# Twitter Sentiment Analysis in the New York area







Katie Cao

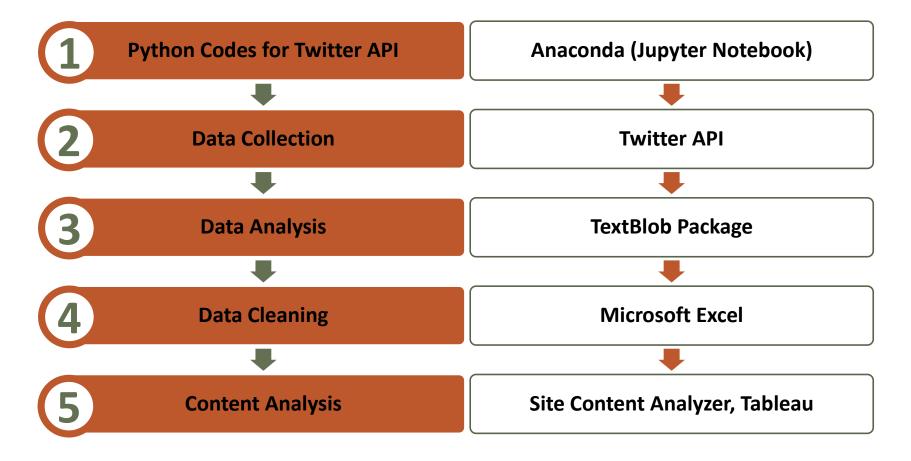
#### Outline

- 1. Big Question
- 2. System Design & System Implementation
- 3. Dataset Description
- 4. Evaluation
- 5. Conclusion
- 6. References

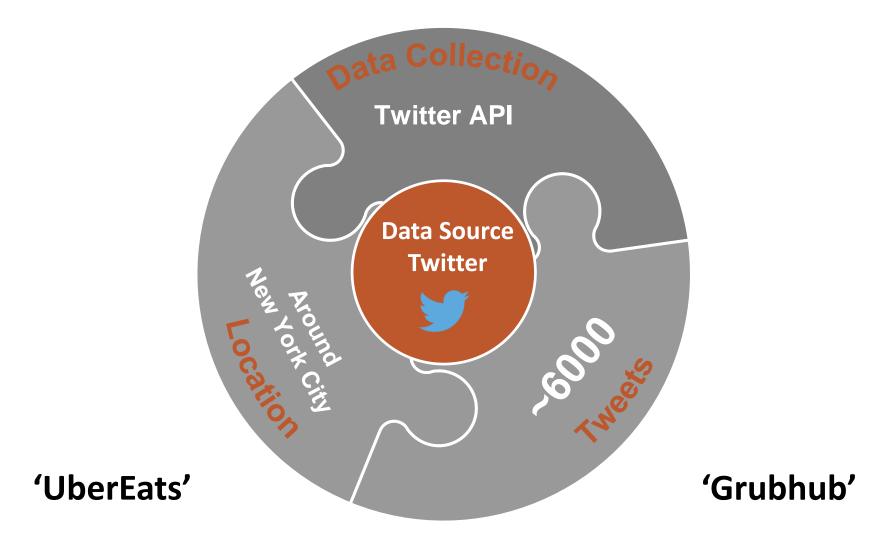


was on Grubhub 1.06E+18 New York 254 But at least you had Ramen lol 1.06E+18 ng for GrubHub to Deliver My Ribs will be t literally on the border 1.06E+18 "New Je Which food delivery service is 100 doing likkle grubhub in 5 hou rojuicepembrokepines with get more well-received on tacted me and compensated me are hi Coming over from A prompt told revitter? decide on dinner Not really feeling labely hilly Lovash Restaurant amp Bar Ongoing Pro hele try this link Sorry about that everyon thy do you dissapoint me the past two times it take you almost a FULL HOUR to tell me t akeout 1.06E+18 "New Jersey, USA" 132 Ordering McDonald s on UberEats bad but if if I d known it was likely a 2 hour wait k ubereats do it so SPIN THE WHEEL OF FAT pport Just contacted the UberEats phone n hen today against my better judgement I tting ready to figure out dinner for toni Thy have I missed two meals in a row beca\_\_\_ Support My ubereats order never arrived con onight we are doing dinner for 8 here at my If a restaurant is looking to expand their 'oo cold to go out Order in on Grubhub from

### System Design & System Implementation

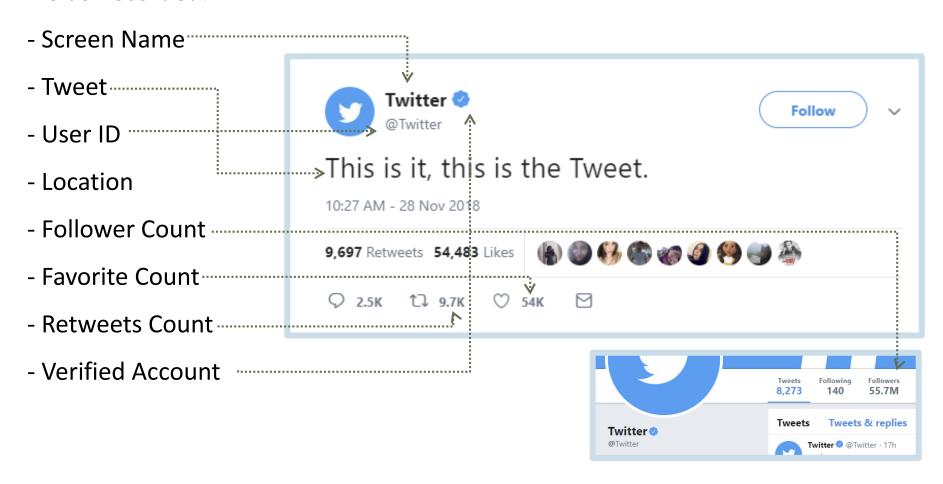


#### Dataset Description



#### **Dataset Description**

#### **Fields Recorded:**



#### Twitter API to Extract Tweets



get\_uber\_tweets()

get\_grubhub\_tweets()

cleaning\_tweet()

tweet\_sentiment()

Data extracted is stored in a text file.



#### Data Analysis

Using **TextBlob** – a Python library for processing textual data, to perform sentiment analysis

**Positive** 



**Neutral** 



**Negative** 



#### Data Cleaning

- Remove Duplicate Tweets (caused by bots)
- Remove Manual Retweets





### Uber Eats

#### Content Analysis

**GRUBHUB**<sup>™</sup>

		manhattan	31 [0.31%]	know	17 [0.17%]
		hour	30 [0.30%]	know	17 [0.17%]
Word	Total ▽	people	29 [0.29%]	back	17 [0.17%]
ubereats	428 [4.32%]	code	28 [0.28%]	good	
new	360 [3.63%]	money	28 [0.28%]	street	17 [0.17%]
york	289 [2.91%]	need	27 [0.27%]	please	17 [0.17%]
usa	202 [2.04%]	today	26 [0.26%]	free	17 [0.17%]
order	164 [1.65%]	connecticut	26 [0.26%]	worst	16 [0.16%]
food	149 [1.50%]			away	16 [0.16%]
philadelphia	114 [1.15%]	really	26 [0.26%]	hours	16 [0.16%]
delivery	109 [1.10%]	georgia	25 [0.25%]	eat	16 [0.16%]
brooklyn	100 [1.01%]	help	25 [0.25%]	minutes	16 [0.16%]
support	100 [1.01%]	waiting	24 [0.24%]	chicken	15 [0.15%]
nyc	81 [0.82%]	day	24 [0.24%]	shit	15 [0.15%]
just	80 [0.81%]	guys	23 [0.23%]	refund	15 [0.15%]
uber	80 [0.81%]	call	23 [0.23%]	used	15 [0.15%]
jersey	75 [0.76%]	ordering	22 [0.22%]	island	15 [0.15%]
florida	63 [0.64%]	place	22 [0.22%]	phone	15 [0.15%]
service	62 [0.63%]	tonight	22 [0.22%]	think	15 [0.15%]
ordered	59 [0.59%]	first	22 [0.22%]	thanks	15 [0.15%]
time	56 [0.56%]	doordash	21 [0.21%]	better	14 [0.14%]
city	53 [0.53%]	lol	21 [0.21%]	using	14 [0.14%]
арр	53 [0.53%]	cold	20 [0.20%]	mcdonald	14 [0.14%]
amp	52 [0.52%]	drivers	20 [0.20%]	drive	14 [0.14%]
eats	50 [0.50%]	take	19 [0.19%]		
driver	48 [0.48%]	philly	19 [0.19%]	door	14 [0.14%]
delivered	45 [0.45%]		19 [0.19%]	come	14 [0.14%]
open	45 [0.45%]	way		night	14 [0.14%]
deliver	43 [0.43%]	dinner	19 [0.19%]	fee	14 [0.14%]
queens	39 [0.39%] 36 [0.36%]	til	18 [0.18%]	issue	14 [0.14%]
bronx what	35 [0.35%]	ave	18 [0.18%]	ago	14 [0.14%]
wnat missing	35 [0.35%]	long	18 [0.18%]	lunch	14 [0.14%]
restaurant	35 [0.35%]	stop	18 [0.18%]	germantown	14 [0.14%]
customer	34 [0.34%]	account	18 [0.18%]	newark	13 [0.13%]
got	33 [0.33%]	getting	18 [0.18%]	two	13 [0.13%]
use	32 [0.32%]	house	18 [0.18%]	guy	13 [0.13%]
hungry	32 [0.32%]	fuck	17 [0.17%]	tell	13 [0.13%]
want	31 [0.31%]	make	17 [0.17%]	available	13 [0.13%]
grubhub	31 [0.31%]	know	17 [0.17%]	delivering	13 [0.13%]
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		got	25 [0.31%]		
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		got	25 [0.31%]
Word	Total ▽	queens	25 [0.31%]
	401 [5.04%]	call	25 [0.31%]
grubhub	283 [3.55%]	manhattan	24 [0.30%]
new	235 [2.95%]	want	24 [0.30%]
york order	162 [2.03%]	night	24 [0.30%]
philadelphia	130 [1.63%]	open	23 [0.29%]
usa	123 [1.54%]	good	23 [0.29%]
delivery	92 [1.16%]	bronx	22 [0.28%]
food	91 [1.14%]	friday	22 [0.28%]
just	79 [0.99%]		22 [0.28%]
nyc	79 [0.99%]	doordash	22 [0.28%]
brooklyn	72 [0.90%]	uber	
amp	71 [0.89%]	hour	22 [0.28%]
care	61 [0.77%]	ordering	22 [0.28%]
city	56 [0.70%]	tonight	21 [0.26%]
арр	52 [0.65%]	place	21 [0.26%]
down	50 [0.63%]	right	20 [0.25%]
seamless	47 [0.59%]	ave	20 [0.25%]
time	43 [0.54%]	cold	20 [0.25%]
jersey	42 [0.53%]	late	19 [0.24%]
ordered	40 [0.50%]	driver	19 [0.24%]
missing	39 [0.49%]	island	19 [0.24%]
what	39 [0.49%]	delivered	19 [0.24%]
philly	36 [0.45%]	help	19 [0.24%]
ubereats	35 [0.44%]	service	18 [0.23%]
first	32 [0.40%]		18 [0.23%]
restaurant	31 [0.39%]	dinner	
florida	30 [0.38%]	bar	18 [0.23%]
today	30 [0.38%]	georgia	18 [0.23%]
use	28 [0.35%]	restaurants	18 [0.23%]
need	26 [0.33%]	people	17 [0.21%]
deliver	25 [0.31%]	know	17 [0.21%]
got	25 [0.31%]	really	17 [0.21%]
queens	25 [0.31%] 25 [0.31%]	sorry	16 [0.20%]
call	25 [0.31%] 24 [0.30%]	eats	16 [0.20%]
manhattan	24 [0.30%]	come	16 [0.20%]
want night	24 [0.30%]	orders	16 [0.20%]
night	24 [0.30%]	customer	15 [0.19%]
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Word	25 [0.31%]		
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24 (0.30%)   day   15 (0.19%)   day		customer	15 [0.19%]
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18 (0.23%)			
18 [0.23%]   last   12 [0.15%]   last   12 [0.15%]   last   12 [0.15%]   available   12 [0.15%]   last   13 [0.23%]   last   14 [0.14%]   last   15 [0.21%]   last   15 [0.21%]   last   15 [0.20%]   last   16 [0.20%]   last   17 [0.21%]   last   18 [0.20%]   last   18 [0.20%]   last   18 [0.20%]   last   19 [0.20%]   last   la			
18 [0.23%] available 12 [0.15%] 18 [0.23%] park 12 [0.15%] 18 [0.23%] united 11 [0.14%] 17 [0.21%] week 11 [0.14%] 17 [0.21%] grub 11 [0.14%] 17 [0.21%] states 11 [0.14%] 16 [0.20%] online 11 [0.14%] 16 [0.20%] lovash 11 [0.14%] 16 [0.20%] hey 11 [0.14%] 16 [0.20%] support 11 [0.14%]			
18 [0.23%]   park   12 [0.15%]			
10 (0.2%)			
10 (0.2%)   week			
17 [0.21%]   grub   11 [0.14%]   17 [0.21%]   states   11 [0.14%]   17 [0.21%]   shit   11 [0.14%]   shit   11 [0.14%]   online   11 [0.14%]   online   11 [0.14%]   lovash   11 [0.14%]   lovash   11 [0.14%]   lovash   11 [0.14%]   lovash   11 [0.14%]   support   11 [0.14%]   16 [0.20%]   support   11 [0.14%]			
17 [0.21%]	17 [0.21%]		
17 [0.21%]	17 [0.21%]		
16 [0.20%] online 11 [0.14%] 16 [0.20%] lovash 11 [0.14%] 16 [0.20%] hey 11 [0.14%] 16 [0.20%] support 11 [0.14%]	17 [0.21%]		
16 [0.20%] lovash 11 [0.14%] 16 [0.20%] hey 11 [0.14%] 16 [0.20%] support 11 [0.14%]	16 [0.20%]		
16 [0.20%] hey 11 [0.14%] 16 [0.20%] support 11 [0.14%]			
16 [0.20%] support 11 [0.14%]			
13 10, 19761			
	1010.19%1		1110.14701

#### Content Analysis

- Brooklyn
- Queens

NYC

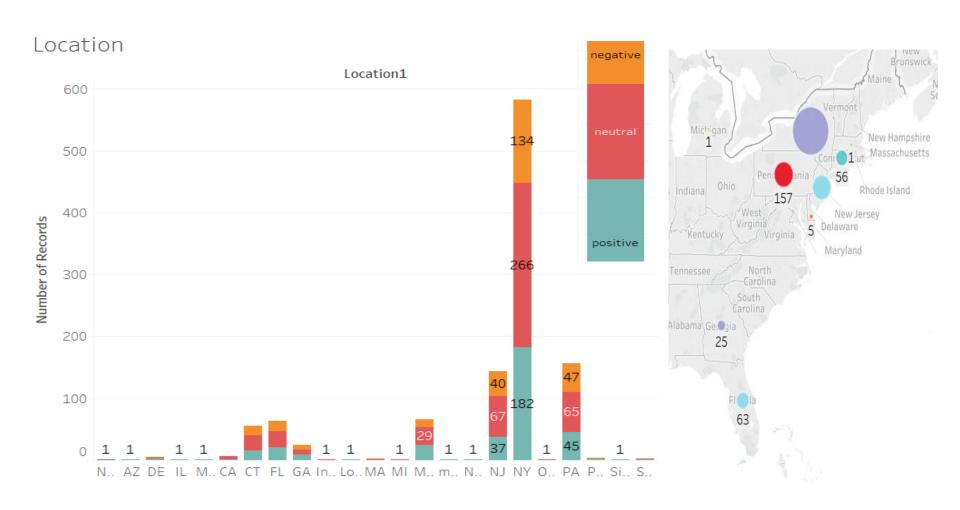
- Bronx
- New Jersey

**Major Serving Locations** 



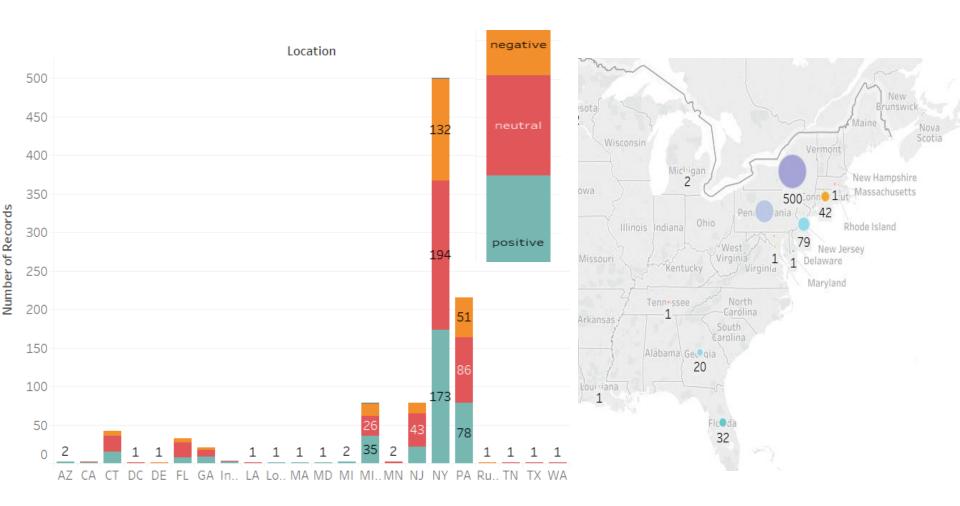


## Location Analysis Uber Eats



#### Location Analysis





# Influencer Analysis Uber Eats



Twitter Handle	Follower Count
YahooFinance	830102
FOX29philly	592611
yo	228375
EXPandAMP	97613
cryptodemedici	92907
SniperZeroXI	67237
KYWNewsradio	53893
kmin	37896
NjTank99	31968
dberkowitz	31107

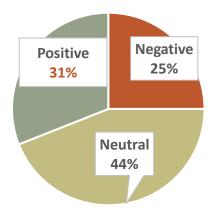
Twitter Handle	Follower Count
TinaB	506397
Cushbomb	292529
Sherlake	264180
Ketaminh	253385
SweetBake	223021
rosegoldmamii	220027
JJFan18	194681
dervogelfamber	165578
lifeisastory_	158290
106th	151468

#### Which one has better sentiment?

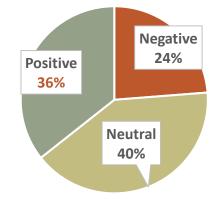
The Twitter sentiment analysis result indicates that **GrubHub** is more well-received than **Uber Eats in the tri-state area**, with a 36% of tweets with positive sentiment, compared to that of Uber Eats (31%).

While the overall percentage of the tweets with positive sentiment of Uber Eats isn't as high, the neutral sentiment takes 44% of all Twitter mentions.









#### Key Takeaways

Digital platforms can **leverage the vast wealth of first, and third-party data** (i.e. social media, location tags, cookies) to create better user experiences, while driving operational efficiencies.

For instance, negative customer feedback relating to delivery times on Twitter, can drive decisions to **add optimal driver capacity in certain locales**, and/or hours of the day.

Similarly, Facebook's social graph data can be leveraged to **better-identify local tastes and demands**, informing companies on which **new restaurants to onboard**, in certain geographies.

#### Limitation



**Limited Number of Tweets** 



**Robot or Real User** 



Only Analyze Tweets in English



Specific Search Words 'Grubhub', 'UberEats'



**Irrelevant Locations** 



Scope: Public Twitter Accounts Only

#### References

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