



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

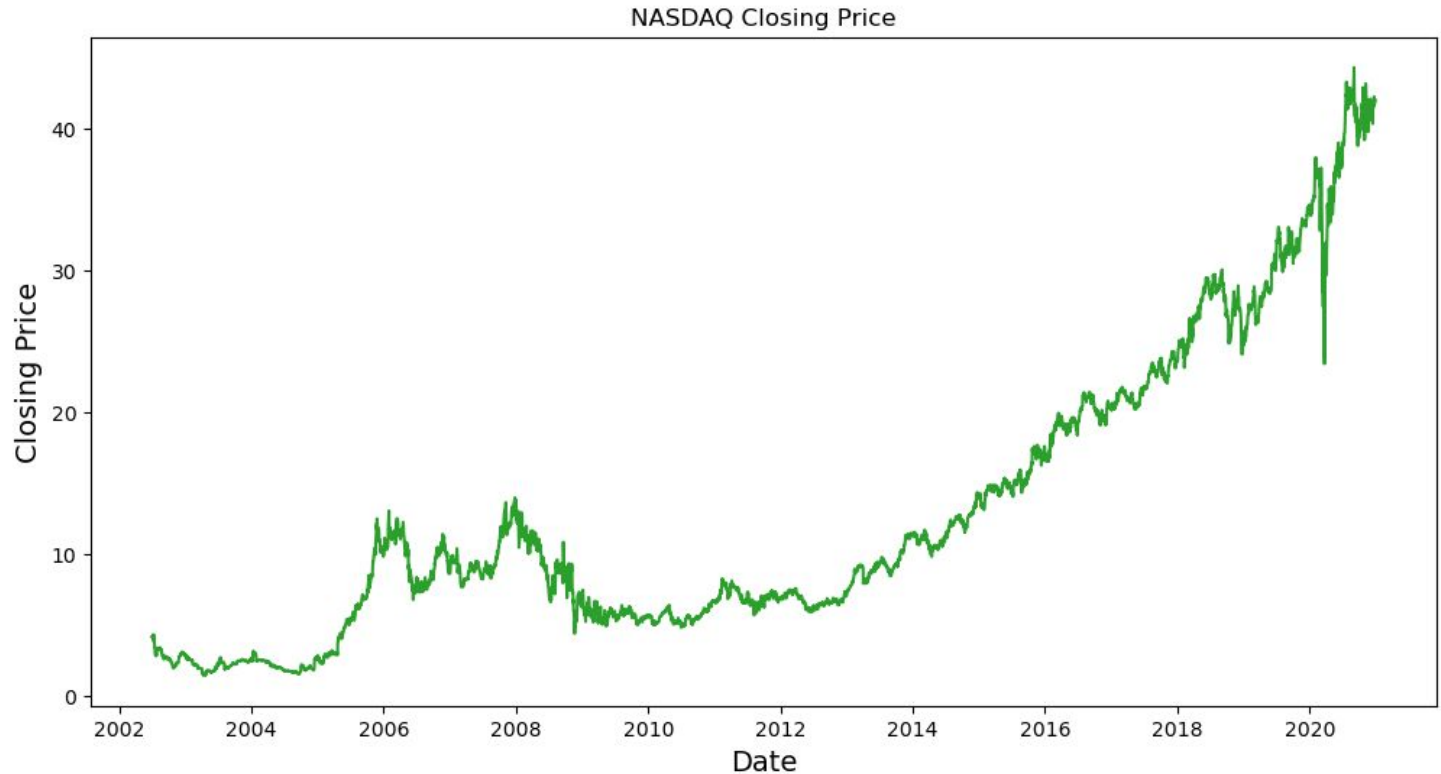
Closing Price and Volume

- Benchmark indicators
- Useful for seeing the big picture



Historical Closing Price

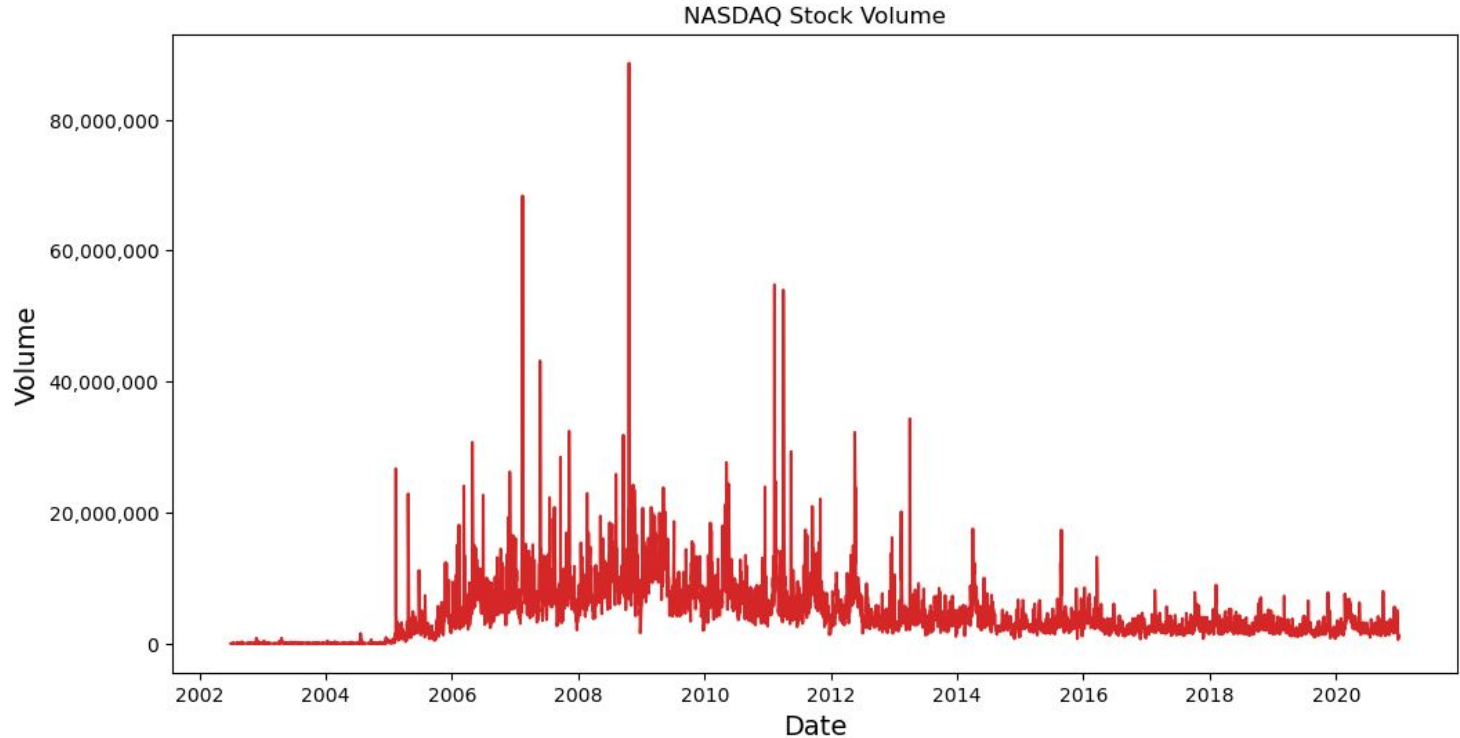
Overall
uptrend from
July 2002 -
December
2020



Volume

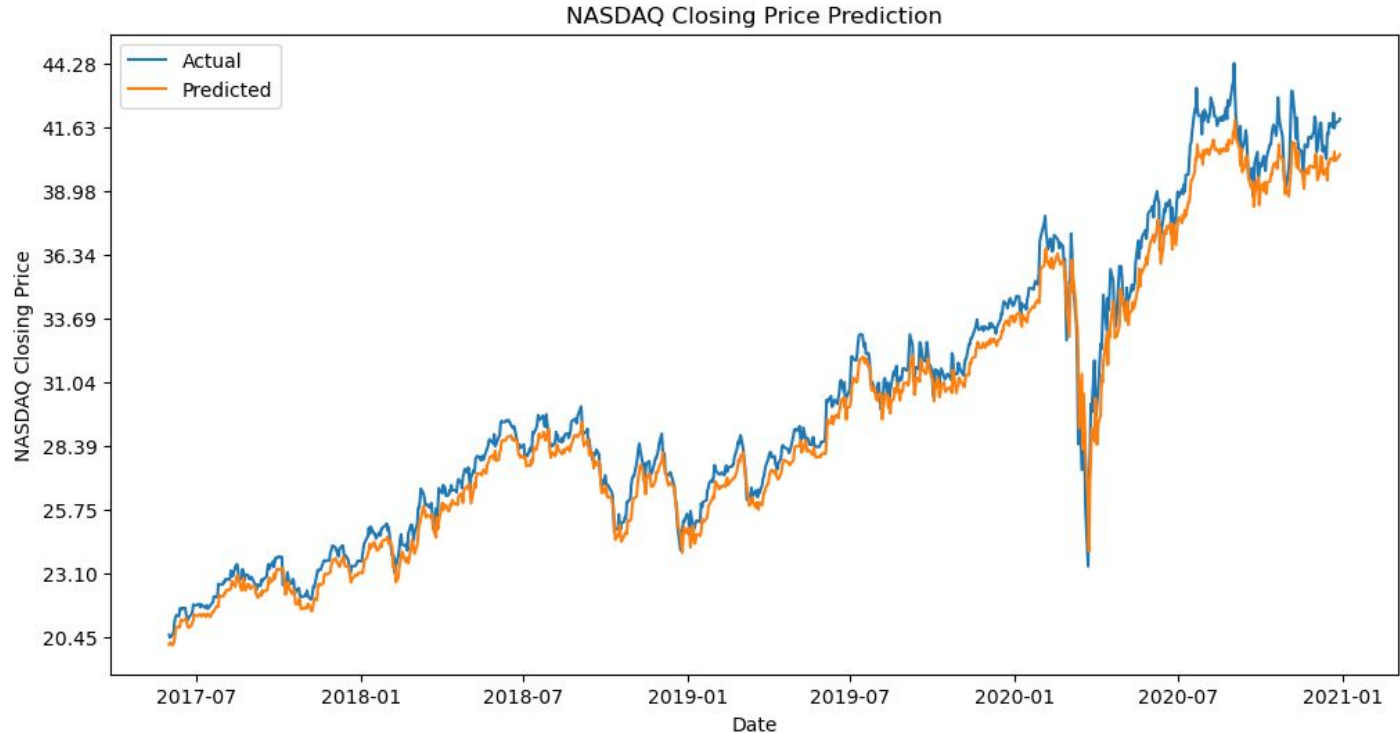
Spikes indicate
major change
in price trend

2014 onward
trading
stabilizes

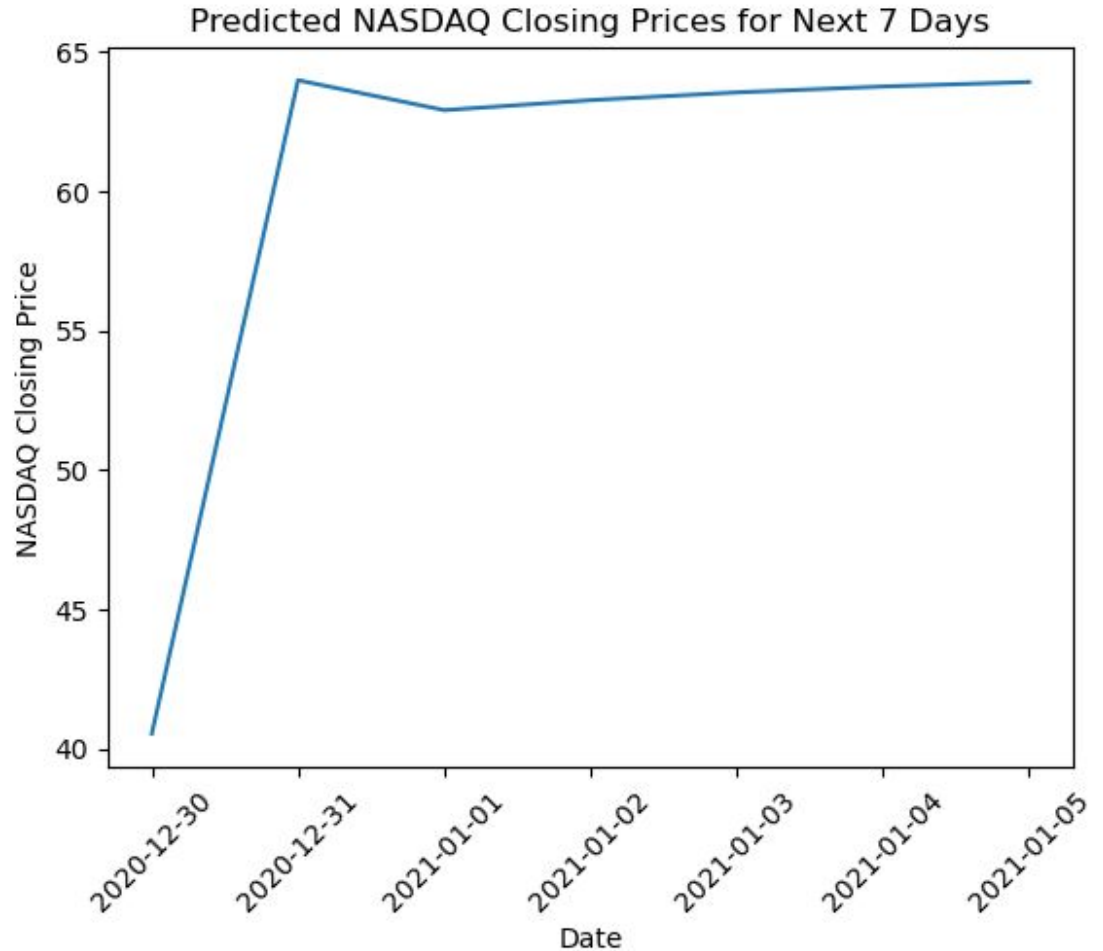


Closing Price Prediction

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



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



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!

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