Trading Bot
(Stop Loss)ing money

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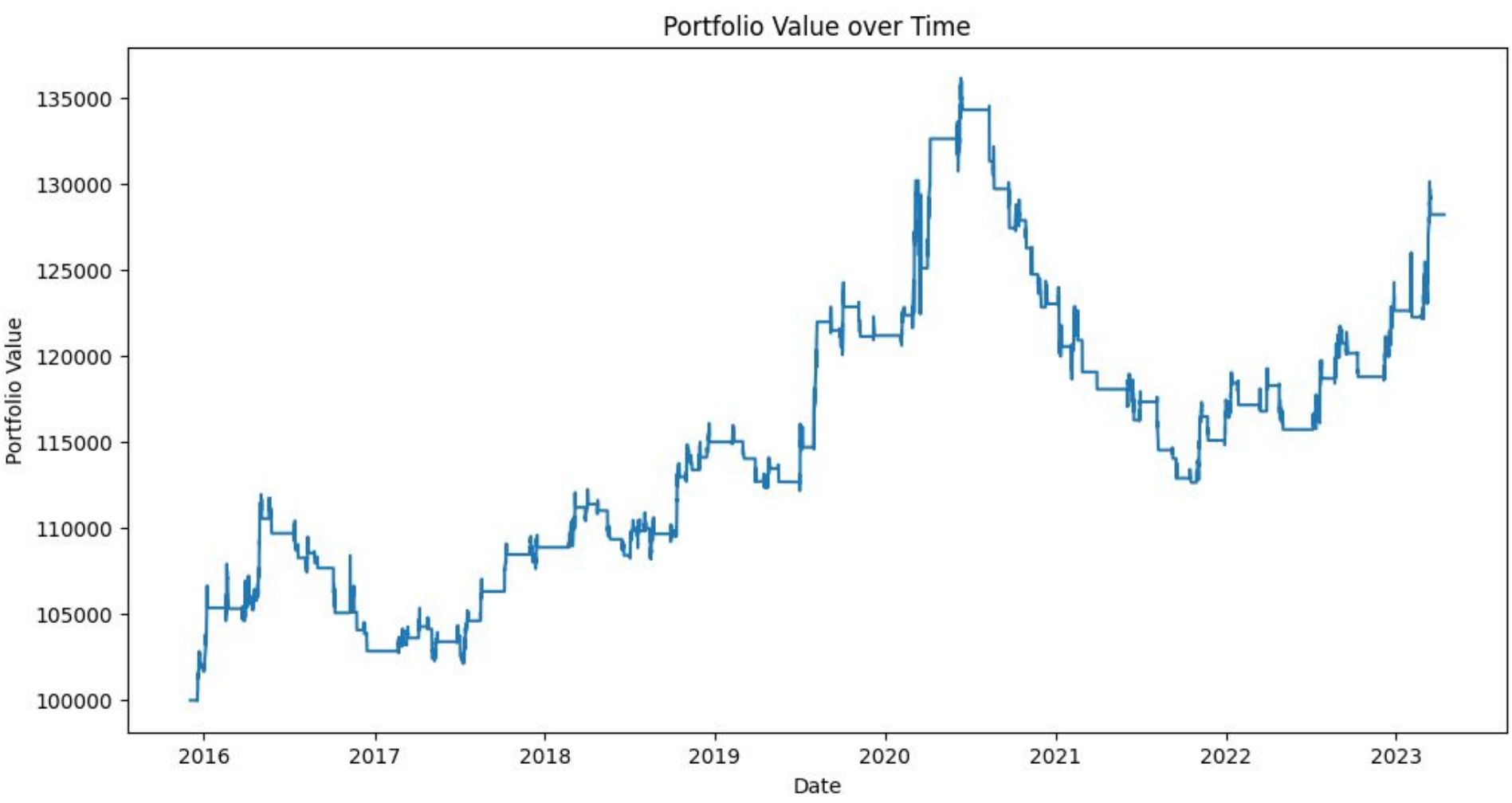
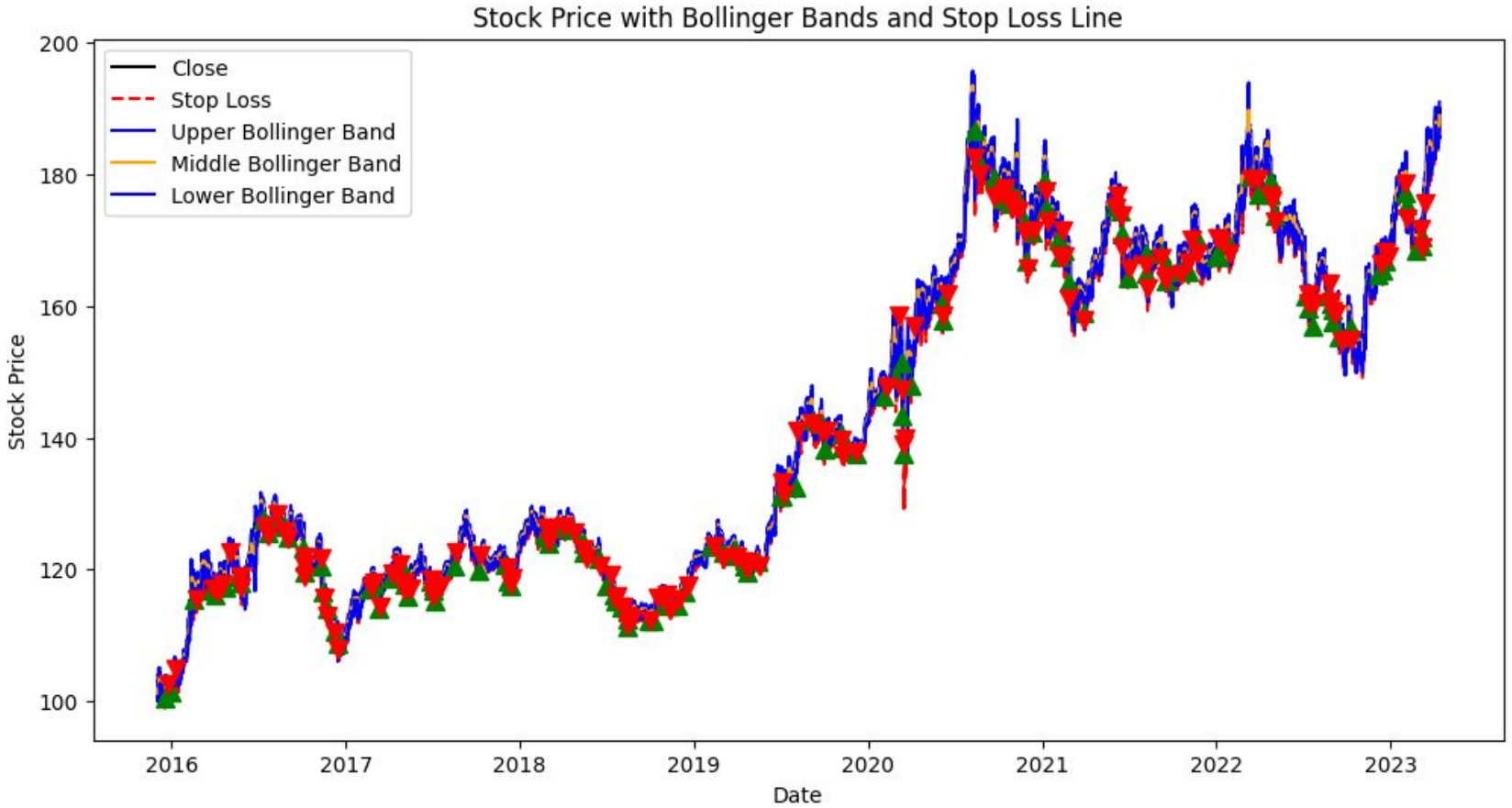
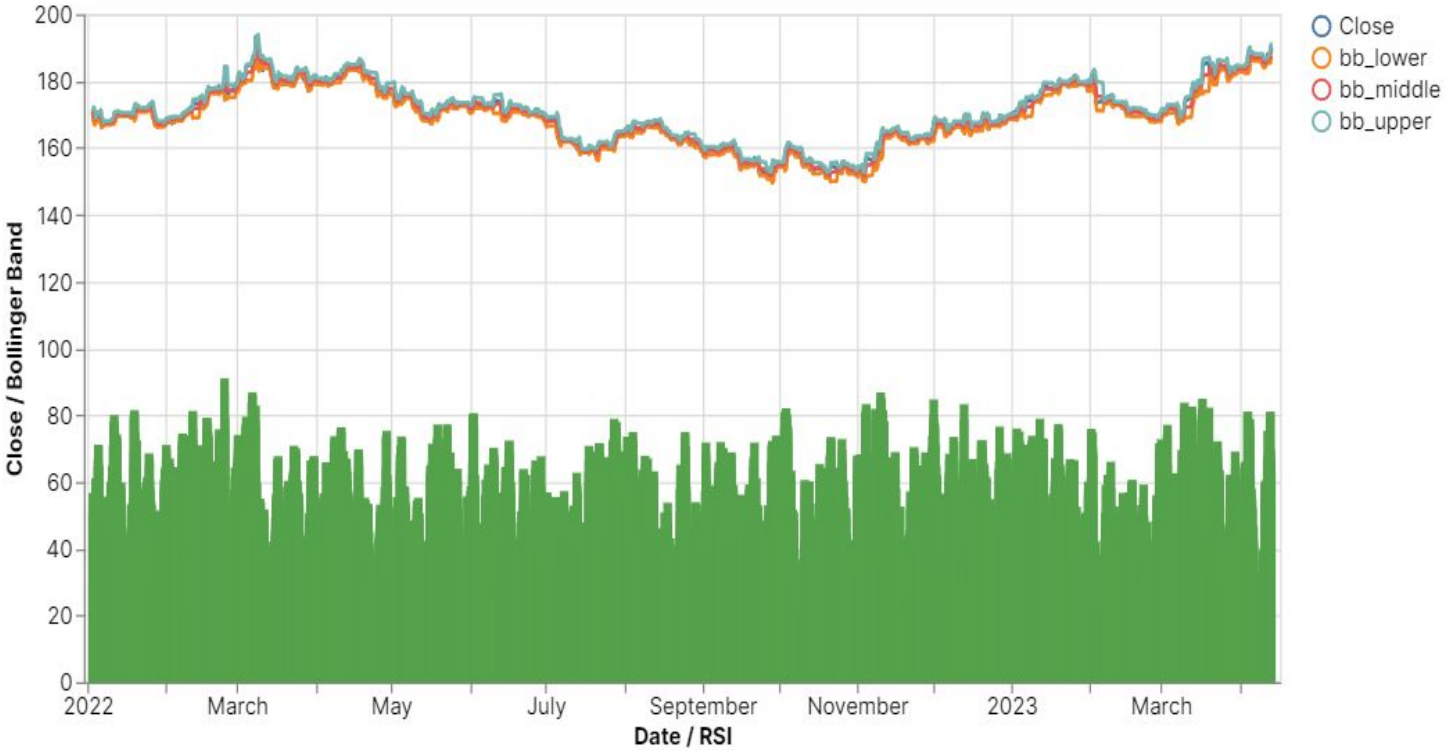
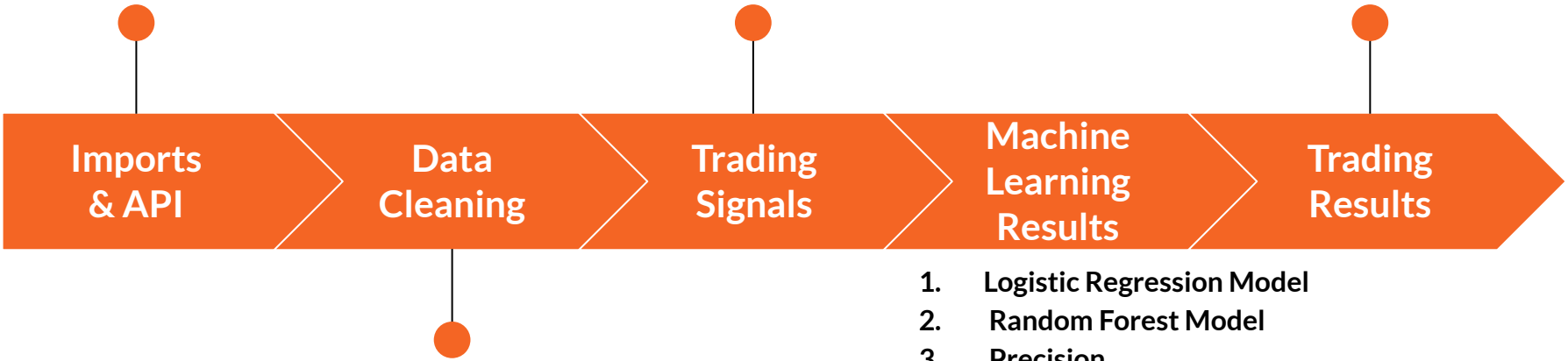

Portfolio Value over Time
Portfolio Value
135000
130000
125000
120000
115000
110000
105000
100000
2016
2017
2018
2019
2020
2021
2022
2023
Date


Stock Price with Bollinger Bands and Stop Loss Line
Close
Stop Loss
Upper Bollinger Band
Middle Bollinger Band
Lower Bollinger Band
Stock Price
200
180
160
140
120
100
2016
2017
2018
2019
2020
2021
2022
2023
Date

Trades!


Close
bb_lower
bb_middle
bb_upper
Close / Bollinger Band
200
180
160
140
120
100
80
60
40
20
0
2022
March
May
July
September
November
2023
March
Date / RSI

GOLD Graph!



- Pandas, Numpy
- Finta, Sklearn
- Alpaca_trade_api
- IPython

- Def (get_stock_data)
- Matching to Finta library Parameters
- Bollinger Bands
- RSI

- Trading Parameters in Data
- ATR(Average True Range)

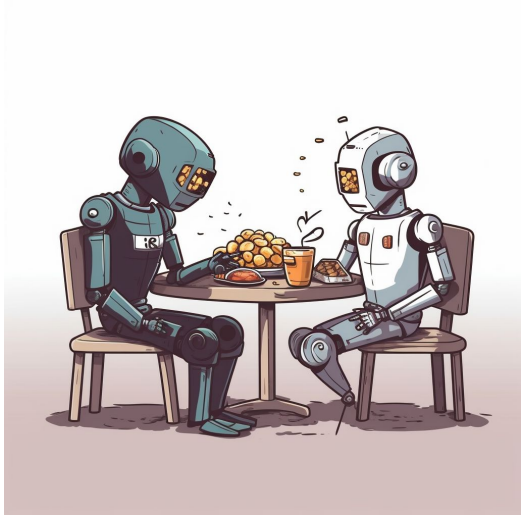
1. Logistic Regression Model
2. Random Forest Model
3. Precision
4. Recall
5. F1-score
6. Support
7. Accuracy
8. Macro Avg
9. Weighted Avg

- Portfolio Value
- Portfolio Profit
- Total Returns
- Annualized Returns
- Trade Win Rate

Executive Summary

- This project aims to develop a trading strategy that uses technical analysis and risk management to identify potentially undervalued stocks and generate buy signals.
- The strategy employs Bollinger Bands and Relative Strength Index (RSI) as indicators to generate buy signals and Average True Range (ATR) to set a trailing stop loss. The objective is to evaluate the effectiveness of the trading strategy and to identify potential improvements with Machine Learning Models

Trading Bot, Fintech, and Machine Learning.



- This project relates to fintech and machine learning by leveraging technical analysis to develop a trading strategy and using machine learning algorithms to evaluate its effectiveness.
- The project uses Python programming language and several libraries to collect and analyze data and train models.
- The project uses two machine learning models, namely Logistic Regression and Random Forest, to evaluate the trading Strategy's effectiveness. In the context of this project, using both models allows for a comparison of their performance and can provide insights into the strengths and weaknesses of each model.

Data Preparation

- The source of data for this project is the Alpaca API, which provides historical stock data for the specified ticker. We chose this data source because it is reliable and provides up-to-date data that can be used for trading purposes.
- Next, the necessary technical indicators (Bollinger Bands, RSI, and ATR) were calculated using the Finta library. These indicators were used to generate buy signals and set the trailing stop loss as part of the trading strategy.
- Finally, the data was split into training and testing sets using the train_test_split function from scikit-learn. The training set was used to fit the machine learning models (Logistic Regression and Random Forest), while the testing set was used to evaluate the performance of the models.

DEMO!

The approach that your group took to achieve the project goals.

- Include any relevant code or demonstrations of the machine learning model.
- Describe the techniques that you used to evaluate the performance of the model.
- **Discuss any unanticipated insights or problems that arose and how you resolved them.**

Result & Conclusion

Team Goal:

To create a Trading bot and measure results…

Half win, created analysis on stock trading strategies.

Whats next for Trading Bot ?

1. Antonio
2. Ezra
3. Mike