

Twitter-Stock Sentiment Analysis Documentation

The general objective of our program is to analyze the correlation between the sentiment of tweets related to a specific query and the effects that it may have on stock prices of a specific ticker or index.

Use case example:

When President Trump tweets things related to economics/taxes/trade, it will influence the market. Our program would show the sentiment as analyzed by AWS and the price of whatever stock/indices you want to track.

How to Use

This is our home page.

Tweet Sentiment Analysis vs Stock Price

Query Update:	<input type="text" value="trump"/>	<input type="button" value="Submit"/>	ticker	query
Add Ticker:	<input type="text" value="spy"/>	<input type="button" value="Submit"/>	spy	trump
<input type="button" value="Query Stop"/>	<input type="button" value="Query Restart"/>	<input type="button" value="Stop Fetching"/>	intc	
<input type="button" value="View Tweets"/>	<input type="button" value="View Sentiment"/>		xlnx	

Query Update: standard query for Twitter API

examples:

from:therealdonaldtrump - would get tweets from the President

donald - would get tweets that have key word "donald"

See twitter documentation for full list of operators

<https://developer.twitter.com/en/docs/tweets/search/guides/standard-operators>

Add Ticker: The stock you want to track

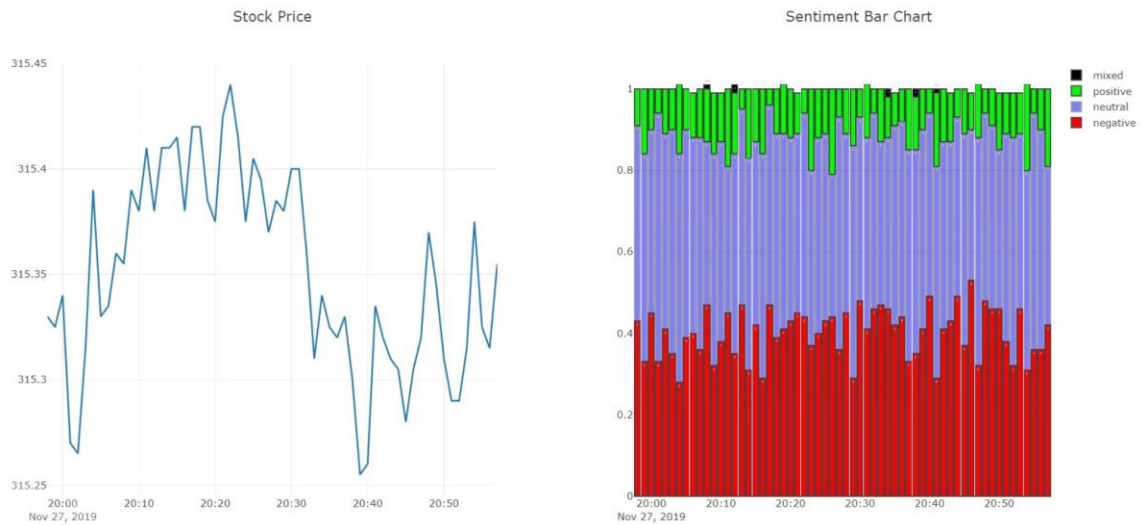
View Tweets: view list of tweets stored on S3

View Sentiment: view sentiment graph along with stock price graph

This is our Stock Price Chart and Sentiment Bar Chart

Twitter Sentiment Analysis vs Stock Price

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Left side is the stock price

Right side is the sentiment analysis

Black - mixed

Green - positive

Blue - neutral

Red - negative

Architecture

We use the following functions

- 1) Amazon Comprehend: Available on AWS, it analyzes text and provides the sentiment breakdown. The sentiment analysis results are stored in DynamoDB

Scan: [Table] tweet: id ▾							
<input type="checkbox"/>	id ⓘ	mixed ▾	negative ▾	neutral ▾	positive ▾	price ▾	ticker ▾
<input type="checkbox"/>	2019-11-27 20:57:00	0.0	0.42	0.39	0.19	315.355	spy
<input type="checkbox"/>	2019-11-27 20:56:00	0.0	0.36	0.54	0.1	315.315	spy
<input type="checkbox"/>	2019-11-27 20:55:00	0.0	0.36	0.58	0.06	315.325	spy
<input type="checkbox"/>	2019-11-27 20:53:00	0.0	0.46	0.43	0.1	315.315	spy
<input type="checkbox"/>	2019-11-27 20:52:00	0.0	0.32	0.56	0.11	315.29	spy
<input type="checkbox"/>	2019-11-27 20:50:00	0.0	0.46	0.39	0.14	315.31	spy
<input type="checkbox"/>	2019-11-27 20:47:00	0.0	0.32	0.56	0.13	315.32	spy
<input type="checkbox"/>	2019-11-27 20:42:00	0.0	0.41	0.46	0.13	315.32	spy
<input type="checkbox"/>	2019-11-27 20:41:00	0.01	0.29	0.52	0.18	315.335	spy
<input type="checkbox"/>	2019-11-27 20:39:00	0.0	0.41	0.49	0.1	315.255	spy
<input type="checkbox"/>	2019-11-27 20:32:00	0.0	0.46	0.48	0.06	315.36	spy
<input type="checkbox"/>	2019-11-27 20:30:00	0.0	0.48	0.45	0.07	315.4	spy

- 2) TwitterEventSource: this function is deployed on AWS Lambda. Returns tweets depending on what the query is. All tweets are stored on S3

Overview Properties Permissions Management				
Q Type a prefix and press Enter to search. Press ESC to clear.				
Upload Create folder Download Actions ▾ US East (N. Virginia) ↻				
Viewing 1 to 300 >				
<input type="checkbox"/>	Name ▾	Last modified ▾	Size ▾	Storage class ▾
<input type="checkbox"/>	2019-11-27 15:03:00.txt	Nov 27, 2019 10:06:43 AM GMT-0500	3.3 KB	Standard
<input type="checkbox"/>	2019-11-27 15:04:00.txt	Nov 27, 2019 10:07:52 AM GMT-0500	3.5 KB	Standard
<input type="checkbox"/>	2019-11-27 15:05:00.txt	Nov 27, 2019 10:08:28 AM GMT-0500	3.6 KB	Standard
<input type="checkbox"/>	2019-11-27 15:06:00.txt	Nov 27, 2019 10:06:36 AM GMT-0500	3.5 KB	Standard
<input type="checkbox"/>	2019-11-27 15:07:00.txt	Nov 27, 2019 10:07:36 AM GMT-0500	3.7 KB	Standard
<input type="checkbox"/>	2019-11-27 15:08:00.txt	Nov 27, 2019 10:08:35 AM GMT-0500	3.7 KB	Standard
<input type="checkbox"/>	2019-11-27 15:09:00.txt	Nov 27, 2019 10:09:35 AM GMT-0500	3.6 KB	Standard
<input type="checkbox"/>	2019-11-27 15:10:00.txt	Nov 27, 2019 10:10:35 AM GMT-0500	3.6 KB	Standard
<input type="checkbox"/>	2019-11-27 15:11:00.txt	Nov 27, 2019 10:11:35 AM GMT-0500	3.7 KB	Standard