

Stock Market Predictor

with Real Time Data



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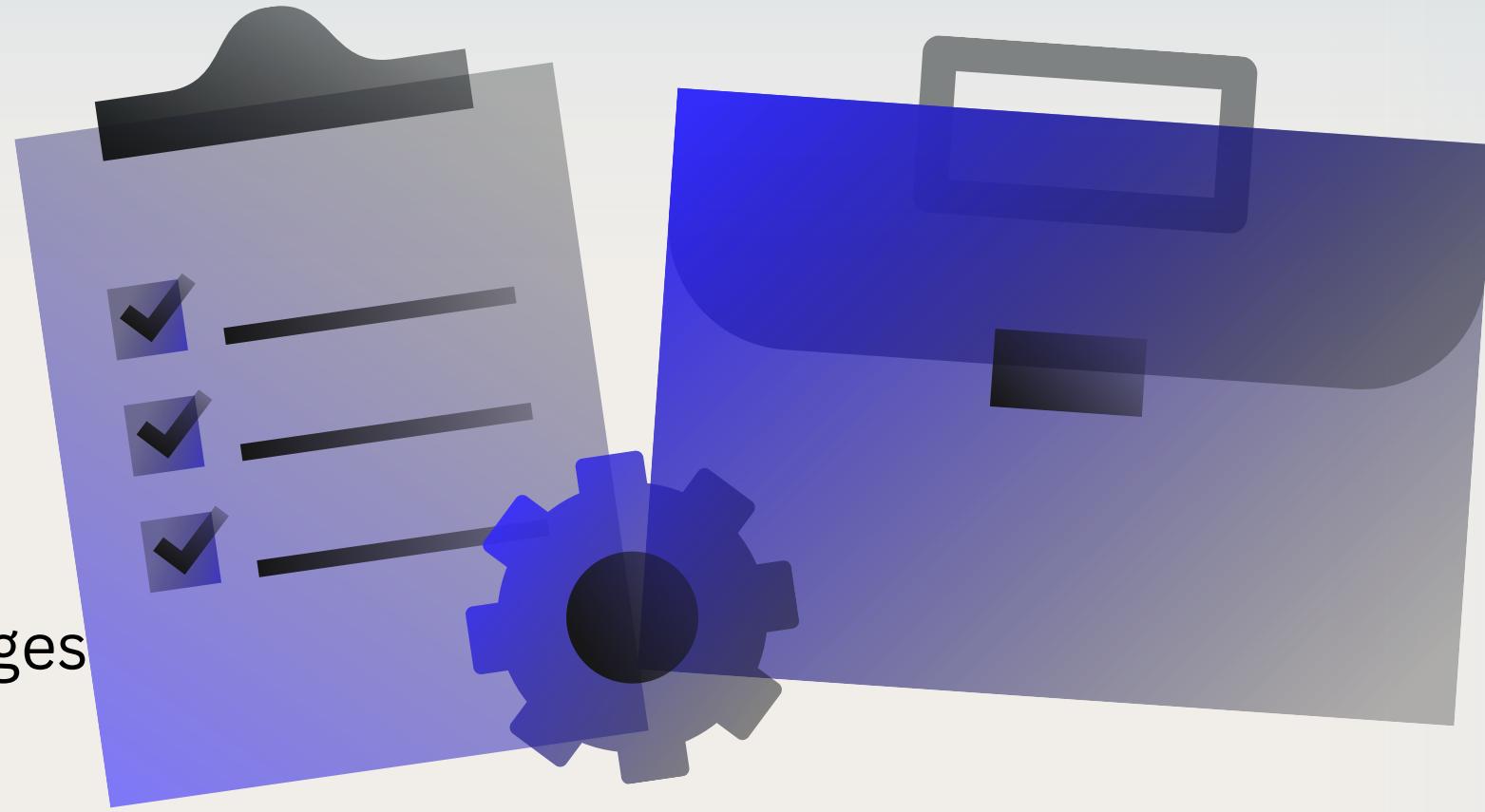
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Stock Market Predictor with Real Time Data

IDEA

- The idea behind the Stock Market Predictor project is to create a tool or system that leverages historical and real-time data to predict future stock prices.
- Stock prices are influenced by a combination of historical trends, market sentiment, and external factors like economic indicators.
- Real-time stock predictions provide timely insights in a fast-moving market.
- Showcases practical use of data science in finance.



ML Life cycle

1. Data Collection: Gather historical stock data and real-time market information using APIs.

2. Data Preprocessing:

- Clean and handle missing values.
- Encode categorical variables (if any).
- Normalize or scale features as needed.



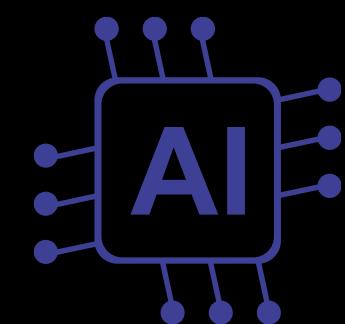
3. Model Building:

- Use Multiple Linear Regression to predict stock prices.
- Train the model on historical data and validate its performance.



4. Evaluation Metrics:

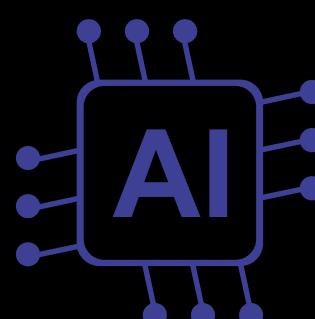
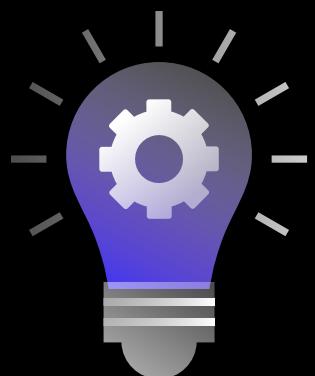
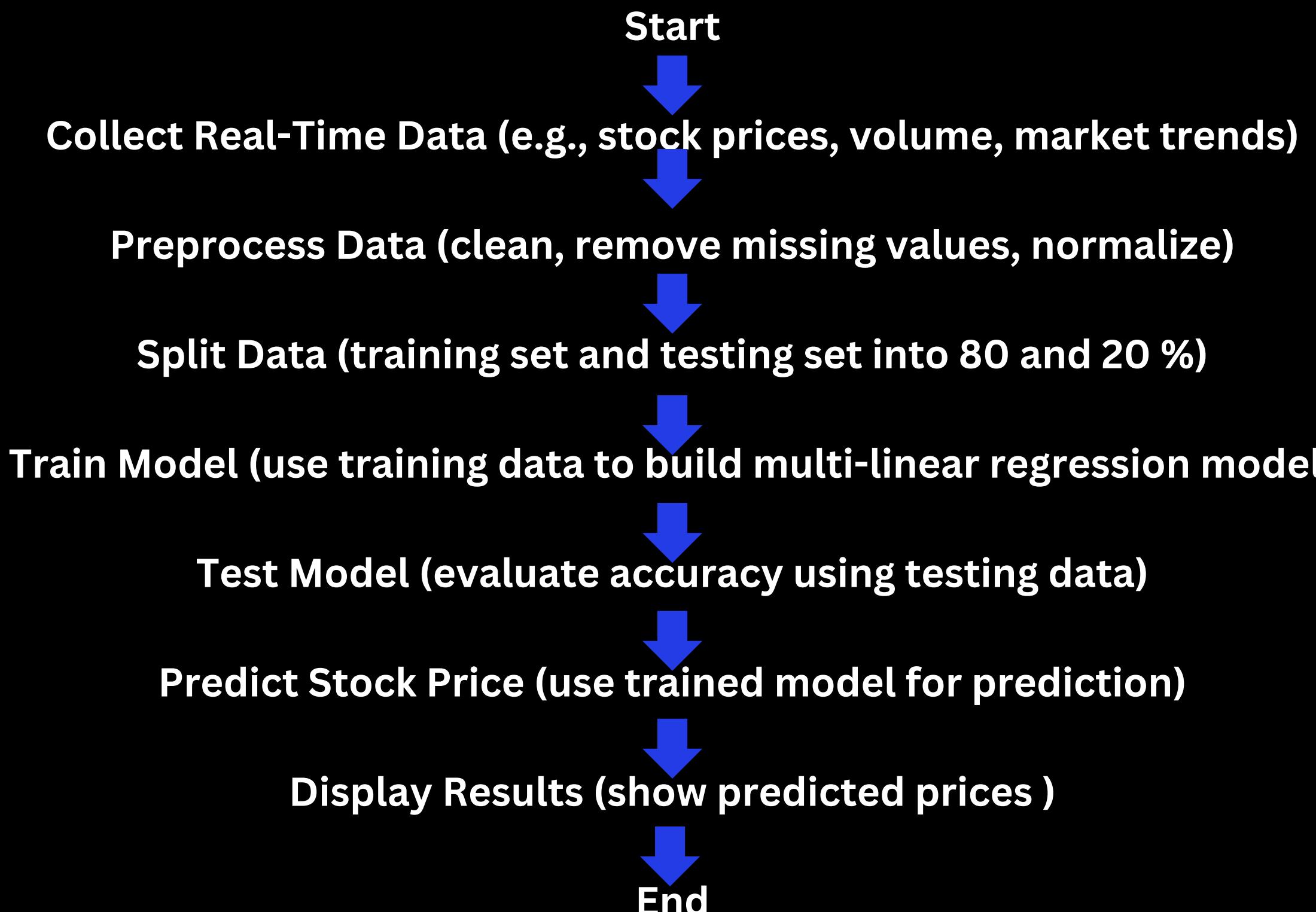
- Mean Squared Error (MSE)
- R-squared



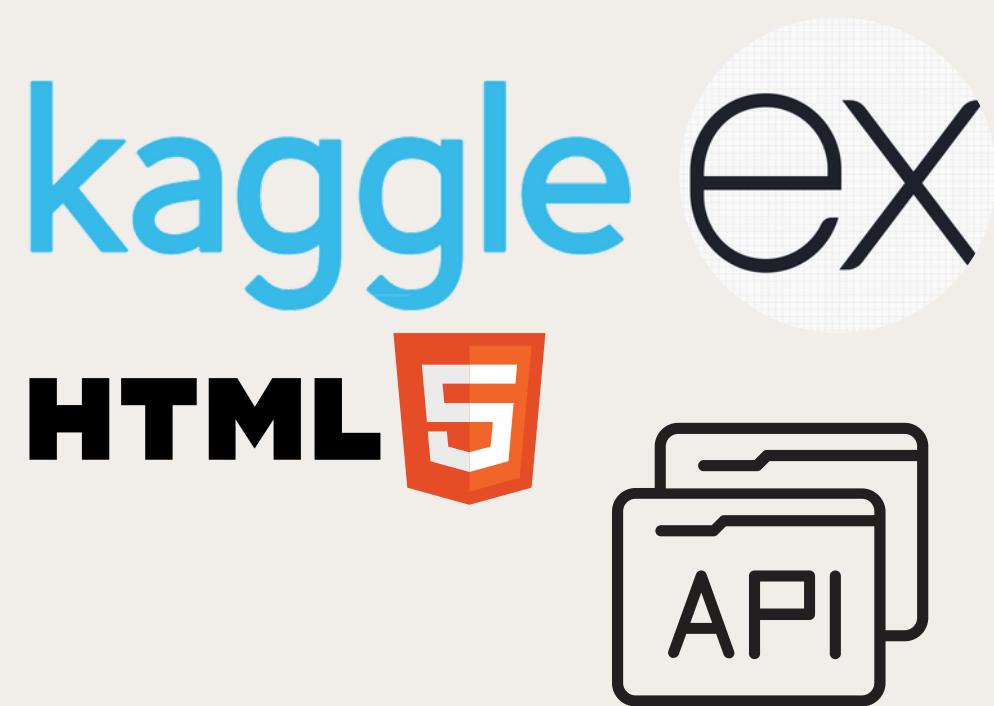
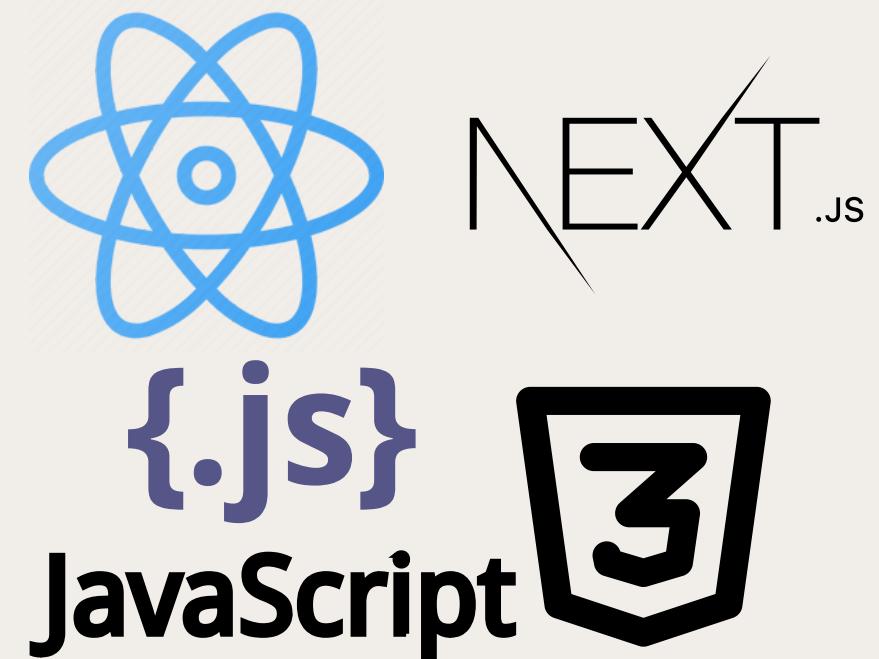
Real-Time Predictions:

Use the trained model to predict stock prices based on live data.

ML Model Development Workflow



TechStack



List all technologies, tools, and libraries:

Backend

- Python
- NumPy
- Pandas
- Scikit-learn
- Matplotlib
- Seaborn
- APIs
- Jupyter Notebook

Frontend

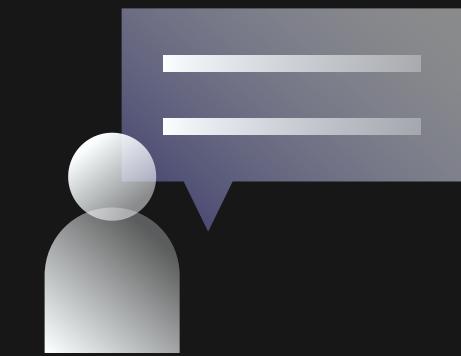
- HTML
- CSS
- JavaScript
- Node JS

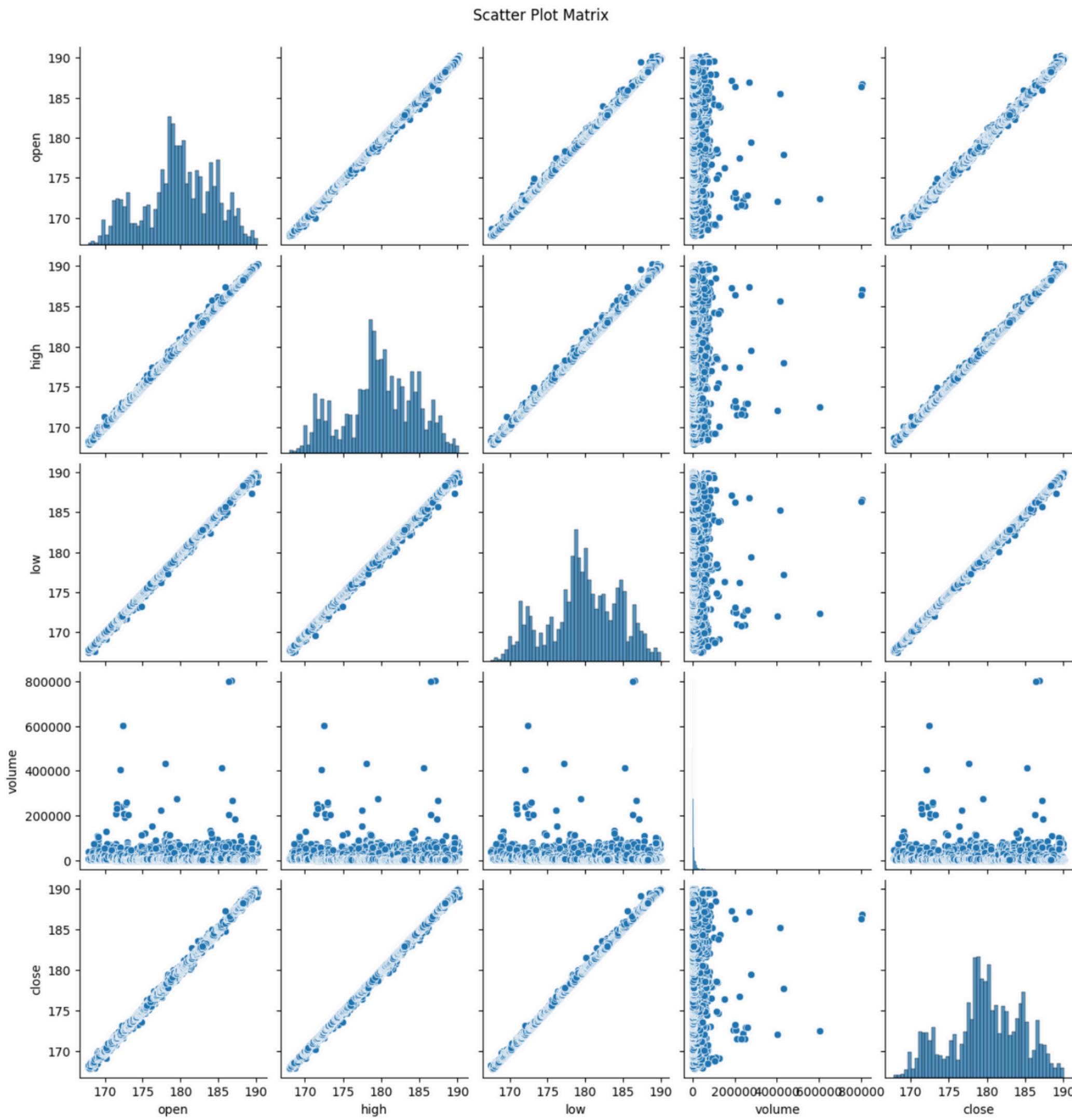


Application Area



- Assists traders and investors in making data-driven buy, sell, or hold decisions.
- Provides insights into stock performance and market trends.
- Helps optimize and diversify portfolios.
- Identifies undervalued or overvalued stocks for better investment strategies.
- Assists in forming investment strategies using historical and real-time trends.
- Forecasts price volatility and trends to assess risks.





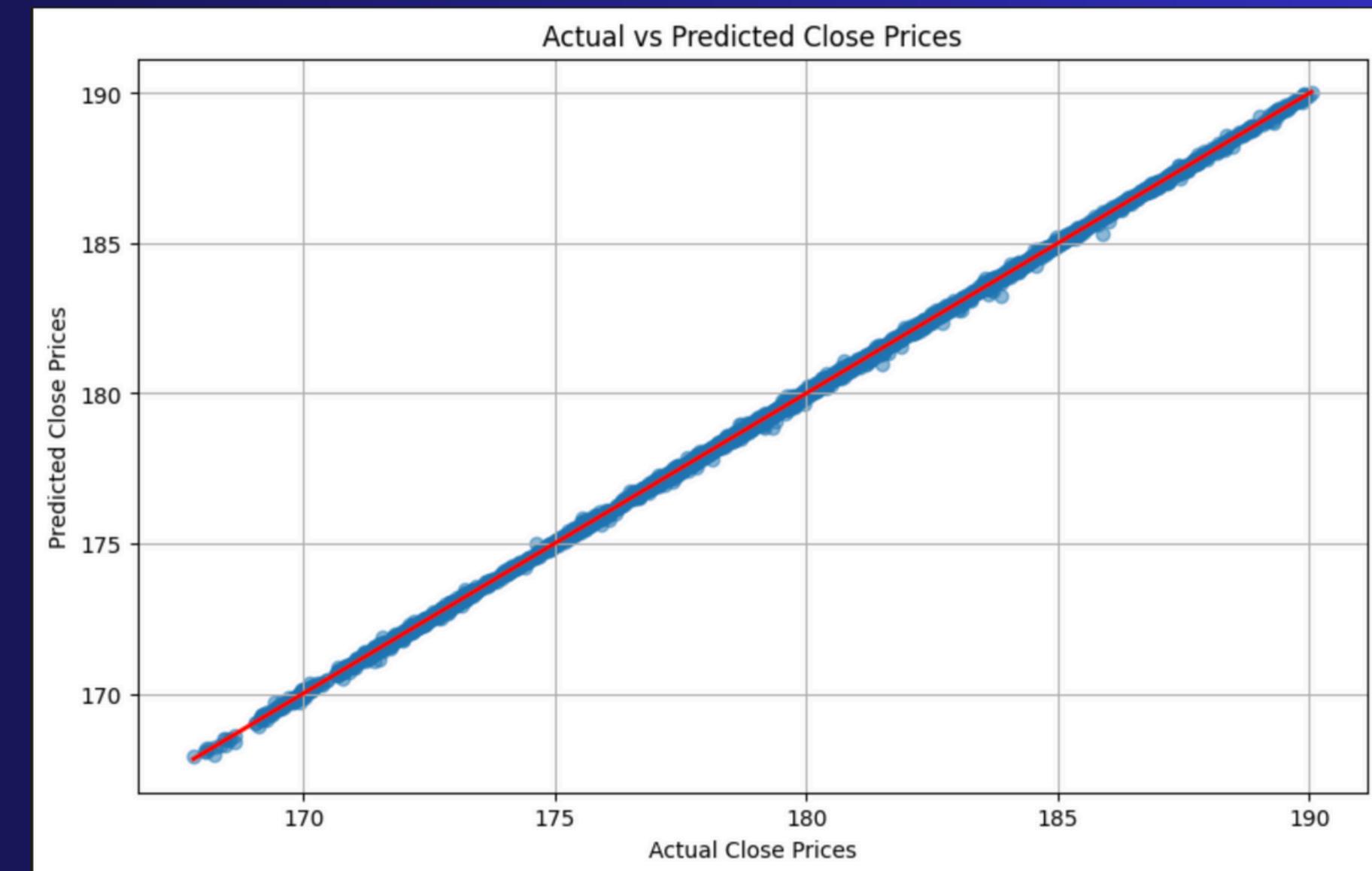
SCATTER PLOT MATRIX

REFERENCES

1. Scikit-learn Documentation: Available at <https://scikit-learn.org/stable/> - For insights on machine learning models and metrics.
2. TensorFlow and Keras Documentation: Available at <https://www.tensorflow.org/> - For understanding neural networks and LSTMs.



OUTPUT



Visualizing using Multiple Linear Regression Model

R-squared: 0.999834490819292

Mean Squared Error: 0.003750238141117844

Related articles and research papers

1. In February 2021, IEEE published a research article titled “Artificial intelligence applied to stock market trading: A Review”. The authors were Fernando G.D.C Ferreira, Amir H. Gandomi and Rodrigo T.N. Cardoso.

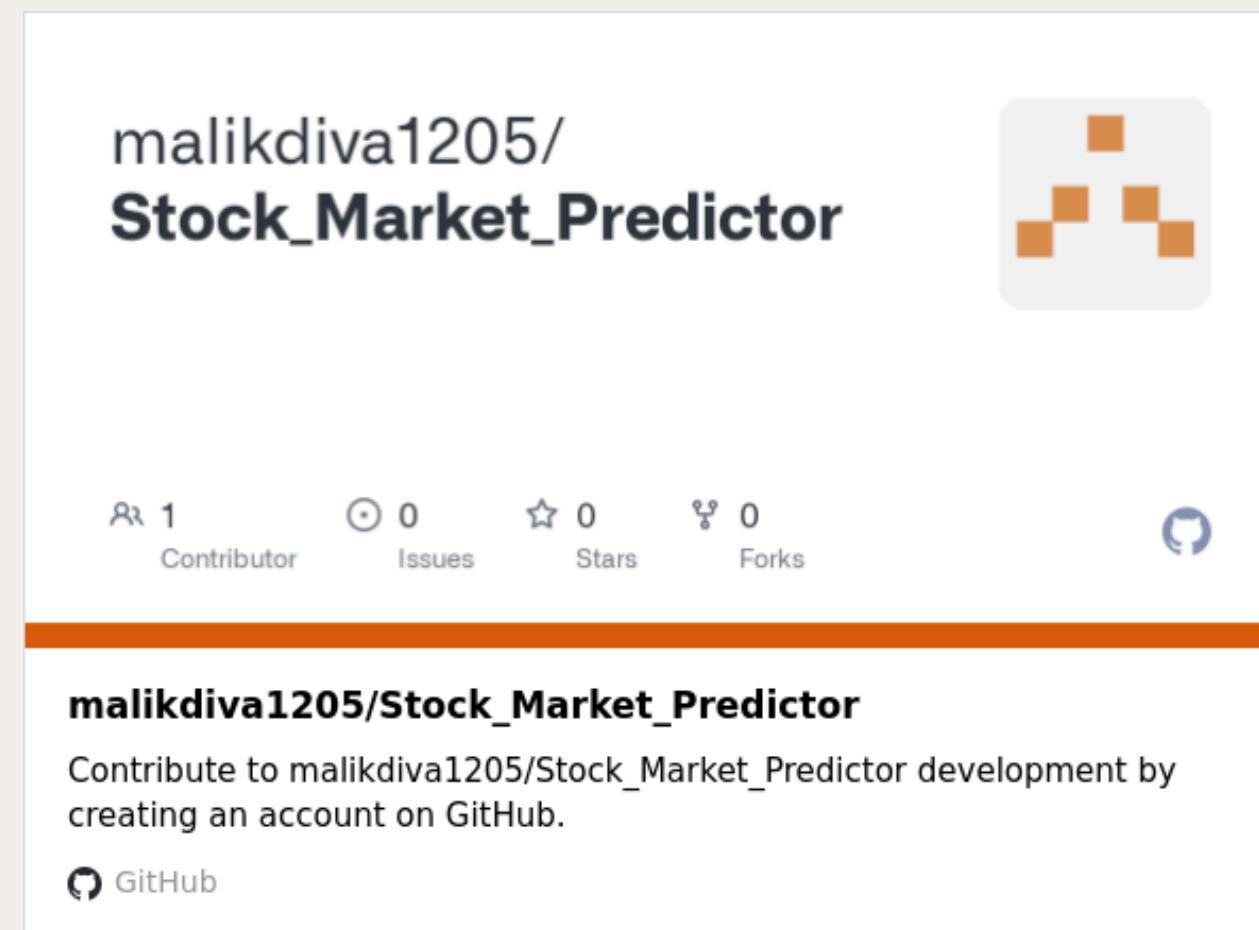
Link: <https://ieeexplore.ieee.org/abstract/document/9350582/keywords#keywords>

2. A research paper title “Effectiveness of Artificial Intelligence in Stock Market Prediction based on Machine Learning” was published by Sohrab Mokhtari, Kang K. Yen and Jin Liu on 30th June 2021 which tries to address the problem of stock market prediction leveraging artificial intelligence strategies.

Link: <https://arxiv.org/abs/2107.01031>

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Thank You