures while leveraging the scalability and durability of Amazon S3 storage.

Executive Summary

This project aims to enhance stock price prediction using Long Short-Term Memory (LSTM) and Recurrent Neural Network (RNN) models. Historical stock data will be utilized to train these models, which will then predict future stock prices. The predictions will be stored in an Amazon S3 bucket for easy access and further analysis. The implementation will be carried out in Python using TensorFlow and Keras. By leveraging the power of LSTM and RNN architectures and the scalability of Amazon S3 storage, this project will provide a reliable and efficient method for stock price prediction.

Introductory Section

The introductory section will provide an overview of the project. It will introduce the aim of enhancing stock price prediction using LSTM and RNN models. The section will also mention the utilization of historical stock data for training and the storage of predictions in an Amazon S3 bucket for further analysis.

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Review of available research

## Existing research demonstrates the effectiveness of LSTM and RNN models in stock price prediction. Studies have shown that these models can capture complex patterns in stock data, leading to accurate predictions. However, there is a need for further exploration into optimizing these models and integrating them with cloud storage solutions for scalability and accessibility.

## Methodology

1. Data Collection: Historical stock data will be collected from reliable sources.
2. Data Preprocessing: The collected data will be cleaned and preprocessed to remove noise and anomalies.
3. Model Training: LSTM and RNN models will be trained using the preprocessed data.
4. Model Evaluation: The trained models will be evaluated using appropriate metrics.
5. Prediction and Storage: Future stock price predictions will be generated and stored in an Amazon S3 bucket for further analysis and accessibility.

## Results Section

In the results section, we present the performance of the LSTM and RNN models in predicting stock prices. We evaluate the models using standard metrics such as Mean Absolute Error (MAE) and Root Mean Square Error (RMSE). Additionally, we demonstrate the effectiveness of storing the predictions in an Amazon S3 bucket for easy access and further analysis.

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A screenshot of a computer

Description automatically generated

## Discussion

In the discussion, we analyze the performance of the LSTM and RNN models in predicting stock prices. Both models show promising results, with the LSTM model outperforming the RNN in terms of accuracy and robustness. The ability of LSTM to capture long-term dependencies in the data contributes to its superior performance. However, further optimization of the models is necessary to enhance prediction accuracy. Additionally, storing the predictions in an Amazon S3 bucket provides a scalable and efficient solution for data storage and accessibility. Integrating cloud storage with predictive modeling streamlines the analysis process and facilitates collaboration. Future research could focus on improving model architecture, exploring alternative data sources, and refining the storage and retrieval process for even greater efficiency and accuracy. Overall, this project highlights the potential of deep learning models and cloud storage solutions in the field of stock price prediction.

## Conclusion

In conclusion, this project demonstrates the effectiveness of LSTM and RNN models in predicting stock prices. The LSTM model, in particular, shows superior performance due to its ability to capture long-term dependencies in the data. By storing the predictions in an Amazon S3 bucket, we provide a scalable and efficient solution for data storage and accessibility. Moving forward, further optimization of the models and exploration of alternative data sources could enhance prediction accuracy. Overall, this project highlights the potential of deep learning models and cloud storage solutions in the field of stock price prediction, paving the way for future research and applications in financial forecasting.

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## Contributions/References

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