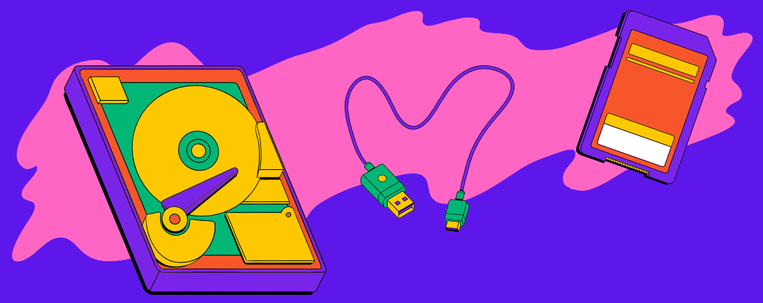
NVIDIA VS AMD

BATTLE OF THE GPUS

A Stock Comparasion Analysis

IndustriesLLC

Fahad & Tak

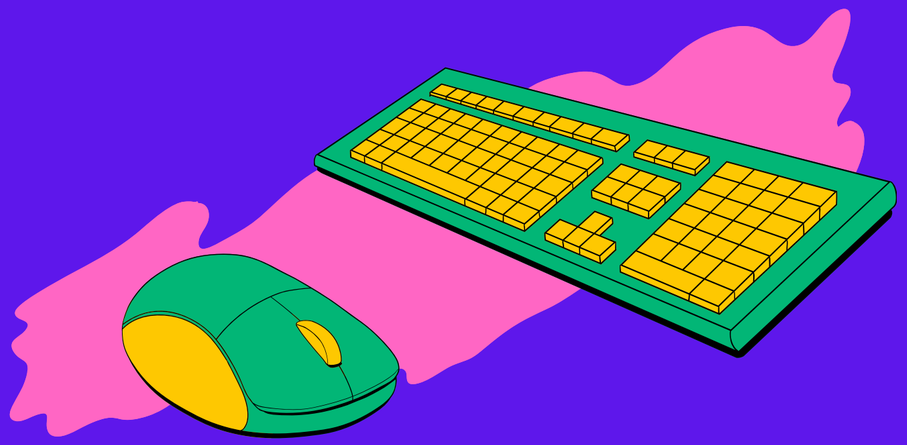


Data Collection

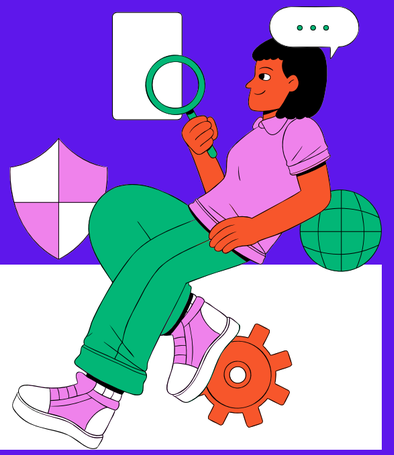
A YFinance API

B Web Scraping

C Huggingface



Tak, Evan, Jennifer



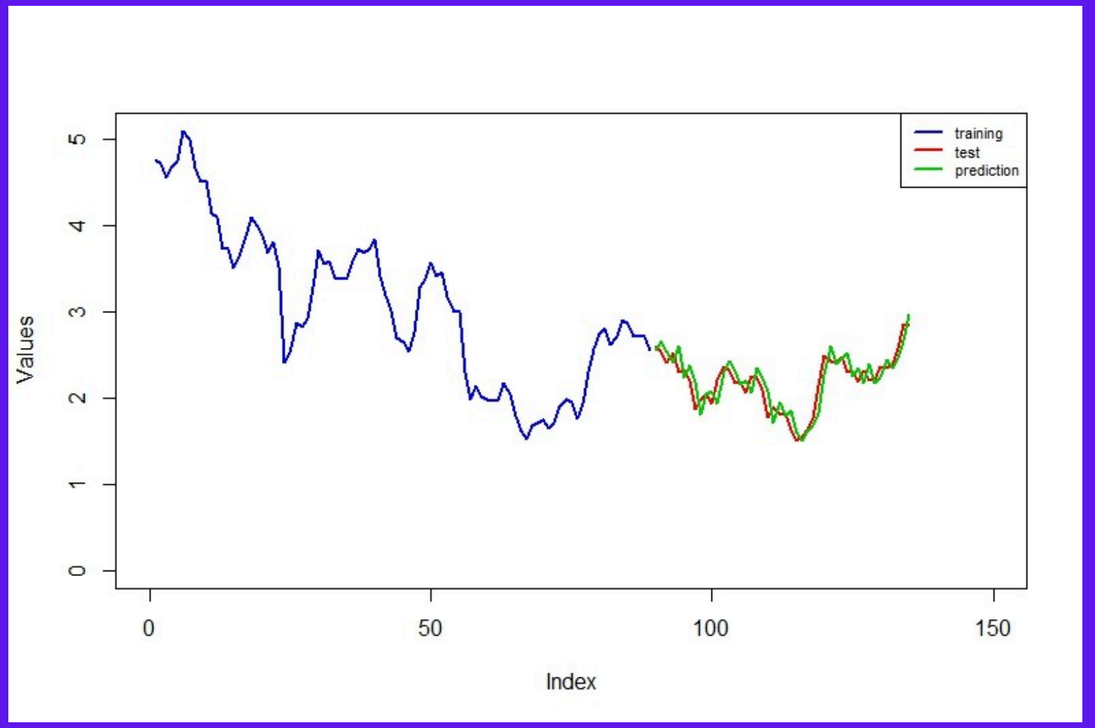
Time Series Models

A LSTM

B ARIMA

LSTM

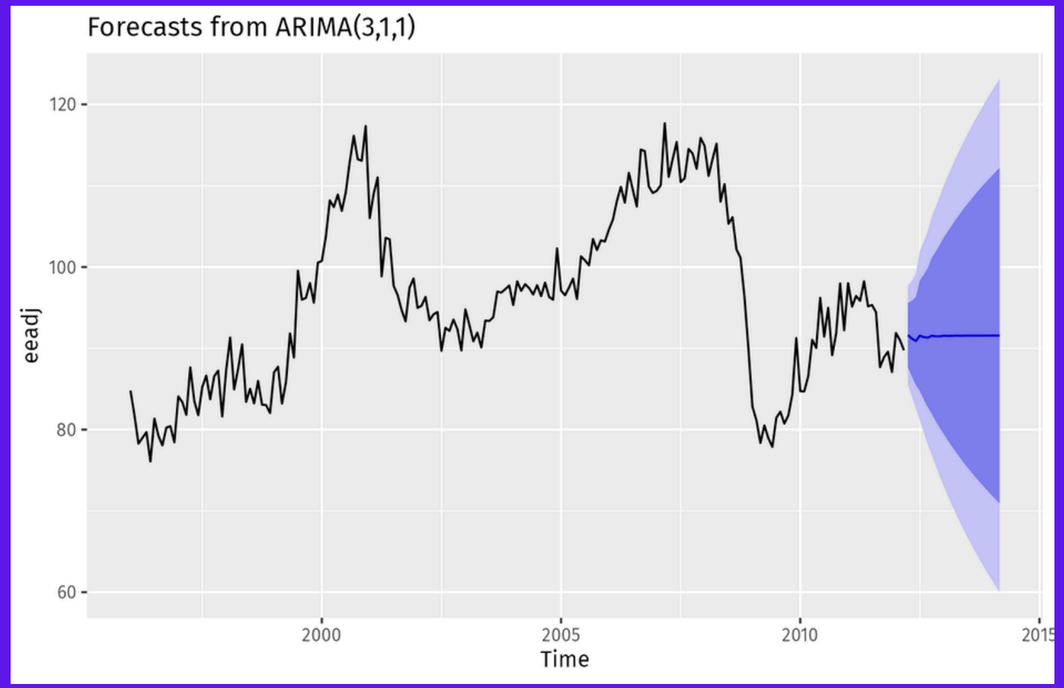
- Excels in sequential tasks and generalizes patterns well
- Can’t predict abnormal behavior
- Not interpretable



https://www.linkedin.com/pulse/time-series-forecasting-using-lstm-r-richard-wanjohi-ph-d/

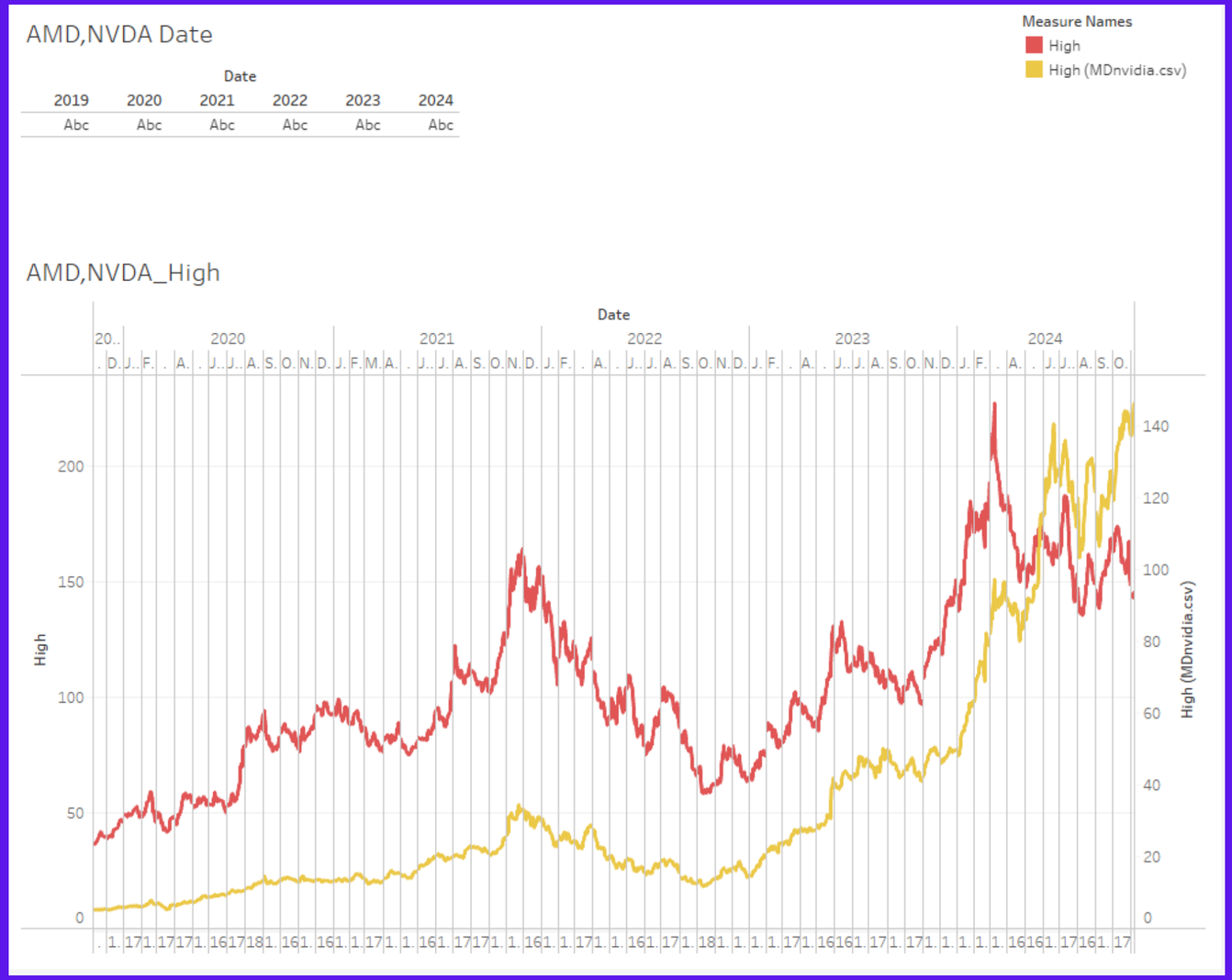
ARIMA

- Autoregressive Integrated Moving Average
- Regression, but the dependent variables are past values
- May not capture complex patterns
- Isn’t a black-box



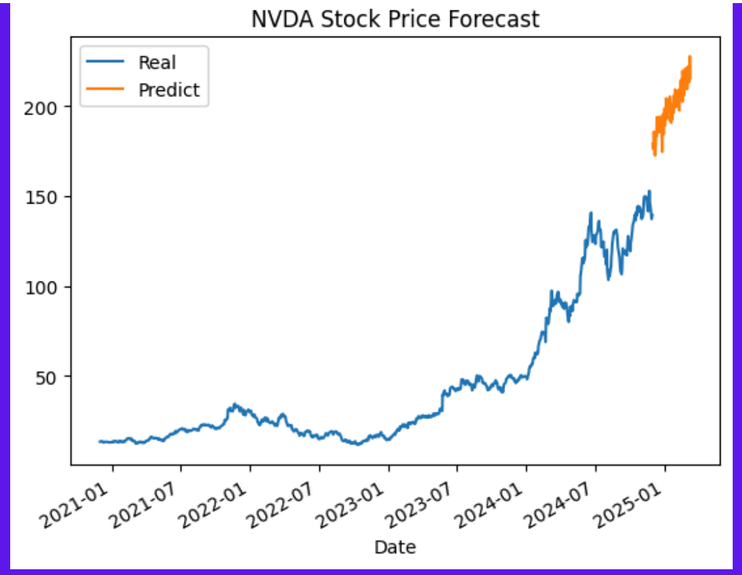
https://otexts.com/fpp2/arima-r.html

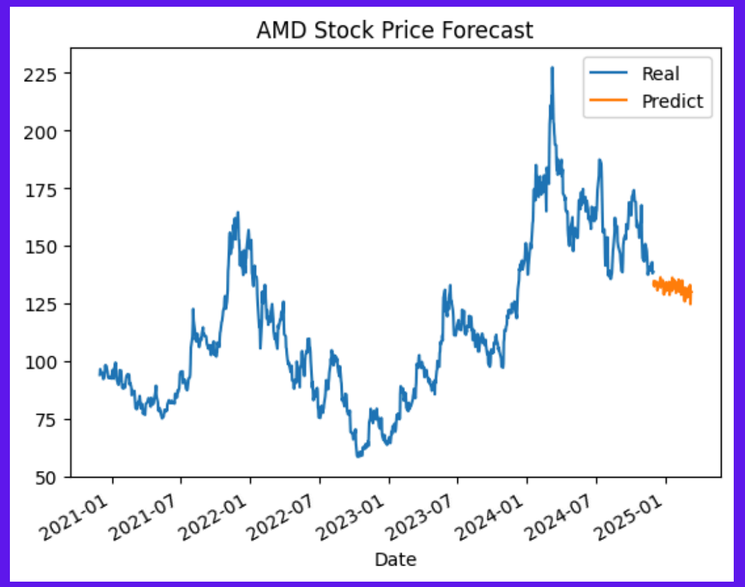
NVIDIA And AMD Data



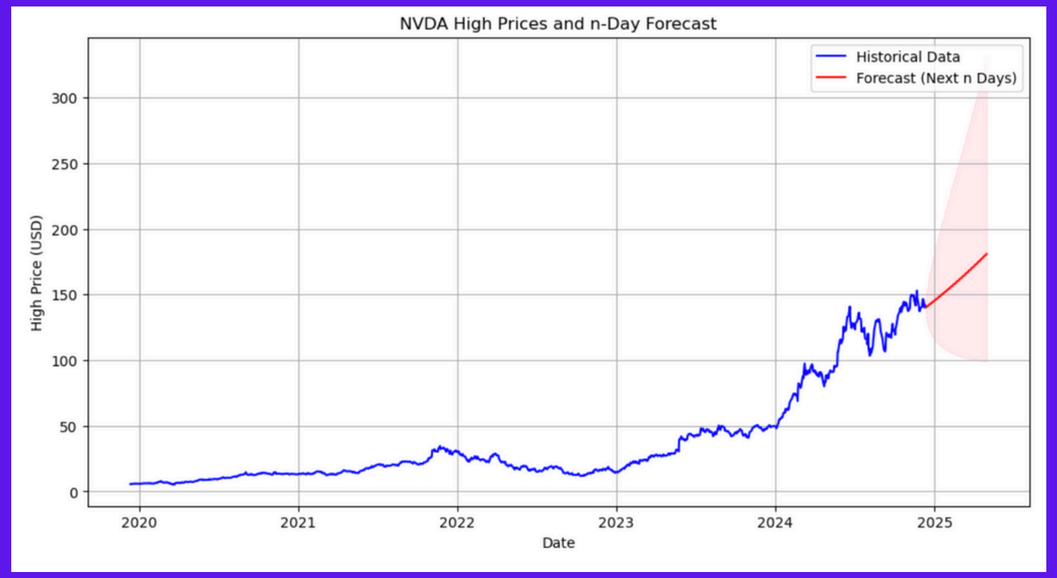
LSTM and ARIMA Forecasts

LSTM



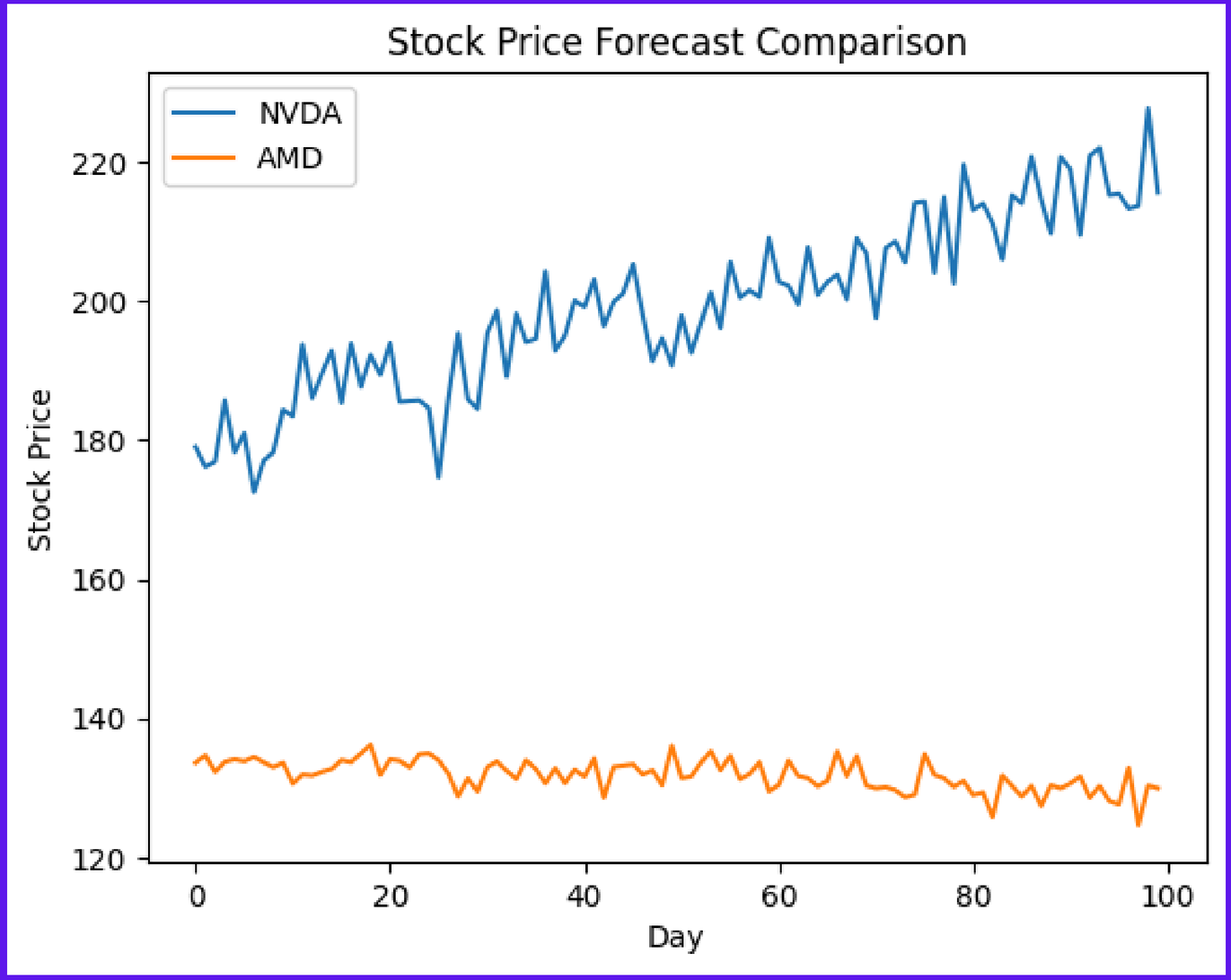


ARIMA



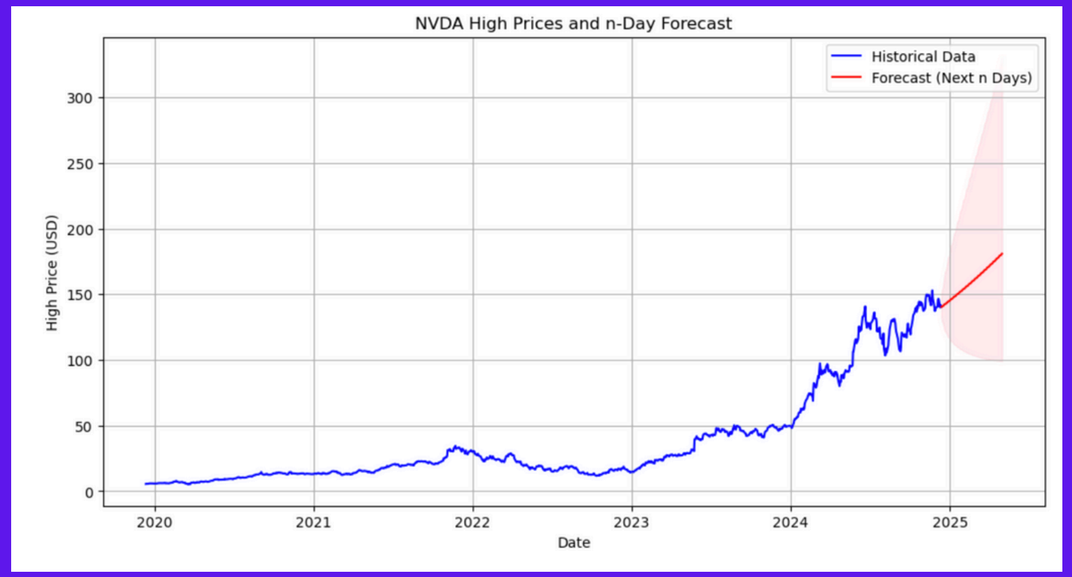
LSTM Forecasts

Based on LSTM predictions, NVIDIA will be **~28%** *higher* than AMD in the next 100 days



ARIMA Forecasts

ARIMA forecasts suggests that NVIDIA will be **~26%** *higher* than AMD in the next 100 days



Fahad

Sentiment Analysis

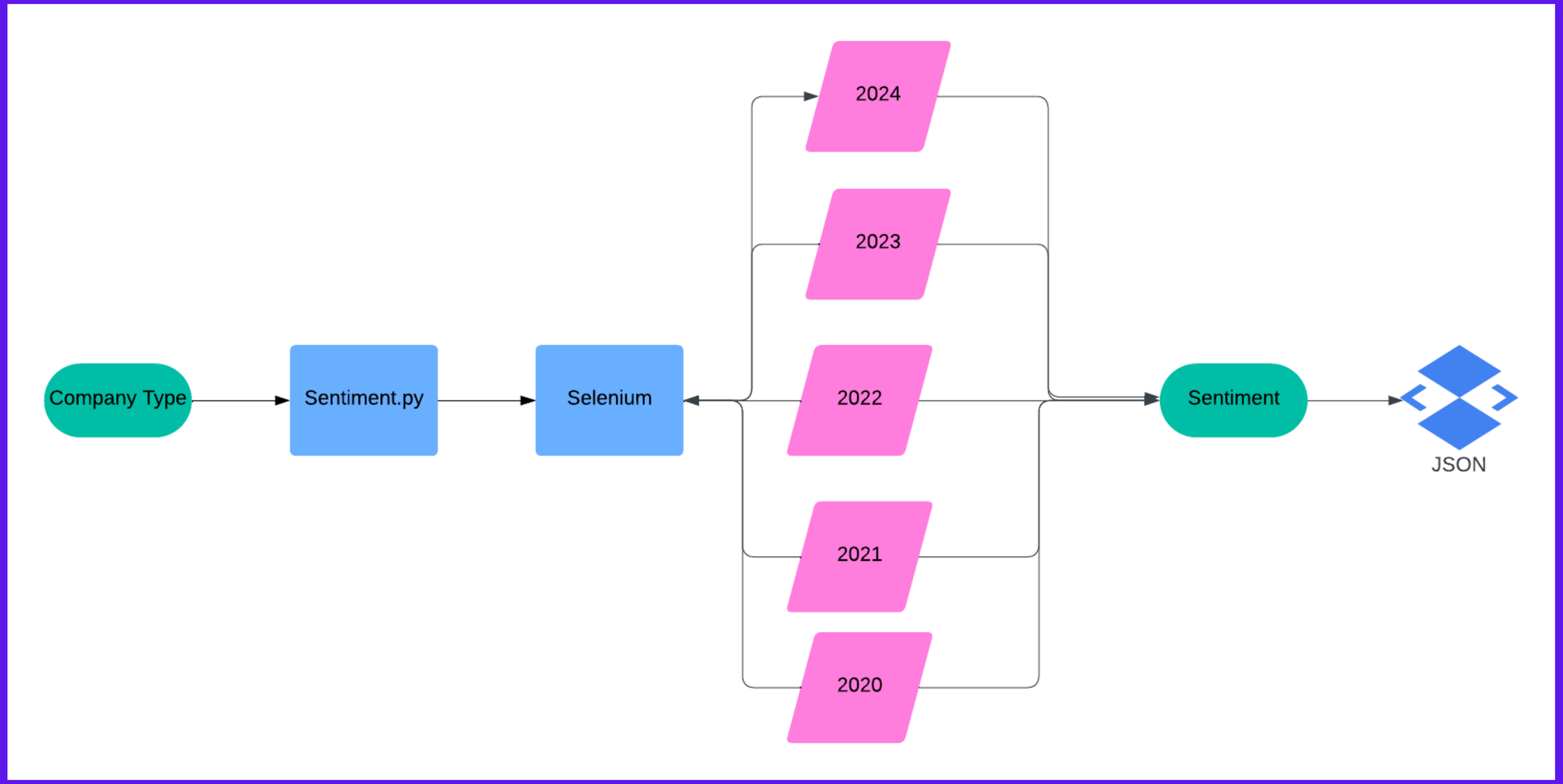
A Huggingface

B Text Classification

C ProsusAI/finbert

D GPU Accelerated

WebScraping Workflow



Sentiment Analysis Graph

Financial Analysis

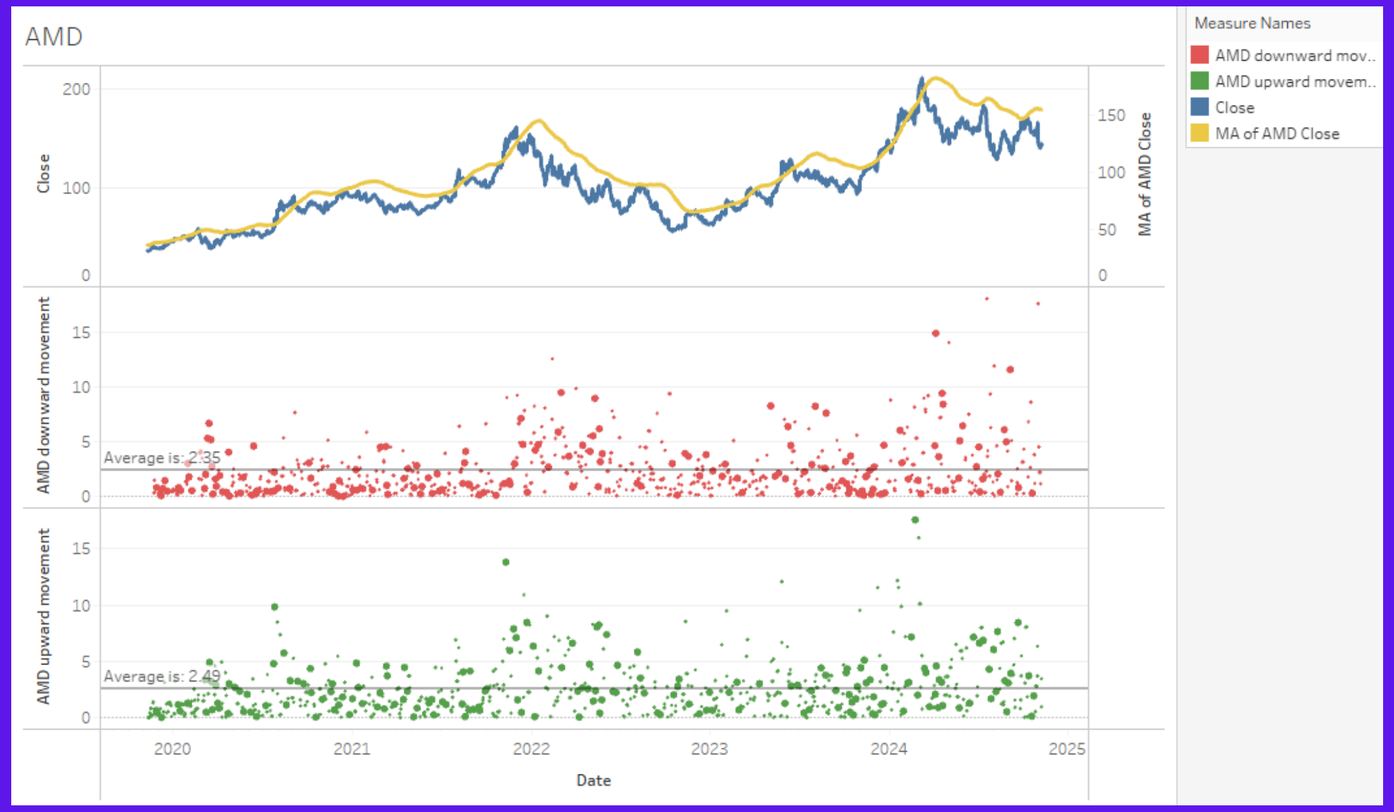
Ali

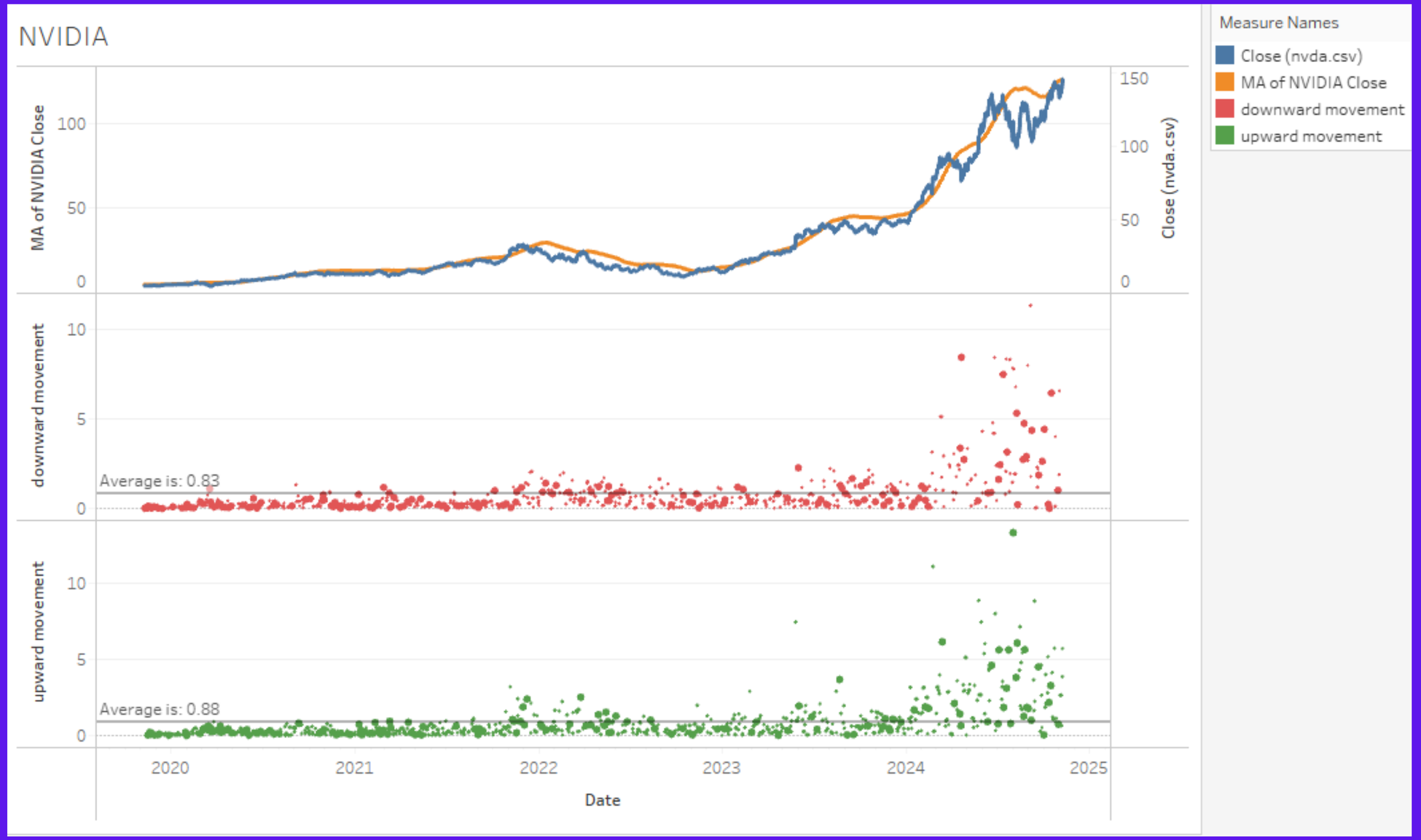
A

Tracking Movement Of Stock

B

Moving Averages (MA)



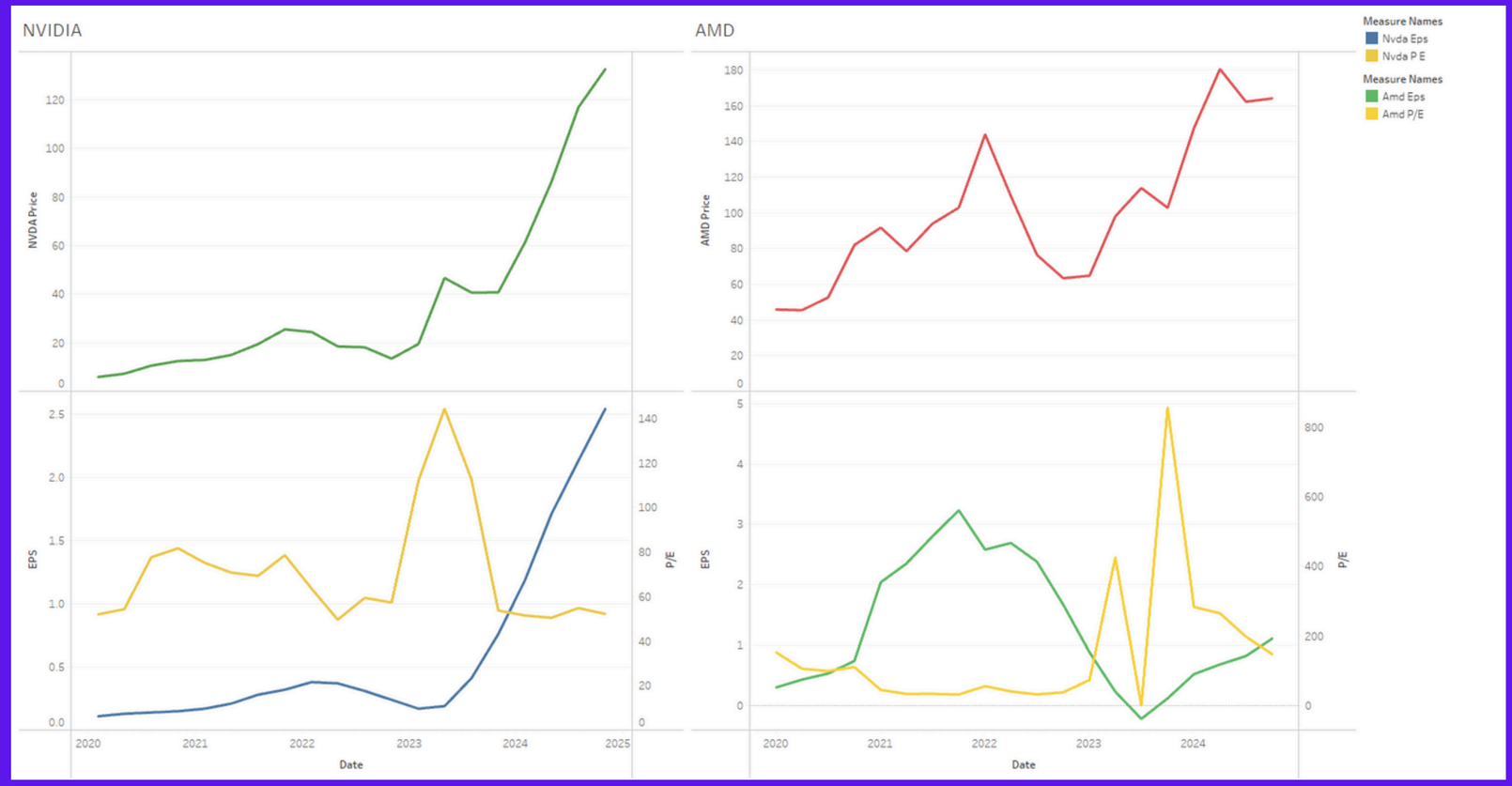

NVIDIA
MA of NVIDIA Close
100
50
0
150
100
50
0
Close (nvda.csv)
downward movement
10
5
0
Average is: 0.83
upward movement
10
5
0
Average is: 0.88
2020
2021
2022
2023
2024
2025
Date
Measure Names
Close (nvda.csv)
MA of NVIDIA Close
downward movement
upward movement

Financial Metrics

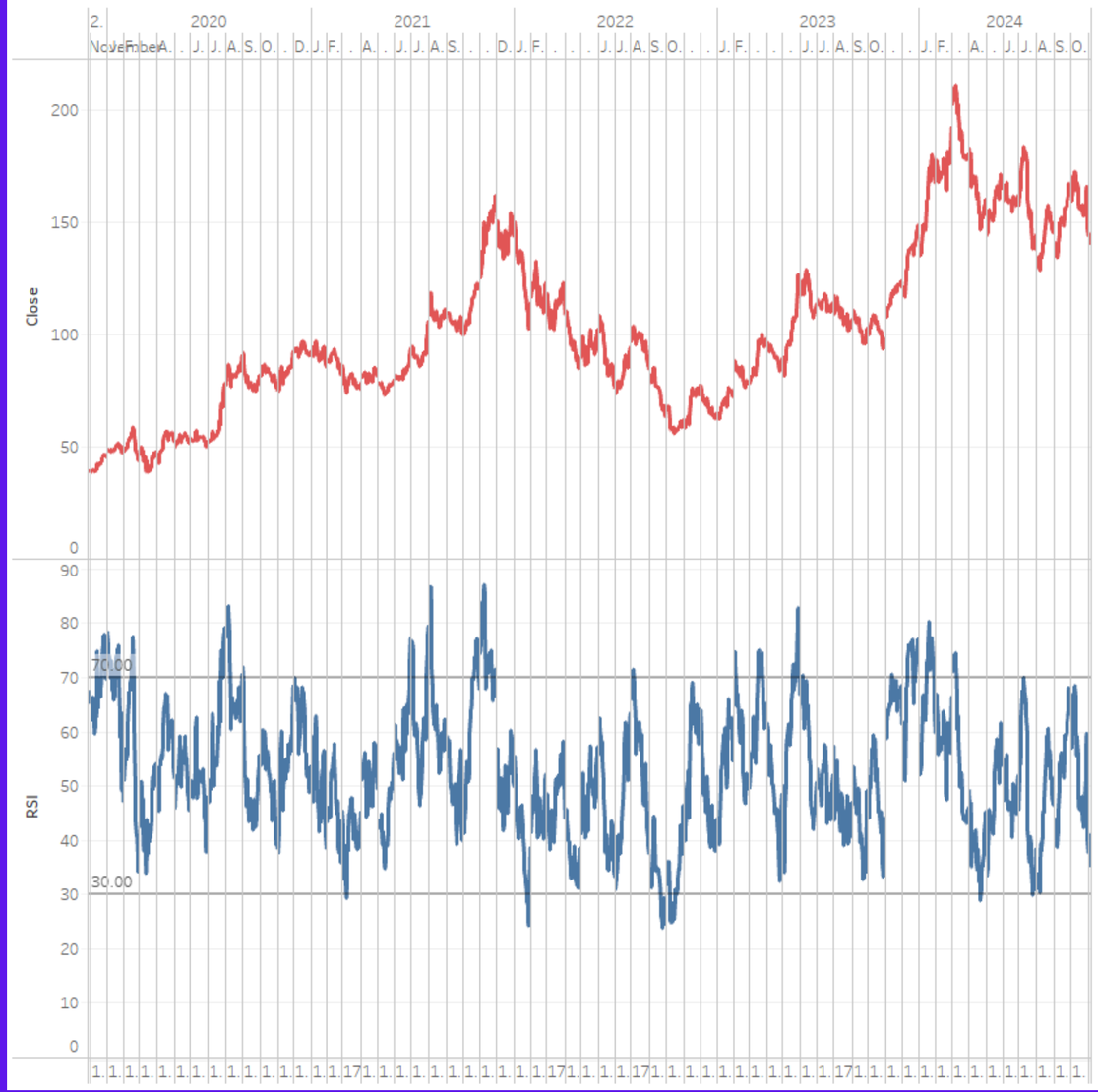
MD

A **Price to Earning Ration *(P/E)***

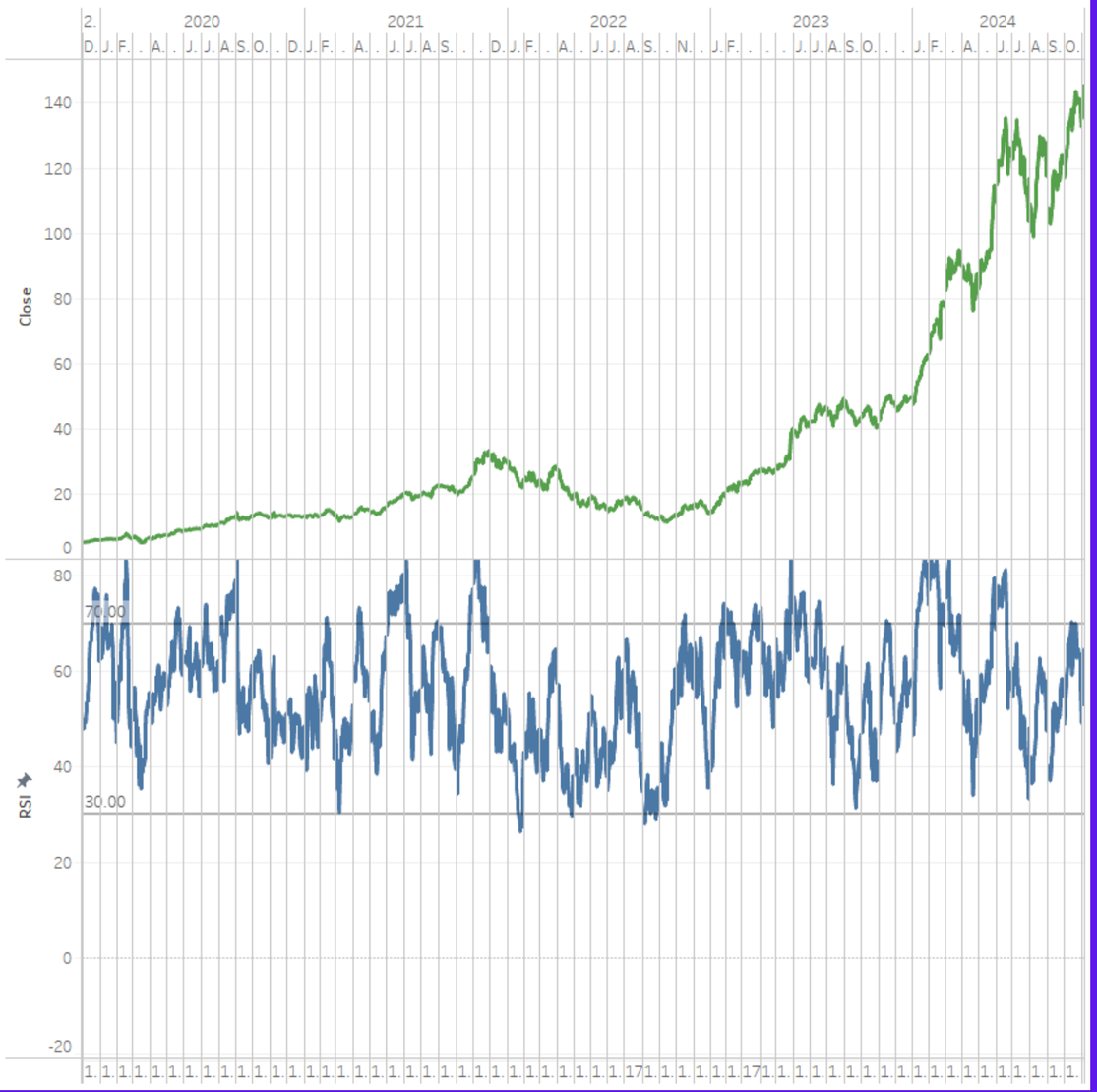
B **Relative Strenght Index *(RSI)***



AMD_RSI



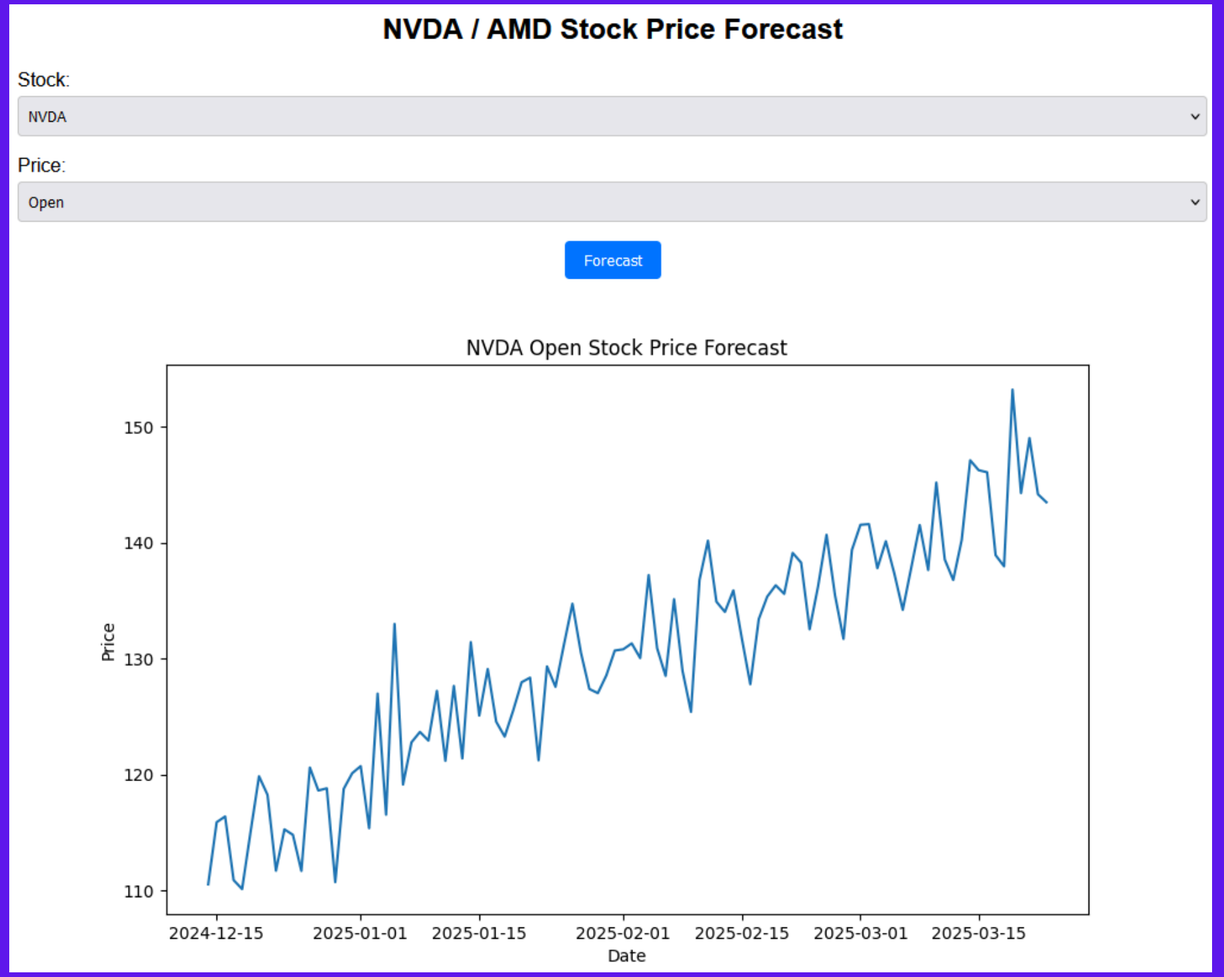
NVIDIA_RSI



NVIDIA or AMD?!

- Based on the LSTM and ARIMA forecasts, we *recommend investing in* **NIVIDA** in the next 100 days
- Though the forecasts seem promising, it is important to take note of the stochastic nature of stock prices, so *no predictions are 100% full-proof*
- Staying up to date with news reports and current events can aid in the decision-making process as well
- For future work, we can *include our article sentiment analysis data* into a multivariate LSTM forecast
- It may be advisable to try and *predict indicators of price fluctuations rather than the prices themselves*, such as the number of new chip factories being built or the number of chips produced

Extra: Flask App



https://github.com/datasheng/csc46000-team-project-4219-industries-llc/tree/main/flask

Thank You!