



EXPERIMENTATION BY TRADING STRATEGIST

Saskia Adler

Day Trading with ChatGPT

Test the Power of AI for Stock Market Predictions

Saskia Adler

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www.gitforgits.com

support@gitforgits.com

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Summary

Preface

'Day Trading with ChatGPT' is an experimentation guide that explores how the powerful AI language model ChatGPT can be utilized for day trading signals in the stock market. This pioneering book aims to give readers a hands-on experience and a comprehensive understanding of how to experiment with ChatGPT for better decision-making before considering it a trading tool.

The author takes a critical approach, emphasizing the strengths and limitations of using ChatGPT in trading. As you journey through the pages, you'll discover the AI's impressive abilities to analyze historical data, address financial prompts, and offer decision-making input while acknowledging the potential pitfalls of relying solely on AI-driven analysis.

The book's objective is not to advocate for ChatGPT as the ultimate trading solution but to objectively examine its potential and limitations in the financial world. The author subtly highlights their skepticism, encouraging readers to approach the technology with a discerning eye and always to corroborate AI-generated insights with their research and expertise.

In this book you will learn how to:

Discover how ChatGPT can analyze historical data for trading insights. Learn to leverage ChatGPT's ability to address financial prompts. Enhance decision-making with AI-driven input in day trading. Understand the importance of combining AI with human expertise.

Explore the benefits and limitations of AI in financial analysis.

Master the use of technical indicators with ChatGPT's guidance.

Develop a critical approach to AI-generated trading insights.

Improve your trading strategies by incorporating AI tools.

Gain a comprehensive understanding of ChatGPT's capabilities.

Learn to navigate the financial world with AI-assisted decision-making.

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Prerequisites

This book is advised for everyone to read, for everyone who wants to make quick analysis of stock trading, and who dont wish to subscribe analytical platforms for stock analysis. This book can also be enjoyed by all those who are under a dilemma if ChatGPT can really do intelligent analysis on stocks and make predictions.

Codes Usage

Are you in need of some helpful code examples to assist you in your programming and documentation? Look no further! Our book offers a wealth of supplemental material, including code examples and exercises.

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We are happy to assist and clarify any concerns.

Acknowledgement

I owe a tremendous debt of gratitude to GitforGits, for their unflagging enthusiasm and wise counsel throughout the entire process of writing this book. Their knowledge and careful editing helped make sure the piece was useful for people of all reading levels and comprehension skills. In addition, I'd like to thank everyone involved in the publishing process for their efforts in making this book a reality. Their efforts, from copyediting to advertising, made the project what it is today.

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Chapter 1: Power of AI in Stock Market Predictions

A Layman's Introduction to AI

In the modern, rapidly evolving world we live in, Artificial Intelligence (AI) has brought about a transformative shift across numerous industries and domains, spanning from healthcare, entertainment, and education to the financial sector. One particular area where AI has made a substantial mark is in the field of stock market forecasting. To appreciate the potential benefits of AI in facilitating well-informed decision-making for day traders, it is crucial to first gain a fundamental understanding of AI and its various applications.

Artificial Intelligence is a subfield of computer science that aims to create machines and systems capable of performing tasks that would typically require human intelligence. These tasks encompass problem-solving, learning, perception, language understanding, and decision-making, among others. Machine learning, a subset of AI, involves the development of algorithms and models that allow computers to learn from and interpret data without explicit programming. This ability to learn and adapt makes AI a powerful tool for a wide range of applications.

In the context of the stock market, AI has demonstrated remarkable potential in helping investors and traders navigate the complexities of financial markets. Stock market prediction is an inherently challenging task due to the vast number of factors influencing stock prices, including market sentiment, political events, economic indicators, and company performance. Consequently, traditional analytical methods often struggle to account for these intricate relationships and the sheer volume of data. By leveraging AI and machine learning, advanced algorithms can process

and analyze enormous quantities of data at unprecedented speeds, identifying patterns and trends that may be indicative of future market movements. These sophisticated models can aid investors and traders in making more informed decisions, potentially leading to improved returns on investment and reduced risks.

Stock Market Predictions until now by Humans

For decades, humans have tried to predict the movements of the stock market using various tools and techniques. These techniques can be broadly categorized into two approaches: fundamental analysis and technical analysis.

Fundamental analysis involves the assessment of a company's financial health, industry position, and overall market conditions to determine the intrinsic value of a stock. Analysts look at factors such as earnings, revenue, debt levels, and management quality to gauge the company's future growth prospects. If the stock's intrinsic value is higher than its current market price, it may be considered undervalued and a potential buying opportunity.

Technical analysis, on the other hand, is based on the belief that historical price movements can provide insights into future trends. Technical analysts study price charts, patterns, and various technical indicators such as moving averages, relative strength index (RSI), and Bollinger Bands to identify potential buying or selling signals. These techniques are based on the assumption that history tends to repeat itself, and that by analyzing past price action, one can predict future market movements.

Human Limitations in Stock Market Predictions

While human analysts can provide valuable insights into the stock market, there are several limitations to their abilities:

Cognitive biases: Humans are susceptible to various cognitive biases that can impact their decision-making process, such as confirmation bias, anchoring bias, and overconfidence.

Information overload: The sheer volume of data available in the stock market can be overwhelming for human analysts, making it difficult to process and analyze all the relevant information.

Time constraints: Analyzing stocks requires a significant amount of time and effort, which can be challenging for individual investors who may have other commitments.

Emotional influence: Emotions can play a significant role in investment decisions, often leading to impulsive or irrational choices that can result in suboptimal outcomes.

How AI Contributes to Stock Market Predictions

AI has the potential to overcome many of the limitations faced by human analysts, offering several advantages in stock market predictions:

Speed and efficiency: AI algorithms can process and analyze vast amounts of data in a fraction of the time it would take a human analyst. This

enables them to quickly identify patterns and trends, allowing investors to make more informed decisions.

Emotion-free decision-making: AI systems are not influenced by emotions, allowing them to make objective decisions based on the available data.

Adaptability and learning: AI systems can adapt to new information and continuously learn from it, improving their predictions over time. As more data becomes available, the AI's understanding of the market deepens, resulting in more accurate forecasts.

Combining multiple techniques: AI can integrate various techniques, such as technical and fundamental analysis, into a single predictive model. This combination allows for a more comprehensive understanding of the market, leading to better predictions.

Customization and personalization: AI algorithms can be tailored to individual investors' preferences and risk tolerance, providing personalized trading strategies and recommendations.

To sum it up, the advent of AI has transformed the landscape of stock market predictions, providing a faster, more efficient, and emotion-free approach to decision-making. While human analysts still play an essential role in the investment process, AI systems like ChatGPT can complement their expertise by quickly analyzing vast amounts of data and generating more accurate predictions. As we progress through this book, we will explore how to harness the power of ChatGPT for day trading by collecting historical stock data, understanding the importance of various

data fields, and defining appropriate prompts for the AI system. By the end of each chapter, you will be equipped with the knowledge to execute specific technical analyses and make informed trading decisions based on the AI-generated predictions.

Prompt Engineering in ChatGPT for Stock Market Predictions

Prompt engineering is an essential aspect of utilizing the capabilities of ChatGPT for stock market predictions effectively. The art of meticulously designing prompts allows users to tap into the wealth of knowledge and insights available within the AI system, providing valuable guidance and actionable stock recommendations. This process empowers not only technical experts but also those with little technical background to make informed decisions in the realm of trading, potentially leading to profits in their investments.

Developing the skill of prompt engineering enables users to ask the right questions and frame them in a way that elicits the most accurate and relevant responses from ChatGPT. This can involve an iterative process of refining prompts, experimenting with different phrasings, and learning from the AI's responses to achieve the desired level of detail and precision in the extracted information. As a result, the user can gain a deeper understanding of market trends, risks, and opportunities, as well as evaluate the performance of specific stocks based on historical data, financial statements, and other relevant factors. By applying these insights, users can create well-informed investment strategies, manage their portfolios more effectively, and potentially increase their returns.

<u>Understanding Prompts and Their Role in ChatGPT</u>

In the context of AI language models like ChatGPT, prompts are inputs provided by the user in the form of text or questions that guide the model's response. The quality of the output generated by ChatGPT depends heavily on the quality of the input prompts. This is because AI models like ChatGPT are designed to understand and respond to natural language queries, using the input prompt as a reference to generate contextually relevant and useful information.

Importance of Prompt Engineering

Prompt engineering is the process of designing and refining input prompts to elicit the desired response from an AI model. Effective prompt engineering is essential for the following reasons:

Relevance and accuracy: Well-crafted prompts can help ensure that the responses generated by ChatGPT are relevant, accurate, and specific to the user's needs. This is particularly important when dealing with complex topics like stock market predictions, where precision and context are vital.

Efficiency: By providing clear and concise prompts, users can obtain useful information from ChatGPT in a timely manner, reducing the need for multiple iterations and interactions with the AI system.

Accessibility: Thoughtfully designed prompts can make AI-generated insights accessible to non-technical individuals, allowing them to leverage the power of ChatGPT without requiring extensive domain knowledge or technical expertise.

Creating Insightful Prompts for Stock Market Predictions

To get the most out of ChatGPT for stock market predictions, users should focus on creating prompts that are both informative and insightful. Following are my personal suggestions and proven methods to help you craft effective prompts:

Be specific: When crafting prompts, focus on providing specific details, such as the stock's ticker symbol, the time frame of interest, and the type of analysis you want ChatGPT to perform. This will help the AI model generate more accurate and targeted predictions.

Example: "Analyze the 3-month price history of XYZ stock using the Relative Strength Index (RSI) and provide potential buy and sell signals."

Use clear language: Ensure that your prompts are clear and easy to understand, avoiding any ambiguity that may lead to confusing or irrelevant responses from ChatGPT.

Example: "Explain the relationship between the moving averages and the current price of XYZ stock over the last month, and provide a short-term price prediction."

Provide context: Offer contextual information when necessary, such as relevant news or events that may impact the stock's performance. This can help ChatGPT incorporate relevant factors into its analysis and predictions.

Example: "Considering the recent earnings report and increased demand for ABC stock, how do you expect the stock price to perform in the next two weeks?"

Encourage elaboration: Frame your prompts in a way that encourages ChatGPT to provide detailed explanations and insights, rather than just a simple answer.

Example: "Based on the technical indicators, such as the MACD and RSI, describe the overall trend of XYZ stock and explain the reasons behind your prediction."

Prompt engineering is a critical aspect of using ChatGPT effectively for stock market predictions. By crafting informative and insightful prompts, users can extract valuable stock tips and insights from the AI model, enabling non-technical individuals to make informed trading decisions and potentially profit from the market.

Summary

This chapter introduced AI concepts in simple terms and explored the significance of prompt engineering in extracting valuable insights from ChatGPT. This chapter begins explaining AI in layman's terms, traditional human methods of stock market predictions, their limitations, and the advantages AI brings to the table. AI systems like ChatGPT offer speed, efficiency, emotion-free decision-making, adaptability, and the ability to combine multiple techniques for more accurate predictions.

Next, the importance of prompt engineering in ChatGPT was discussed. Prompt engineering is crucial for generating relevant, accurate, and contextually useful information from the AI model. Effective prompts ensure efficient interaction with ChatGPT, making AI-generated insights accessible to non-technical individuals. Guidelines for crafting effective prompts were provided, emphasizing the need for specificity, clarity, context, and encouraging elaboration.

Chapter 2: Collecting and Analyzing Historical Stock Data

Importance of Historical Data in Day Trading

Historical data plays a vital role in day trading, as it serves as the foundation for various analytical techniques and decision-making processes. In essence, historical data is a record of past stock prices and trading volumes, which traders use to identify patterns and trends that can inform their future trading decisions. This chapter will explore the importance of historical data in day trading and provide examples to demonstrate how it can be used effectively for making accurate predictions.

Basis for Technical Analysis

Technical analysis is a widely used approach in day trading that relies heavily on historical data. By examining past price movements and trading volumes, technical analysts aim to identify patterns and trends that may repeat in the future. These patterns can be used to generate buy or sell signals, helping traders capitalize on potential market opportunities.

For example, a trader might analyze a stock's historical price chart to identify support and resistance levels, which are price points where buying or selling pressure tends to reverse. If the stock's price approaches a support level, the trader may consider it a buying opportunity, anticipating that the price will bounce back up. Conversely, if the price nears a resistance level, the trader may consider selling, expecting the price to fall.

Quantifying Market Sentiment

Historical data can also help traders understand the prevailing market sentiment, which is crucial for making informed decisions. By examining price and volume trends over time, traders can gauge investor sentiment and determine whether the market is bullish (optimistic) or bearish (pessimistic).

For instance, if a stock's price has been consistently rising on high trading volume, it may indicate strong demand and bullish sentiment. On the other hand, if the price has been falling on high volume, it could signal bearish sentiment and a potential downtrend.

Establishing Benchmarks and Performance Metrics

Historical data is crucial for setting benchmarks and evaluating the performance of trading strategies. By comparing the outcomes of various strategies against historical data, traders can determine which approaches have been most successful in the past and fine-tune their techniques for better results in the future.

For example, a trader might backtest a moving average crossover strategy by analyzing how it would have performed on a specific stock's historical price data. If the strategy consistently generated positive returns, the trader may consider implementing it in their current trading plan.

Enhancing Predictive Models

Historical data serves as the foundation for various predictive models used in day trading, including machine learning algorithms and AI systems like ChatGPT. By feeding historical data into these models, traders can train them to recognize patterns and generate forecasts based on past trends.

For instance, a trader might input a stock's historical price data into a machine learning model to predict future price movements based on factors such as moving averages, RSI, and MACD. The model's predictions can then be used to inform the trader's decision-making process, potentially leading to more profitable trades.

Just to summarize, historical data plays a crucial role in day trading, serving as the foundation for technical analysis, quantifying market sentiment, establishing benchmarks, and enhancing predictive models. By leveraging historical data effectively, traders can make more informed decisions and potentially generate profits in the stock market. In the subsequent sections and further chapters, we will explore how to collect and analyze historical stock data, as well as how to use ChatGPT to generate insightful predictions based on this data.

Downloading Historical Stock Data from Yahoo Finance

To download historical stock data from Yahoo Finance, follow the steps below:

Visit Yahoo Finance

Go to the Yahoo Finance website at https://finance.yahoo.com/.

Search for the Stock

Type the stock's ticker symbol or company name into the search bar and press Enter. In this case, search for "Alphabet Inc" or the ticker symbol "GOOGL" (for Alphabet Inc. Class A shares).

Navigate to Historical Data tab

Once the stock's summary page has loaded, click on the "Historical Data" tab, located in the menu near the top of the page.

Set the Time Range

Under the "Date Range" section, click on the date boxes and choose the desired start and end dates for your data. In this case, set the start date to April 1, 2022, and the end date to March 31, 2023.

Choose the Frequency

Below the "Date Range" section, you'll find the "Frequency" options. Click the dropdown menu and select the desired frequency for the data: daily, weekly, or monthly.

Apply Settings and Download the Data

Click the "Apply" button to update the data displayed on the page according to your selected settings. Once the data has been updated, click the "Download" button, located near the top-right corner of the page, to download the historical data as a CSV (Comma Separated Values) file.

By following the steps outlined above, you can download historical data for Alphabet Inc. with different frequencies. Ensure that the date range is set from April 1, 2022, to March 31, 2023, and then proceed to select the desired frequency as follows:

Ready Steps for Downloading Daily Historical Data

Select the "Daily" option from the "Frequency" dropdown menu, click "Apply," and then click "Download" to obtain daily historical data for Alphabet Inc. within the specified date range.

Ready Steps for Downloading Weekly Historical Data

Select the "Weekly" option from the "Frequency" dropdown menu, click "Apply," and then click "Download" to obtain weekly historical data for

Alphabet Inc. within the specified date range.

Ready Steps for Downloading Monthly Historical Data

Select the "Monthly" option from the "Frequency" dropdown menu, click "Apply," and then click "Download" to obtain monthly historical data for Alphabet Inc. within the specified date range.

Once you have downloaded the historical data, you can open the CSV file using a spreadsheet software like Microsoft Excel or Google Sheets to analyze the data and use it for your trading strategy or as input for ChatGPT to generate stock predictions.

Reviewing the Downloaded Historical Data

When you download historical stock data from Yahoo Finance, you'll typically find the following columns in the CSV file. Each column represents a different aspect of the stock's performance on a particular day, week, or month, depending on the chosen frequency.

Date: This column shows the date for the corresponding data. For daily data, it represents the trading day, while for weekly and monthly data, it usually shows the last trading day of the week or month.

Open: The "Open" column represents the opening price of the stock for that specific period. This is the price at which the first trade occurred when the market opened. High: The "High" column indicates the highest price at which the stock traded during the specified period. It is the maximum price investors were willing to pay for the stock during that time frame.

Low: The "Low" column shows the lowest price at which the stock traded during the specified period. It is the minimum price investors were willing to sell the stock during that time frame.

Close: The "Close" column represents the closing price of the stock for the specified period. This is the price at which the last trade occurred before the market closed. Note that this is the "Close" price, not the "Adjusted Close" price, which accounts for events such as stock splits and dividends.

Adj Close: The "Adj Close" (Adjusted Close) column shows the closing price adjusted for corporate actions such as stock splits, dividends, and new stock offerings. This column provides a more accurate reflection of the stock's value over time, as it accounts for changes that impact the stock's price directly.

Volume: The "Volume" column indicates the total number of shares that were traded during the specified period. It is a measure of the stock's liquidity and trading activity.

Understanding the meaning of each column is crucial for analyzing the historical data effectively. You can use this information to identify trends, calculate technical indicators, and evaluate the stock's performance over time. Additionally, you can input this data into AI models like ChatGPT to generate stock predictions and make informed trading decisions.

Uploading Historical Data to GitHub

Creating a GitHub account, uploading files, and using file links in ChatGPT is a straightforward process. Following is a step-by-step walkthrough to help you accomplish this:

Create a GitHub Account

Visit the GitHub website at https://github.com/.

Click the "Sign up" button in the top-right corner of the page.

Enter your desired username, email address, and a strong password.

Complete the security challenge by following the on-screen instructions.

Click the "Create account" button.

Follow the prompts to complete your profile and preferences. You can skip these steps if you prefer.

Verify your email address by clicking the link sent to your inbox.

Create a New GitHub Repository

Log in to your GitHub account.

Click the "+" icon in the top-right corner of the page and select "New repository."

Enter a repository name, such as "database-repository."

Choose whether you want the repository to be public (accessible to everyone) or private (accessible only to you and collaborators).

You can initialize the repository with a README file by checking the "Add a README file" option. This file serves as a description of your repository.

Click the "Create repository" button.

<u>Upload Files to the Repository</u>

Navigate to your newly created repository.

Click the "Add file" button and select "Upload files."

Drag and drop your CSV files (google_stockprice_daily.csv, google_stockprice_weekly.csv, and google_stockprice_monthly.csv) or click "choose your files" to select the files from your computer.

Enter a brief description of your changes in the "Commit changes" section.

Click the "Commit changes" button to upload the files.

Obtain the Raw File Links

In your repository, click on the file you want to get the link for (e.g., google stockprice daily.csv).

Click the "Download" button or the "Raw" button. The file will open in a new browser window or tab.

Copy the URL from the address bar. This is the raw file link you can use in ChatGPT.

Following are the raw file links for your uploaded files:

Daily data:

https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv

Weekly data:

https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_weekly.csv

Monthly data:

https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_monthly.csv

Use File Links in ChatGPT

To use these file links in ChatGPT, you can simply provide the URL as part of your prompt or message. For example:

"Using the daily historical data of Alphabet Inc. from the following link, please predict the stock's performance for the next week:

ChatGPT will then access the data from the provided link and generate a response based on your request.

Summary

In this chapter, we discussed the importance of historical stock data in day trading and how it forms the basis for technical analysis, quantifying market sentiment, establishing benchmarks, and enhancing predictive models. We then explored how to download historical data from Yahoo Finance, specifically daily, weekly, and monthly data for Alphabet Inc. from April 1, 2022, to March 31, 2023.

After downloading the data, we explained the meaning of each column in the historical data CSV file, including Date, Open, High, Low, Close, Adj Close, and Volume. This information is essential for analyzing the data and using it for trading strategies or inputting it into AI models like ChatGPT. Finally, we provided step-by-step instructions on how to create a GitHub account, upload files to a new repository, and obtain raw file links for the uploaded files. These file links can be used as input for ChatGPT, allowing the AI model to access the data and generate stock predictions based on the provided information.

Chapter 3: Moving Averages (SMA & EMA) with ChatGPT

Moving Averages and Their Types

Moving averages are widely used technical indicators in stock market analysis that help traders identify trends and make informed decisions. They provide a smoothed representation of a stock's price over a specified period, eliminating short-term fluctuations and highlighting the underlying trend. This chapter will explore the concept of moving averages, their different types, such as Simple Moving Average (SMA), Exponential Moving Average (EMA), and the popular 50-day and 200-day moving averages.

Concept of Moving Averages

A moving average is calculated by taking the average price of a stock over a specific number of periods (e.g., days, weeks, or months). By continuously updating the average as new data points become available, the moving average "moves" along the price chart, providing a clear visual representation of the stock's trend. Moving averages can be used to generate buy and sell signals, determine support and resistance levels, and identify trend reversals.

Simple Moving Average (SMA)

The Simple Moving Average (SMA) is the most basic type of moving average. It is calculated by adding the stock's closing prices over a specified number of periods and dividing the sum by the total number of periods. The formula for an n-period SMA is:

$$SMA = (P1 + P2 + ... + Pn) / n$$

Where P1, P2, ..., Pn are the closing prices for each period, and n is the number of periods.

For example, a 10-day SMA is calculated by adding the closing prices of the last 10 days and dividing the sum by 10. The SMA is useful for identifying general trends but may lag behind actual price movements due to its simple calculation.

Exponential Moving Average (EMA)

The Exponential Moving Average (EMA) is a more advanced type of moving average that assigns greater weight to the most recent data points, making it more responsive to recent price changes. The EMA is calculated using a smoothing factor, which depends on the length of the moving average. The formula for an n-period EMA is:

$$EMA = (Close - Previous EMA) * (2 / (n + 1)) + Previous EMA$$

Where Close is the current closing price, Previous EMA is the EMA of the previous period, and n is the number of periods.

The EMA reacts more quickly to price changes than the SMA, making it better suited for identifying short-term trends and potential entry and exit points.

50-Day and 200-Day Moving Averages

The 50-day and 200-day moving averages are popularly used by traders to analyze stock trends and make trading decisions. The 50-day moving average represents the intermediate-term trend, while the 200-day moving average indicates the long-term trend.

When the 50-day moving average crosses above the 200-day moving average, it generates a "golden cross" signal, suggesting a bullish trend and a potential buying opportunity. Conversely, when the 50-day moving average crosses below the 200-day moving average, it forms a "death cross" signal, indicating a bearish trend and a potential selling opportunity.

To sum it up, moving averages are essential technical analysis tools that help traders identify trends and make informed decisions. Understanding the different types of moving averages, such as SMA, EMA, and the 50-day and 200-day moving averages, can greatly enhance a trader's ability to analyze stock trends and make profitable trades. In the subsequent chapters, we will explore how to use these moving averages with ChatGPT to generate insightful stock predictions.

Engineering Prompts for SMA, EMA, 50 DEMA and 200 DEMA

To use ChatGPT for generating insights and predictions based on Simple Moving Average (SMA), Exponential Moving Average (EMA), 50-day Moving Average (50 DEMA), and 200-day Moving Average (200 DEMA), you need to craft specific prompts that convey your requirements clearly.

Following are some examples of prompts for each type of moving average:

Prompts for SMA

"Using the historical stock data from the following link, calculate the 20-day Simple Moving Average for Alphabet Inc. and identify any potential buy or sell signals: [data link]"

"Please analyze the 10-day and 30-day Simple Moving Averages for Alphabet Inc. using the provided data and suggest if the stock is in an uptrend or downtrend: [data_link]"

Prompts for EMA

"Based on the historical data available here [data_link], compute the 12-day Exponential Moving Average for Alphabet Inc. and identify any recent crossovers with the 26-day EMA that may indicate a potential trading opportunity."

"Using the stock data at this link [data_link], compare the 5-day and 15-day Exponential Moving Averages for Alphabet Inc. and determine if there are any potential entry or exit points."

Prompts for 50 DEMA

"Analyze the 50-day Moving Average for Alphabet Inc. using the historical data at the following link [data_link] and determine if the stock is currently above or below this average."

"Please examine the recent price action of Alphabet Inc. in relation to its 50-day Moving Average using this data [data_link] and indicate if there are any potential support or resistance levels."

Prompts for 200 DEMA

"Utilizing the data provided here [data_link], assess the long-term trend of Alphabet Inc. by examining its 200-day Moving Average and suggest if the stock is in a bullish or bearish phase."

"Evaluate the relationship between the 50-day and 200-day Moving Averages for Alphabet Inc. using the historical data from this link [data link] and identify any recent 'golden cross' or 'death cross' signals."

Do not forget to replace [data_link] with the actual URL of the historical stock data you want ChatGPT to use. Let me give you a demonstration of how prompt should appear using your historical data file URL.

Predicting Moving Averages with ChatGPT

Following are the revised prompts with the specified data link and some example responses that ChatGPT might generate:

Sample Prompt: SMA

"Using the historical stock data from the following link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, calculate the 20-day Simple Moving Average for Alphabet Inc. and identify any potential buy or sell signals."

ChatGPT Response:

"After analyzing the 20-day Simple Moving Average for Alphabet Inc., it appears that the stock recently crossed above the moving average, which may indicate a potential buying opportunity. However, it's important to consider other technical indicators and market conditions before making any trading decisions."

Sample Prompt: EMA

"Based on the historical data available here https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, compute the 12-day Exponential Moving Average for Alphabet Inc. and identify any recent

crossovers with the 26-day EMA that may indicate a potential trading opportunity."

ChatGPT Response:

"Upon analyzing the 12-day and 26-day Exponential Moving Averages for Alphabet Inc., there was a recent bullish crossover where the 12-day EMA moved above the 26-day EMA. This could suggest a potential buying opportunity. However, it's essential to analyze other technical indicators and market factors before making a decision."

Sample Prompt: 50 DEMA

"Analyze the 50-day Moving Average for Alphabet Inc. using the historical data at the following link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv and determine if the stock is currently above or below this average."

ChatGPT Response:

"After examining the 50-day Moving Average for Alphabet Inc., the stock is currently trading above the average. This may indicate a bullish trend in the short term. Keep in mind that other factors, such as market sentiment and technical indicators, should also be considered when making trading decisions."

Sample Prompt: 200 DEMA

"Evaluate the relationship between the 50-day and 200-day Moving Averages for Alphabet Inc. using the historical data from this link

https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv and identify any recent 'golden cross' or 'death cross' signals."

ChatGPT Response:

"Upon analyzing the historical data for Alphabet Inc., it appears that the 50-day Moving Average recently crossed above the 200-day Moving Average, forming a 'golden cross' signal. This may suggest a bullish trend and a potential buying opportunity. However, it's important to take other technical indicators and market conditions into account before making any investment decisions."

Overall, Upon analyzing the different moving averages, ChatGPT indicated that Alphabet Inc. appears to be in a bullish trend across multiple time frames. The stock is trading above the 50-day Moving Average and recently experienced a 'golden cross' signal, where the 50-day Moving Average crossed above the 200-day Moving Average. Considering the insights generated by ChatGPT based on various moving averages, it seems that you as a trader might adopt a bullish stance on Alphabet stock.

Summary

This chapter focused on understanding moving averages and their types, including Simple Moving Average (SMA), Exponential Moving Average (EMA), 50-day Moving Average (50 DEMA), and 200-day Moving Average (200 DEMA). We discussed the concept of moving averages, which smooth out a stock's price over a specified period, helping traders identify trends and make informed decisions.

We described the calculation and usage of SMA and EMA, highlighting the differences between them. While SMA is a straightforward average of stock prices over a given number of periods, EMA assigns greater weight to more recent data points, making it more responsive to price changes. We also introduced the popular 50-day and 200-day moving averages, often used by traders to analyze stock trends and make trading decisions.

Next, we provided examples of prompts that could be used with ChatGPT for analyzing and generating insights based on various moving averages. These prompts covered the calculation and analysis of SMA, EMA, 50 DEMA, and 200 DEMA using Alphabet Inc.'s historical stock data. We replaced the placeholder [data_link] with a specific data link and illustrated how ChatGPT might execute the prompts, providing insights into the stock's trends and potential trading opportunities.

Finally, we summarized ChatGPT's responses to the example prompts and concluded that Alphabet Inc. appears to be in a bullish trend across multiple time frames. However, we also emphasized the importance of

considering other technical indicators and market conditions before making any investment decisions.

Chapter 4: Relative Strength Index (RSI) with ChatGPT

Relative Strength Index (RSI)

The Relative Strength Index (RSI) is a popular momentum oscillator used in technical analysis to measure the speed and change of price movements. Developed by J. Welles Wilder Jr., RSI helps traders identify potential overbought or oversold conditions in a stock, generating buy and sell signals that can be crucial for successful day trading. This chapter will explore the concept of RSI and its importance for day traders.

Concept of Relative Strength Index

RSI is a momentum indicator that oscillates between 0 and 100, providing insights into the strength of a stock's price movement over a specified period. The index is calculated based on the average gains and losses of the stock over a certain number of periods, typically 14 days. RSI helps traders evaluate the momentum behind price movements, identify potential trend reversals, and determine entry and exit points.

The RSI formula is as follows:

$$RSI = 100 - (100 / (1 + RS))$$

Where RS (Relative Strength) is the average gain over a specified period divided by the average loss over the same period.

Overbought and Oversold Conditions

The RSI is commonly used to identify overbought and oversold market conditions. An overbought condition occurs when the stock's price has risen significantly in a short period, potentially leading to a short-term reversal or pullback. An RSI value above 70 is typically considered overbought.

Conversely, an oversold condition occurs when the stock's price has declined significantly in a short period, potentially indicating a short-term reversal or a bounce. An RSI value below 30 is generally considered oversold.

It is important to note that these thresholds are not absolute, and different market conditions or stocks may require adjustments to these levels.

Importance of RSI in Day Trading

For day traders, the RSI is a valuable tool that can help identify potential trading opportunities based on changes in a stock's momentum. By analyzing overbought and oversold conditions, traders can determine the best entry and exit points for their trades, capitalizing on short-term price fluctuations.

RSI is also useful for identifying divergences between price and momentum. A bullish divergence occurs when the stock's price forms a lower low, but the RSI forms a higher low, indicating a potential reversal to the upside. Conversely, a bearish divergence occurs when the stock's price forms a higher high, but the RSI forms a lower high, signaling a potential reversal to the downside.

Combining RSI with Other Technical Indicators

While RSI can provide valuable insights on its own, it is most effective when used in conjunction with other technical indicators. Combining RSI with moving averages, support and resistance levels, or trend lines can help traders gain a more comprehensive understanding of the market and improve their decision-making process. The Relative Strength Index (RSI) is a vital momentum oscillator that helps day traders identify potential overbought and oversold conditions, enabling them to make informed trading decisions. By understanding the concept of RSI and incorporating it into their trading strategies, day traders can enhance their ability to capitalize on short-term price fluctuations and generate profits.

In the subsequent chapters, we will explore how to use RSI with ChatGPT to generate insightful stock predictions.

Prompt Engineering for RSI

To use ChatGPT for generating insights and predictions based on the Relative Strength Index (RSI), you need to craft specific prompts that convey your requirements clearly.

The given below are some examples of prompts for RSI:

Prompts for Identifying Overbought and Oversold Conditions

"Analyze the historical stock data of Alphabet Inc. from the following link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and calculate the 14-day RSI. Identify any recent overbought or oversold conditions."

"Using the provided stock data for Alphabet Inc. at this link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, determine if the stock is currently in an overbought or oversold territory based on the 14-day RSI."

Prompts for Detecting Divergences

"Examine the historical data of Alphabet Inc. available here: https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and identify any recent bullish or bearish divergences between the stock's price and the 14-day RSI."

"Analyze Alphabet Inc.'s stock data from this link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv to spot any RSI divergences that may suggest a potential trend reversal."

Prompts for Combining RSI with Other Technical Indicators

"Using the historical data at this link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, analyze Alphabet Inc.'s 14-day RSI in conjunction with the 50-day Moving Average to identify potential trading opportunities."

"Assess Alphabet Inc.'s stock data available here https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and combine the 14-day RSI with trend lines to determine any potential entry or exit points."

As said throughout the book, you can further refine these prompts or create new ones to suit your specific requirements.

Predicting RSI with ChatGPT

The given below are the revised prompts with some example responses that ChatGPT might generate:

Sample Prompt: Identifying Overbought and Oversold Conditions

"Analyze the historical stock data of Alphabet Inc. from the following link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and calculate the 14-day RSI. Identify any recent overbought or oversold conditions."

ChatGPT Response:

"Upon analyzing the 14-day RSI for Alphabet Inc., the stock recently reached an RSI value of 72, which indicates an overbought condition. This may suggest that the stock is due for a short-term pullback or correction. However, it is essential to consider other technical indicators and market factors before making trading decisions."

Sample Prompt: Detecting Divergences

"Examine the historical data of Alphabet Inc. available here https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and identify any recent bullish or bearish divergences between the stock's price and the 14-day RSI."

ChatGPT Response:

"After analyzing Alphabet Inc.'s historical data, I found a recent bullish divergence where the stock's price formed a lower low, while the 14-day RSI formed a higher low. This divergence may suggest a potential reversal to the upside. Nevertheless, it's important to confirm this signal with other technical indicators and market context."

Sample Prompt: Combining RSI with Other Technical Indicators

"Using the historical data at this link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, analyze Alphabet Inc.'s 14-day RSI in conjunction with the 50-day Moving Average to identify potential trading opportunities."

ChatGPT Response:

"Upon analyzing Alphabet Inc.'s historical data, the 14-day RSI is currently at 57, which is a neutral level. However, the stock is trading above its 50-day Moving Average, indicating a bullish trend. A potential trading opportunity could arise if the RSI dips into oversold territory (below 30) and subsequently rebounds, while the stock remains above the 50-day Moving Average. As always, consider other technical indicators and market conditions before making any trading decisions."

Overall, we provided examples of how ChatGPT might analyze the Relative Strength Index (RSI) for Alphabet Inc.'s stock based on different prompts. The prompts covered identifying overbought and oversold conditions, detecting divergences, and combining RSI with other technical indicators like the 50-day Moving Average.

The responses indicated that Alphabet Inc. recently reached an overbought condition, suggesting a potential short-term pullback. However, a bullish divergence was also identified, indicating a possible reversal to the upside. Furthermore, when analyzing the 14-day RSI in conjunction with the 50-day Moving Average, a bullish trend was observed.

Taking into account all the results from the prompts, the analysis seems mixed, with both bullish and bearish signals present. Therefore, a trader should carefully consider these insights along with other technical indicators and market conditions before deciding on a bullish or bearish stance on Alphabet stock.

Summary

This chapter focused on understanding the concept of the Relative Strength Index (RSI) and its importance for day trading. We explored the calculation and interpretation of RSI, which measures the speed and change of price movements and oscillates between 0 and 100. By identifying overbought and oversold conditions, as well as divergences between price and momentum, traders can make more informed decisions about potential trading opportunities.

We provided examples of RSI-related prompts that can be fed to ChatGPT, covering the identification of overbought and oversold conditions, detection of bullish and bearish divergences, and the combination of RSI with other technical indicators like moving averages. We also shared example responses that ChatGPT might generate based on these prompts.

The example responses demonstrated that Alphabet Inc.'s stock exhibited both bullish and bearish signals, with recent overbought conditions and a bullish divergence. By combining RSI with the 50-day Moving Average, a bullish trend was observed. Considering the mixed analysis, traders should carefully evaluate these insights along with other technical indicators and market conditions before deciding on a bullish or bearish stance on Alphabet stock. It is crucial to remember that these example responses are for illustrative purposes and may not accurately reflect real-time data analysis.

Chapter 5: Bollinger Bands with ChatGPT

Bollinger Bands for Day Trading

Bollinger Bands, a widely used technical analysis tool, were created by John Bollinger in the 1980s. This tool comprises three lines: a simple moving average (SMA) and two standard deviation lines situated above and below the SMA. Bollinger Bands are employed by traders to gauge market volatility, pinpoint potential trend reversals, and establish overbought and oversold market conditions. In this section, we will delve into the fundamentals of Bollinger Bands and their importance in day trading.

<u>Understanding Bollinger Bands</u>

Bollinger Bands encompass three primary lines:

Middle Band: This line represents a Simple Moving Average (SMA) of a stock's closing prices over a designated period, typically 20 days.

Upper Band: The upper band is calculated by adding a predetermined number of standard deviations, generally two, to the middle band.

Lower Band: Conversely, the lower band is derived by subtracting a predetermined number of standard deviations, typically two, from the middle band.

The bands' expansion and contraction are contingent upon the stock's volatility, as determined by the standard deviation. The bands widen

during periods of high volatility and narrow when volatility is low. By incorporating Bollinger Bands into their trading strategies, traders can effectively evaluate market conditions and make informed decisions. The tool's ability to measure volatility and identify potential trend reversals is invaluable in day trading, as it allows for timely entry and exit points. Furthermore, Bollinger Bands can help traders determine whether a particular stock is overbought or oversold, enabling them to capitalize on short-term price fluctuations.

Measuring Volatility with Bollinger Bands

Bollinger Bands provide valuable insights into a stock's volatility. When the bands are wide, it indicates that the stock is experiencing high volatility, and when the bands are narrow, it suggests low volatility. This information helps traders understand the market's behavior and anticipate potential price movements.

<u>Identifying Overbought and Oversold Conditions</u>

Bollinger Bands can help traders identify overbought and oversold conditions in the market. When the stock's price touches or exceeds the upper band, it may indicate an overbought condition, suggesting that the stock might be due for a pullback or correction. Conversely, when the stock's price touches or falls below the lower band, it may indicate an oversold condition, signaling a potential bounce or reversal.

Bollinger Band Squeezes and Breakouts

A Bollinger Band squeeze occurs when the bands narrow significantly, indicating a period of low volatility. This squeeze often precedes a

breakout or a significant price movement in either direction. By identifying Bollinger Band squeezes, traders can prepare for potential breakouts and capitalize on the subsequent price movements.

Importance of Bollinger Bands in Day Trading

For day traders, Bollinger Bands are a valuable tool to assess market conditions, anticipate potential trend reversals, and identify overbought and oversold situations. By incorporating Bollinger Bands into their trading strategies, day traders can improve their decision-making process and better gauge market volatility.

Moreover, Bollinger Bands can be combined with other technical indicators, such as the Relative Strength Index (RSI) or Moving Averages, to create a more comprehensive trading strategy. By understanding the concept of Bollinger Bands and using them effectively, day traders can enhance their ability to make informed decisions and capitalize on short-term price fluctuations.

In the subsequent chapters, we will explore how to use Bollinger Bands with ChatGPT to generate insightful stock predictions and trade recommendations.

Defining Prompts for Spotting Bollinger Bands

To generate insights and predictions based on Bollinger Bands using ChatGPT, you need to craft specific prompts that clearly convey your requirements. The given below are some examples of prompts for Bollinger Bands:

Prompts for Identifying Overbought and Oversold Conditions

"Analyze the historical stock data of Alphabet Inc. from the following link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and calculate the 20-day Bollinger Bands. Identify any recent overbought or oversold conditions."

"Using the provided stock data for Alphabet Inc. at this link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, determine if the stock is currently in an overbought or oversold territory based on the 20-day Bollinger Bands."

Prompts for Detecting Bollinger Band Squeezes and Breakouts

"Examine the historical data of Alphabet Inc. available here https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and identify any recent Bollinger Band squeezes or breakouts."

"Analyze Alphabet Inc.'s stock data from this link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv to spot any Bollinger Band squeezes that may suggest a potential breakout in the near future."

Prompts for Combining Bollinger Bands with Other Technical Indicators

"Using the historical data at this link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, analyze Alphabet Inc.'s 20-day Bollinger Bands in conjunction with the 14-day RSI to identify potential trading opportunities."

"Assess Alphabet Inc.'s stock data available here https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and combine the 20-day Bollinger Bands with the 50-day Moving Average to determine any potential entry or exit points."

Analyzing Prompt Responses on Bollinger Bands

The given below are the revised prompts with example responses that ChatGPT might generate:

Sample Prompt: Identifying Overbought and Oversold Conditions

"Analyze the historical stock data of Alphabet Inc. from the following link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and calculate the 20-day Bollinger Bands. Identify any recent overbought or oversold conditions." ChatGPT Response:

"After analyzing the 20-day Bollinger Bands for Alphabet Inc., the stock recently touched the upper band, suggesting an overbought condition. This may imply that the stock could experience a short-term pullback. However, it is essential to consider other technical indicators and market factors before making trading decisions."

Sample Prompt: Detecting Bollinger Band Squeezes and Breakouts

"Examine the historical data of Alphabet Inc. available here https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, and identify any recent Bollinger Band squeezes or breakouts."

ChatGPT Response:

"Upon reviewing the historical data of Alphabet Inc., a recent Bollinger Band squeeze was observed, indicating a period of low volatility. Shortly after the squeeze, the stock broke above the upper band, suggesting a potential bullish breakout. Traders may want to monitor this development closely and consider other technical indicators for confirmation before taking action."

Sample Prompt: Combining Bollinger Bands with Other Technical Indicators

"Using the historical data at this link https://raw.githubusercontent.com/kittenpub/database-repository/main/google_stockprice_daily.csv, analyze Alphabet Inc.'s 20-day Bollinger Bands in conjunction with the 14-day RSI to identify potential trading opportunities."

ChatGPT Response:

"After analyzing Alphabet Inc.'s 20-day Bollinger Bands and the 14-day RSI, the stock is currently trading near the middle band, while the RSI is at 56, a neutral level. A potential trading opportunity could arise if the stock's price approaches the lower Bollinger Band and the RSI simultaneously enters oversold territory (below 30). As always, consider other technical indicators and market conditions before making any trading decisions."

After analyzing the above given ChatGPT responses on bollinger bands, it indicated that Alphabet Inc.'s stock recently touched the upper Bollinger Band, suggesting an overbought condition that could lead to a short-term pullback. However, a bullish breakout was also observed after a Bollinger Band squeeze, pointing to a potential continuation of the bullish trend.

Considering the mixed results from the prompts, it is not possible to definitively conclude whether a trader should have a bullish or bearish stance on Alphabet stock. Again, traders should carefully consider these insights along with other technical indicators and market conditions before making a decision.

Summary

The chapter introduced the concept of Bollinger Bands, a popular technical analysis tool that measures volatility and helps traders identify potential trend reversals, overbought and oversold conditions, and Bollinger Band squeezes and breakouts. Bollinger Bands consist of three lines: a simple moving average (SMA) and two standard deviation lines above and below the SMA. The bands expand and contract based on the stock's volatility, with wider bands indicating higher volatility and narrower bands indicating lower volatility.

We provided examples of Bollinger Band-related prompts that can be fed to ChatGPT, covering topics such as identifying overbought and oversold conditions, detecting squeezes and breakouts, and combining Bollinger Bands with other technical indicators like the Relative Strength Index (RSI). We also shared example responses that ChatGPT might generate based on these prompts.

The example responses demonstrated that Alphabet Inc.'s stock exhibited mixed signals, with recent overbought conditions and a bullish breakout following a Bollinger Band squeeze. Given these mixed results, traders should carefully evaluate these insights along with other technical indicators and market conditions before making a decision on a bullish or bearish stance on Alphabet stock. It is crucial to remember that these example responses are for illustrative purposes and may not accurately reflect real-time data analysis.

Chapter 6: Fibonacci Retracement with ChatGPT

Understanding Fibonacci Retracement

<u>Overview</u>

Fibonacci retracement is a popular technical analysis tool used by traders to identify potential support and resistance levels in financial markets. It is based on the Fibonacci sequence, a series of numbers in which each number is the sum of the two preceding ones, starting from 0 and 1 (0, 1, 1, 2, 3, 5, 8, 13, and so on). The Fibonacci retracement tool applies certain ratios derived from the Fibonacci sequence to identify key price levels where a financial instrument, such as a stock or currency pair, may reverse or consolidate after a significant price movement.

Importance of Fibonacci Retracement

The importance of Fibonacci retracement in day trading lies in its ability to help traders predict potential reversal points in the market. These reversal points can provide opportunities for entering or exiting trades, setting stop-loss orders, and managing risk. The primary Fibonacci retracement levels are 23.6%, 38.2%, 50%, 61.8%, and 78.6%. These levels are calculated by dividing a number in the Fibonacci sequence by another number a few places ahead of it.

To apply Fibonacci retracement to a chart, traders identify a significant price movement, either an uptrend or a downtrend, and then draw horizontal lines at the calculated retracement levels. These lines represent potential support (in an uptrend) or resistance (in a downtrend) levels where the price may temporarily reverse or consolidate before continuing its original trend.

It is important to note that Fibonacci retracement is not a standalone tool and should be used in conjunction with other technical indicators and market analysis to increase its reliability. Some traders combine Fibonacci retracement levels with moving averages, trend lines, or other technical analysis tools to confirm potential reversal points and increase the probability of successful trades. By understanding and applying Fibonacci retracement levels, traders can make more informed decisions regarding entry and exit points, risk management, and trade strategy. However, it is essential to combine Fibonacci retracement with other technical analysis tools and market insights to improve its accuracy and effectiveness in predicting price reversals.

Prompt Engineering for Fibonacci Retracement

Sample Prompts on Fibonacci Retracement

The given below are some examples of prompts for Fibonacci retracement that you can feed to ChatGPT along with the provided historical stock data (weekly):

"Calculate the Fibonacci retracement levels for the Alphabet stock from its lowest point to its highest point in the given historical data."

ChatGPT Response:

"The Fibonacci retracement levels calculated for the Alphabet stock from its lowest point (\$83.45 on 2022-10-31) to its highest point (\$142.64 on 2022-03-28) are as follows: 23.6% retracement at \$97.29, 38.2% retracement at \$109.80, 50% retracement at \$113.04, and 61.8% retracement at \$116.29."

"Identify potential support and resistance levels for Alphabet stock using Fibonacci retracement from the provided data."

ChatGPT Response:

"Based on the Fibonacci retracement analysis, the potential support and resistance levels for Alphabet stock are: \$97.29 (23.6% retracement), \$109.80 (38.2% retracement), \$113.04 (50% retracement), and \$116.29 (61.8% retracement)."

"What are the key price levels to watch in the Alphabet stock based on Fibonacci retracement analysis using the historical data provided?"

ChatGPT Response:

"The key price levels to watch in the Alphabet stock based on the Fibonacci retracement analysis are: \$97.29 (23.6% retracement), \$109.80 (38.2% retracement), \$113.04 (50% retracement), and \$116.29 (61.8% retracement). These levels can serve as potential support and resistance points for the stock."

Analysis of Responses from Fibonacci Retracement Prompts

Based on the results of the Fibonacci retracement prompts, we have identified several key price levels for Alphabet stock: \$97.29 (23.6% retracement), \$109.80 (38.2% retracement), \$113.04 (50% retracement), and \$116.29 (61.8% retracement). These levels serve as potential support and resistance points for the stock.

Considering the results of these prompts, it is essential for a trader to monitor how the Alphabet stock price interacts with these key levels. If the stock price shows strength at support levels and bounces upward, it may indicate a bullish trend. Conversely, if the price struggles to surpass resistance levels and moves downward, it may signal a bearish trend. To determine whether to adopt a bullish or bearish stance on Alphabet stock, a trader should analyze the stock's behavior at these critical price levels in conjunction with other technical indicators and market insights for a more comprehensive assessment.

Summary

In Chapter 6, we discussed the concept of Fibonacci retracement and its importance in day trading. We explained that Fibonacci retracement levels are derived from the key numbers in the Fibonacci sequence, and they help identify potential support and resistance levels for a stock's price. These levels can provide valuable insights into price movements and inform trading decisions.

We then provided various examples of prompts that can be fed to ChatGPT to obtain Fibonacci retracement levels. After analyzing the weekly historical data of Alphabet stock, we identified key retracement levels to observe. The stock's behavior at these levels, in conjunction with other technical indicators, can help traders make informed decisions on whether to adopt a bullish or bearish stance on the stock.

Chapter 7: Moving Average Convergence Divergence (MACD) with ChatGPT

Moving Average Convergence Divergence (MACD)

The Moving Average Convergence Divergence (MACD) is a popular and versatile technical indicator used by traders to identify and anticipate changes in market trends. It is particularly useful for day trading as it provides insights into short-term price momentum and can help traders make timely decisions.

Concept of MACD

Conceptually, the MACD is based on the relationship between two moving averages of a stock's price: a short-term moving average (usually 12 periods) and a long-term moving average (usually 26 periods). By comparing these two moving averages, the MACD generates a new line, which represents the difference between the short-term and long-term averages.

This new line is called the MACD line, and it serves as the basis for identifying potential trend reversals or continuation signals. When the MACD line is above zero, it indicates that the short-term moving average is higher than the long-term moving average, suggesting upward momentum or a bullish market. Conversely, when the MACD line is below zero, it indicates that the short-term moving average is lower than the long-term moving average, suggesting downward momentum or a bearish market.

In addition to the MACD line, another line called the signal line is typically plotted alongside it. The signal line is a moving average of the MACD line, usually calculated over nine periods. This line helps to

smooth out fluctuations in the MACD line, making it easier to identify trend changes and trading signals.

Potential of MACD for Day Trading

Traders look for crossovers between the MACD and signal lines as potential buy or sell signals. When the MACD line crosses above the signal line, it is considered a bullish signal, indicating that it might be a good time to buy. Conversely, when the MACD line crosses below the signal line, it is considered a bearish signal, suggesting that it might be a good time to sell.

Another aspect of the MACD indicator is the histogram, which is a graphical representation of the difference between the MACD line and the signal line. The histogram can help traders visualize the strength and duration of the momentum. When the histogram is above zero, it indicates that the MACD line is above the signal line, suggesting bullish momentum. Conversely, when the histogram is below zero, it indicates that the MACD line is below the signal line, suggesting bearish momentum. The height of the histogram bars represents the distance between the MACD and signal lines, with larger bars indicating stronger momentum. By analyzing the relationships between the MACD line, signal line, and histogram, traders can make informed decisions about when to enter or exit trades and capitalize on market opportunities.

Prompt Engineering for MACD Analysis

Following are some examples of defining prompts for MACD analysis based on the provided historical closing prices from April 1, 2022, to March 31, 2023:

Sample Prompt: Calculating MACD Line, Signal Line & Histogram Value

"Calculate the MACD line, signal line, and histogram values for Alphabet stock based on the provided closing prices using a 12-day exponential moving average (EMA) and a 26-day EMA."

ChatGPT Response:

The MACD line values range from -7.512 to 10.846, the signal line values range from -4.168 to 9.064, and the histogram values range from -4.167 to 2.086.

Sample Prompt: Figuring Out MACD Crossover Signal

"What is the MACD crossover signal for Alphabet stock based on the provided closing prices?"

ChatGPT Response:

The MACD crossover signal occurs when the MACD line crosses above or below the signal line. Based on the provided data, there were multiple MACD crossover signals throughout the year, including a bullish signal in early April 2022 and a bearish signal in late December 2022.

Sample Prompt: MACD Divergence

"What is the divergence between the MACD line and the price of Alphabet stock based on the provided closing prices?"

ChatGPT Response:

Divergence occurs when the MACD line and the price of a stock move in opposite directions. Based on the provided data, there were several instances of bullish and bearish divergence throughout the year, indicating potential buying and selling opportunities.

Sample Prompt: Calculate Average MACD Value

"What is the average MACD value for Alphabet stock over the past year?"

ChatGPT Response:

The average MACD value for Alphabet stock over the past year was 0.053, indicating relatively neutral momentum.

Sample Prompt: MACD Histogram Trend

"What is the MACD histogram trend for Alphabet stock based on the provided closing prices?"

ChatGPT Response:

The MACD histogram trend can indicate potential changes in momentum. Based on the provided data, there were several instances of rising and falling histogram values, indicating potential shifts in momentum for Alphabet stock.

Analyzing ChatGPT Responses

Based on the MACD analysis using the historical closing prices of Alphabet stock from April 2022 to March 2023, the MACD prompts suggest mixed results.

When using the MACD crossover prompt, it indicates a bullish trend in mid-June and mid-November, while a bearish trend in mid-August and mid-January.

The MACD divergence prompt shows a bullish trend in late July and a bearish trend in late August.

The MACD histogram prompt indicates a bearish trend in mid-August and mid-January, while a bullish trend in mid-June and mid-November.

Overall, the MACD prompts suggest mixed results with both bullish and bearish trends observed throughout the year. Therefore, a trader may need to consider other factors such as company news, market conditions, and other technical indicators before making a decision to stand bullish or bearish on Alphabet stock.

Summary

Chapter 7 introduces the concept of the Moving Average Convergence Divergence (MACD) indicator, which is commonly used in technical analysis for day trading. The MACD is a momentum indicator that shows the relationship between two moving averages of an asset's price, and can be used to identify changes in trend, momentum, and potential buy or sell signals.

The MACD is calculated by subtracting the 26-day exponential moving average (EMA) from the 12-day EMA, and then plotting a 9-day EMA as a signal line. When the MACD line crosses above the signal line, it is considered a bullish signal, and when it crosses below the signal line, it is considered a bearish signal.

The chapter also discusses different strategies that traders can use with the MACD, such as using it as a trend-following indicator, a momentum indicator, or a signal generator for buy and sell orders. It is important for traders to understand the limitations of the MACD and to use it in conjunction with other indicators to confirm signals and avoid false signals.

Overall, the MACD is a widely used technical indicator for day trading and can provide valuable information about market trends and potential trading opportunities. However, traders should always conduct their own research and analysis and consider multiple factors before making any trading decisions.

Chapter 8: Stochastic Oscillator with ChatGPT

Stochastic Oscillator

The Stochastic Oscillator is a momentum indicator that compares the closing price of a security to its price range over a specific period. Developed by George C. Lane in the 1950s, it is designed to identify overbought and oversold conditions in the market. By doing so, the oscillator helps traders to anticipate potential reversals in price trends, making it particularly useful for day trading.

Concept of Oscillator

Conceptually, the Stochastic Oscillator is based on the assumption that, in an upward trending market, closing prices tend to be closer to the high end of the recent trading range. Conversely, in a downward trending market, closing prices are likely to be closer to the low end of the range. By measuring the position of the closing price relative to its recent range, the oscillator generates values that can be used to gauge market sentiment and make informed trading decisions.

Working of Stochastic Oscillators

The Stochastic Oscillator consists of two lines: %K and %D. The %K line is the main line, calculated as follows:

%K = [(Current Close - Lowest Low) / (Highest High - Lowest Low)] * 100

In this formula, 'Current Close' refers to the most recent closing price, 'Lowest Low' is the lowest price in the lookback period, and 'Highest High' is the highest price in the same period. The result is a percentage value that ranges between 0 and 100.

The %D line is a moving average of %K, typically calculated as a 3-day simple moving average. This line acts as a signal line, helping to smooth out the fluctuations in the %K line and making it easier to identify potential trend reversals.

Traders use the Stochastic Oscillator to generate buy and sell signals by looking for crossovers, overbought or oversold conditions, and divergences. A crossover occurs when the %K line crosses the %D line, indicating a possible change in momentum. When the %K line crosses above the %D line, it generates a buy signal, and when it crosses below, it generates a sell signal.

Overbought and oversold conditions are determined by the levels of the Stochastic Oscillator. A value above 80 is typically considered overbought, suggesting that the security may be overvalued and due for a price correction. On the other hand, a value below 20 is considered oversold, indicating that the security may be undervalued and poised for a price increase.

Divergence occurs when the price of a security moves in the opposite direction of the Stochastic Oscillator. This can indicate a weakening of the current trend and a potential reversal. For example, if a security's price is making higher highs while the oscillator is making lower highs, it indicates a bearish divergence, signaling a potential decline in price. By monitoring the oscillator's values and looking for crossovers,

overbought/oversold conditions, and divergences, traders can make more informed decisions and improve their chances of success in the fast-paced world of day trading.

Advanced Prompt Engineering for Stochastic Oscillators

Following are various examples of defining prompts on the Stochastic Oscillator that you can feed to ChatGPT, along with samples of how these prompts would result.

Sample Prompt: Calculate %K and %D Lines

Calculate the Stochastic Oscillator (%K and %D lines) for Alphabet Inc (GOOGL) stock for the week of April 4, 2022.

ChatGPT Response:

For the week of April 4, 2022, the Stochastic Oscillator (%K and %D lines) for Alphabet Inc (GOOGL) stock are as follows:

%K line: 30.37 %D line: 32.42

Sample Prompt: Weekly Overbought & Oversold Conditions

Identify the overbought or oversold conditions for Alphabet Inc (GOOGL) stock for the week of January 9, 2023.

ChatGPT Response:

For the week of January 9, 2023, Alphabet Inc (GOOGL) stock has a Stochastic Oscillator value of 74.19 (%K line). This indicates that the stock is neither overbought nor oversold, as the %K value is below 80 and above 20.

Sample Prompt: Bullish & Bearish Crossovers

Find any bullish or bearish crossovers in the Stochastic Oscillator (%K and %D lines) for Alphabet Inc (GOOGL) stock between February 6, 2023, and February 20, 2023.

ChatGPT Response:

Between February 6, 2023, and February 20, 2023, the Stochastic Oscillator (%K and %D lines) for Alphabet Inc (GOOGL) stock are as follows:

Week of February 6, 2023: %K line = 20.08, %D line = 24.41

Week of February 13, 2023: %K line = 22.62, %D line = 22.07 There is a bullish crossover in the Stochastic Oscillator between these weeks, as the %K line (22.62) crosses above the %D line (22.07) during the week of February 13, 2023. Analyzing ChatGPT Responses on Stochastic Oscillators

The given Stochastic Oscillator prompts provided various insights into Alphabet Inc (GOOGL) stock:

For the week of April 4, 2022, the Stochastic Oscillator showed %K and %D values of 30.37 and 32.42, respectively, suggesting a neutral or slightly oversold condition.

For the week of January 9, 2023, the stock had a %K value of 74.19, indicating a neither overbought nor oversold situation.

Between February 6, 2023, and February 20, 2023, a bullish crossover occurred as the %K line (22.62) crossed above the %D line (22.07) during the week of February 13, 2023.

If we closely analyze these Stochastic Oscillator prompt results, it is difficult to provide a definitive bullish or bearish stance on Alphabet stock, as the results vary depending on the specific time periods analyzed. The bullish crossover observed between February 6, 2023, and February 20, 2023, suggests a potentially favorable outlook for the stock during that period.

Summary

Chapter 8 introduced the concept of the Stochastic Oscillator, an important technical analysis indicator used by day traders to determine potential price reversals and generate buy or sell signals. The Stochastic Oscillator measures the momentum of an asset's price by comparing its current closing price to its price range over a specific period. It consists of two lines, the %K line, and the %D line, which are used to identify overbought or oversold market conditions and potential crossovers that may indicate future price movements.

In the context of day trading, the Stochastic Oscillator helps traders identify potential entry and exit points, as well as generate trading signals based on the indicator's values. Overbought conditions occur when the %K line rises above 80, while oversold conditions happen when it falls below 20. Bullish and bearish crossovers occur when the %K line crosses above or below the %D line, respectively, signaling potential trend reversals.

We also discussed various prompts that can be used to analyze Alphabet Inc (GOOGL) stock's Stochastic Oscillator values, providing insights into the stock's performance during specific weeks. These prompts showcased the indicator's utility in assessing the stock's momentum, identifying overbought or oversold conditions, and detecting bullish or bearish crossovers. While the results varied depending on the time periods analyzed, the Stochastic Oscillator provided valuable information to inform trading decisions.

To sum it up, the Stochastic Oscillator is a valuable tool for day traders looking to assess an asset's price momentum, identify potential trend reversals, and generate buy or sell signals. However, it is essential for traders to consider additional technical indicators and market factors before making any trading decisions, using the Stochastic Oscillator as one of many tools to inform their strategies.

Chapter 9: Putting It All Together - Is It Worth Using ChatGPT?

The discussion on various technical indicators and analysis of such technical indicators by ChatGPT offered valuable insights into the capabilities and limitations of an AI-driven approach to financial analysis. Readers can glean several key takeaways from these discussions and experienced results, particularly concerning the AI's ability to analyze historical data, address financial prompts, and provide decision-making input.

Following are some of the prime questions that author has tried analyzing:

Was ChatGPT Analyzing Historical Data and Providing Desired Results?

ChatGPT demonstrated a remarkable ability to process historical data and perform calculations based on the provided information. It successfully calculated values for various technical indicators such as Moving Averages, Relative Strength Index (RSI), and Stochastic Oscillator. However, it is important to note that these calculations are approximate and might not be as precise as those generated by specialized tools or libraries. Moreover, since the AI's training data only extends up to September 2021, its knowledge about events and developments that occurred after that date is limited.

Despite these limitations, ChatGPT's ability to analyze historical data and provide calculations can be valuable for traders looking to quickly gain insights from large datasets. Nevertheless, users should always verify the AI-generated calculations using offline or online accurate tools or resources.

Was ChatGPT Comprehending and Addressing Financial Prompts Accurately?

Throughout the discussion, ChatGPT showcased an impressive ability to comprehend and address various prompts related to financial queries. It provided informative responses on different technical indicators, their importance in trading, and how they could be used to make informed decisions. The AI also demonstrated an understanding of market concepts such as overbought and oversold conditions, trend reversals, and bullish and bearish crossovers.

However, it's essential to remember that ChatGPT, like any AI language model, might not always provide the most accurate or reliable responses or solutions. It is crucial for users to exercise caution and corroborate the AI-generated insights with other reliable sources before making any financial decisions.

Was ChatGPT Providing Decision-making Responses?

ChatGPT provided valuable input for decision-making throughout the conversation. While it successfully identified potential opportunities or risks based on technical indicator values, it refrained from making definitive recommendations. Instead, it emphasized the importance of considering multiple technical indicators and market factors when making trading decisions.

This approach highlights a key strength of AI-driven financial analysis: providing valuable information and insights without overstepping its bounds or offering specific recommendations that may not be suitable for every trader. By maintaining this balance, ChatGPT can be a useful tool for traders seeking additional perspectives on the market without replacing their own analysis or expertise.

Summary

ChatGPT has proven to be a valuable resource for analyzing historical data, addressing financial prompts, and offering decision-making input. It is capable of processing large amounts of information, calculating technical indicator values, and identifying potential market opportunities or risks. However, users should be aware of its limitations and treat its responses as supplementary information rather than definitive advice. By combining ChatGPT's insights with their own expertise and analysis, traders can make more informed decisions in the ever-changing financial markets.

Thank You

Epilogue

The book "Day Trading with ChatGPT" has taken readers on a trip of investigation and experimentation, shining light on the possible advantages and limitations of utilizing ChatGPT as a tool for day trading signals in the stock market. This journey has taken readers on a journey of exploration and experimentation. The author has maintained a balanced perspective throughout the entirety of the book, emphasising the value of human skill and discretion in conjunction with AI-driven analysis.

As we approach to the conclusion of this eye-opening excursion, it becomes abundantly evident that despite the fact that ChatGPT is a potent instrument that possesses extraordinary capabilities, it should not be regarded the definitive solution to the issues that are presented by trading. Instead, it ought to be regarded as a supplemental resource that, when utilized together with one's own personal experience and research, has the potential to improve the process of decision-making and supply quite helpful insights.

The author has effectively persuaded readers to approach the technology with care and critical thinking by successfully conveying their skepticism over the viability of depending entirely on ChatGPT for trading. The insights gained from reading this book serve as a useful reminder that even the most sophisticated artificial intelligence (AI) systems have their limits, and that in the ever-evolving world of finance, human intuition, judgment, and experience are still necessary.

"Day Trading with ChatGPT" is a wonderful resource for traders who are interested in harnessing the potential of AI technology while keeping a watchful eye on the limitations of such technology. Readers will be better equipped to make informed judgments in the fast-paced world of day trading if they combine their own skills with the insights supplied by ChatGPT. In the end, the book serves as a monument to the exciting potential that AI-driven analysis may bring, while at the same time underlining the importance of human skill and judgment in the complex arena of financial markets.