

CART 451 Final Project

With Node JS as the runtime environment, there are many modules included and data retrieval apis used in my project. In order of importance: News API, Alpha-vantage API, Axios, Chart.js, Regression.js, Wordnet, Sentiment, Yahoo-finance API, Readability, and Express. In combination, these APIs and modules work to request data from the internet, analyze it in various ways, and process and generate content to display on a local web server. More specifically, current news articles are sourced from News Api and used as input for text augmentation as well as stored to analyze long-term sentiment trends.

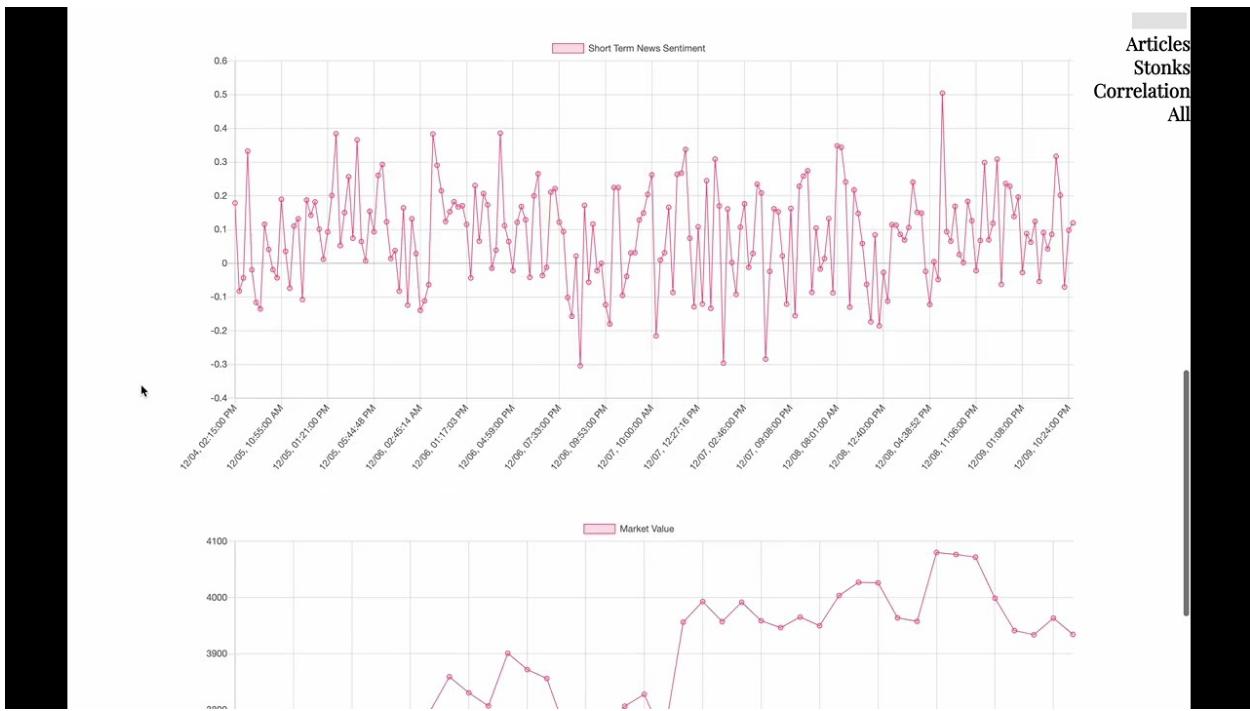
The implemented features include graphical representations of the relationship between news sentiment and market value, word substitution algorithm to augment the meaning of news articles, and a representation of the share value correlation among every company on the New York Stock Exchange, Nasdaq, and the over the counter market. These three features attempt to reduce a mountain of data to actionable information but the end result is static text and graphs. The final implementation is a way to overlay this information to create an abstract jumble of data.

My original goal was to create a program that predicts market movements by interpreting past market reactions to news events. For example, article themes or publishers that have reliable causal relationships to market fluctuations would act as predictors. In order for this to work, the amount of data I would have needed was too expensive if not unavailable. And even if I had sufficient data and algorithms to process it, the intended implementation would have had to require processing power I would have to pay for as well. The second goal was to use the same program that would have interpreted news article data to generate news articles themselves. My logic was that if a prediction algorithm were able to extract meaning from text, it would only need modest modifications to be able to generate meaningful text from the same text. In the end, I used sentiment analysis to determine the market relevance of news articles and Wordnet to augment articles. Every word of a randomly selected article has its Wordnet synsets iterated through until a word that has the same part of speech is found and used as a replacement. For the market prediction implementation, every time the page is loaded a request for 100 articles is made and each one is stored in an archive. At the same time, a two-month range of sp500 market data is requested and displayed on the same graph as an aggregated sentiment analysis of all the archived articles in the same range.

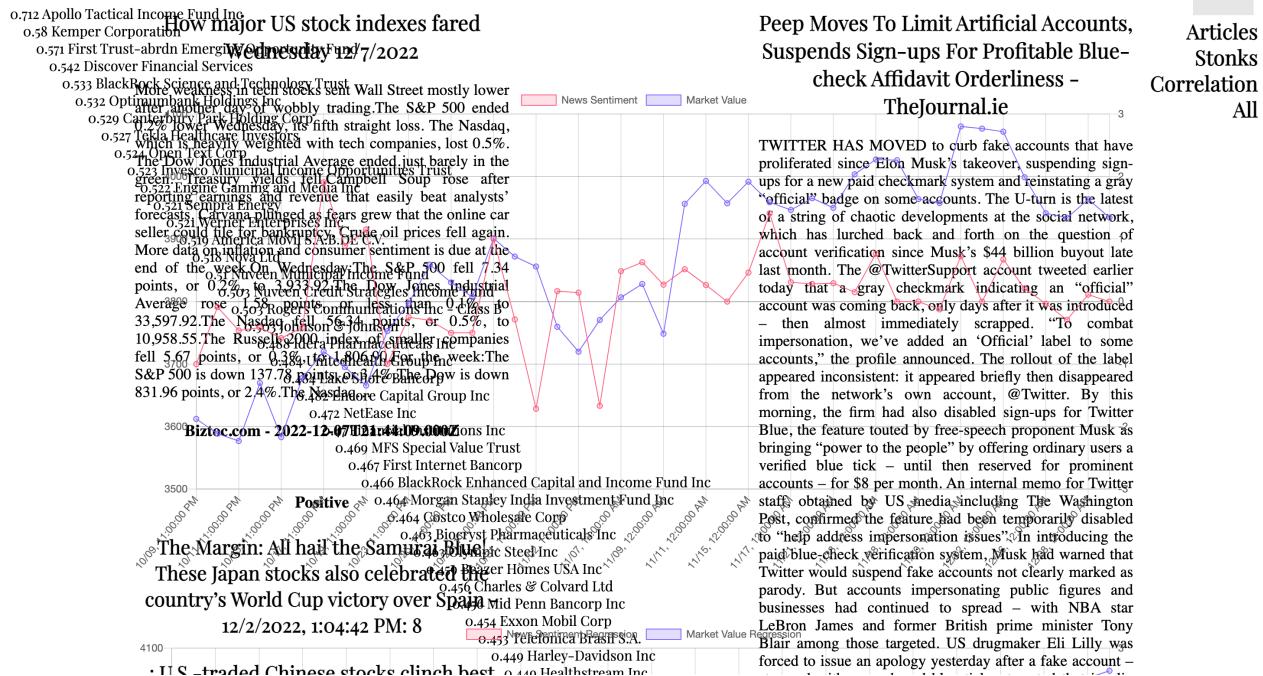
As part of the project I downloaded a huge dataset of the price history of every company in the S&P500, Nasdaq, Forbes2000, and NYSE. Together, there are 4000 price histories. I wrote a script to process the correlation coefficient between each company. Amounting to 4000^2 values, this set of numbers represents the degree to which the share price of each company in the original set correlates with every other as a function of time. The script I wrote to get these numbers is named marketDataResearch.js and is in the final_project folder.

My inspiration came from the apis and modules I ended up using. The sheer breadth and depth of news api, market apis, and wordnet were the inspiration for my project.

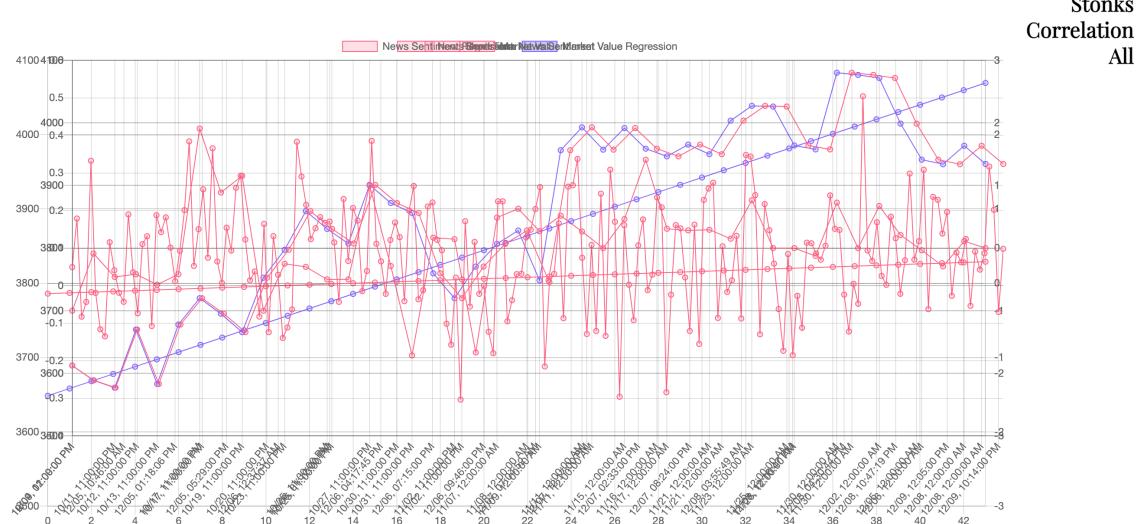
Screen recording:



Everything overlaid



Graphs overlaid



Everything overlaid 2



Articles
 Stocks
 Correlation
 All

Cardinal Incredibly Stingy Bonus Instrument of punishment

Value Finance And Bonus Finance are time-honored investment strategies. And these two disciplines are not mutually exclusive. Many value stocks are also dividend stocks, and vice versa -- and combining these two approaches gives investors multiple ways to win. Value stocks with a discounted valuation could provide some upside when the market comes to appreciate them. Meanwhile, the dividend payments provide a steady stream of passive income -- and perhaps some downside protection in a turbulent market. With the market's sell-off in 2022, there are plenty of good stocks trading at incredibly cheap valuations and offering compelling dividend yields. Here are three that you may want to consider now. Image source: Getty Images. 1. Foot Locker Foot Locker (FL -2.84%) has struggled over the last few years as mall-based retailers have fallen out of favor with investors. But there's reason for optimism as new CEO Mary Dillon (former head of Ulta Beauty) comes in and attempts to spark a turnaround. Under Dillon's leadership, Ulta Beauty increased e-commerce revenue from 4% to 30%, so there is reason for optimism that she can lead Foot Locker's transformation from a brick-and-mortar retailer to more of an omnichannel company. During Dillon's tenure, Ulta Beauty's market value almost tripled. As they say, past performance is no guarantee of future success, but it looks like the right person is in charge now. One note of caution for dividend investors is that Foot Locker paused its payout for one quarter during the COVID-19 pandemic in 2020, and the company resumed dividend payments at a reduced rate the next quarter. However, this was a unique circumstance and a trying time for many businesses, and Foot Locker has now quickly ramped up the dividend payment back to where it was in the pandemic's early days. With a bargain

Only articles

How major US stock indexes fared

Wednesday 12/7/2022

More weakness in tech stocks sent Wall Street mostly lower after another day of wobbly trading. The S&P 500 ended 0.2% lower Wednesday, its fifth straight loss. The Nasdaq, which is heavily weighted with tech companies, lost 0.5%. The Dow Jones Industrial Average ended just barely in the green. Treasury yields fell. Campbell Soup rose after reporting earnings and revenue that easily beat analysts' forecasts. Carvana plunged as fears grew that the online car seller could file for bankruptcy. Crude oil prices fell again. More data on inflation and consumer sentiment is due at the end of the week. On Wednesday: The S&P 500 fell 7.34 points, or 0.2%, to 3,933.92. The Dow Jones Industrial Average rose 0.58 points, or less than 0.1%, to 33,597.92. The Nasdaq fell 56.34 points, or 0.5%, to 10,958.55. The Russell 2000 index of smaller companies fell 5.67 points, or 0.3%, to 1,806.90. For the week: The S&P 500 is down 137.78 points, or 3.4%. The Dow is down 831.96 points, or 2.4%. The Nasdaq...

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Positive

The Margin: All hail the Samurai Blue! These Japan stocks also celebrated their country's World Cup victory over Spain -

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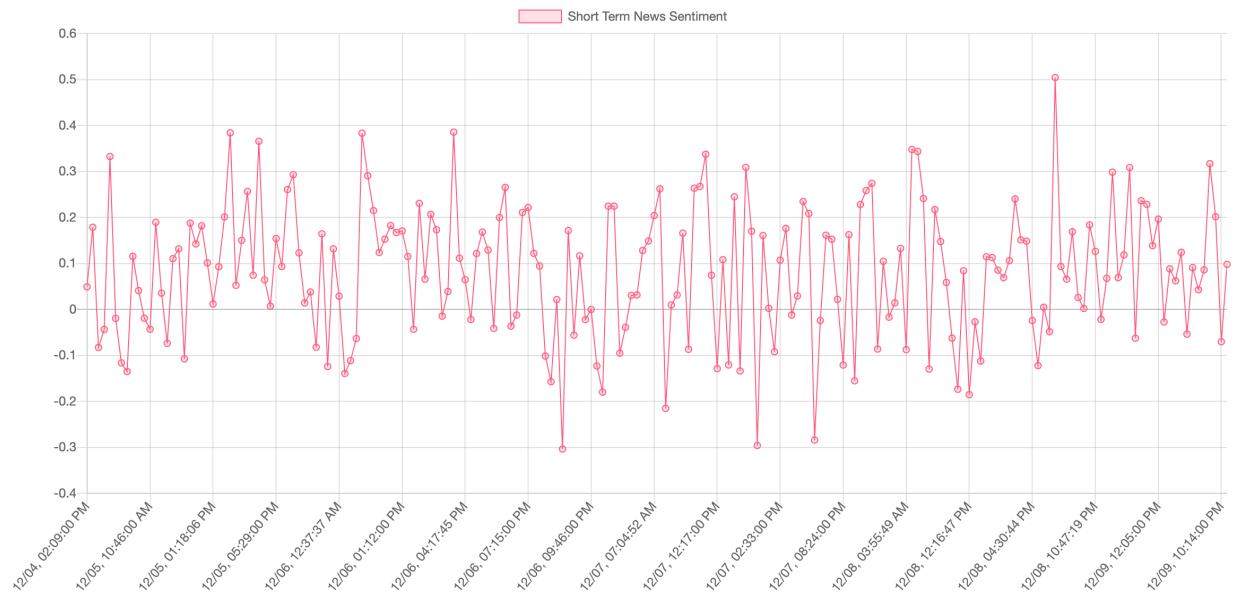
• US-traded Chinese stocks clinch best

Articles
 Stocks
 Correlation
 All

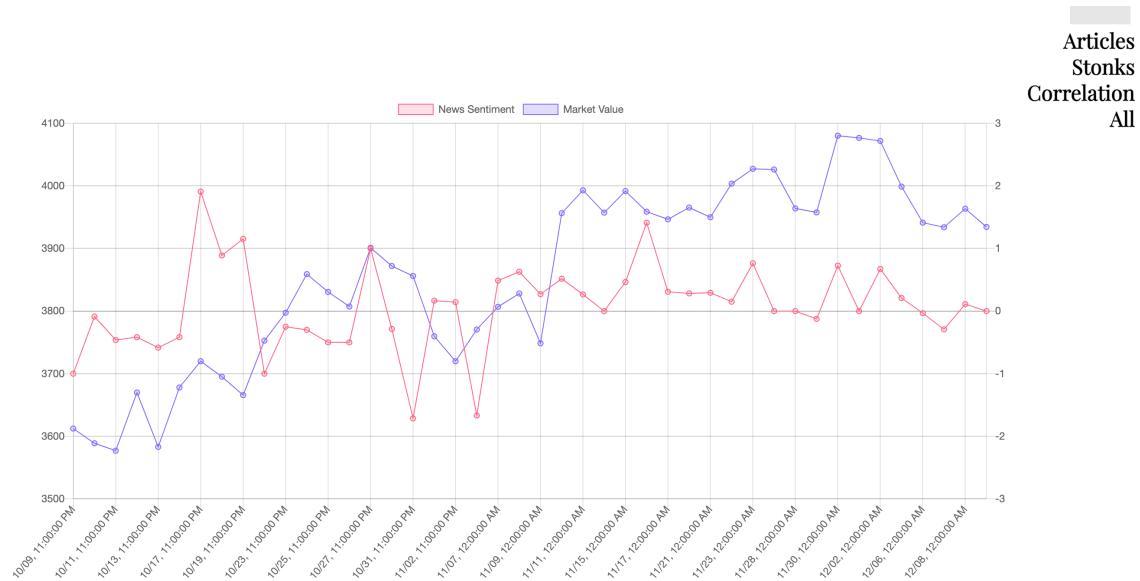
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Value Finance And Bonus Finance are time-honored investment strategies. And these two disciplines are not mutually exclusive. Many value stocks are also dividend stocks, and vice versa -- and combining these two approaches gives investors multiple ways to win. Value stocks with a discounted valuation could provide some upside when the market comes to appreciate them. Meanwhile, the dividend payments provide a steady stream of passive income -- and perhaps some downside protection in a turbulent market. With the market's sell-off in 2022, there are plenty of good stocks trading at incredibly cheap valuations and offering compelling dividend yields. Here are three that you may want to consider now. Image source: Getty Images. 1. Foot Locker Foot Locker (FL -2.84%) has struggled over the last few years as mall-based retailers have fallen out of favor with investors. But there's reason for optimism as new CEO Mary Dillon (former head of Ulta Beauty) comes in and attempts to spark a turnaround. Under Dillon's leadership, Ulta Beauty increased e-commerce revenue from 4% to 30%, so there is reason for optimism that she can lead Foot Locker's transformation from a brick-and-mortar retailer to more of an omnichannel company. During Dillon's tenure, Ulta Beauty's market value almost tripled. As they say, past performance is no guarantee of future success, but it looks like the right person is in charge now. One note of caution for dividend investors is that Foot Locker paused its payout for one quarter during the COVID-19 pandemic in 2020, and the company resumed dividend payments at a reduced rate the next quarter. However, this was a unique circumstance and a trying time for many businesses, and Foot Locker has now quickly ramped up the dividend payment back to where it was in the pandemic's early days. With a bargain

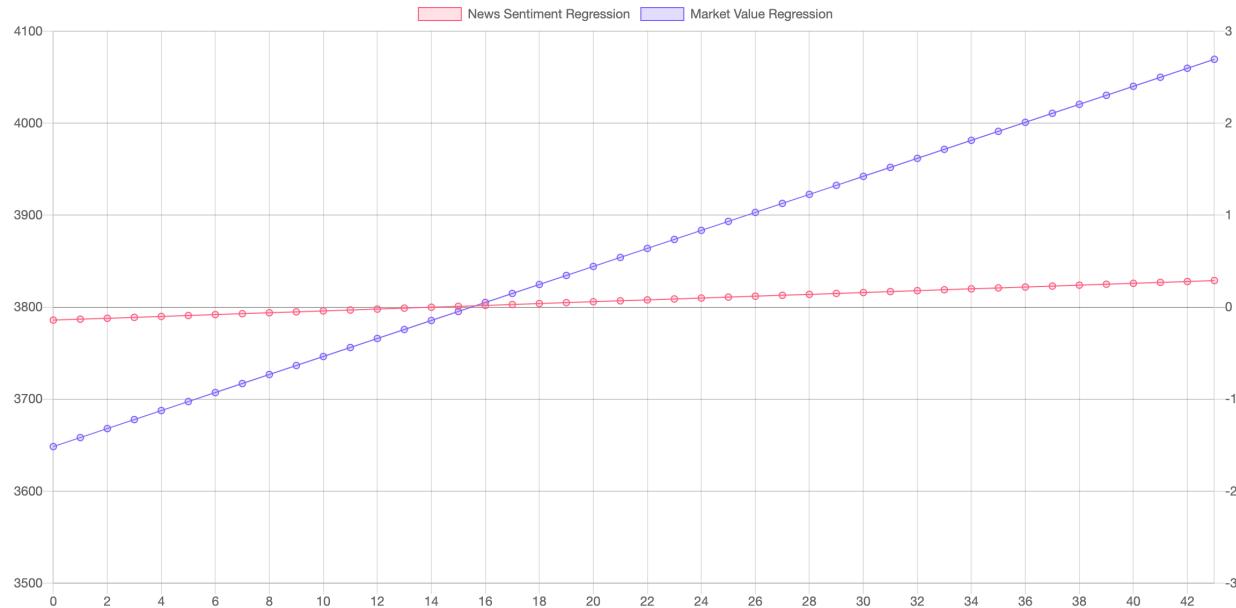
Only news sentiment



News sentiment - SP500 value comparison



Regression lines for news sentiment and SP500 value



Snapshot of correlation coefficients of companies with highest average among companies on a list of 4000

