Neural Network for TechInvest

By Terry Thompson

Goal

- Time Series using LSTM Neural Network
- Forecast 7 days of the NASDAQ based on historical data
- 2 variables:
  - Closing Price
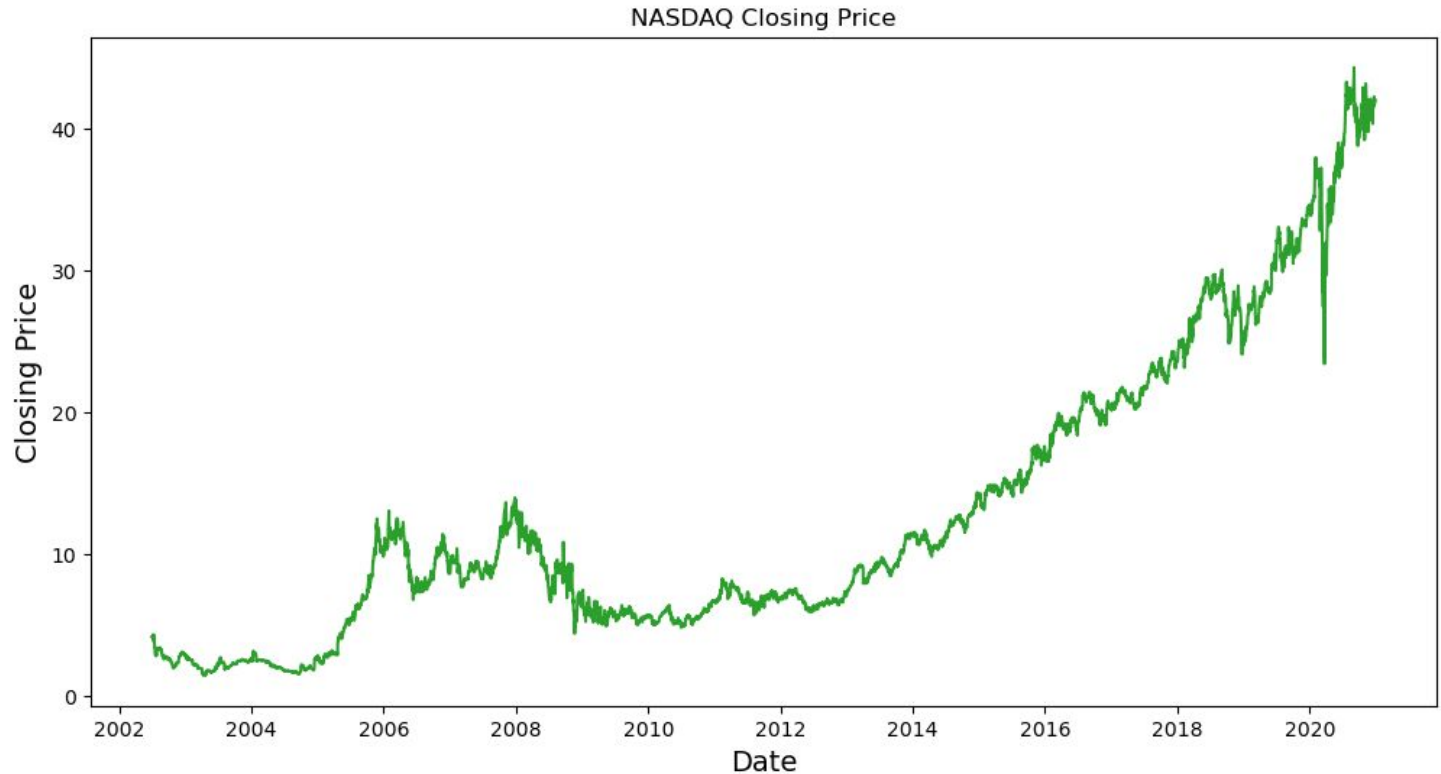 - Volume

NASDAQ Data

Variable in the data set

- Open
- Close
- High
- Low
- Volume

Date	Open	High	Low	Close	Volume
7/1/2002	$ 4.19	$ 4.19	$ 4.19	$ 4.19	3900
7/2/2002	$ 4.33	$ 4.61	$ 4.19	$ 4.23	21000

Historical Closing Price
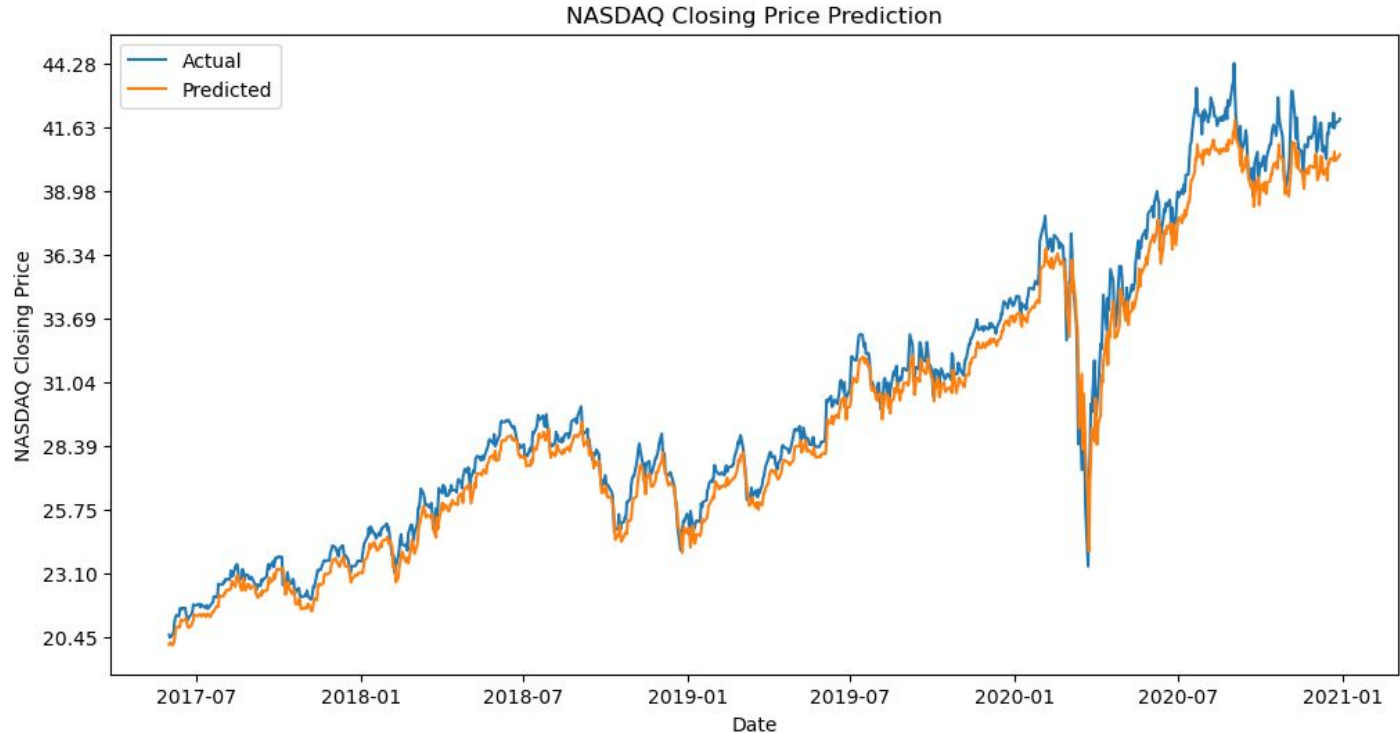
Overall
uptrend from
July 2002 -
December
2020

NASDAQ Closing Price

Volume

Spikes indicate major change in price trend

2014 onward trading stabilizes

NASDAQ Stock Volume
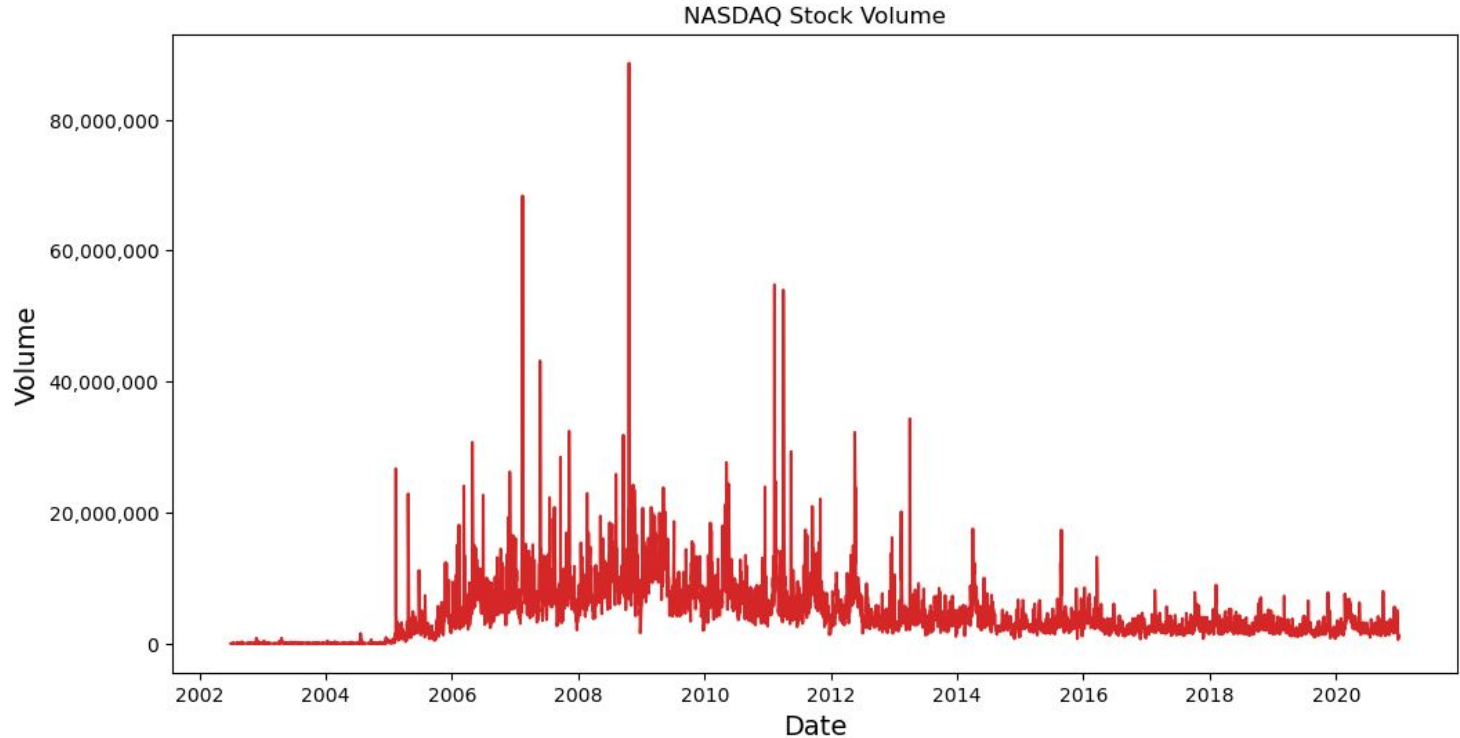
Closing Price Prediction

- Neural Network Modeling
- Best prediction model gives 2% error.

NASDAQ Closing Price Prediction

- Seven day forecast shows upward trend
- Note the steady increase on Day 3

Predicted NASDAQ Closing Prices for Next 7 Days
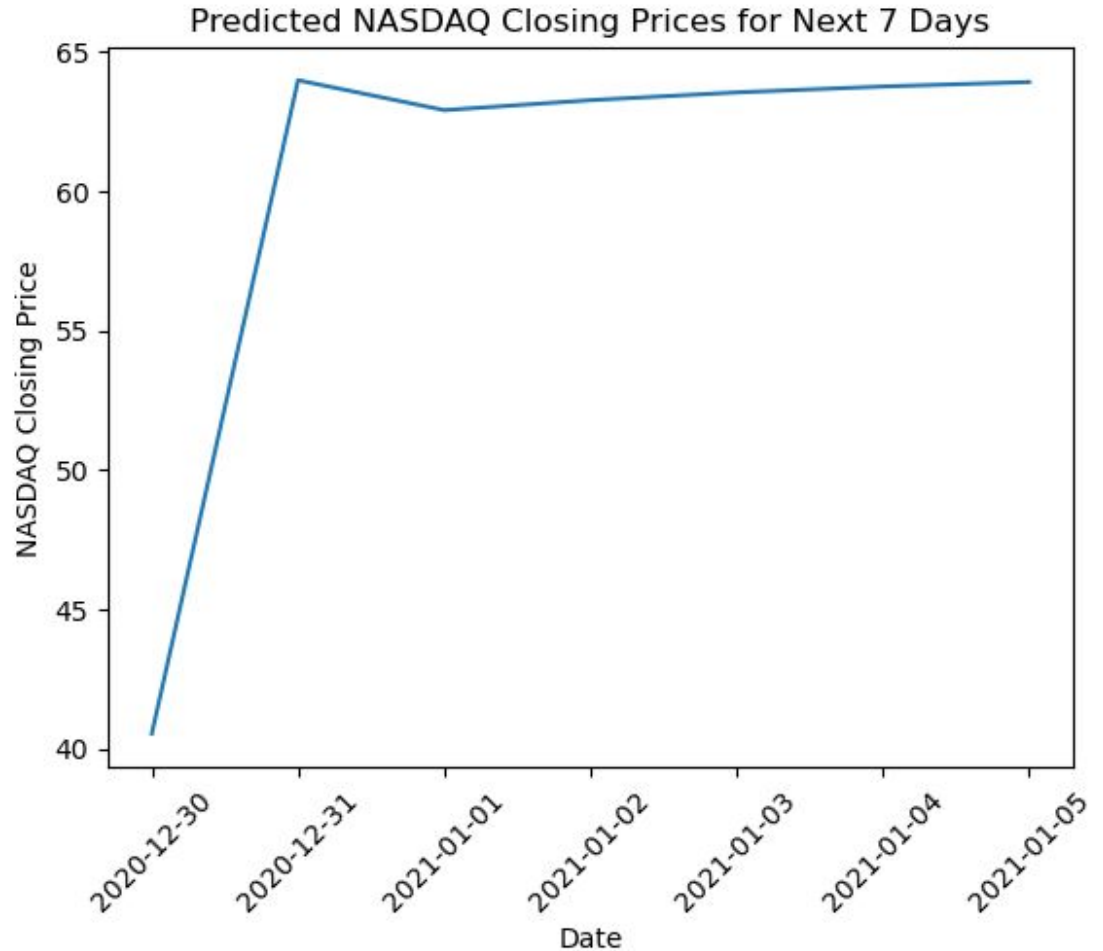
Conclusion

- **Model performance has a 2% error margin**
- **Predictions follow actual trends well, without overfitting**
- **This model prediction is based on only a few variables**
- **Unaccounted influences:**
  - **Public sentiment**
  - **Governmental policies**
  - **Unforeseen events**

Recommendations

- **Invest more into current holdings**
- **Diversify holdings within the NASDAQ**
- **Hold on to current investments**
- **Re-evaluate position after 7 days**

Further Actions

- **Incorporate mechanisms that allow the data to be scraped and incorporated:**
  - **twitter analysis**
  - **proposed legislation**
  - **other current economic factors**

Thank You!

Terry Thompson

https://www.linkedin.com/in/terry-thompson-224794a8/