

CHAPTER 5: RESULTS AND DISCUSSIONS

5.1 Evaluation Metrics

RMSE (Root Mean Squared Error) is computed for the active forecasting model (Linear Regression) and displayed on the results page.

5.2 Output Screens

SAMS

HOME DASHBOARD

CALM, DATA-DRIVEN STOCK FORECASTS

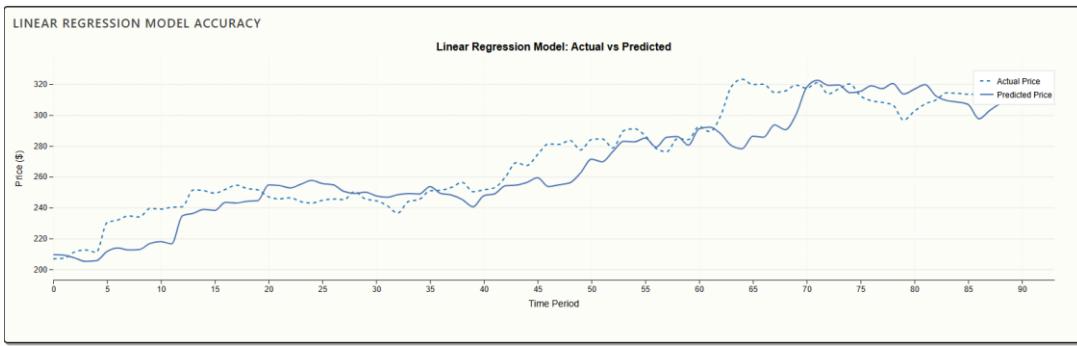
Enter a stock symbol below to generate tomorrow's price forecasts and a sentiment overview using ARIMA, LSTM, linear regression and recent news.

PLEASE ENTER A STOCK SYMBOL

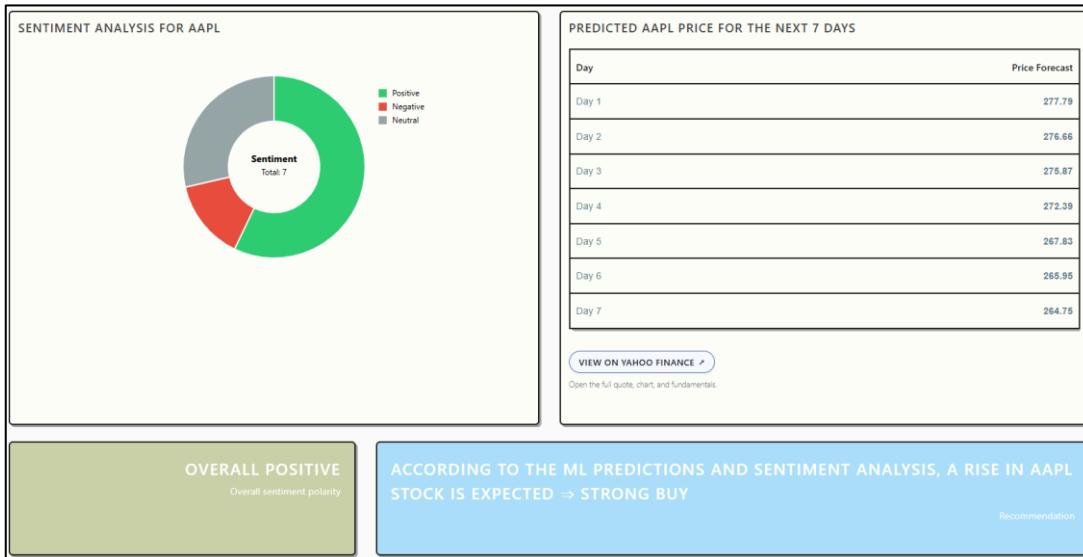
Company Stock Symbol (e.g. AAPL, GOOGL)

VIEW FORECAST

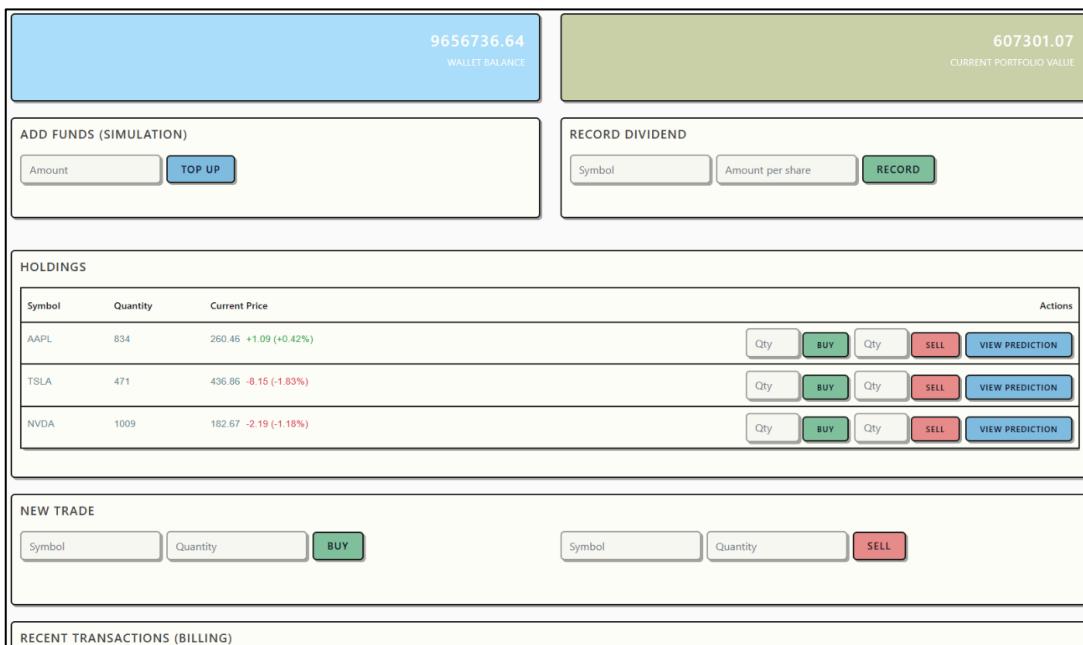
Home / Prediction Studio page



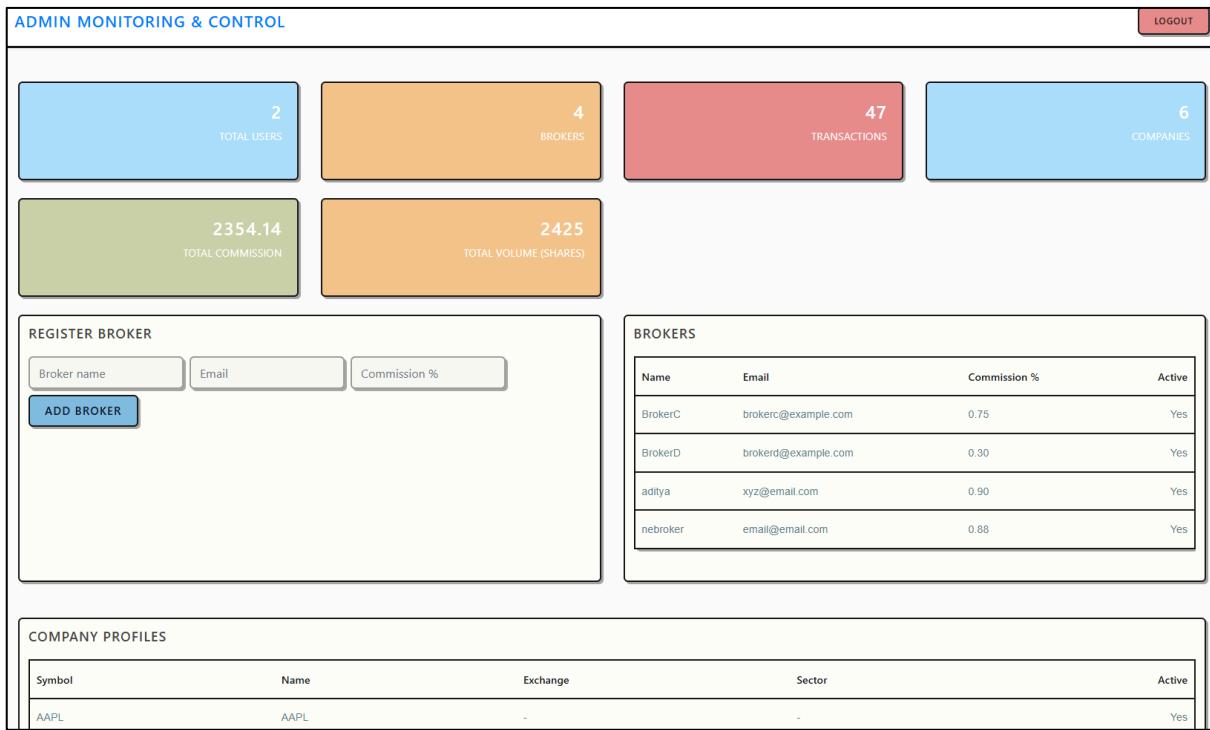
LR model test graph



7-day forecast table and Sentiment Chart



Stocks trading and dividends management



Admin dashboard and Broker management with Company management

5.3 Discussion

- The system provides a unified view combining technical forecasting and sentiment context, addressing the integration gap identified in the literature [1], [5].
- The Linear Regression model delivers fast response times suitable for web applications while maintaining interpretable predictions [2], [3].
- Feature scaling and proper train-test splitting ensure robust model performance as recommended by recent studies [2], [4].
- The 7-day forecast horizon provides actionable short-term predictions that align with practical trading strategies.
- The sentiment engine is designed with multiple fallback sources to remain operational even when primary data sources are unavailable.
- The combination of quantitative forecasting and qualitative sentiment analysis provides a more comprehensive decision-support framework than either approach alone.