

Final Project

CS644 – Fall 2021 – Introduction to Big Data

Instructor: Yao Shen

Sentiment Analysis of Twitter Data

Submitted by

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Abstract:

This project addresses the problem of sentiment analysis on Twitter. The goal of this project was to predict sentiment for the given Twitter post using Python. Sentiment analysis can predict many different emotions attached to the text, but in this report, only 3 major were considered: positive, negative and neutral. The training dataset was small (just over 5900 examples) and the data within it was highly skewed, which greatly impacted on the difficulty of building a good classifier. After creating a lot of custom features, utilizing bag-of-words representations and applying the Extreme Gradient Boosting algorithm, the classification accuracy at the level of 58% was achieved. Analyzing the public sentiment as firms trying to find out the response of their products in the market, predicting political elections and predicting socioeconomic phenomena like the stock exchange.

Problem Statement:

The goal of this project is to predict the sentiment analysis of users Tweeter data. Sentiment analysis can predict many different emotions attached to the text, but in this project, only 3 major were considered: positive, negative and neutral.

1. OVERVIEW TECHNOLOGIES AND PLATFORM USED:

1.1 Twitter:

Twitter is a social networking platform used to share small bits of information across the world. It is the most popular micro blogging website in today's world. The 140 characters' messages/posts are called tweet and people can follow each other to receive other person's tweets. They can tag other using @ symbol. Like all social media forum these tweets can include URLs, photographs, and hashtags. A person can share another person's tweet (re-tweet) if he is following the later. Hashtag (#) is used as a trendsetter in twitter, and used to easily look for information on a particular topic while collecting data from twitter.

1.2 Apache Spark:

Spark is a framework which provides cluster computing platform to perform various tasks like data analytics, machine learning, data streaming, database management, parallel computing, graph operations, etc. Spark can run as a standalone cluster as well as in cluster mode. Spark uses RDD (resilient distributed dataset) to distribute items over the cluster. RDD's are read only datasets and are handled by spark for the purpose of maintaining its fault tolerant behavior. Aside from RDD's spark also has DataFrames which are table like structures used by spark to store data in table format, for manipulation of data in dataframes spark also provides SQL libraries and functions. Spark has Spark SQL library which can be used to perform SQL queries on dataframes. Apache Spark supports Java, Scala, Python and R. Spark core is the main engine which manages input output operations, scheduling, memory management, networking interfaces and dataset (RDD based).

1.2.1 Spark Streaming :

Spark Streaming is an add on package to the core Spark API, which is scalable, high throughput and fault tolerant. It provides functionality of processing live data streams. [8]. For streaming Apache spark can have flume, HDFS, apache Kafka, twitter, kinesis data sources. This data can be then cleaned and structured in spark itself and used to do further processing.

1.2.2 Spark SQL:

Spark core has an SQL extension which supports more optimization on datasets (RDD) and is in structured format to retrieve data using the SQL queries. Spark SQL provides most convenient way to perform several transitions on the data. Spark SQL uses dataframes for data manipulations.

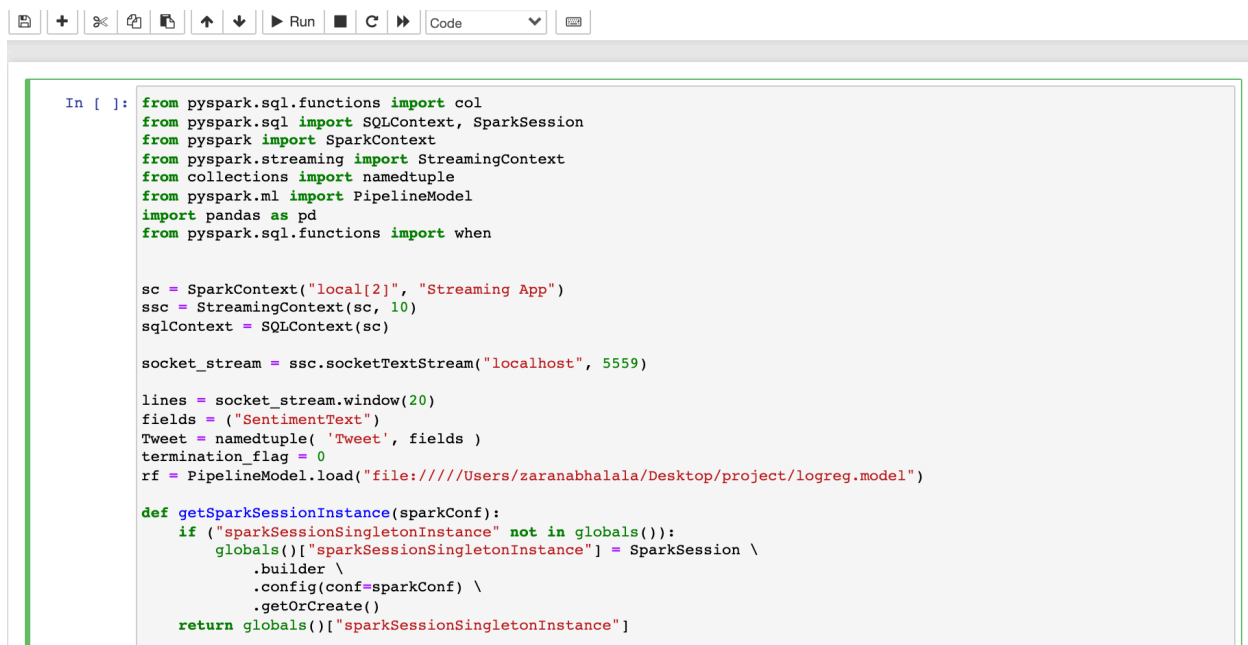
1.2.3 Spark ML Lib (Machine learning libraries):

Spark ML Lib provides wide range of advanced machine learning libraries. Spark has two kinds of libraries which perform operations on RDDs and DataFrames. Spark can process large amount of data and perform advanced machine learning algorithms on it. Spark supports clustering, classification, reduction, regression, etc.

2. IMPLEMENTATION

2.1 Streaming Twitter Data Using Spark

We use spark streaming to stream live spark data. To load Twitter data into Apache Spark twitter provides an interface to developers which can be used to access twitter data. Visit twitters applications site to register your application “<https://apps.twitter.com/>” [13]. I have noted twitter tokens into TwitterKeys.txt which are needed to initialize spark streaming context. The streaming data is captured into batches. The interval for downloading batches can be set, I have set the interval to be 10 seconds. Therefore, every 10 seconds a new batch of data is streamed and captured into batches. We set the filter which contains set of keywords to filter the tweets. Only tweets with those keywords present in it would be streamed.

A screenshot of a Jupyter Notebook interface. The top toolbar shows icons for file operations, running, and code execution. The main area contains a code cell with the following Python code:

```
In [ ]: from pyspark.sql.functions import col
from pyspark.sql import SQLContext, SparkSession
from pyspark import SparkContext
from pyspark.streaming import StreamingContext
from collections import namedtuple
from pyspark.ml import PipelineModel
import pandas as pd
from pyspark.sql.functions import when

sc = SparkContext("local[2]", "Streaming App")
ssc = StreamingContext(sc, 10)
sqlContext = SQLContext(sc)

socket_stream = ssc.socketTextStream("localhost", 5559)

lines = socket_stream.window(20)
fields = ("SentimentText")
Tweet = namedtuple('Tweet', fields)
termination_flag = 0
rf = PipelineModel.load("file:///Users/zaranabhalala/Desktop/project/logreg.model")

def getSparkSessionInstance(sparkConf):
    if ("sparkSessionSingletonInstance" not in globals()):
        globals()["sparkSessionSingletonInstance"] = SparkSession \
            .builder \
            .config(conf=sparkConf) \
            .getOrCreate()
    return globals()["sparkSessionSingletonInstance"]
```

2.2 Understanding Data:

The far most and initial stage in data mining is to perceive and recognize the problem and to note down the objectives. We have equipped ourselves with domain knowledge to recognize the problem complication, it will tremendously improve data mining effectiveness and potency. We have thoroughly understood the sources and types of related data and we have gathered, collected some useful data. We are focusing on finding the right insights from data. The data we receive from twitter streaming is in Json format. This data needs to be understood before using it, selecting the fields form this data is one of the important 19 aspects. We use twitter4j library which is embedded into TwitterUtils library for getting specific fields out of the data.

```
In [4]: 1 train_df = sqlContext.read.format("csv").load('training.1600000.processed.noemoticon.csv')
2 # test_df = sqlContext.read.format("csv").load('file:///Users/zaranabhalala/Desktop/project/trainingandtestdata/testdata.m
3
4
5 #Rename Columns
6 train_df = train_df.withColumnRenamed("_c0", "sentiment")\
7     .withColumnRenamed("_c1", "id")\
8     .withColumnRenamed("_c2", "date")\
9     .withColumnRenamed("_c3", "query")\
10    .withColumnRenamed("_c4", "user")\
11    .withColumnRenamed("_c5", "text")
12
```

```
In [14]: 1 train_df
Out[14]: DataFrame[sentiment: string, id: string, date: string, query: string, user: string, text: string]
```

2.3 Pre- Processing Data:

The collected data were noisy, missing useful info and inconsistent [14]. We have almost finished the Data preparation process. In this process, we have to check if there are empty values or inconsistency in the data. The data should be in a consistent state to be analyzed. To improve the efficiency of our analysis the data should be in a simple format. Data mining is done on this data so to get efficient results the data must be processed by removing redundancies. The data is made meaningful by deriving information from it like deriving dates out of months, days and year. For example, Deriving the age of the tweet by its date.

2.4 Algorithm and Sentiment Analysis:

Sentiment analysis is performed using Stanford's Natural Language Processing library. It takes text input and sends this library to get the sentiment in return. This library constructs a tree like structure out of the plain text passed to it, this structured is created after cleaning the data and removing all the stop words.

Split Train and Test Set

```
In [19]: # set seed for reproducibility
(train_df, test_df) = train_df.randomSplit([0.7, 0.3], seed = 100)
print("Training Dataset Count: " + str(train_df.count()))
print("Test Dataset Count: " + str(test_df.count()))
```

```
Training Dataset Count: 1120280
Test Dataset Count: 479720
```

```
In [ ]:
```

Data Preprocessing and Model Training in Spark

```
In [23]: #
## regular expression tokenizer
regexTokenizer = RegexTokenizer(inputCol="text", outputCol="words", pattern="\W")
#
## stop words
add_stopwords = ["http", "https", "amp", "rt", "t", "c", "the", "@"]
stopwordsRemover = StopWordsRemover(inputCol="words", outputCol="filtered").setStopWords(add_stopwords)
#
## bag of words count
countVectors = CountVectorizer(inputCol="filtered", outputCol="features", vocabSize=10000, minDF=5)
#
## convert string labels to indexes
label_stringIdx = StringIndexer(inputCol="sentiment", outputCol="label")
#
#print (label_stringIdx)

rf = RandomForestClassifier(labelCol="label", featuresCol="features", numTrees=100, seed=100)
#lrModel = lr.fit(trainingData)
```

```
In [26]: pipeline = Pipeline(stages=[regexTokenizer, stopwordsRemover, countVectors, label_stringIdx, rf])
```

```
In [28]: pipelineFit = pipeline.fit(train_df)
predictions = pipelineFit.transform(test_df)
```

2.5 Saving to Database:

I am using SQL to store the huge data. SQL is widely used and is very efficient in storing tabular data. It is easy to store data into SQL using JDBC connection. The connection needs a driver which then makes a connection to the database and pushes the data into desired table.

Every time a new data frame is created it gets pushed and appended to the existing table in the database. The driver needs MySQL server URL and password along with table and database name to store data. For the data to be isolated we need to set the isolation property to read committed.

2.6 Labeling Training Data

To train our model, we already have labelled data.

The data is in CSV format, and almost all of the emojis have been removed.

There are six fields and three labels in the file.

The tweet's polarity (0 is negative, 2 is neutral, and 4 is positive).

Model Inference on sample test set

```
In [33]: predictions.select("text","sentiment","probability","label","prediction") \
        .orderBy("probability") \
        .show(n = 30, truncate = 40)
```

text	sentiment	probability	label	prediction
Crap : Can't attend school. Me sick...	0	[0.4002160167987572,0.5997839832012428]	1.0	1.0
@nathanprodi yeah, i'm sick i feel l...	0	[0.4042877635215788,0.5957122364784212]	1.0	1.0
I'm always hungry all the time but no...	0	[0.40473638082922625,0.5952636191707739]	1.0	1.0
I'm sooooo sick...sore throat, headac...	0	[0.40516120663837013,0.5948387933616299]	1.0	1.0
G'morning! I'm sad cus my back hurts ...	0	[0.40743924994458935,0.5925607500554106]	1.0	1.0
i hate being sick. i feel horrible. m...	0	[0.40889193436898824,0.5911080656310118]	1.0	1.0
urghh! i feel sick! my tummy hurts ri...	0	[0.4119392919519621,0.5880607080480378]	1.0	1.0
i miss my kitty; i dont even want to ...	0	[0.4123219320497672,0.5876780679502329]	1.0	1.0
My head hurts sooo bad right now! Ugh...	0	[0.41371989665306863,0.5862801033469314]	1.0	1.0
ugh, looks like i have to give up my ...	0	[0.41464374042653984,0.5853562595734602]	1.0	1.0
No ball for Erin. Me sad. Not allowed...	0	[0.414644439764302,0.585355560235698]	1.0	1.0
Why does my stomach hurt so bad I do...	0	[0.4150871316489324,0.5849128683510676]	1.0	1.0
is sad... i hate lying to him like t...	0	[0.41515082838865275,0.5848491716113472]	1.0	1.0
@sherm6ft6 im sooo sad! i wanted to d...	0	[0.41590337421490875,0.5840966257850913]	1.0	1.0
I literally feel sick without him...I...	0	[0.41608760393524746,0.5839123960647525]	1.0	1.0
I wish some one was up to talk to! im...	0	[0.4163065924610325,0.5836934075389675]	1.0	1.0
ugh, i feel sick! probly bcus of my ...	0	[0.4167653051263015,0.5832346948736985]	1.0	1.0
@rpd95 What?! That's sad I mean that...	0	[0.4172620648600398,0.5827379351399602]	1.0	1.0
No! I think i'm getting the flu, feel...	0	[0.4173528111589488,0.5826471888410513]	1.0	1.0
Poor Nati is sick today. It's so qui...	0	[0.4173873120905096,0.5826126879094903]	1.0	1.0
there is no point in going home sick ...	0	[0.41758912558371114,0.5824108744162888]	1.0	1.0
sick roomie gave me her cold my thro...	0	[0.4178023596567861,0.582197640343214]	1.0	1.0
At work right now. Sad that i have to...	0	[0.41801816920936913,0.5819818307906308]	1.0	1.0
So tired! Can't stop coughing! Hurt...	0	[0.4184535717667555,0.5815464282332445]	1.0	1.0
Slept bad, feel tired. Hate exams. Ha...	0	[0.4185380512649601,0.5814619487350399]	1.0	1.0
im sick i feel like crap ..but i sti ...	0	[0.41876017416346334,0.5812398258365367]	1.0	1.0
is about to cry which is somethin I n...	0	[0.41883419486163603,0.581165805138364]	1.0	1.0
I'm SICK!! Ugh HORRIBLE tummy ache!...	0	[0.4190186480919577,0.5809813519080422]	1.0	1.0
Pray for Us, Karen is working, Aiden ...	0	[0.4190964719455616,0.5809035280544385]	1.0	1.0
Am getting some kind of sore throat t...	0	[0.4191412054091495,0.5808587945908504]	1.0	1.0

only showing top 30 rows

Accuracy of our model is as below:

Spark Model Validation

```
In [37]: evaluator = MulticlassClassificationEvaluator(labelCol="label", predictionCol="prediction", metricName="accuracy")
        print("Accuracy: %g" % (evaluator.evaluate(predictions)))
```

Accuracy: 0.7151

Save Spark Model

```
In [38]: pipelineFit.save("file:///Users/zaranabhalala/Desktop/project/logreg.model")
```

```
In [ ]:
```

2.7 Output:

After the sentiment analysis is completed, the results are saved in a csv file with tweets and the outcome. The outcome is expressed as a number between 0 and 2, with positive, neutral, and negative values.

Twitter API as server is listening on port 5559 to get the tweets.

```
# Local connection
host = "127.0.0.1"
port = 5559

s = socket.socket()
s.bind((host, port))

print("Listening on port: %s" % str(port))

s.listen(5)
c, addr = s.accept()

print("Received request from: " + str(addr))
auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
auth.secure = True
auth.set_access_token(access_token, access_token_secret)

api = tweepy.API(auth, wait_on_rate_limit=True, wait_on_rate_limit_notify=True, retry_count=10, retry_delay=5,

streamListener = TwitterStreamListener(c)
myStream = tweepy.Stream(auth=api.auth, listener=streamListener, tweet_mode='extended')
myStream.filter(track=['review', 'reviews', 'amazon', 'shopping', 'ebay', 'refund'])
```

```
Listening on port: 5559
Received request from: ('127.0.0.1', 55995)
RT benzajp CARTCVAmazon benzajp RT
RT HuaweiFactsJP XmasBIG amazon HuaweiFactsJPRT
Scalp Massager used this to scrub my shampoo into my hair and wow it got through my thick hair with ease The long sil
icon bristles provided just the right amount of pressure without being harsh cute bathroom scalp
Check out How Many Ways by Toni Braxton on Amazon Music
RT OfficialLAJP AmazonTwitterRT
RT benzajp CARTCVAmazon benzajp RT
RT phoenixsitv SitvAmazonphoenixsitvampRTDM
The novel is good at asking whether there is more to life than what we see and what it means to live in deaths shadow
RT caughttink amazon not even trying anymore
Metaanalyse en rapid review Ivermectine reduceert stervensrisico COVID sterk onethisch en immoreel om het niet te geb
ruiken
hhproductions Sorry to you Ethan I love you Hila amp crew Ive been a YouTube premium subscriber for about years amp
a channel member for months They need to fix this complete BS Even Google removes an influx of bad reviews on busine
sses from trolls TeamYouTube manage troll reporting
Tendencias del Comercio Electronico para el Live Shopping Voice commerce Cryptocurrency payments Ya sabes de qu va
n estas tendencias tendencias ecommerce comercioelectronico cryptos voice shopping liveshopping tendencias
if some say that this is a form of sexual abuse that could be a
```

Spark streaming as client running as below:

Cs644 Final Project: Sentiment Analysis of Twitter Data

```
def rdd_iterator(time, rdd):

    print("==== %s ===== %s" % str(time))

    print("Started")
    spark = getSparkSessionInstance(rdd.context.getConf())
    print("spark session")
    rowRdd = rdd.map(lambda w: Tweet(w))
    linesDataFrame = spark.createDataFrame(rowRdd)
    print("linesDataframe created.")
    linesDataFrame.createOrReplaceTempView("tweets")

    lineCountsDataFrame = spark.sql("select SentimentText as text from tweets")
    print(lineCountsDataFrame.show(5, False))

    prediction = rf.transform(lineCountsDataFrame)
    print("after prediction")
    keep_list = ["text", "prediction"]
    prediction_save = prediction.select([column for column in prediction.columns if column in keep_list])

    prediction_save.show(50, False)
    pred = prediction_save.toPandas()
    pred.to_csv('preds.csv', mode='a', header='true', index = False, encoding='utf-8')
    import time
    time.sleep(120)
    ssc.stop()

lines.foreachRDD(rdd_iterator)

ssc.start()
ssc.awaitTermination()
```

/Users/zaranabhalala/opt/anaconda3/lib/python3.8/site-packages/pyspark/sql/context.py:77: FutureWarning: Deprecated in 3.0.0. Use SparkSession.builder.getOrCreate() instead.

warnings.warn(

==== 2021-12-20 19:28:40 =====

Started
spark session
linesDataframe created.

+-----+
|text|
+-----+

RT benzajp CARTCVAmazon benzajp RT
RT HuaweiFactsJP XmasBIG amazon HuaweiFactsJPRT
Scalp Massager used this to scrub my shampoo into my hair and wow it got through my thick hair with ease The long si
licon bristles provided just the right amount of pressure without being harsh cute bathroom scalp |
Check out How Many Ways by Toni Braxton on Amazon Music
RT OfficialLAJP AmazonTwitterRT

+-----+
only showing top 5 rows

None
after prediction

+-----+
+-----+
|text|
|prediction|
+-----+
+-----+

RT benzajp CARTCVAmazon benzajp RT
0.0 |
RT HuaweiFactsJP XmasBIG amazon HuaweiFactsJPRT
0.0 |
Scalp Massager used this to scrub my shampoo into my hair and wow it got through my thick hair with ease The long si
licon bristles provided just the right amount of pressure without being harsh cute bathroom scalp
0.0 |
Check out How Many Ways by Toni Braxton on Amazon Music
0.0 |
RT OfficialLAJP AmazonTwitterRT
0.0 |
RT benzajp CARTCVAmazon benzajp RT
0.0 |
RT phoenixsitv SitvAmazonphoenixsitvampRTDM
0.0 |
The novel is good at asking whether there is more to life than what we see and what it means to live in deaths shado
w
0.0 |
RT caughttink amazon not even trying anymore
1.0 |
Metaanalyse en rapid review Ivermectine reduceert stervensrisico COVID sterk onethisch en immoreel om het niet te ge

Cs644 Final Project: Sentiment Analysis of Twitter Data

Output stored in the CSV file as below:

text	prediction
RT tsumurajp Amazon tsumurajp RT	0.0
RT ahamoofficial DayAmazon ahamo ahamoofficial	0.0
My nigga randomly cleared out my Amazon cart I see some neck under the tree along with his Christmas gifts	1.0
RT eiking Amazon or PayPay RTRT	0.0
RT TudorTweep New ReleaseLady of the Tudor Court servant of Queens courtier wife spy And constant heartThis is the story of	0.0
RT MafiaCityJP Amazon MafiaCityJP	0.0
RT arcaeajp of Dreams of Wrathth	0.0
RT MUArchangeJP MU	0.0
RT Hectez Please buy this game The narrative was really good and the characters are fleshed out so well is beyond worth it I swear	0.0
Trellwym Thank you for spending your whole refund check on me last semester I owe you	0.0
Pprt	0.0
RT mangasalekd	0.0
RT erinbiba Now that everyone is finally upgrading to good KN or N masks its important to know that a HUGE number more then dep	0.0
Do you have your shopping done	0.0
RT pleoshep MY BROTHER THAT WORKED FOR AMAZON GOT FIRED FOR THIS TODAY LMFAOOOOO NO WAY	1.0
DREAM HOUSE by Constantza Sasha Pop via amazon	0.0
RT regzaofficial Amazon regzaofficial ampRTAmazon	0.0
Amazon NoActivity	0.0
RT BethTabler Review Black Sun by Rebecca RoanhorseREVIEW BY AquaVenatusBlack Sun is proof that Rebecca Roanhorse can weave her	0.0
Cuarto dia consecutivo que vamos al shopping y le compro ropa a Emma esta bebe es compradora compulsiva con dos meses	0.0
RT POINTJPTSUTOMU AmazonRTDM	0.0
RT SEGAEnt Amazon ampRTRT	0.0
RT HuaweiFactsJP XmasBIG amazon HuaweiFactsJPRT	0.0
RICO DAYS	0.0
RT eiking Amazon or PayPay RTRT	0.0
RT regmati porqu en Argentina no se puede ir al Shopping con perros como en USA o en Europa	1.0
RT Sawa RT PayPayAmazonGoogleiTunes	0.0
LetsBOATRACE AmazonW	0.0
RT OldManLefty A woman listed an Eric Clapton CD on eBay she thought would fetch her around Clapton sued the woman for copyright	0.0
RT sawa iPad RT RT	0.0
RT ShytoshiKusama YOU LYING POS I ABSOLUTELY HATE SCAMMERS AS SOON AS MY TWITTER STOPS GOING APESHIT FROM ALL THE RTs IM SIMPLY GOING	1.0
RT CARGOOFFICIAL Switch LitePayPay Amazon	0.0
DCAllen Would you like to give this smart toilet a positive review on Amazon while you shit	0.0
I refuse to go shopping for my brother kids again its a amp done because Im stressing out	1.0
RT ahamoofficial DayAmazon ahamo ahamoofficial	0.0
RT ShytoshiKusama This you askthedr or is this Twitter account not associated with this review and all the others on your business	0.0
RT regzaofficial Amazon regzaofficial ampRTAmazon	0.0
POKEMON EMERALD AUTHENTIC EXCELLENT CONDITION CIB NINTENDO GAMEBOYADVANCE eBay UnitedStates Auction Ninthusiast	0.0
My first and only poetry book is now available on Amazon A Lifetime So Far in Poetry recovery poetry	1.0
Click the link to learn how you can enter to win a complete refund on any one order made between Nov th and Dec th OR a gift certificate kinky BDSM fetish femdom sissy chastity malechastity cagedboy cage	0.0
Its not too late Save on your lastminute Christmas gifts with code XMAS through Wednesday Start shopping XMAS	0.0
RT Genshin Ver Twitter AmazonGenshinRT	0.0
RT yantanmonday Podcast PodcastAmazon Music	0.0
RT olliehaig JUST IN Ive spoken to SA Health this morning ALL testing sites across the city are overwhelmed and very busy A review i	0.0

Cs644 Final Project: Sentiment Analysis of Twitter Data

RT BethPaintings	0.0
RT ikkieb Amazon ikkiebRT	0.0
hours of shopping done finally home	1.0
	0.0
oo	0.0
RT bkllynbby	0.0
I just got paid to review a product Join me intellifluence and you can too via intellifluence	0.0
RT tactbusiness RT amazon CPFIREBURNING	0.0
The latest Skip Daily Review Thanks to edbott alex programming cybersecurity	0.0
RT tomsandora MA DPH released review of breakthrough COVID cases unvaccinated residents are x more likely to become infected than t	0.0
RT BlueArchiveJP	0.0
Enter to win Coobie Bra Of Winners Choice from CoobieBra ampamp emilyreviewscom giveaway sweeps sweepstakes giftguide	0.0
RT yourmystarjp Amazon yourmystarjp RT AM	0.0
RT sankanren JR ampRT Amazon sankanren RTDM	0.0
RT SoEthereal The Book of Boba Fett will start streaming in days on DisneyPlus and its very promising theres so much secrecy that	0.0
RUNNING GIRL Seamless Workout Shirts for Women DryFit Short Sleeve TShirts Crew Neck Stretch Yoga Tops AthleticShirts	0.0
BOX ABSampPVC	0.0
Our legal team has will be commencing a lawsuit against ShytoshiKusama shib for libel We will be able to find out his true identity in the courts Our company will not stand for defamation and fake reviewsWe h	1.0
RT ahamoofficial DayAmazon ahamo ahamoofficial	0.0
RT aishamae For those doing some Christmas shopping in Melbourne today cohealthau is running a vaccination popup van today at the for	0.0
RT eliking Amazon or PayPal RTRT	0.0
RT KStateFB RHenington teamed up with a local nonprofit to take kids and their families from the Manhattan community holiday shopping	0.0
RT XiaomiJapan Redmi Buds ampRT DM	0.0
RT giftmall RT Amazon giftmall RT	0.0
RT umagon iTunesPayPayAmazon	0.0
WhaleStats wibx WIBOOIndication NFTs Crypto BTC ETH ADA BNB SOL DOT VRA KDA SHIB DOGE FTM VET SAND MANA COTI ONE ENJ LINK GALA MATIC AVAX LTC LUNA AXS Metaverse elonmusk ope	0.0
No solo estoy emocionada pq voy a ver Spider man sino que ya lo estaba hace una semana cuando escrib un review sobre la película para el final de ingls Full virga	1.0
PromoEmEstante	0.0
RT hanasuiyvtv MC amp ABCZhanasuiyvtv RT	0.0
RT CARGOOFFICIAL Switch LitePayPay Amazon	0.0
ps videogames	0.0
RT battledream AmazonbattledreamRT	0.0
CANWAY CANWAY Amazon	0.0
RT thetimes Amazon agreed to Beijings demand to have anything below a fivestar review of Xi Jinpings book The Governance of China remo	1.0
RT bjornlarssen Im skipping the top books of thread because I really lack spoonsenergy maybe later but Id like to highlight a	1.0
RT MysteryRank	0.0
romanmx AFP marietteleroux mikeldrums Equal Is Unfair Americas Misguided Fight Against Inc Amazon	0.0
RT sbineotrade SBIAmazongiftee Box	0.0
Its almost that time of year for performance reviews Here are articles that list a few things you can look out for to prevent bias from impacting your rating during your performance review this year Diversityandl	0.0
RT wtfjummy online shopping for hours and then closing all the tabs and not buying anything is one of my favorite hobbies	1.0
RT umagon iTunesPayPayAmazon	0.0
RT Sawa RT PayPayAmazonGoogleiTunes	0.0
From Allan J Lewis AllanJLewisGET OUT OF MY DREAMSThe Magic Man enters peoples dreams and has them do his bidding while he probes their darkest secrets	1.0
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