Reliance Industries Stock Forecast

Gain insights into the future performance of one of India's largest conglomerates, Reliance Industries, through our comprehensive stock analysis and forecasting model.

Team Members

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Data Collection

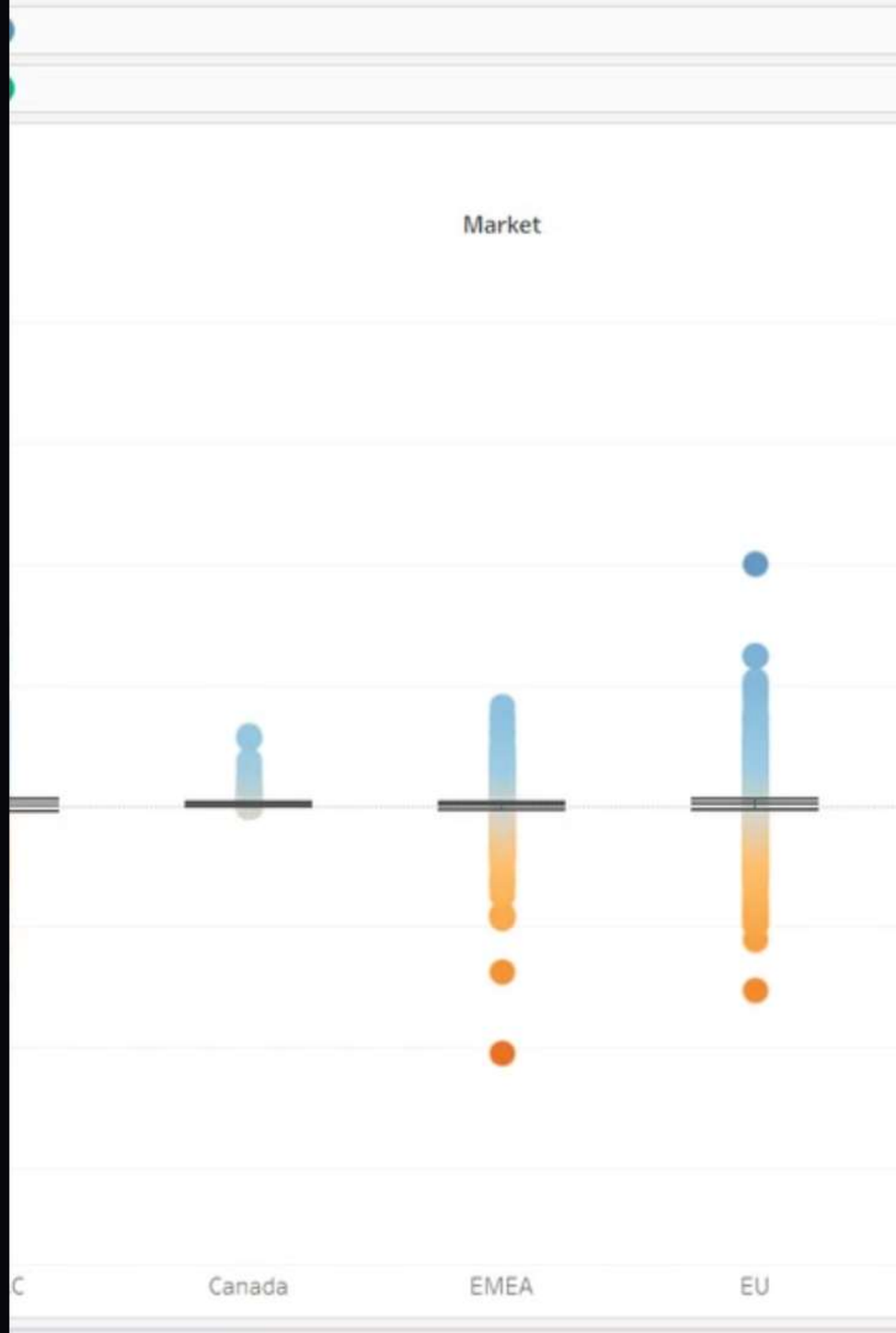
The first step in our stock forecast project is to gather the necessary data. We will collect historical stock prices, financial statements, and other relevant information to build our predictive models.

Data Source

The data for this analysis was collected from a reputable financial website. The website provides historical stock data, financial reports, and industry news to help investors make informed decisions.

Exploratory Data Analysis (EDA)

Dive deep into the dataset and uncover key insights through comprehensive data exploration. Analyze patterns, outliers, and relationships to guide the model building process.



Exploratory Data Analysis (EDA)

Initial Data Inspection

Carefully examine the raw data to understand its structure, quality, and identify any anomalies or missing values that need to be addressed.

Data Cleaning

Clean and preprocess the data by handling missing values, removing duplicates, and ensuring consistency across variables and observations.

Visualization of Stock Prices

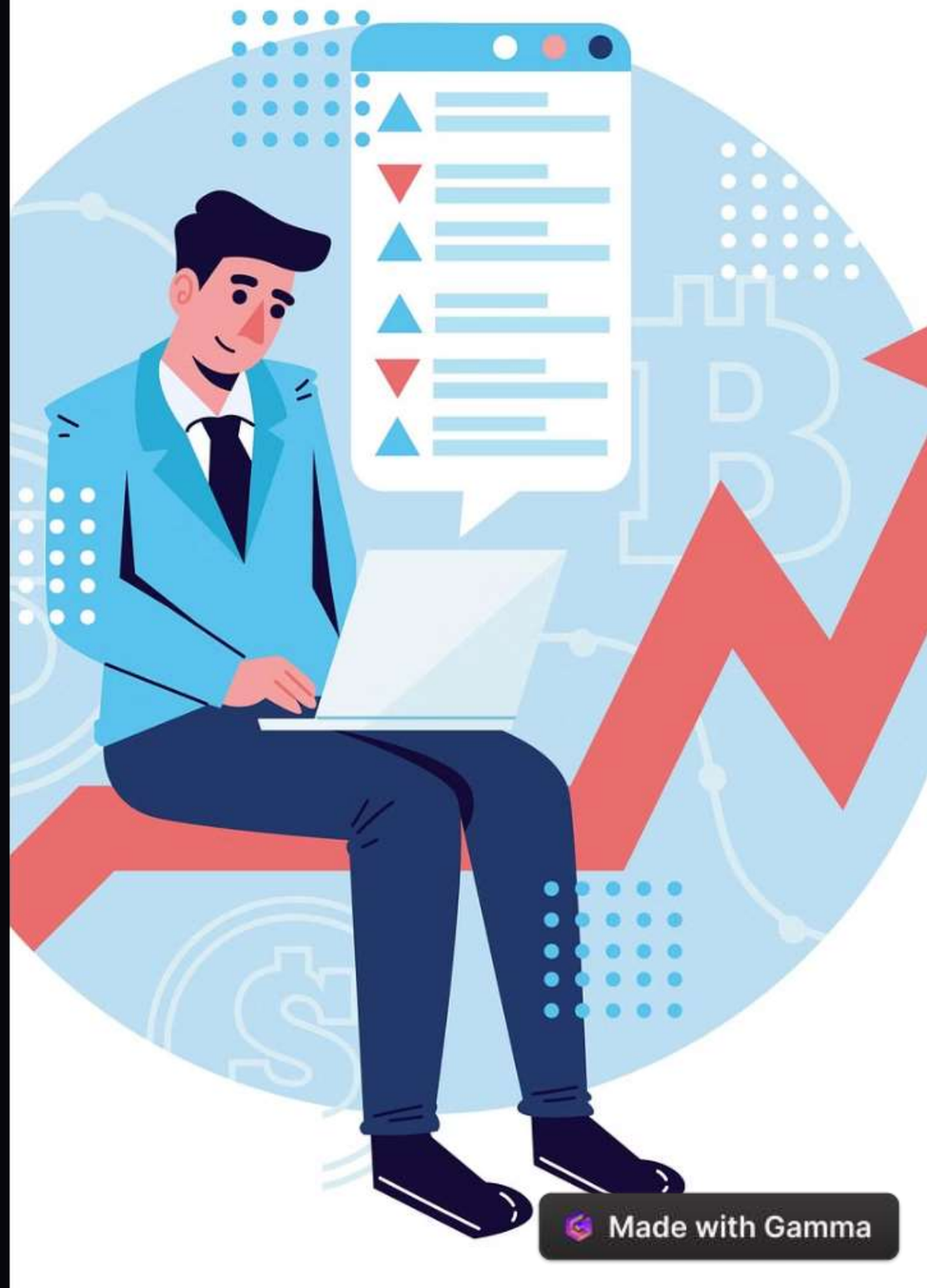
Leverage data visualization techniques to uncover trends, seasonality, and patterns in the stock price data, providing valuable insights.

Detection of Trends and Patterns

Analyze the data to identify any significant trends, seasonal fluctuations, or other recurring patterns that may influence the stock's performance.

Model Building

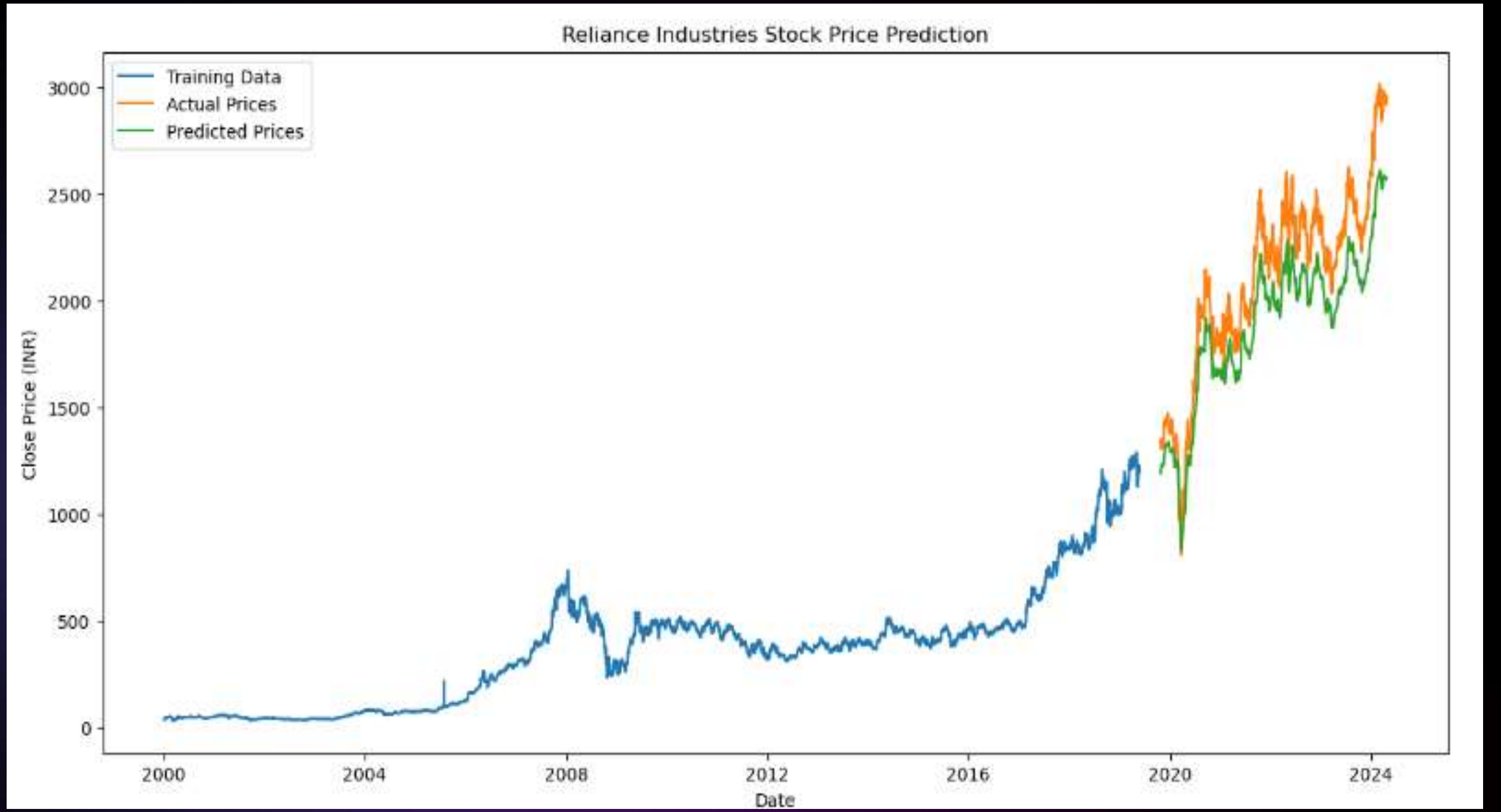
We used advanced machine learning techniques to develop a comprehensive model for forecasting Reliance Industries stock prices. Our approach leveraged both statistical and neural network-based methods to capture complex market dynamics.



Made with Gamma

Modeling Method

1. Simple Exponential Method
2. Holt Method (Double Exponential)
3. Holt-Winter Exponential Smoothing with Additive Seasonality and Trend (Triple Exponential)
4. Holt-Winter Exponential Smoothing with Multiplicative Seasonality and Additive Trend (Triple Exponential)
5. Holt-Winter Exponential Smoothing with Additive Seasonality and Multiplicative Trend (Triple Exponential)
6. Holt-Winter Exponential Smoothing with Multiplicative Seasonality and Multiplicative Trend (Triple Exponential)
7. ARIMA
8. LSTM Model


Reliance Industries Stock Price Prediction
Training Data
Actual Prices
Predicted Prices
Close Price (INR)
3000
2500
2000
1500
1000
500
0
2000
2004
2008
2012
2016
2020
2024
Date

Model Evaluation

After building the prediction model, we evaluate its performance using various metrics to ensure it meets the client's requirements and provides accurate forecasts.

Model Evaluation

RMSE Metric

The Root Mean Squared Error (RMSE) was used to evaluate the model's performance. RMSE measures the average magnitude of the errors in the same unit as the original data.

Best Performing Model

The LSTM (Long Short-Term Memory) neural network model achieved the lowest RMSE, making it the best-performing model for forecasting Reliance Industries stock prices.

Rigorous Evaluation

The models were extensively tested and validated to ensure their reliability and accuracy in predicting future stock price movements.

Deployment

Reliance Industries Stock Price Prediction

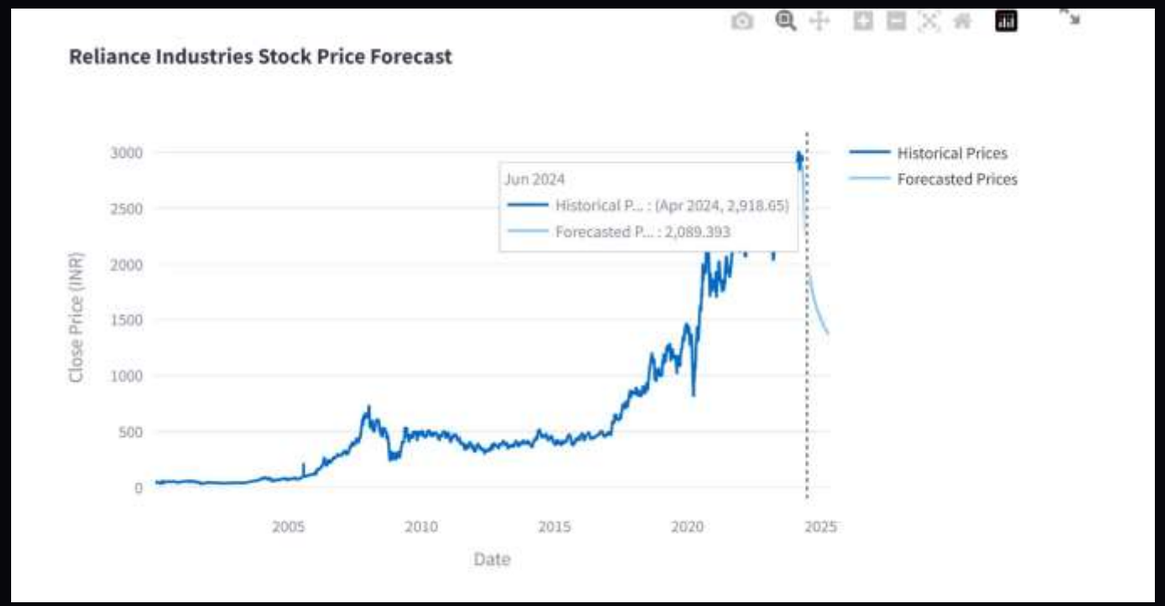
Start Date

2024/04/24

End Date

2025/04/24

Predict



Forecasted Prices for the Selected Period

	Forecasted Close
2024-04-29 00:00:00	2,757.0784
2024-04-30 00:00:00	2,733.5569
2024-05-01 00:00:00	2,711.6863
2024-05-02 00:00:00	2,691.3599
2024-05-03 00:00:00	2,672.3923
2024-05-04 00:00:00	2,654.5652
2024-05-05 00:00:00	2,637.656
2024-05-06 00:00:00	2,621.4619
2024-05-07 00:00:00	2,605.812
2024-05-08 00:00:00	2,590.5706

THANK YOU