PREDICTING COMMODITIES RELATED COMPANIES STOCK MARKET USING NEURAL NETWORK

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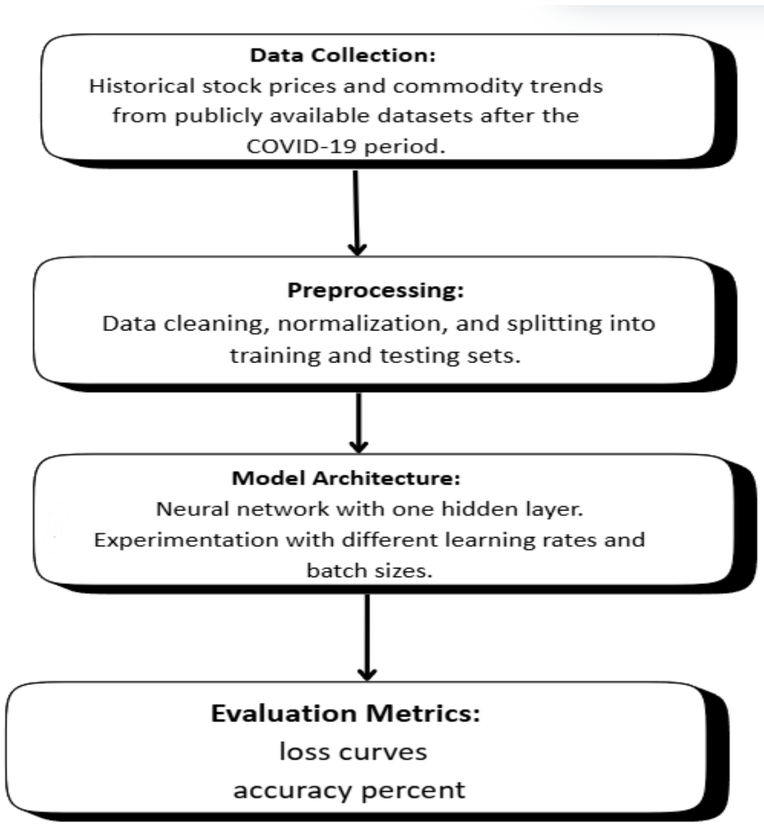
MOTIVATION/INTRODUCTION

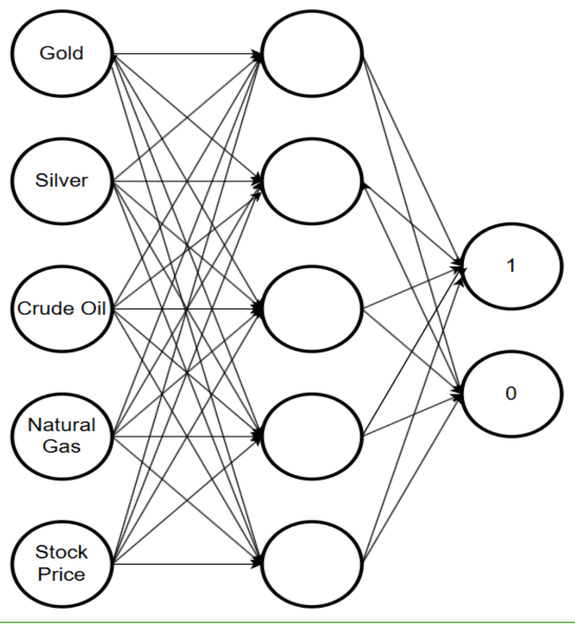
- The Indian stock market, particularly commodity-related companies like IOC, Reliance, and MCX, is significantly influenced by macroeconomic factors. Post-COVID, shifts in global commodity prices like gold and crude oil prices have become critical determinants of stock trends. This project aims to harness these macroeconomic indicators to predict stock market movements, aiding investors in informed decision-making.

SCOPE OF THE PROJECT

This study investigates the influence of commodity prices—namely gold, silver, crude oil, and natural gas—on the stock prices of commodity-related Indian companies. By employing a neural network with one hidden layer, the project aims to uncover predictive patterns and relationships within the data. This research is particularly significant in the post-COVID economic scenario, where fluctuations in global commodity prices have had a profound impact on market trends.

METHODOLOGY

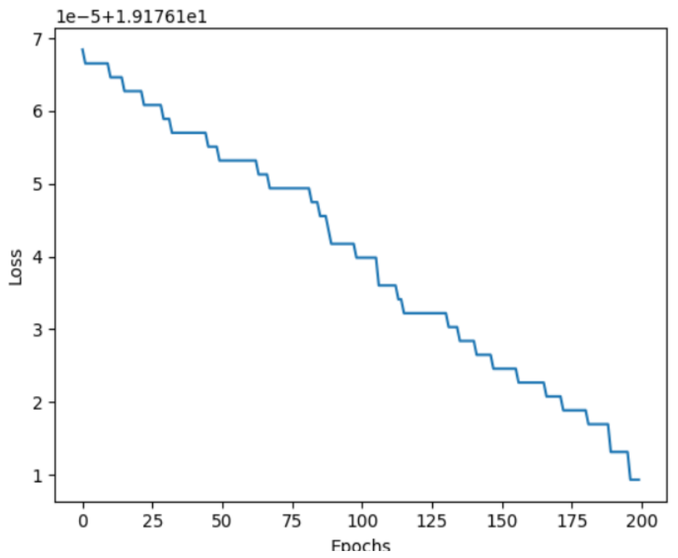




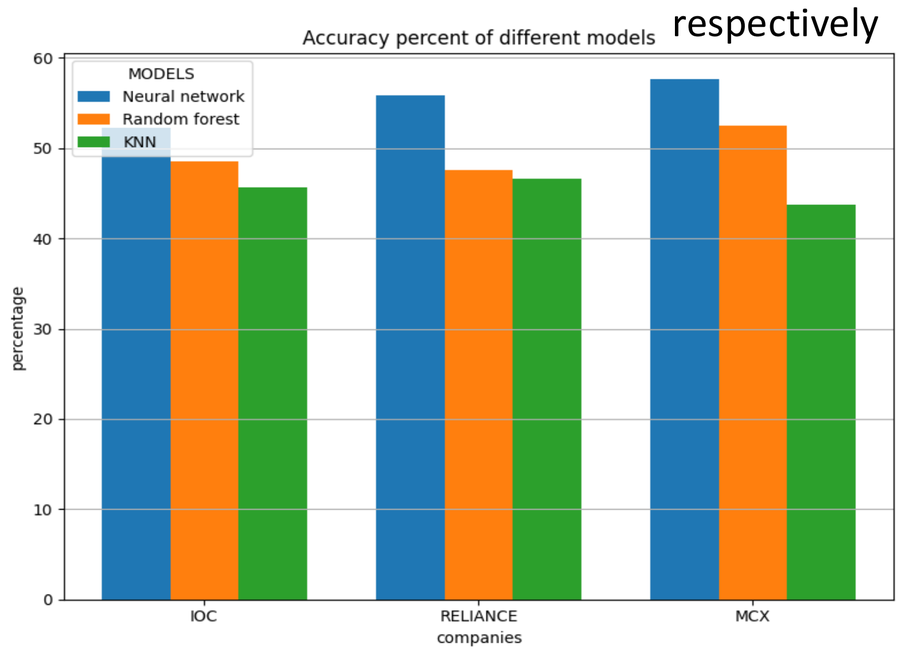
- The model has 5 input nodes
- There is 1 hidden layer with 5 nodes
- The output layer has 2 nodes
- 1 means price will go up up and 0 means price will go down
- The price of Gold , Silver, Gas and Stock of that company on that day is given to predict the next day change

RESULTS

- ✓ Neural network Model achieves more than 55% accuracy with all the companies which much better and reliable than other models.



- ✓ The loss function is continuously decreasing ,making the model more accurate
- ✓ The model is giving accuracy of 55.8%, 57.6%,52.2% for Reliance ,India oil corporation and Multi Commodity Exchange respectively



CONCLUSION/SUMMARY

The project demonstrates that neural networks can predict commodity-related stock movements reasonably well. While the accuracy scores are modest, further tuning of hyperparameters and exploration of alternative models may enhance predictions. Future work could include integrating global commodity indices and economic indicators for improved outcomes.

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REFERENCE/ACKNOWLEDGEMENT

https://github.com/Keerthana0290/stockmarketprediction.git