DR B R AMBEDKAR NATIONAL INSTITUTE OF TECHNOLOGY, JALANDHAR

Department of Electrical Engineering

VISUALISING & FORECASTING STOCKS

Using Machine Learning (Streamlit)

Submitted By

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Under the Guidance of

DR. SHALINI PAL

Agenda | What this report covers?

Introduction | What is this project?

- We are creating a web application which will predict the stock trend for various companies.
- A machine learning model has been developed which has a accuracy of 98-98.5% Few machine learning models will be developed which will show company information (logo, registered name, and description) and stock plots based on the stock code given by the user.
- Also the ML model will enable the user to get predicted stock prices for the date inputted by the user.

Objective

- Using our application, one can visualize share prices and other statistical factors.
- It will help the keen investors carefully decide on which company they want to spend their earnings on.
- We have made dynamic plots of the financial data of a company by using the data provided by yfinance python library.
- We have used a machine learning algorithm -Long Short Term Memory (LSTM) to predict the upcoming stock prices.

Methodology

Make the main webapp's structure.

Enhance the site's UI by styling using CSS

Implement a machine learning model - Long Short Term Memory (LSTM) to predict the stock price for the dates requested by the user.

Generate plots of data using the matplotlib library of Python. The data is fetched using yfinance python library. Visualize various plots and predict the stock trend of the stock entered by the user.

Deploy the project on Heroku to host the application live.

Project Timeline

DONE

TASK 1

Validate the idea by doing a low level implementation (Proof of Concept) of the components involved in this project.

Getting more clarity around the unknowns and a better understanding of the stages involved in the project.

(5 DAYS)

TASK 2

DONE

(3-5 DAYS)

Create basic website layout

Make the web layout using Dash HTML Components and Dash Core Components, then store it in the app's layout component.

TASK 3

Styling the application's web page

Using CSS we will style our webpage to make it look neater and user-friendly. After this task, our webpage will have a better look than before.

(3-5 DAYS)

TASK 4

(15-20 DAYS)

Generating a company's information and graphs

Use the yfinance python library to get company information (name, logo and description) and stock price history. Dash's callback functions will be used to trigger updates based on change in inputs.

TASK 5

Creating the machine learning model

We are now going to build a machine learning model - Support Vector Regression (SVR) for predicting the stock prices.

(10-15 DAYS)

TASK 6

(3-4 DAYS)

Deploying the project on Heroku

Now that our project is complete, we will deploy it on Heroku.

TOTAL NO. OF DAYS:
60 DAYS (APPX.)

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STOCK TREND PREDICTION

Enter Stock Code

RELIANCE.NS

Data

	High	Low	Open	Close	Volume	Adj C
count	5,591.0000	5,591.0000	5,591.0000	5,591.0000	5,591.0000	5,591.(
mean	593.0821	577.8950	585.7708	585.1974	17,108,818.0551	564.(
std	615.9248	601.6187	609.0193	608.4727	18,246,634.0431	611.9
min	33.9624	30.5043	31.7962	31.4404	0.0000	24.(
25%	92.5030	89.1261	91.0409	90.7508	6,457,612.5000	77.2
50%	444.9820	434.4568	439.9299	439.2117	10,377,944.0000	414.2
75%	634.5291	608.8537	621.7378	623.1370	21,002,299.5000	568.2

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Closing Price vs Time Chart

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Closing Price vs Time Chart with 100 MA

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Closing Price vs Time Chart with 200 MA

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Closing Price vs Time Chart with 100 MA & 200 MA

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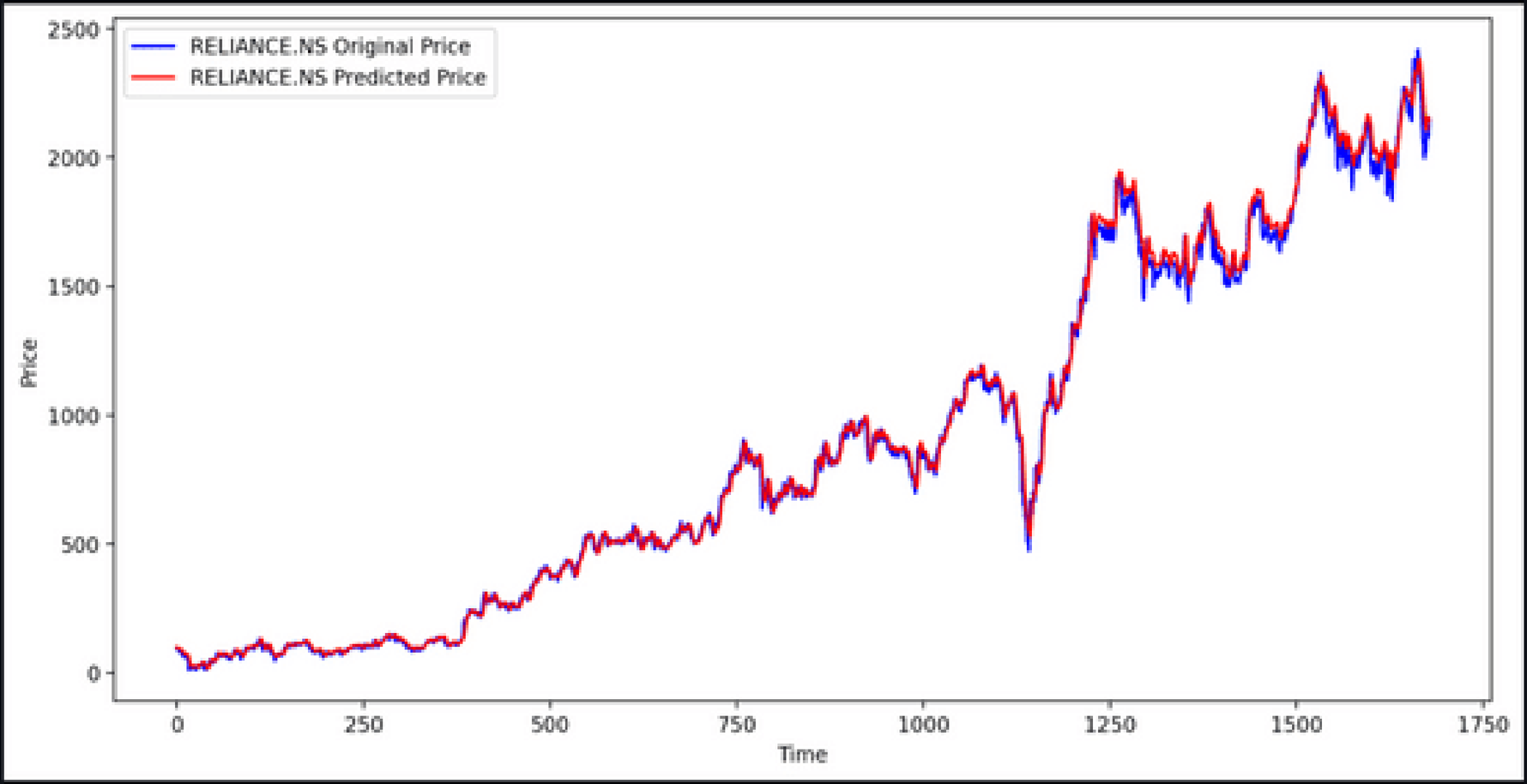
Prediction vs Original



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Prediction vs Original

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##########################################################################
Tomorrow's  RELIANCE.NS  Closing Price Prediction by LSTM:  2539.2737
LSTM RMSE: 54.19517003577413 4
##########################################################################

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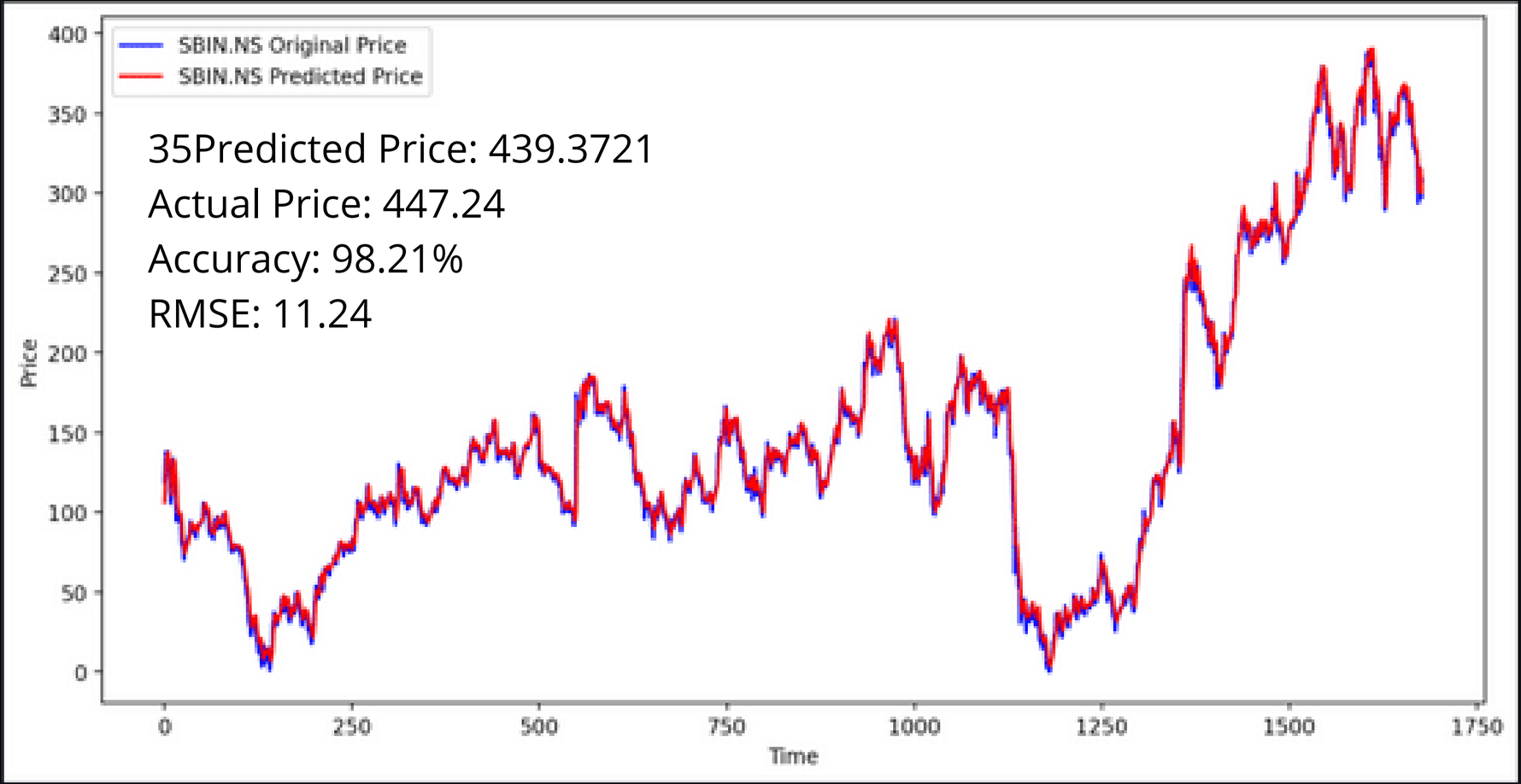
Prediction vs Original



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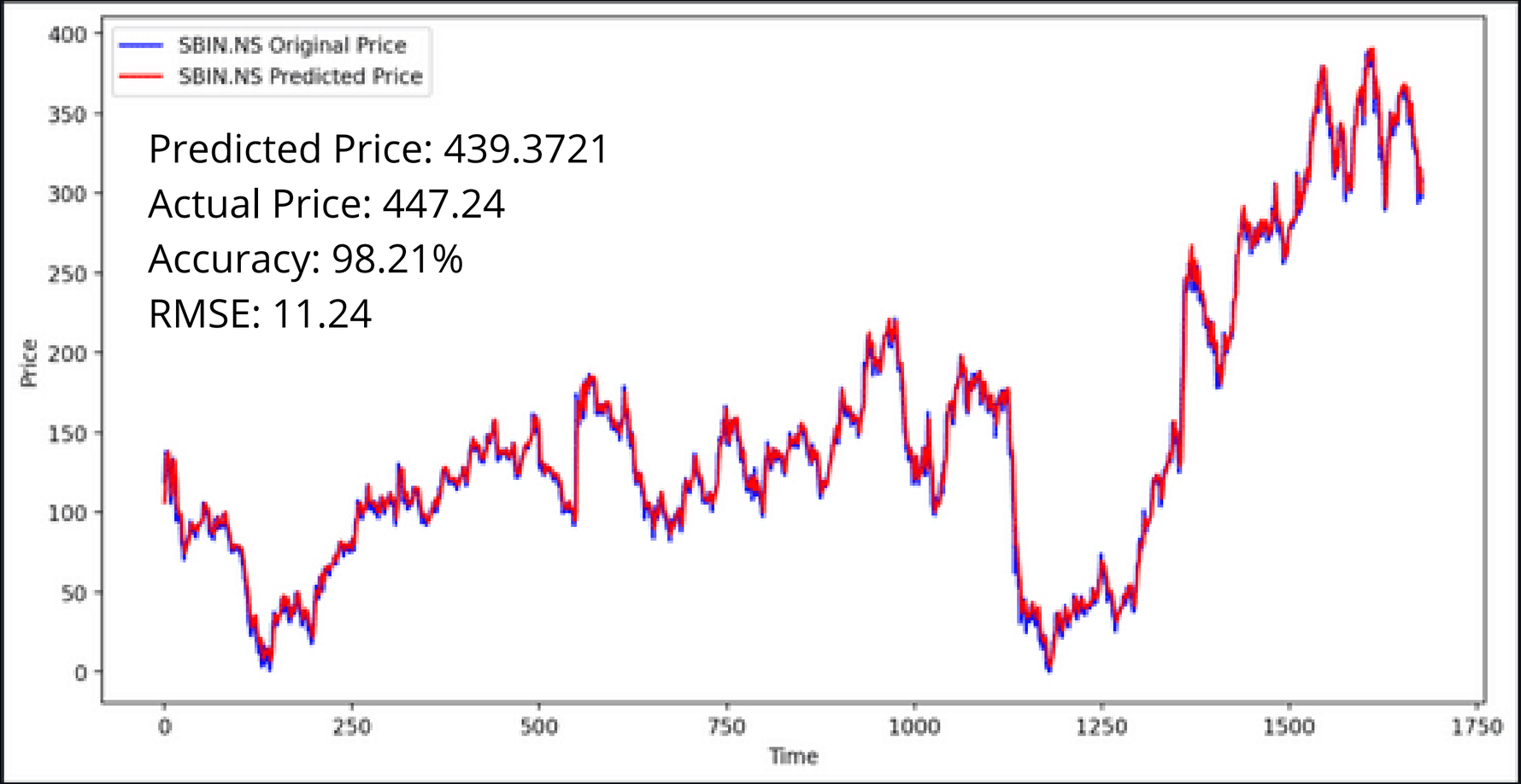
Prediction vs Original



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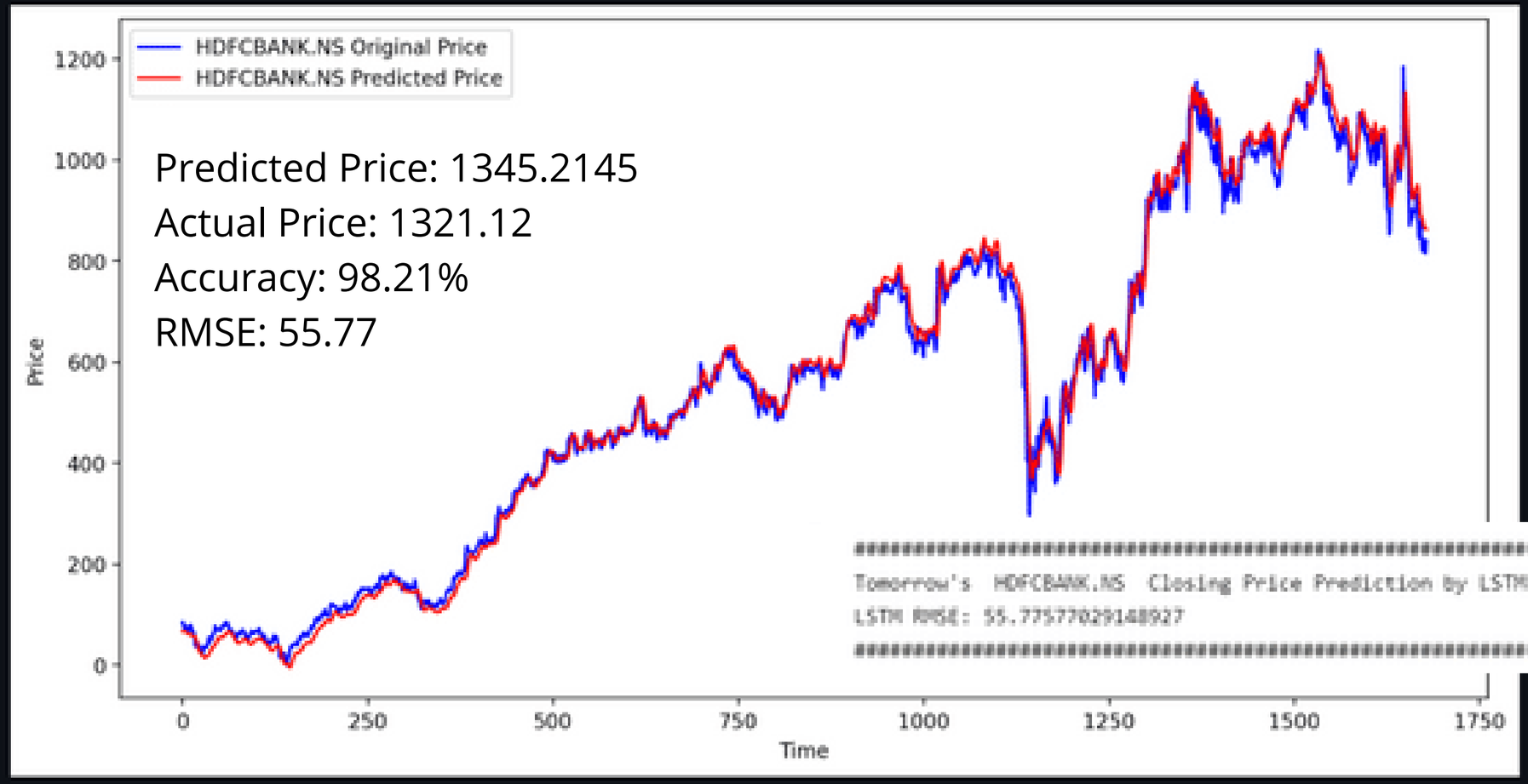
Prediction vs Original



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Thank you!