Stock Price Prediction using LSTM with Attention

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Problem Statement

Stock price movements are highly volatile and difficult to predict due to market complexity and nonlinear patterns in data.

Proposed System / Solution

Use LSTM neural networks combined with Attention mechanisms to capture temporal dependencies and improve accuracy in stock price prediction.

System Development Approach

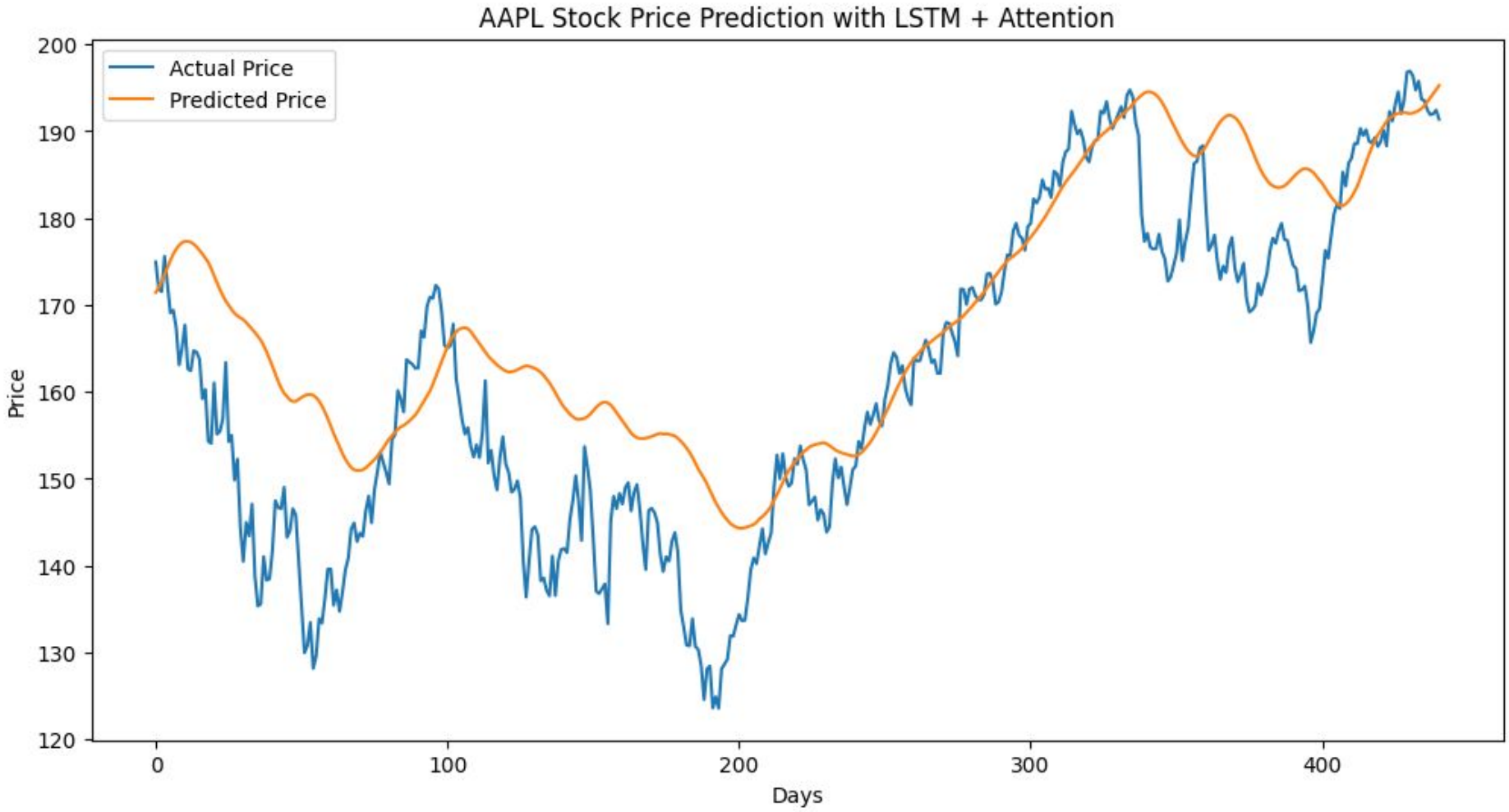
- Python
- TensorFlow/Keras
- Google Colab
- Pandas
- Matplotlib
- Yahoo Finance API or Kaggle dataset

Algorithm & Deployment

- Data collection & preprocessing
- Building LSTM with Attention layer
- Training the model
- Evaluation and prediction
- Deploy via Google Colab or Streamlit (optional)

Result (Output Image)

Show prediction graph: real vs predicted stock prices


AAPL Stock Price Prediction with LSTM + Attention
Actual Price
Predicted Price
Price
Days
200
190
180
170
160
150
140
130
120
0
100
200
300
400

Conclusion

The model shows promising results in capturing stock trends using deep learning techniques, especially with attention enhancing focus on important time steps.

Future Scope

- incorporate more features (news, sentiment analysis)
- Use advanced models like Transformers
- Real-time stock app deployment

References

GITHUB LINK :

https://github.com/jgr11082003/Stock-Price-Prediction-using-LSTM-Attention

DATA SET:

https://finance.yahoo.com/

THANK YOU