



CS6140 Project

Stock Price Prediction for NVIDIA (NVDA)

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NVIDIA Stock Price Prediction

NVIDIA, a major player in the semiconductor industry, its stock price exhibits significant fluctuations influenced by rapid technological advancements and market dynamics, making it interesting and challenging to forecast its movements.

Published on TradingView.com, Feb 26, 2025 20:13 UTC

NVIDIA Corporation, 1D, NASDAQ O:129.99 H:133.73 L:128.49 C:129.71 +3.08 (+2.43%)
Vol 212.64M



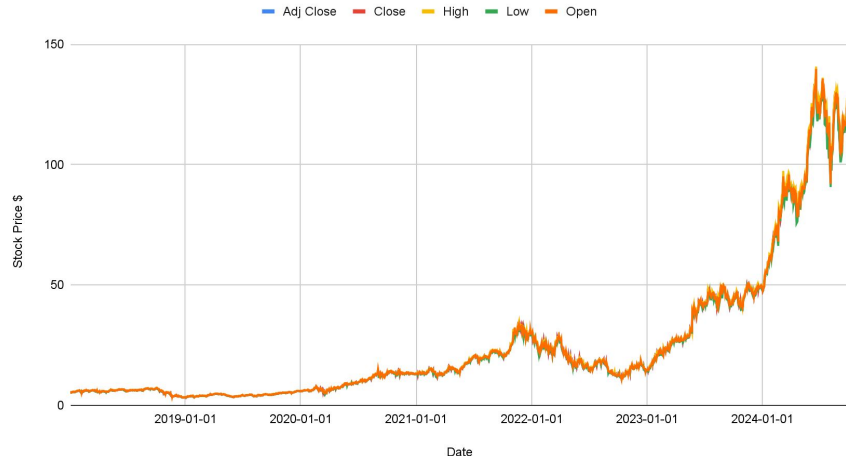
TradingView



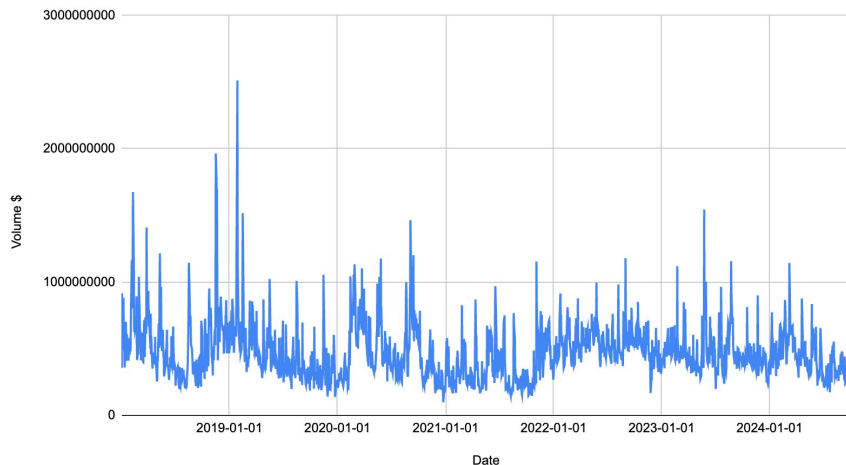
Dataset

- Dataset source: Kaggle
(<https://www.kaggle.com/datasets/muhammaddawood42/nvidia-stock-data/data>)
- 1,697 daily records of NVIDIA stock data from 2018-01-02 to 2024-09-30
- Features: Date, Open, High, Low, Close, Adjusted Close, and Volume
- Additional features: 10-day and 50-day moving averages and daily returns

Nvidia Stock Price



Nvidia Stock Volume



Regression Models

- Split the dataset chronologically into 80% training and 20% testing sets to avoid lookahead bias.
- A PLR approach with degree 2 polynomial features for a baseline comparison.
- A Random Forest regressor that captures complex patterns while reducing overfitting.
- A DNN regressor built using PyTorch to capture non-linear relationships.
- Potentially a LSTM regressor also implemented in PyTorch to explicitly model temporal dependencies in the data.
- Model performance will be assessed using MSE and R^2 , and visualizations will be generated to compare actual versus predicted closing prices.



Thank you!