# STOCK TIME-SERIES ANALYSIS

January 4, 2024

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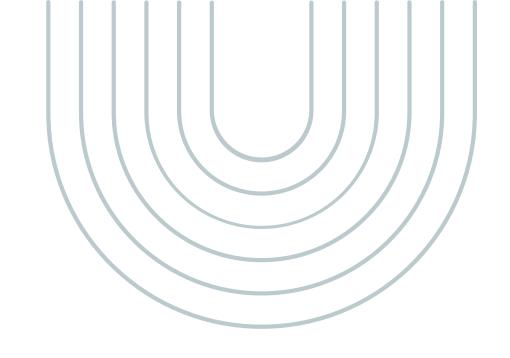
**BUSINESS PROBLEM** 

O2 DATA OVERVIEW

O3 ANALYSIS & MODEL

O4 RECOMMENDATIONS

O5. FUTURE RESEARCH



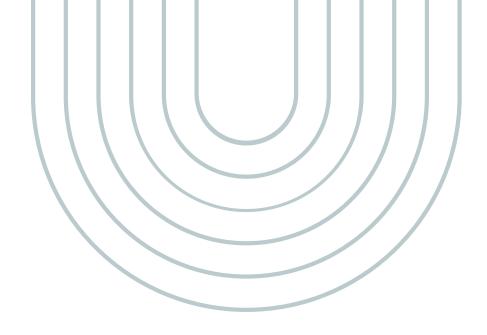
## TABLE OF CONTENT

## BOTTOMLINE

**Upward Trend** 

**LSTM Model** 

# BUSINESS PROBLEM

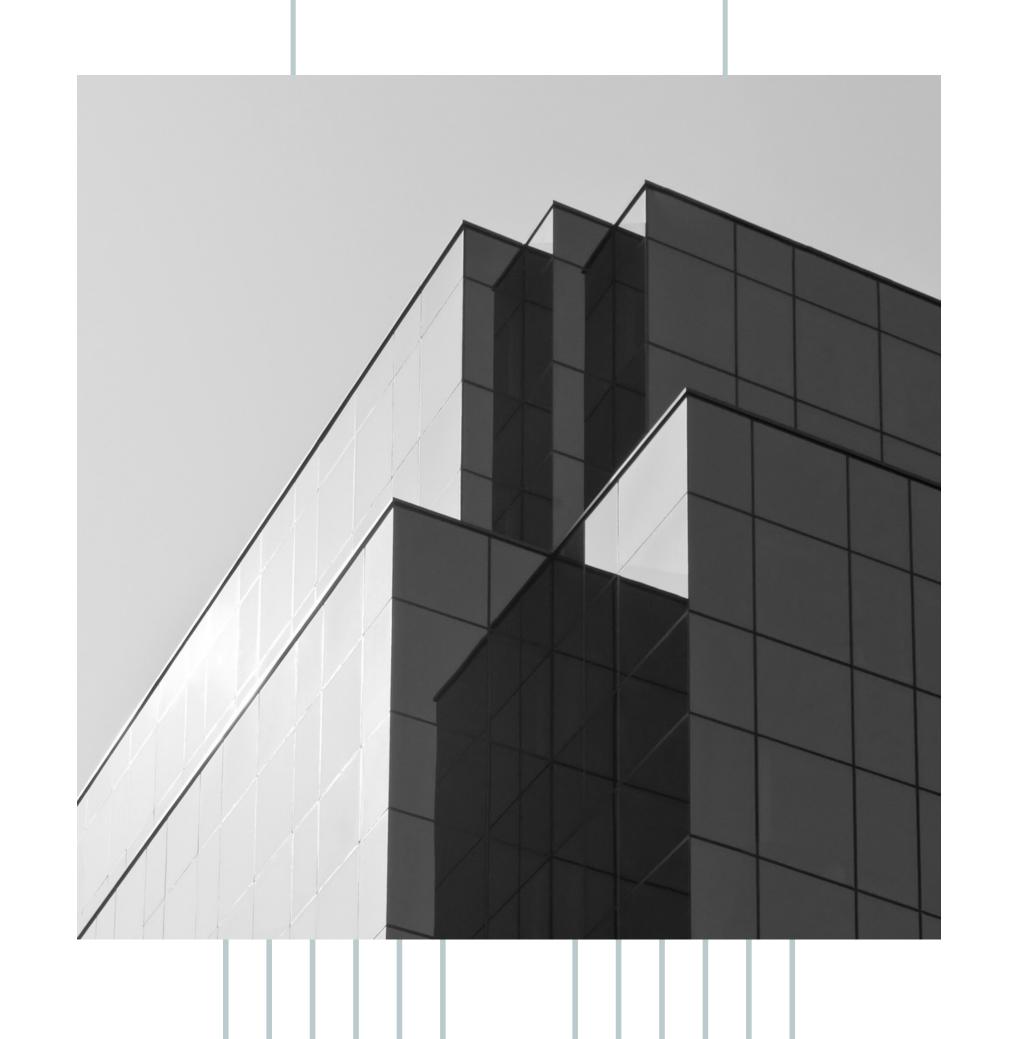


### **PROBLEM**

- Long-Term Investment: Where to start
- Reliable Model Forecasting

### **MICROSOFT**

- PC Software systems and applications
- Founded in 1975
- 37 year Stock history



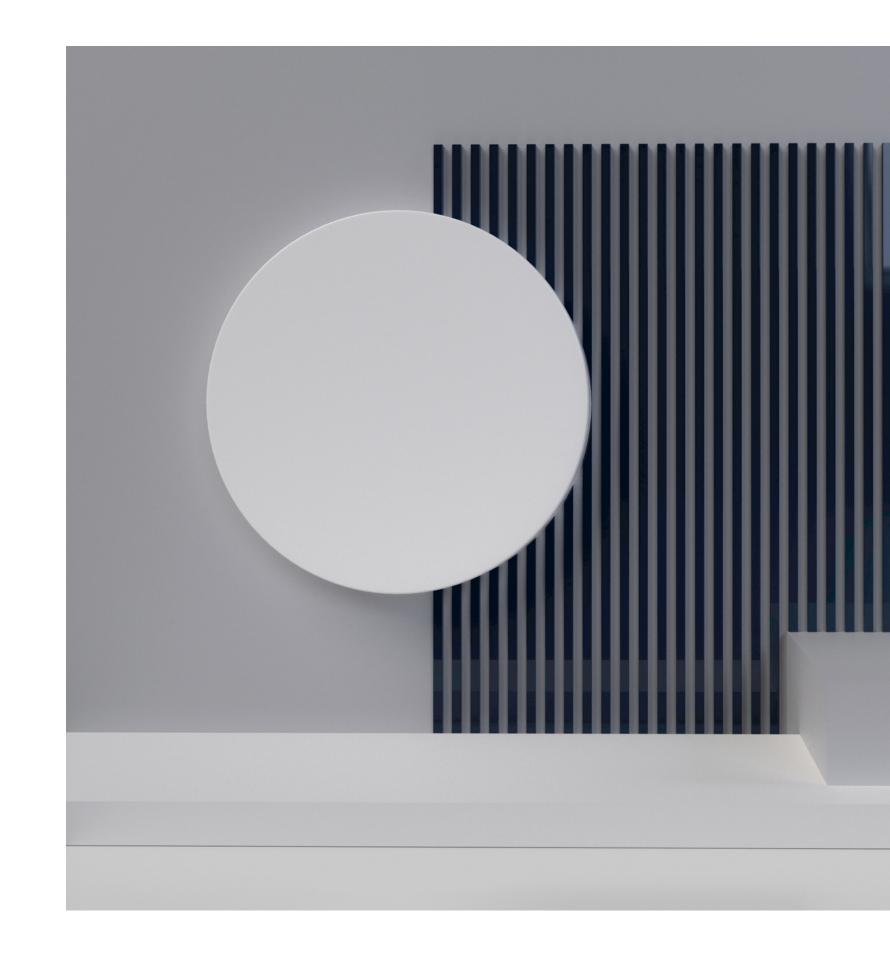
# DATA OVERVIEW

# MSFT Stock Historical Data

- Yahoo! Finance.
- 9524 Observations.
- Closing Stock Price.

#### **Data Limitations**

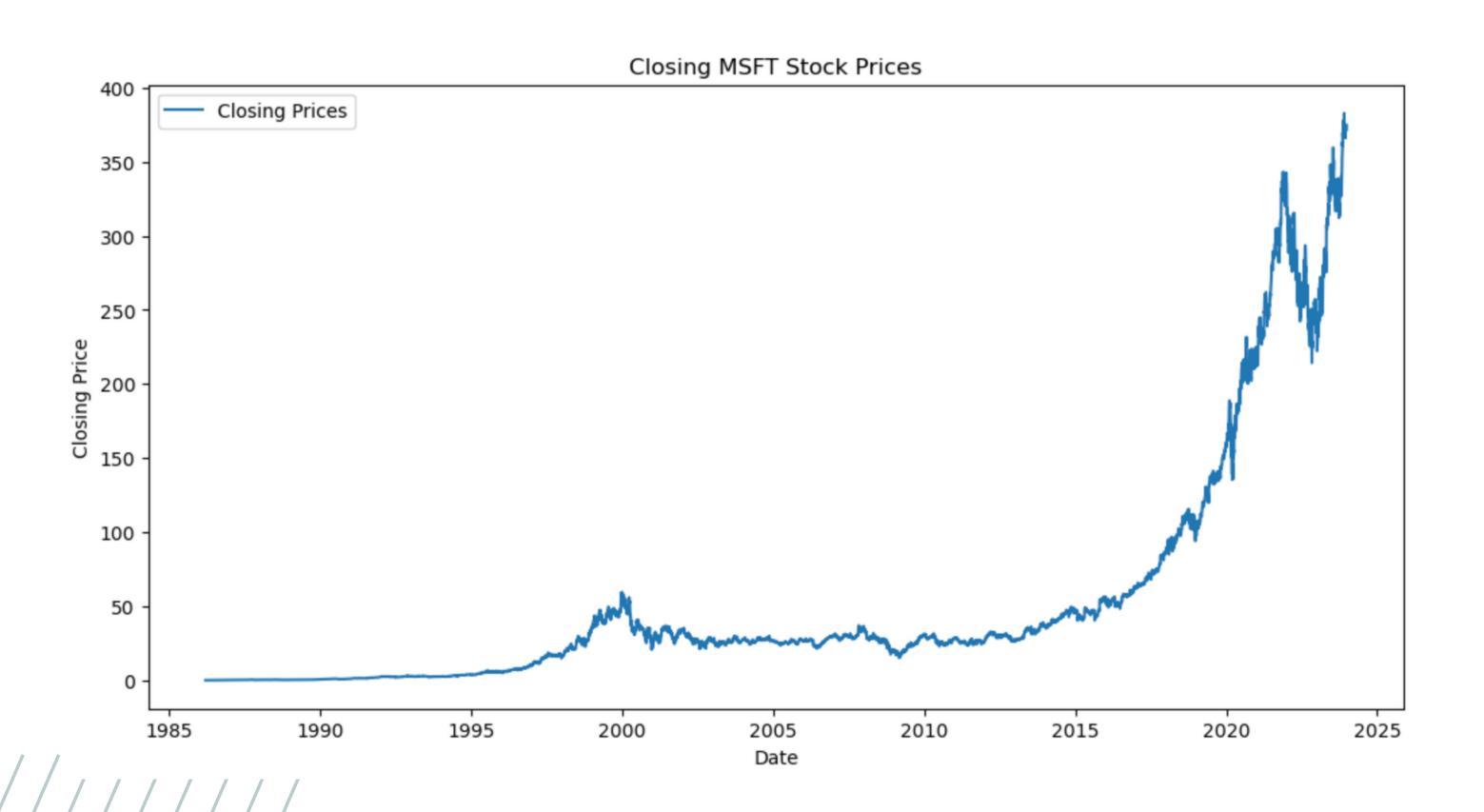
No Weekend Observations.



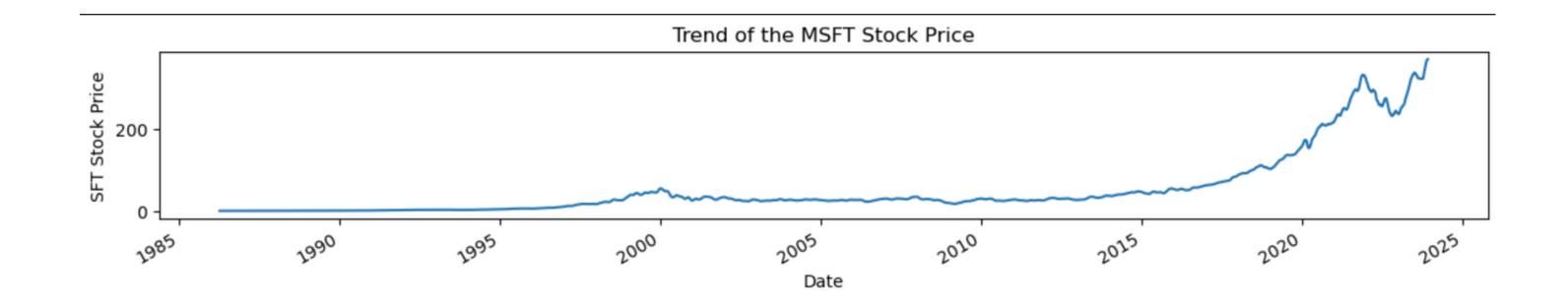
# ANALYSIS & MODEL

Liceria & Co.

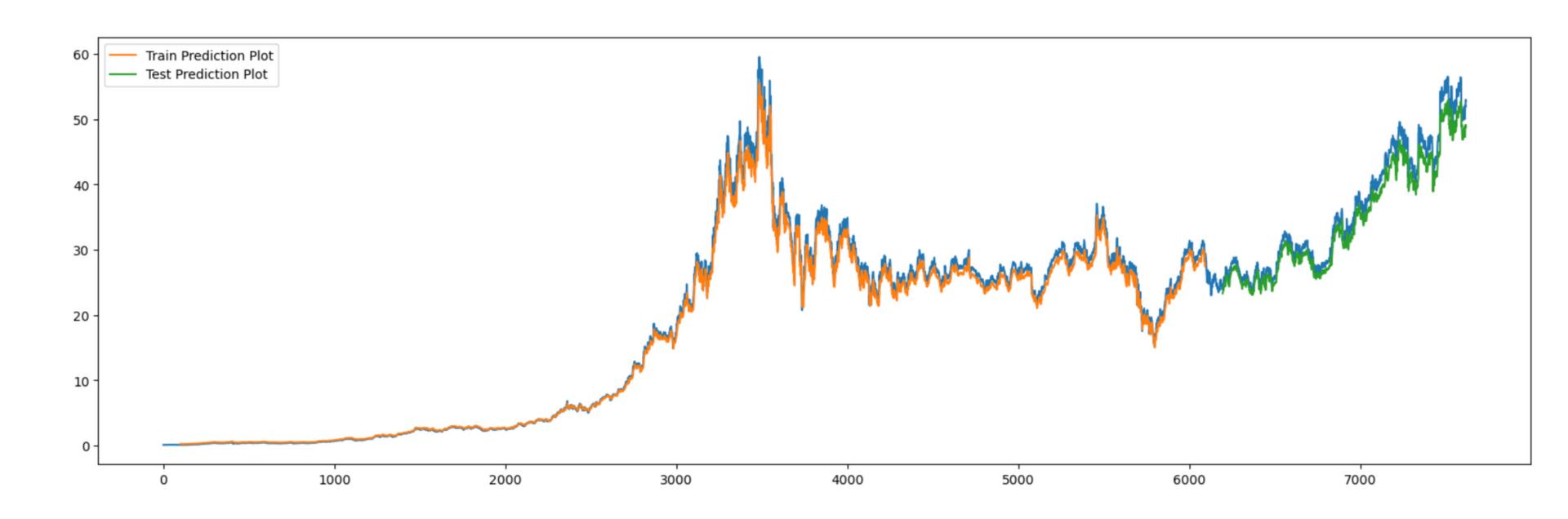
## HIGHEST MSFT STOCK PRICE EVER



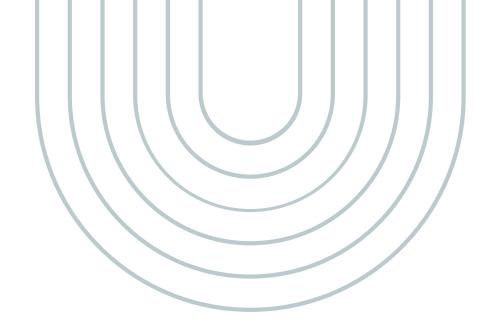
## UPWARD TREND IN THE PAST 9 YEARS



## LSTM NEURAL NETWORK FORECASTING



# RECOMMENDATIONS



## SOLUTION

- Upward Trend
- LSTM Forecasting

### **PROBLEM**

- Long-Term Investment: Where to start
- Reliable Model Forecasting

## 05. FUTURE RESEARCH

**EXTERNAL** FACTORS

REAL-TIME FORECASTING

ENHANCE MODEL ROBUSTNESS



Have any question?

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## APPENDIX