METIS

A REGRESSION ANALYSIS ON FINANCIAL ASSETS

WESLEY SHEH

2021

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INTRODUCTION

2021

INTRODUCTION

The rationale:

I am part of a quantitative hedgefund that wants to look for and use historical analysis understand the feasibility of linear regression as a trading strategy.

Objective:

To create and compare regression models of companies within the S&P 500 and how it compares to the index itself.

Goal:

Figure out how profitable or unprofitable a linear regression strategy is compared to a passive investment strategy. (Not actively trading whatsoever, or a buy-hold strategy)

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DATA ACQUISITION

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DATA ACQUISITION

Data Acquisition:

Historical stock trading information dating back to 2000. This was a decision to allow for the business cycle to take place. This was done by first using BeautifulSoup to collect the name and information of the S&P 500 companies. Then after this was done, we scraped the stock prices from Yahoo using pandas' data-reader. (It allows you to connect to souces like Yahoo Finance, World Bank, Google Analytics, St.Louis FED and Kenneth French’s data library)

Features:

Date, High, Low, Open, Close, Volume, and Adj Close.

We also will create others for our regression analysis. Such as a percent change and a lag.

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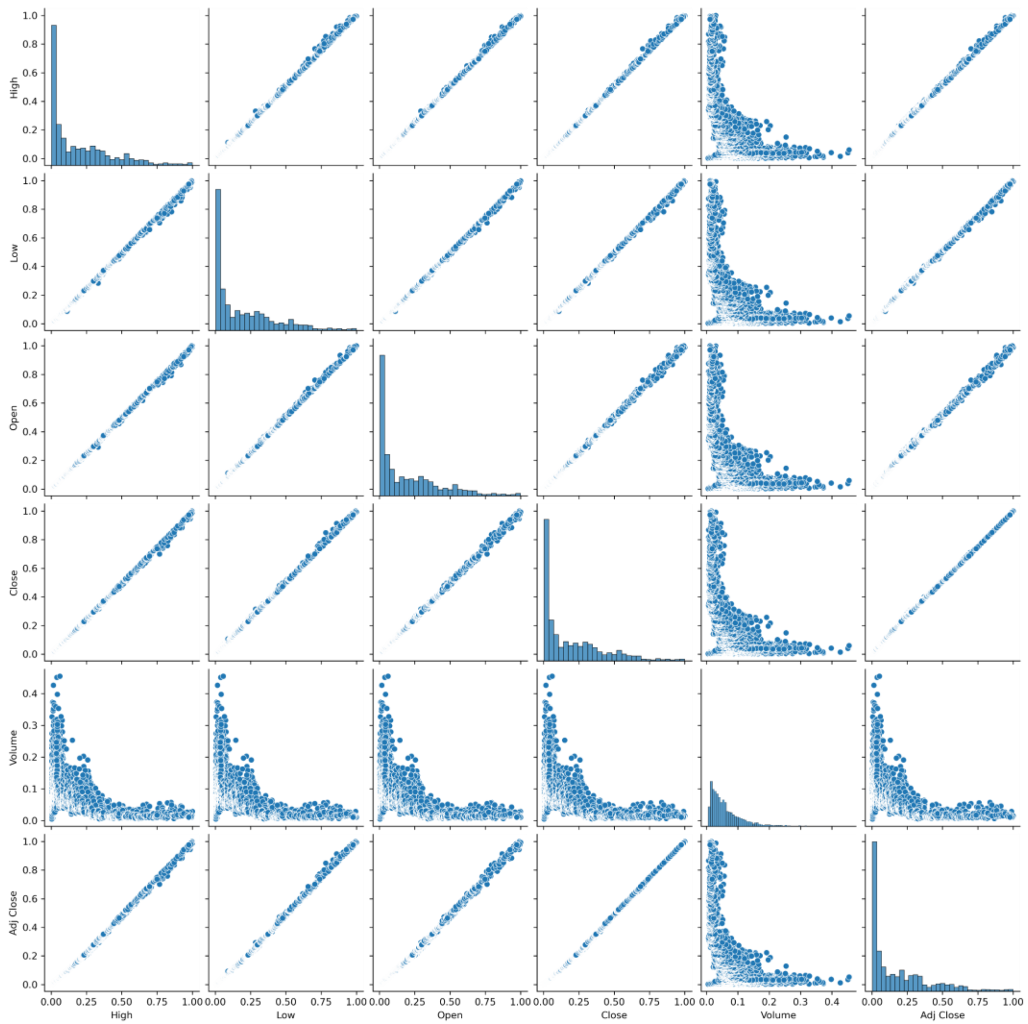
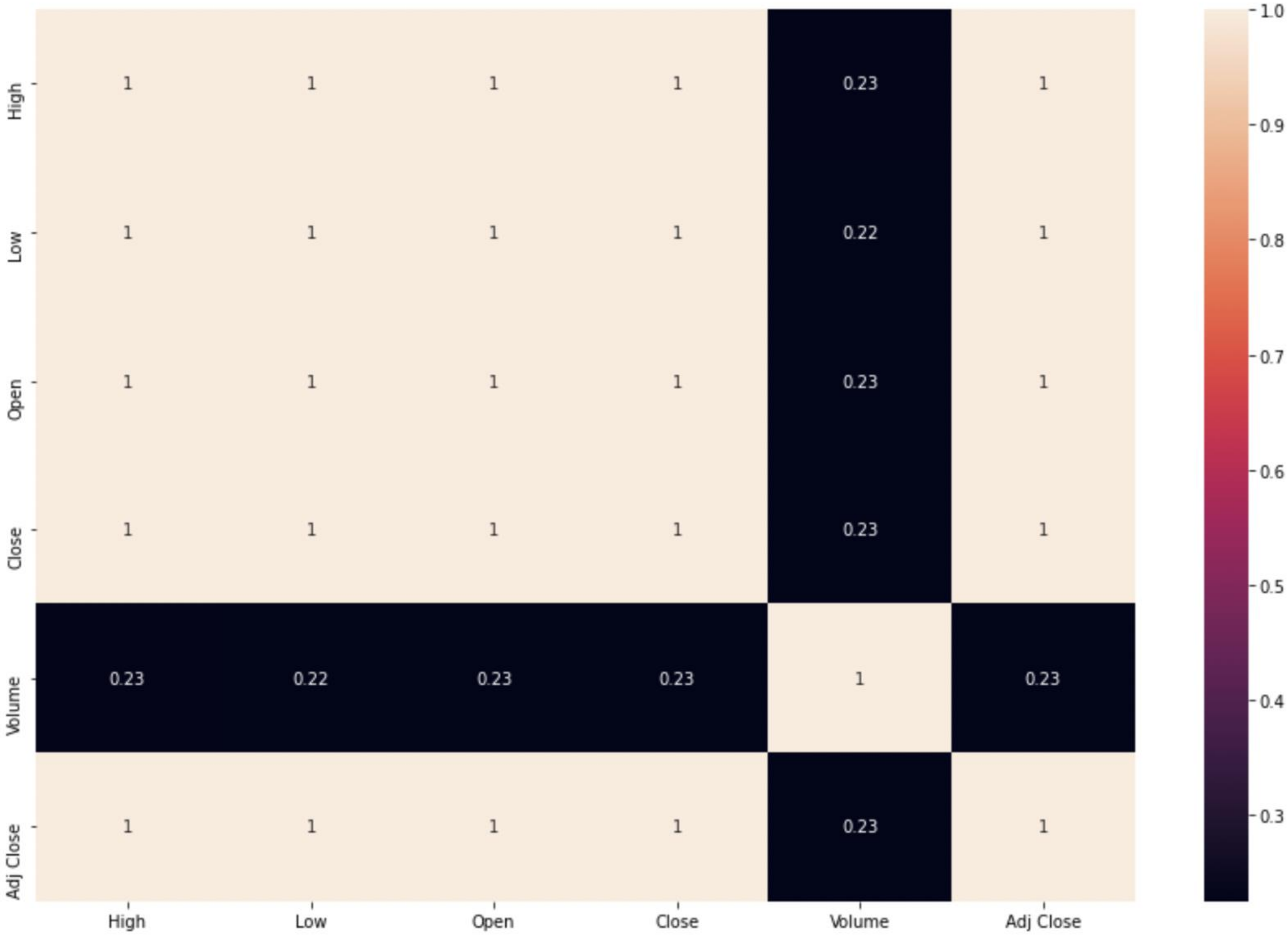
EXPLORATORY DATA ANALYSIS

2021

EXPLORATORY DATA ANALYSIS



EXPLORATORY DATA ANALYSIS



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REGRESSION MODEL

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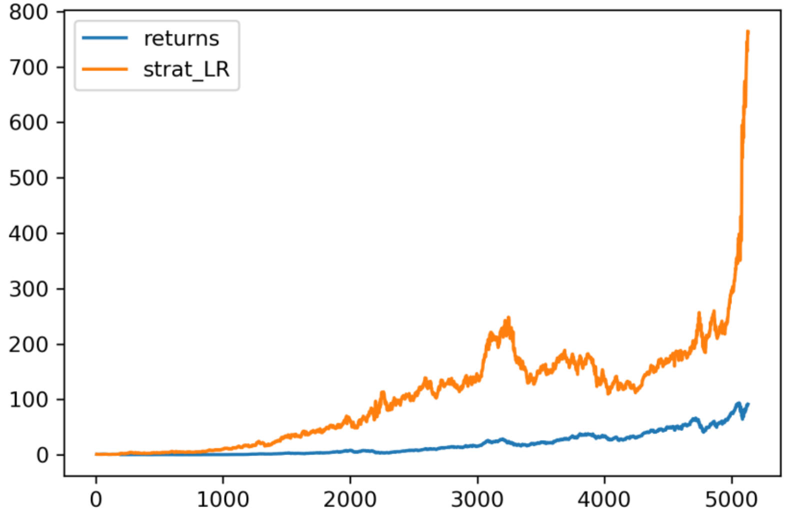
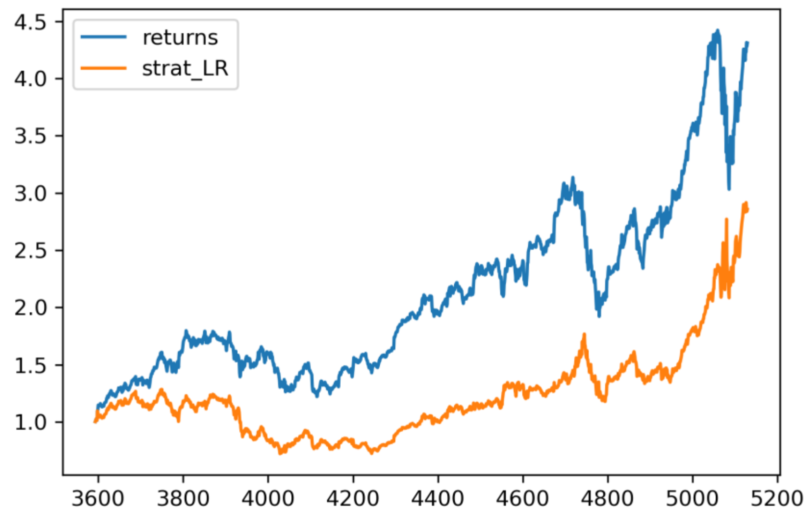
REGRESSION MODEL





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COMPARISON

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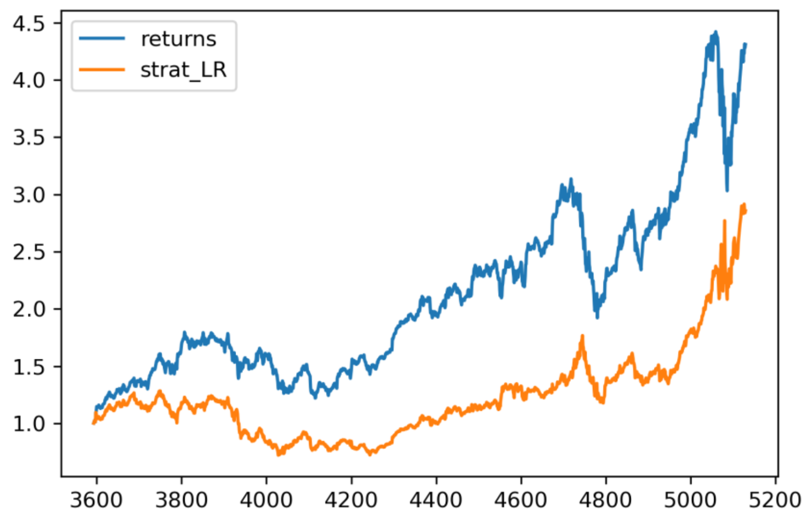
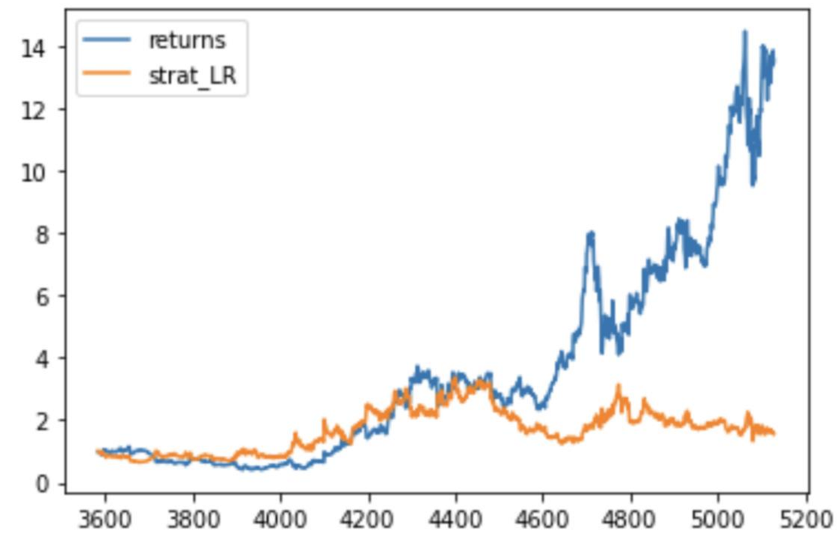
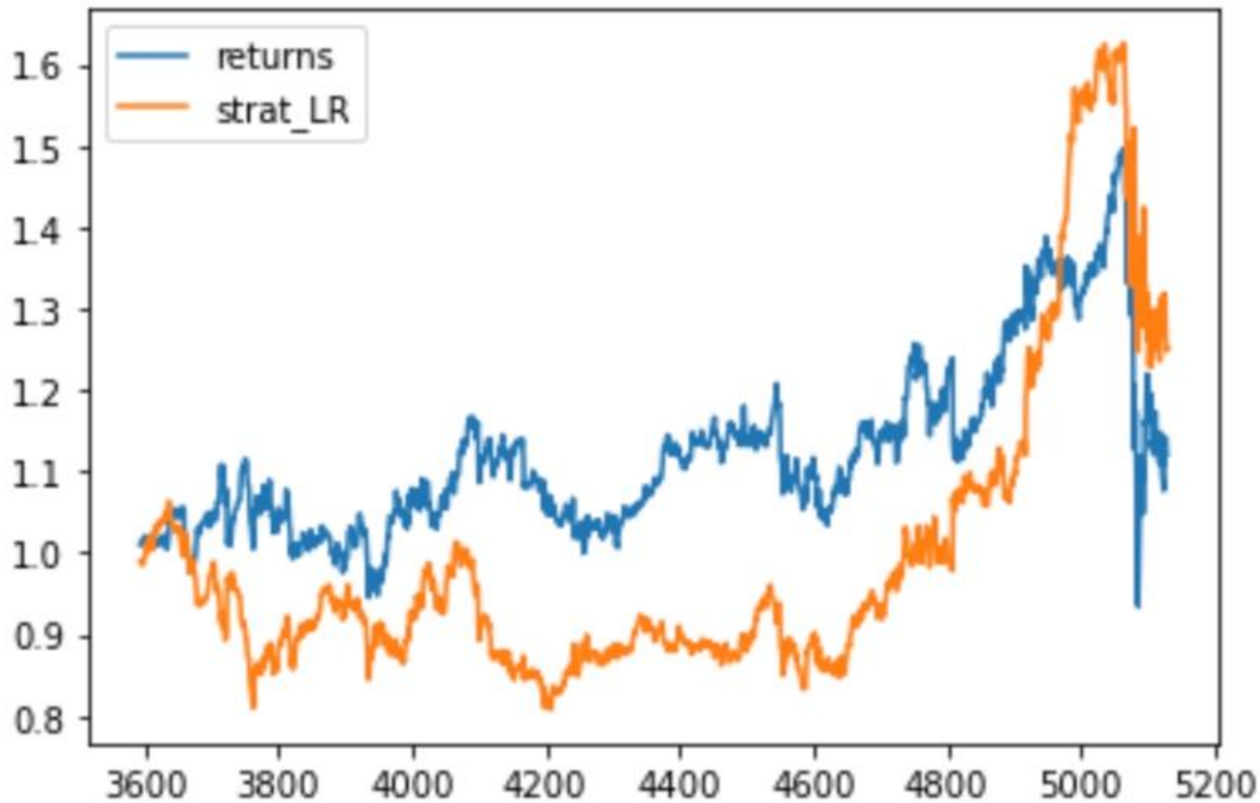
COMPARISON (APPLE AND AMD)





A POSITIVE RETURN EXAMPLE COCA-COLA



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CONCLUSION

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CONCLUSION

Conclusion:

This stock trading method is not convincing currently, however there needs to be more testing and there should be more analysis on all of the S&P500 instead of just one comparison. This may also be bias because the S&P500 are the biggest 500 companies, however in a smaller setting we might be able to see something different in the results.

Future Work:

We would want to methodologically apply this strategy to the entirety of the S&P and the broader market looking for weakness in the strategy. We would also have to factor in the trading fees as well.

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QUESTIONS?

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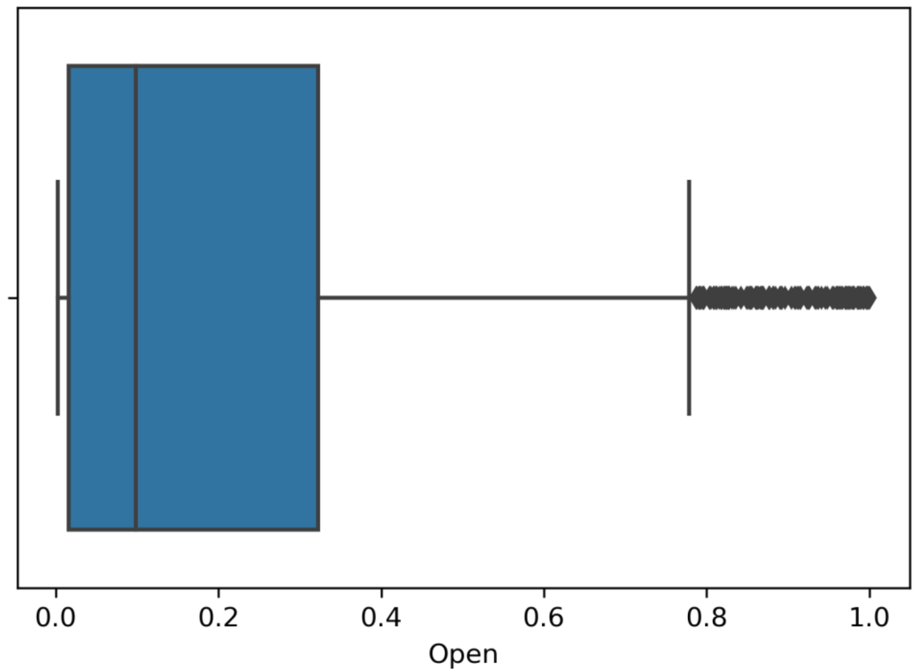
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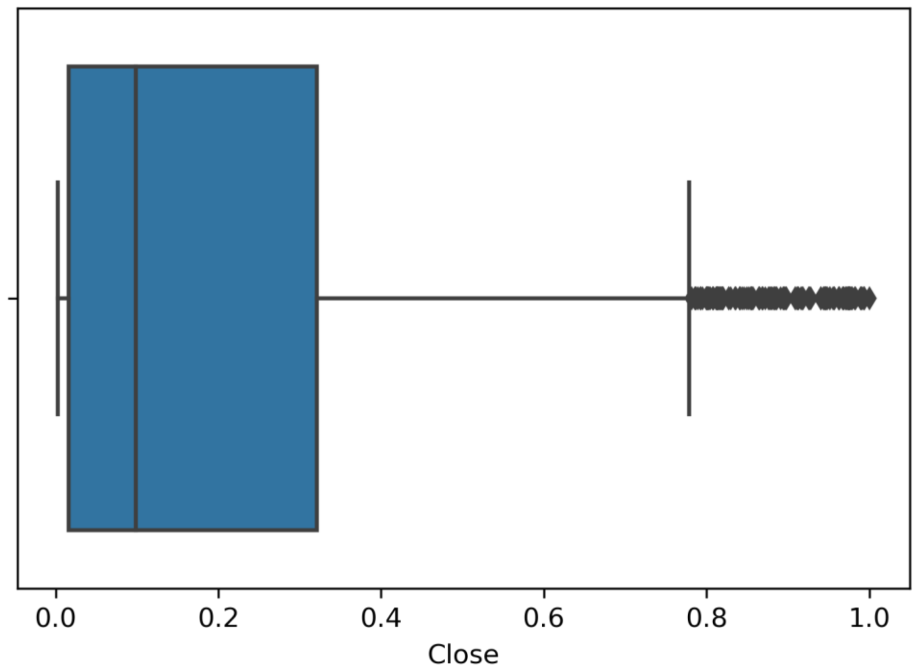

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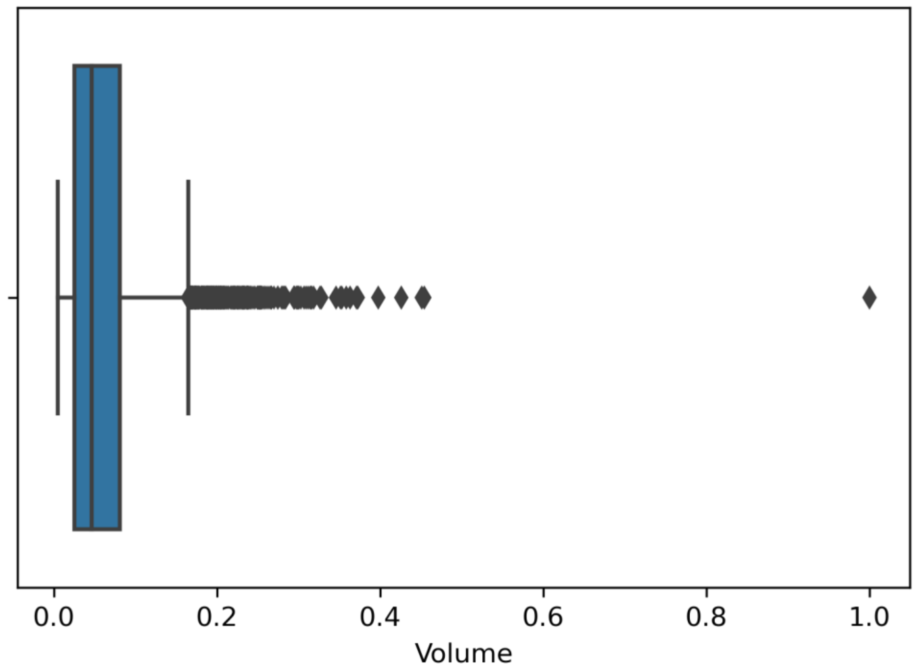

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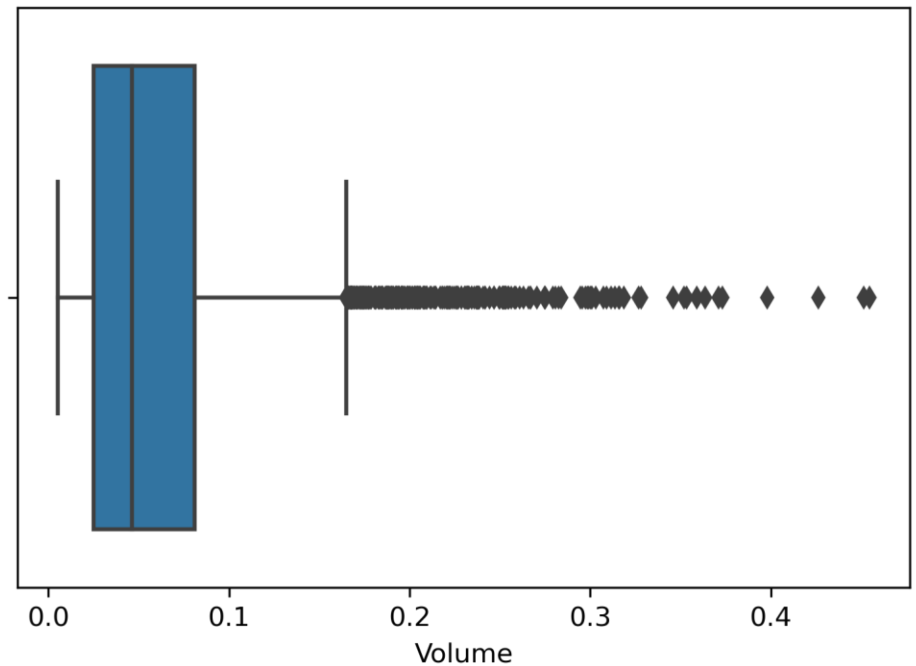

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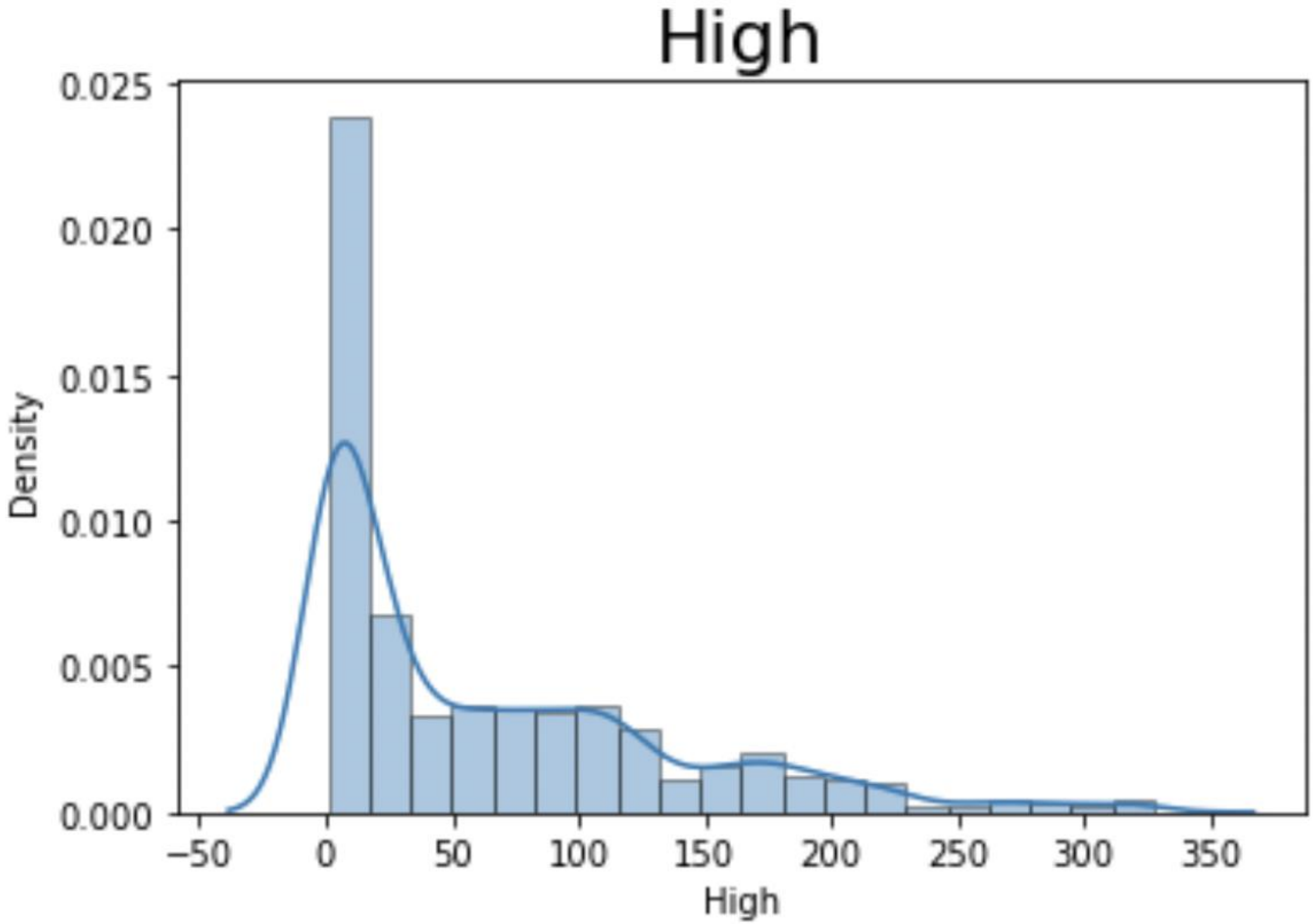
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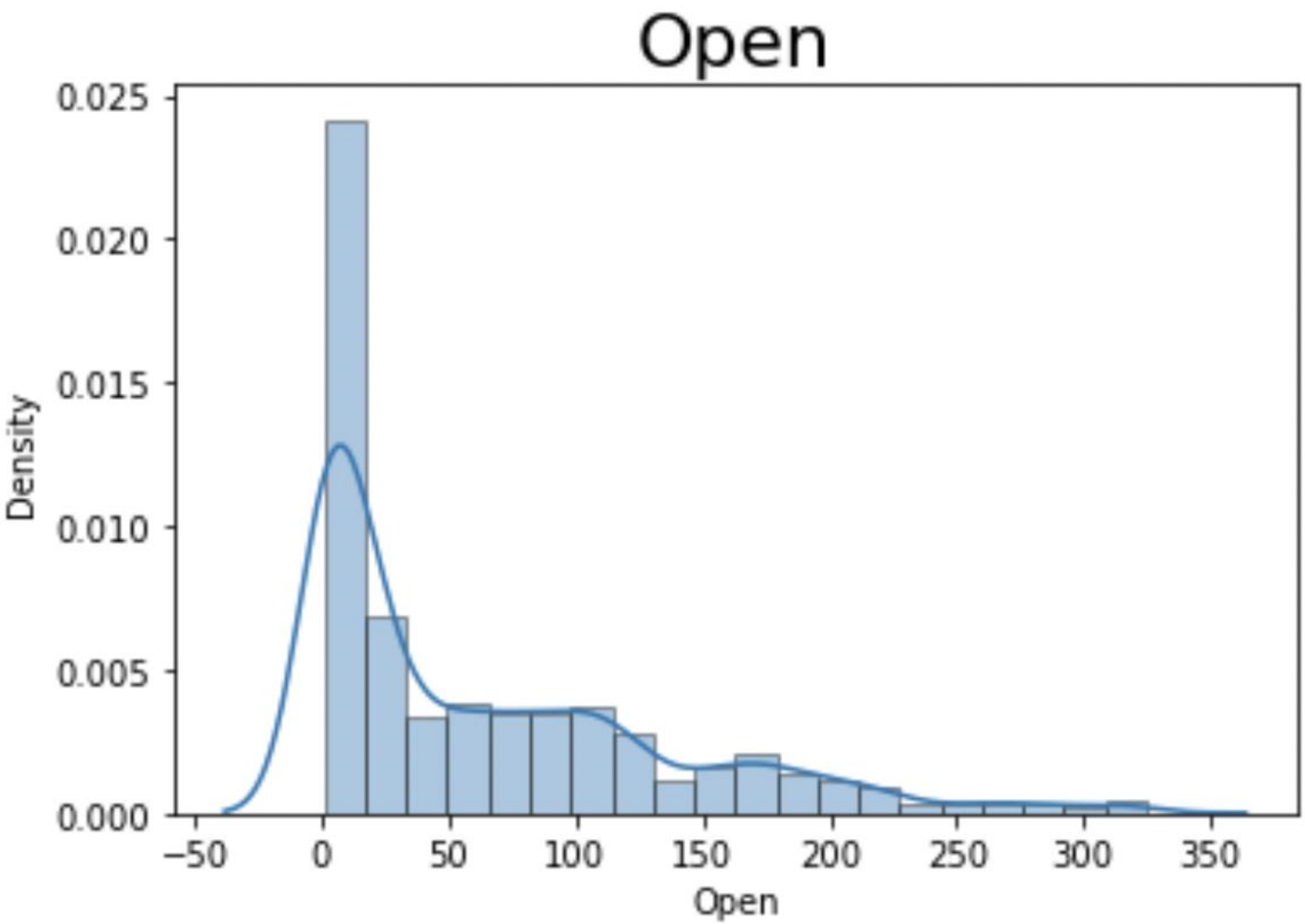
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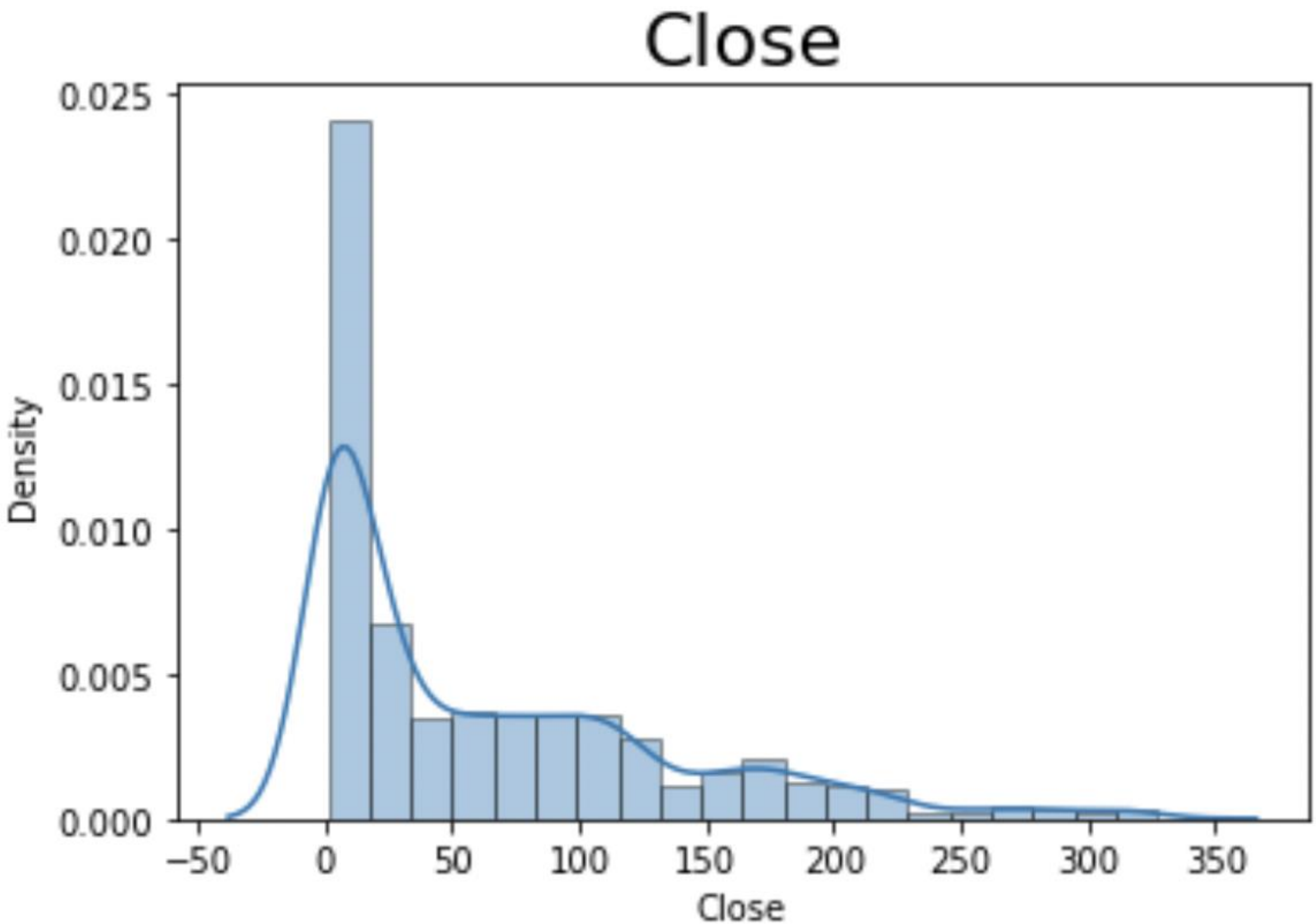
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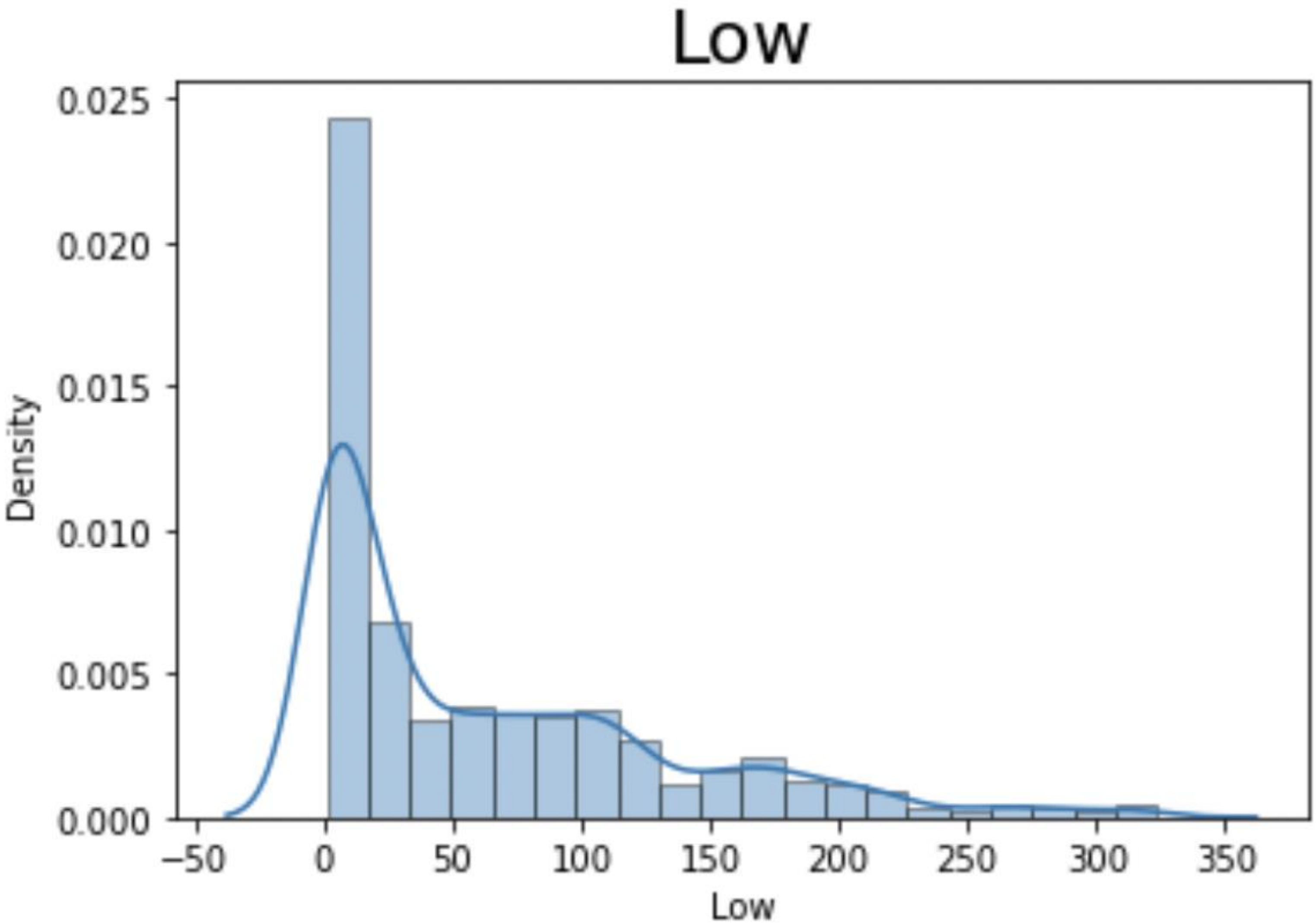
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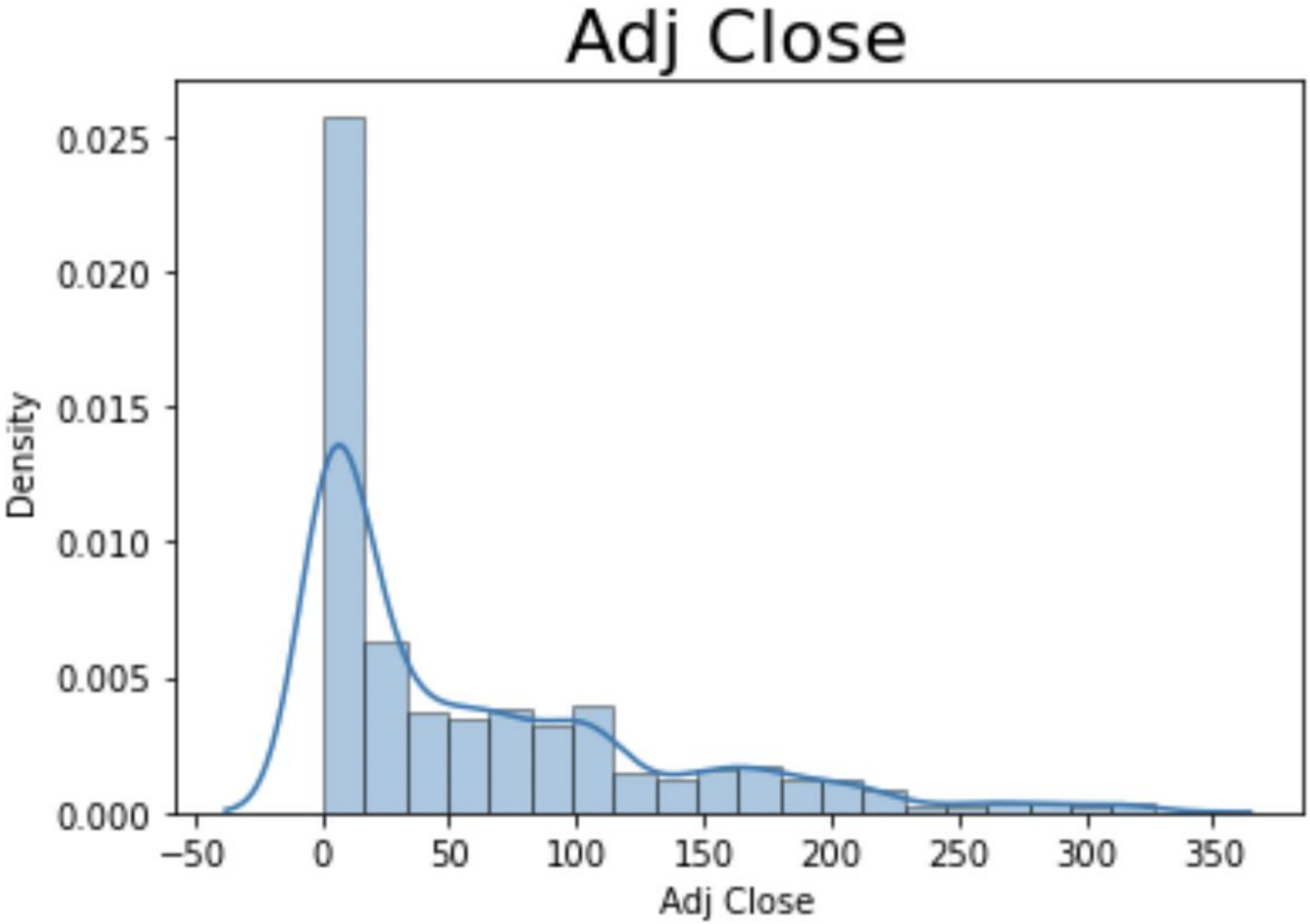
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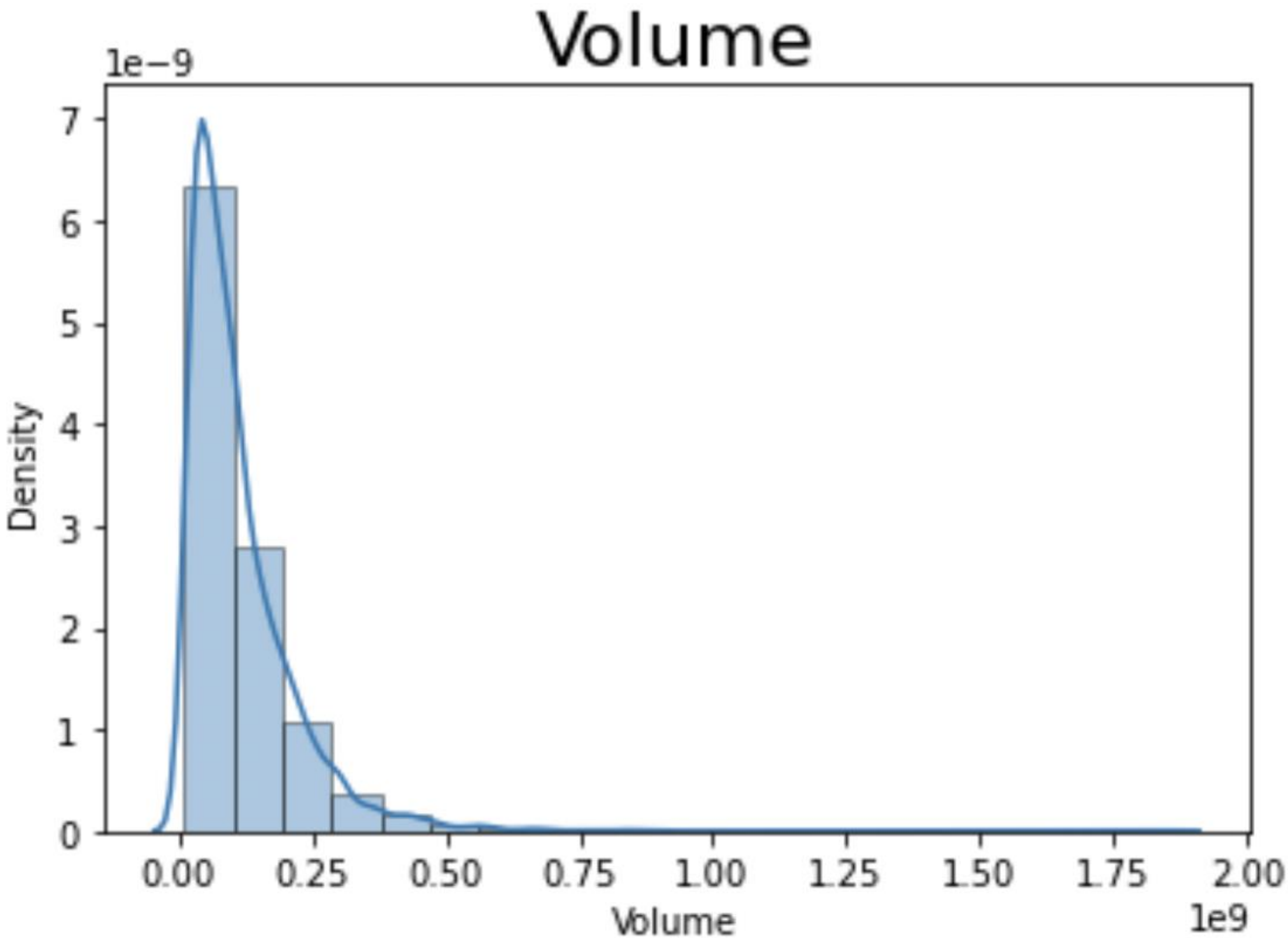
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Volume
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