

# Multivariate Stock Trend Prediction Using LSTM

Enter Stock Ticker

AAPL

Select number of years

1

10



15



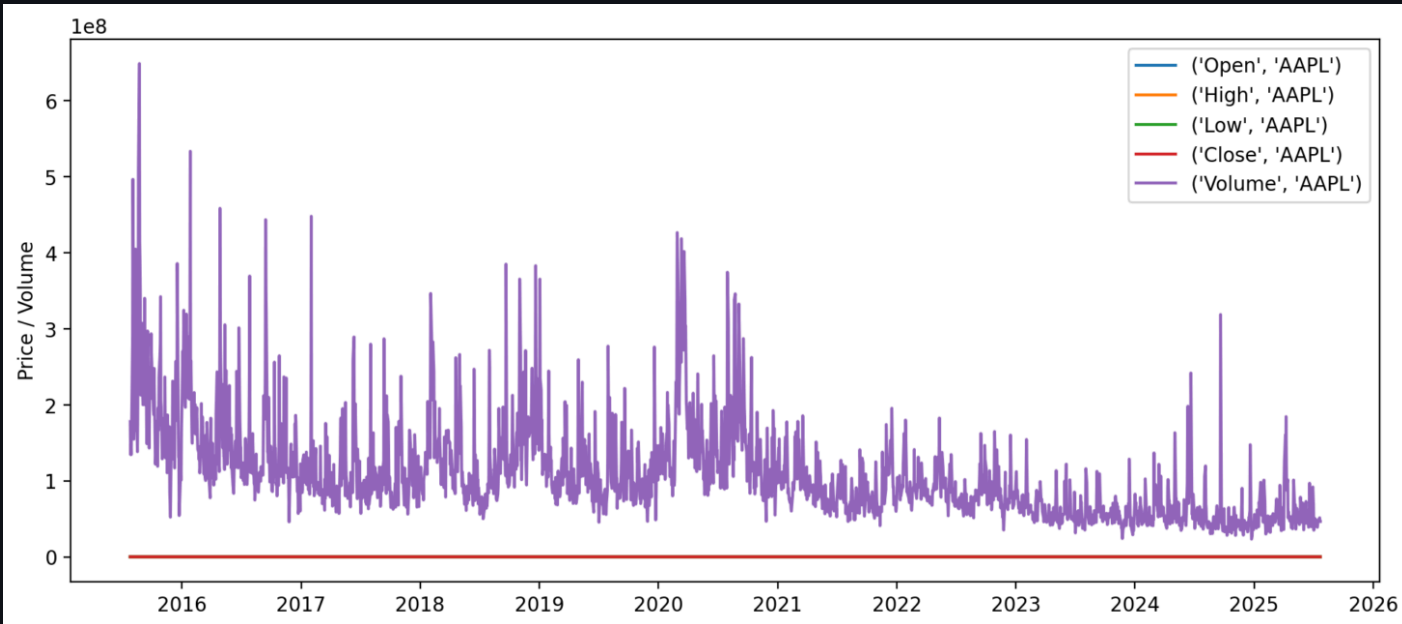
## Feature Overview for AAPL

	Open	High	Low	Close	Volume
Date	AAPL	AAPL	AAPL	AAPL	AAPL
2025-07-17 00:00:00	210.57	211.8	209.59	210.02	48,068,100
2025-07-18 00:00:00	210.87	211.79	209.7	211.18	48,974,600
2025-07-21 00:00:00	212.1	215.78	211.63	212.48	51,377,400
2025-07-22 00:00:00	213.14	214.95	212.23	214.4	46,404,100
2025-07-23 00:00:00	215.045	215.1	212.41	214.15	46,415,026

## Insight from Statistics

- Average Closing Price: \$104.45
- Price Range: 20.65to258.4
- Volatility: High 🔥 (Std Dev: 69.13)
- Stocks with high volatility can offer higher returns but also higher risk.

## Feature Time Series



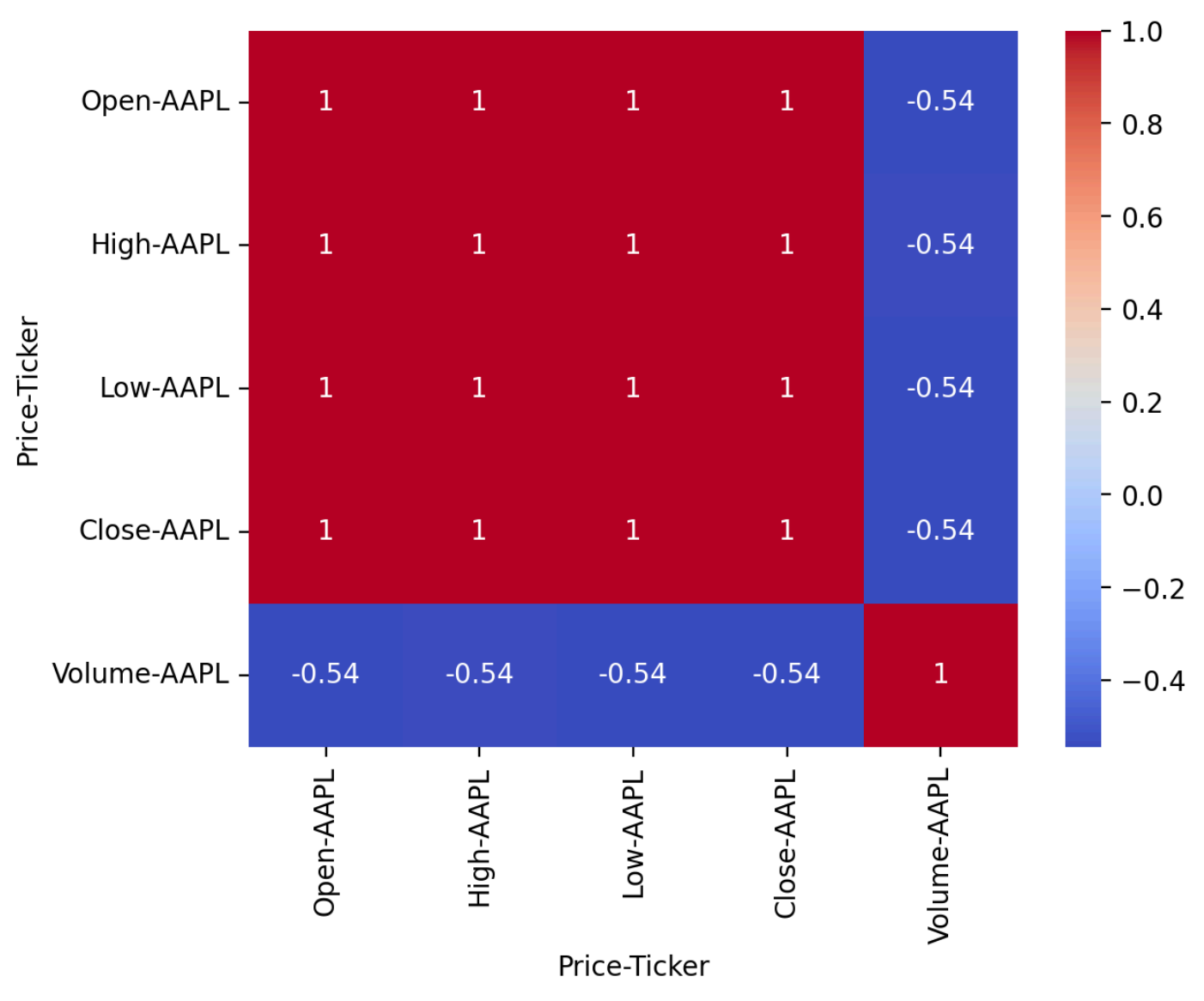
## Insight on Price Movement

- AAPL shows historical price and volume trends.

- Sharp movements in **Volume** often precede big price changes.
- Look for patterns like spikes or dips across features to identify events.



## Feature Correlation Heatmap

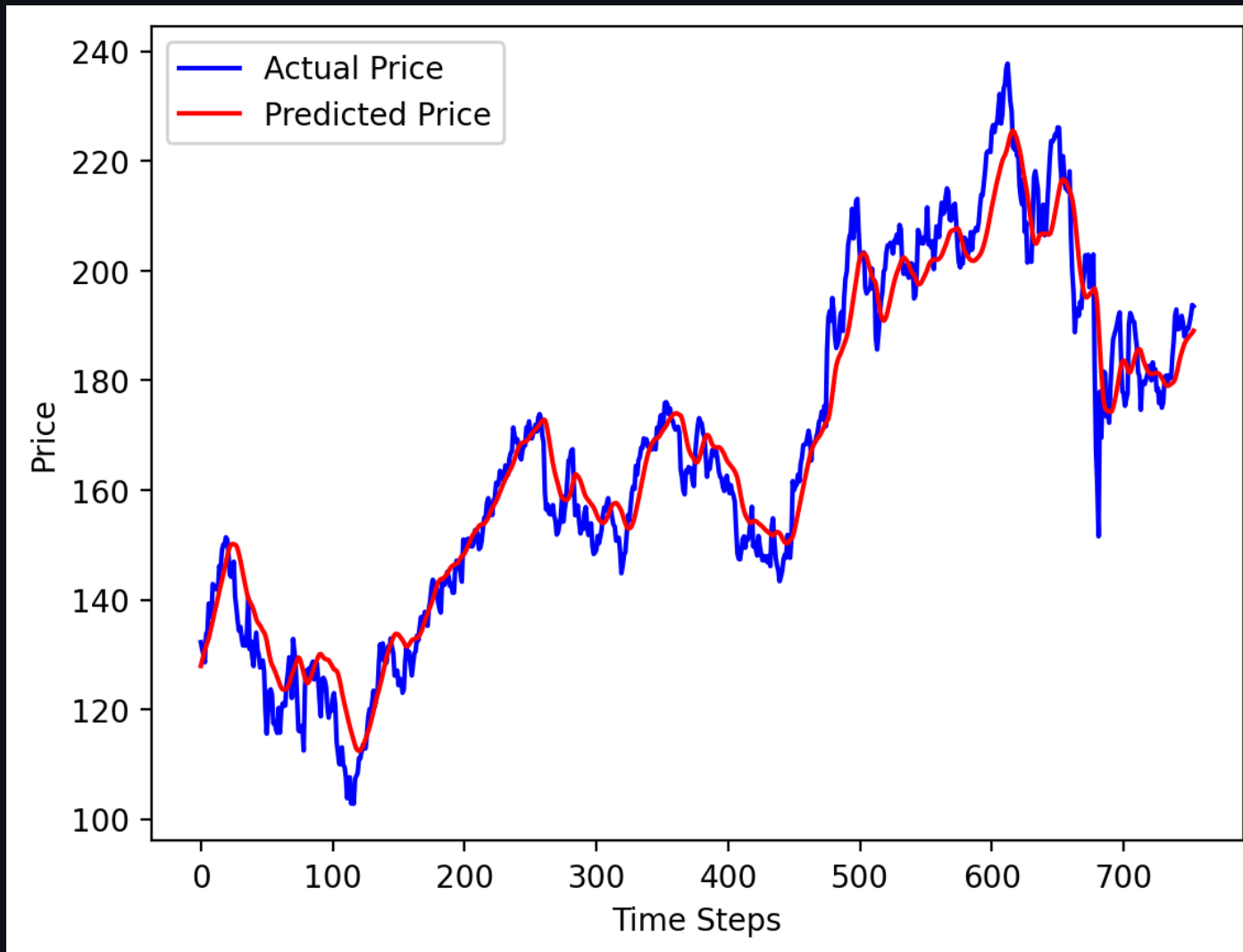


## Insight on Feature Relationships


- Correlation Heatmap shows how features move together.

- 'Close' typically has strong correlation with 'Open', 'High', 'Low'.
- Low correlation with 'Volume' suggests volume behaves independently.


## 🧠 Predicted vs Actual Closing Prices











## Model Performance Insight

- RMSE: 7.06
-  Moderate accuracy — trend is captured, some deviation.

## Summary of Current Trend

- Latest Close Price: \$214.15
- MA100: 208.04, \* \* MA200 : \*\*221.78
- Trend Indicator:  Sideways/Neutral

## Final Report

-  Stock Ticker: AAPL
-  Date Range: 2015-07-27 to 2025-07-24
-  Model RMSE: 7.06
-  Trend Analysis:  Sideways/Neutral
-  Volatility Level: High 
-  This app uses 5 features: Open, High, Low, Close, Volume to make predictions using an LSTM deep learning model.

