# 📈 Stock Price Trend Prediction using LSTM

## Introduction

This project aims to predict the future trend of stock prices using historical data. It leverages deep learning (LSTM networks) along with technical indicators such as Moving Average and RSI to enhance trend analysis.

## Abstract

LSTM (Long Short-Term Memory) networks are a type of Recurrent Neural Network well-suited for time series forecasting. In this project, we used stock data from Yahoo Finance, normalized it, created sequences of past data, trained an LSTM model, and visualized predictions. Additional features like RSI and 60-day MA were integrated. A Streamlit dashboard was also built to demonstrate live trend visualization and analysis.

## Tools Used

- Python

- yfinance

- Keras (LSTM)

- Matplotlib

- scikit-learn

- Streamlit

- Replit

## Steps Involved

1. Data fetching using `yfinance`

2. Data normalization and preparation

3. Building LSTM model using Keras

4. Training and evaluation

5. Visualization of predictions

6. Integration of Moving Average and RSI

7. Streamlit dashboard deployment on Replit

## Conclusion

The model was able to predict stock price trends with reasonable accuracy. Additional indicators like MA and RSI improved the interpretability. The Streamlit dashboard made the project interactive and suitable for real-world deployment.

## Live Dashboard Link

https://ddea86b5-580a-45c7-954f-24cf0a5d3cb7-00-1luhvlh2qhle9.pike.replit.dev/