



Quantum Computing

- A Web Scraping Project by Michael Tarino



Background

Basic QM

History of theoretical quantum computing

Real-world developments in past 5-10 years

Major players in the space



State of Quantum Technology

01

Hardware - Adiabatic (annealing), Gate Model (circuit model)

02

Software - quantum cloud platforms; optimization, machine learning & sampling problems



Project objective



To find insights that would be helpful for strategic marketing professionals about the state of social media awareness of the quantum computing industry.



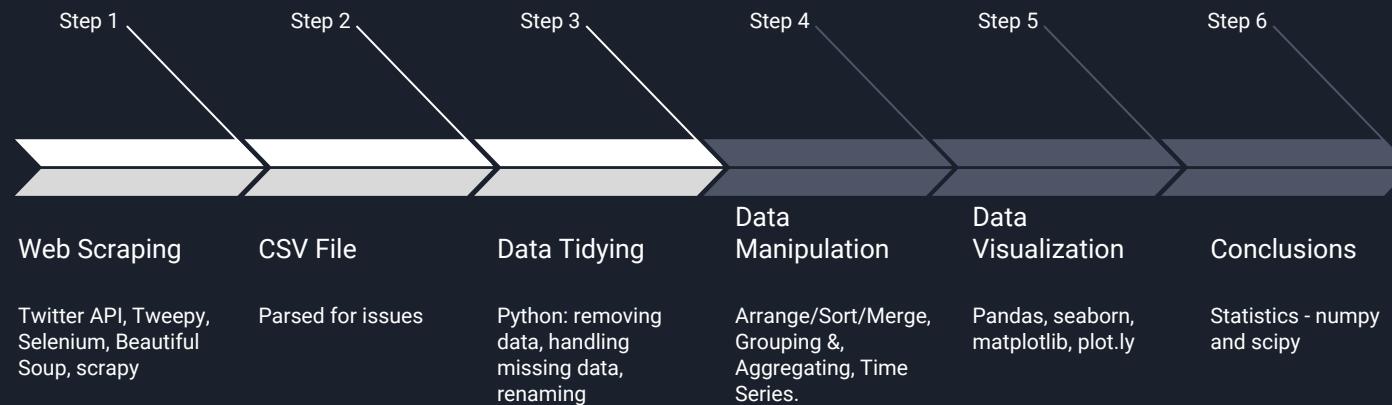
Target audience

Prospective employers, fellow classmates, & NYC
Data Science Academy educators





Project timeline



Web Scraping

Selenium and Twitter API

- Twitter News Search:
“Quantum Computing”
- scroll with “while” loop
and populates dictionary
with “for” loop
- prints a 115KB CSV file
- raw data is 590 rows by
11 columns
- I focus on data from
2012 to 2017





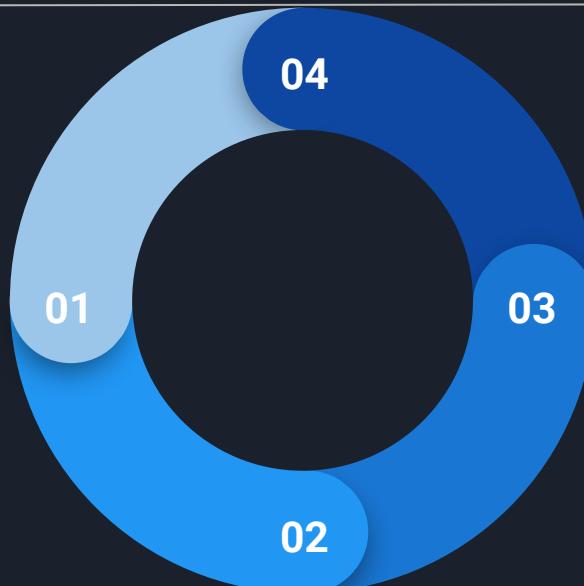
Data

Data tidying

Data
Manipulation

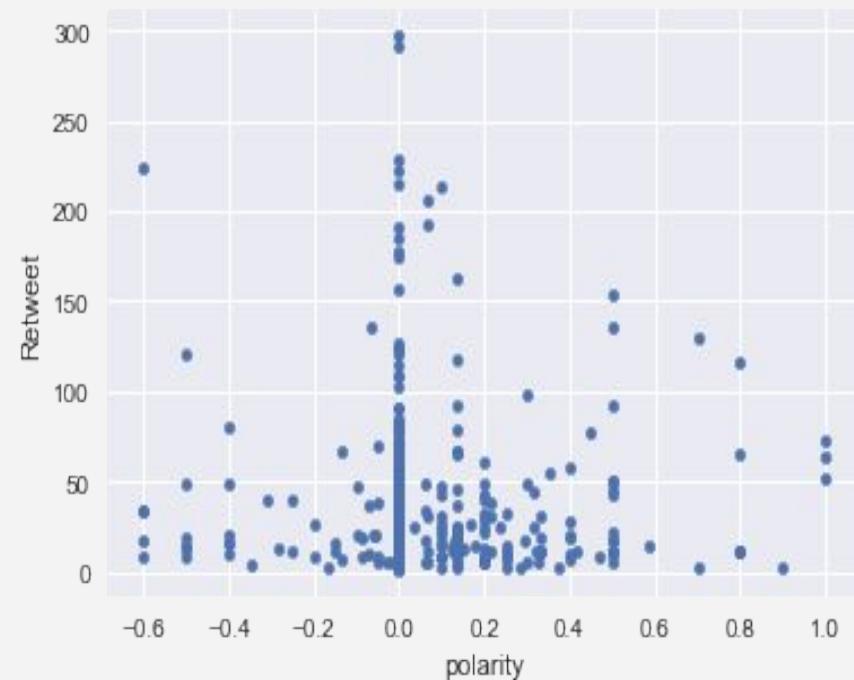
Conclusions

Data
Visualization &
NLP

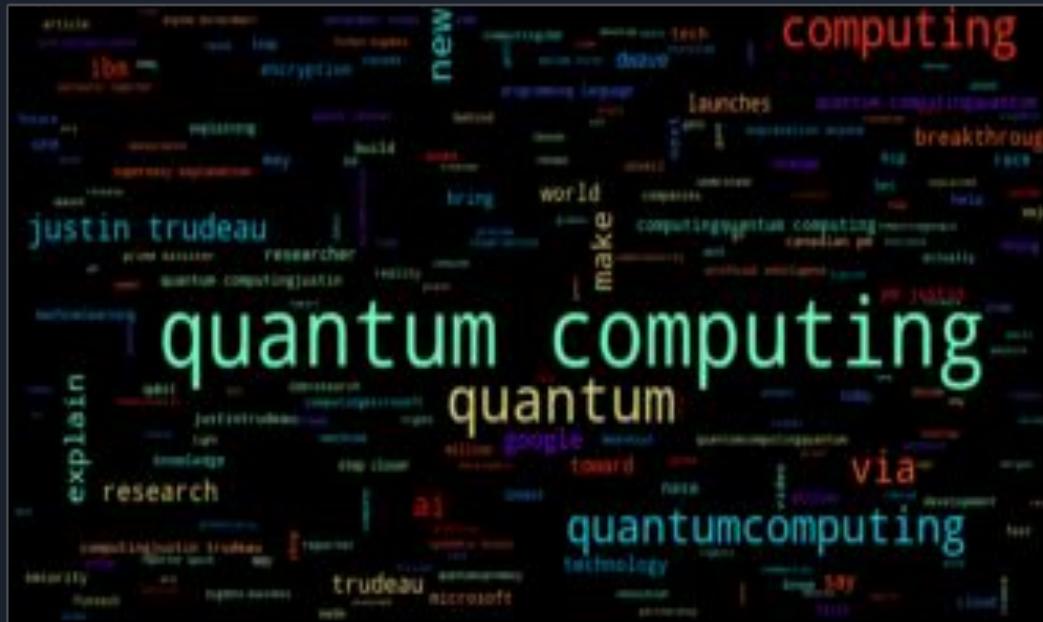


Tweet Content - Sentiment Analysis

	Content	polarity
499	brilliant folks ibmresearch brought us another...	0.900000
397	delightful see prime minister justintrudeau ex...	0.583333
519	win google vs ibm quantum computing race mt vl...	0.800000
416	proud technology company country whose pm just...	0.800000
396	add knowledge quantum computing justin trudeau...	0.700000



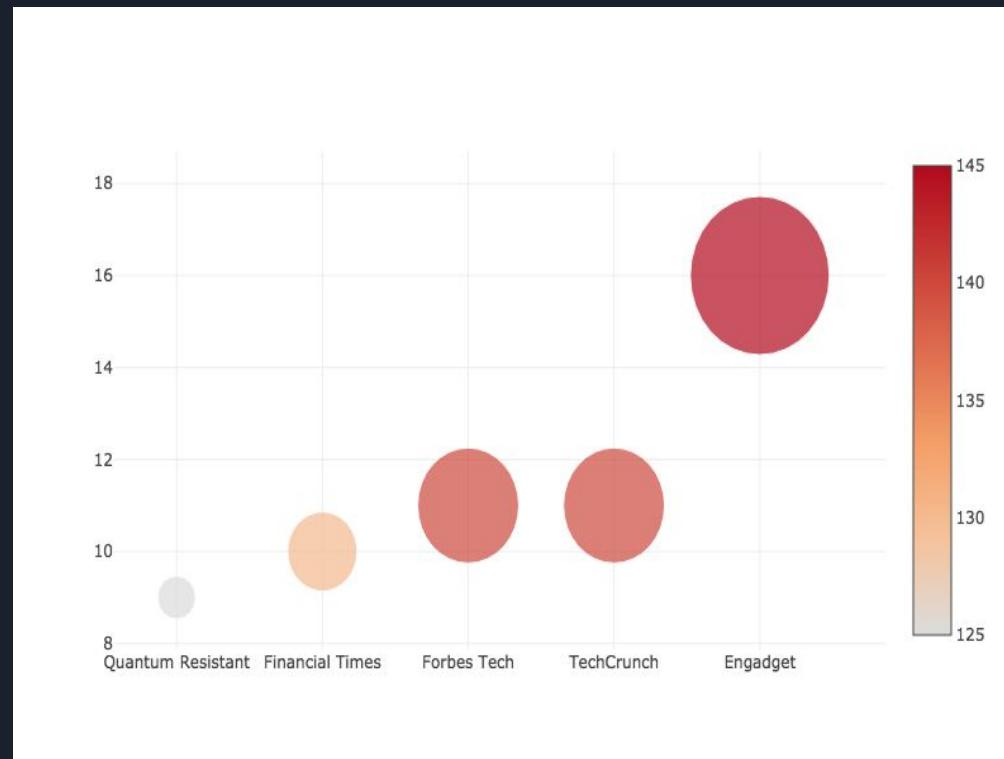
Word Count - Word Cloud & List



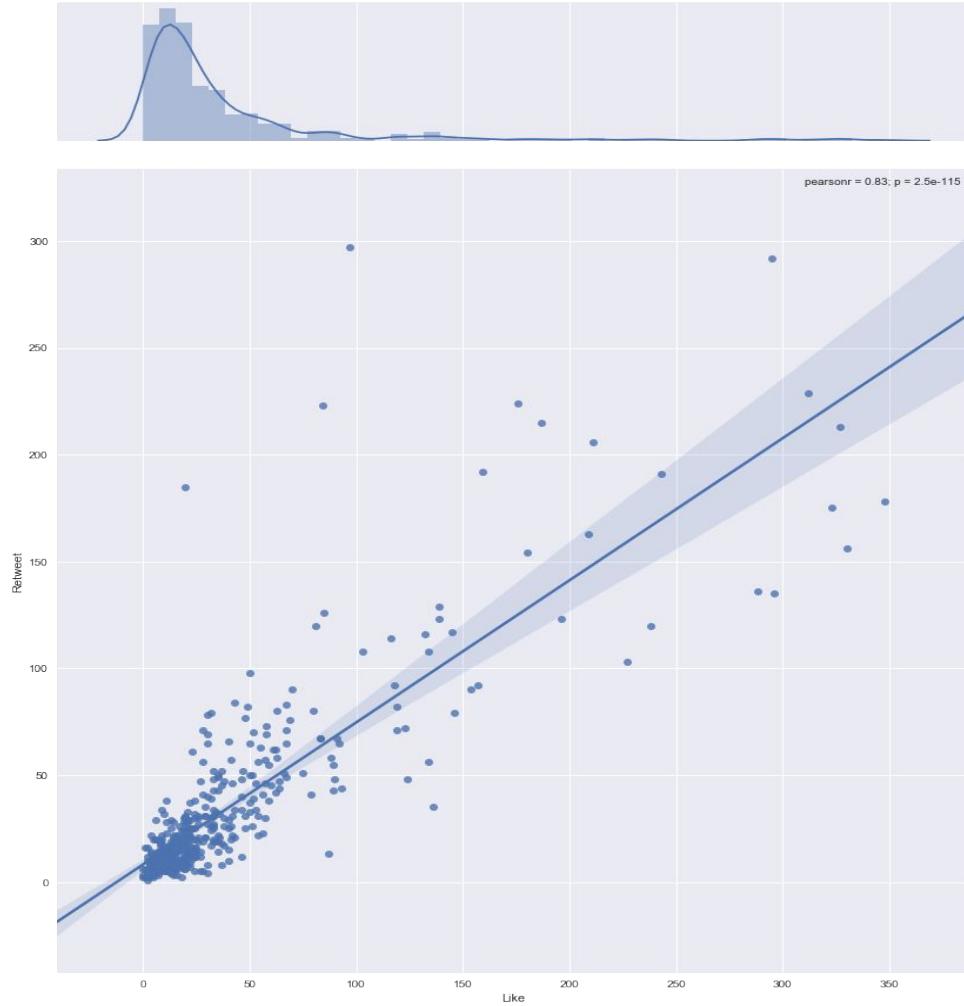
Count	
287	quantum
215	computing
42	ibm
39	trudeau
37	justin
35	google
21	new
21	microsoft
20	pm
14	canadian
13	make
12	intel
12	dwave
11	explains
11	cloud
10	race
10	ai
10	breakthrough
10	researchers
10	launches

Author Count

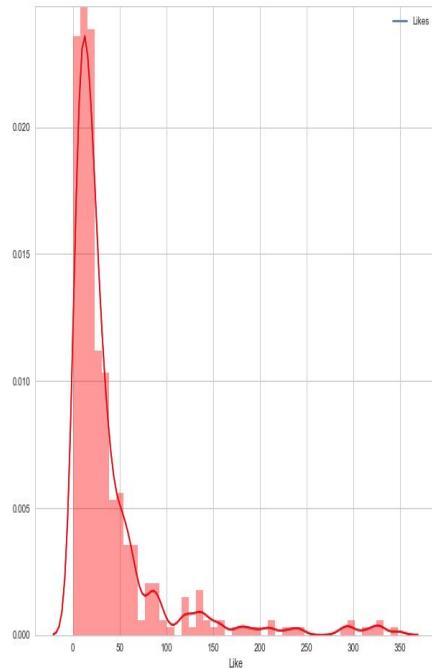
Count	Author
16	Engadget\nVerified account\n
11	TechCrunch\nVerified account\n
11	Forbes Tech\nVerified account\n
10	Financial Times\nVerified account\n
9	Quantum Resistant\n
9	The Economist\nVerified account\n
8	WIRED UK\nVerified account\n
7	Bloomberg\nVerified account\n
7	Forbes\nVerified account\n
7	WIRED\nVerified account\n



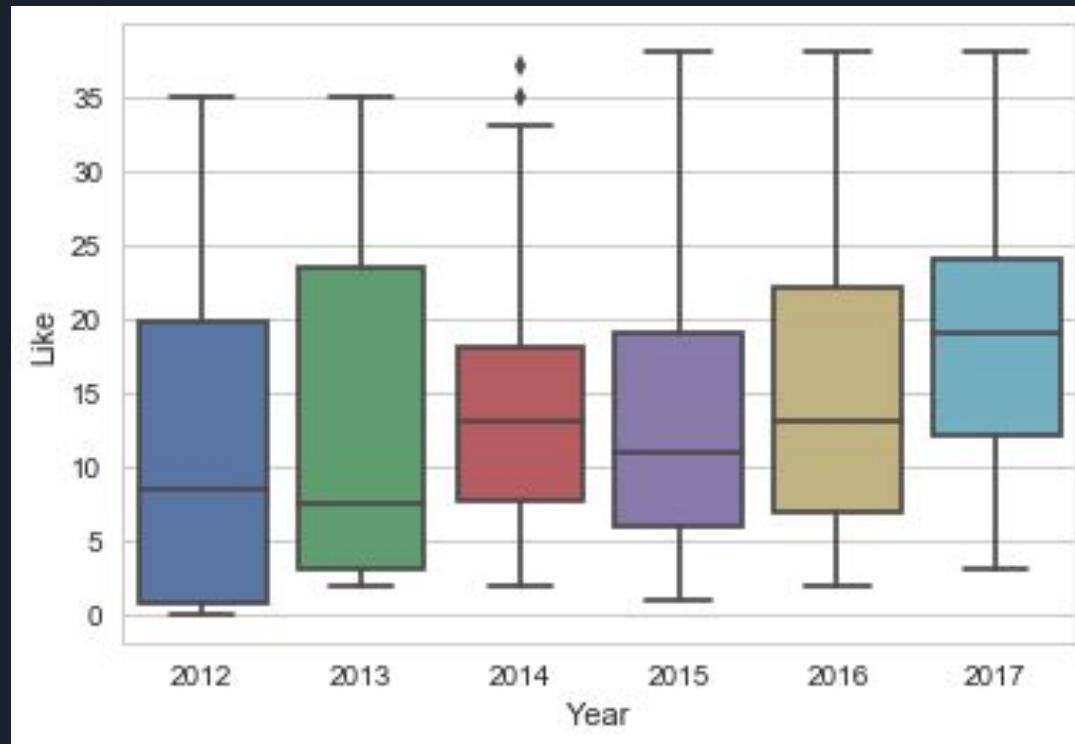
Joint Plot of “Retweets” by “Likes”



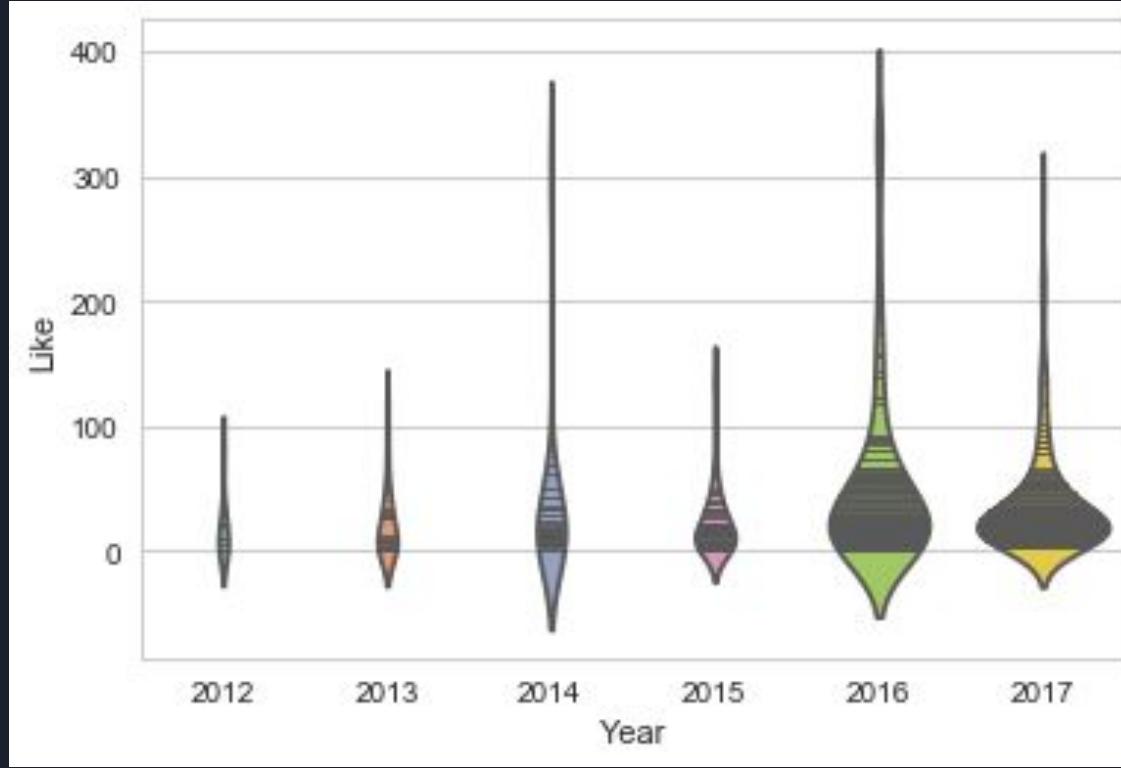
“Likes”
Histogram



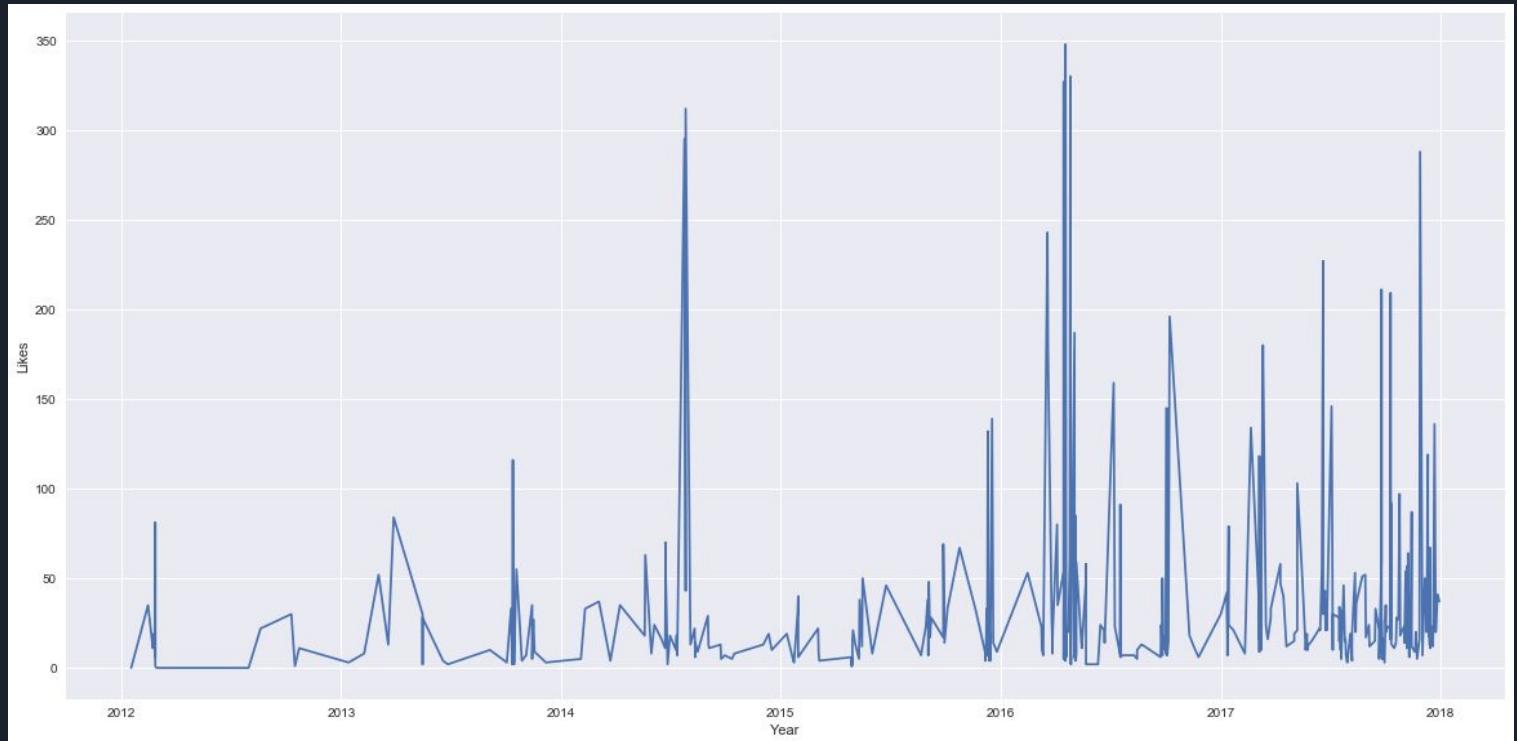
“Likes” by “Year” Boxplot



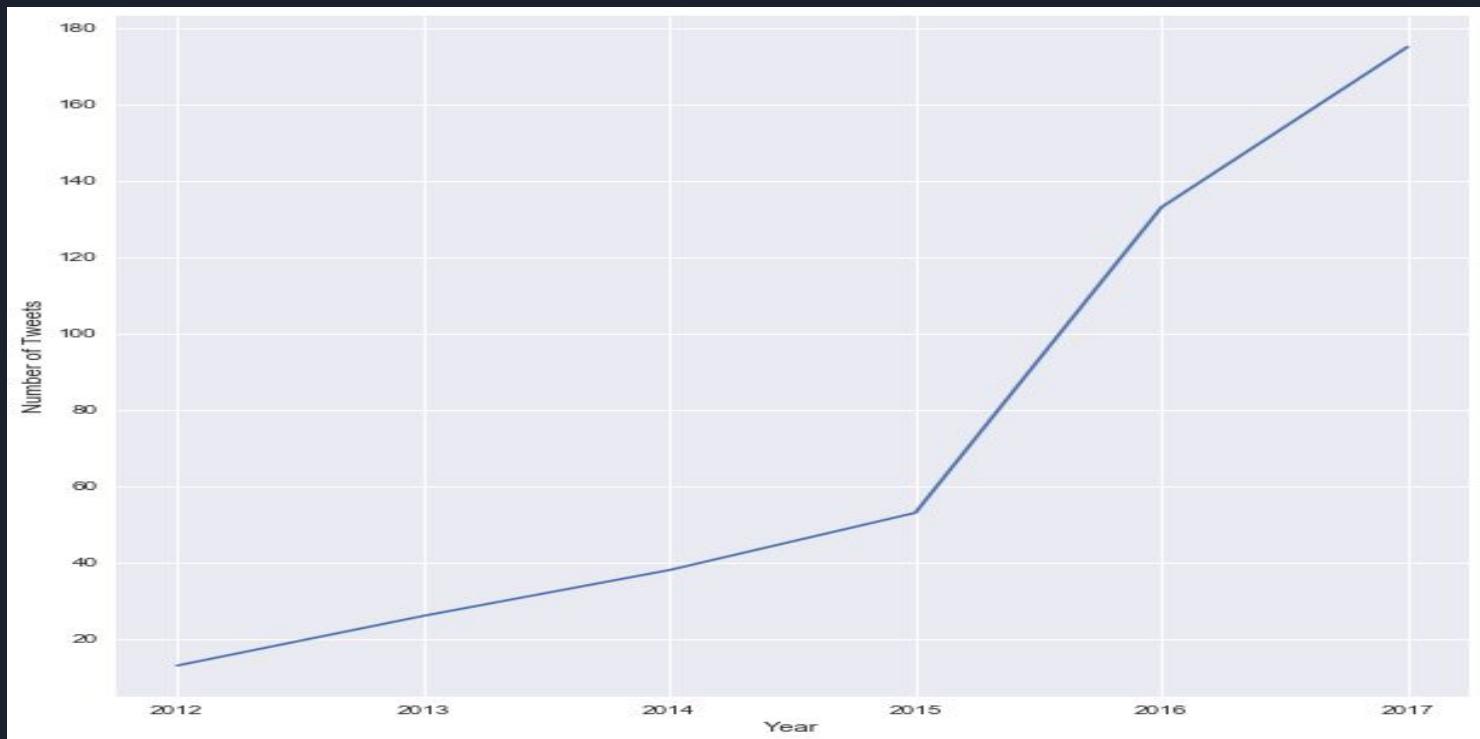
“Likes” Violin Plot



“Likes” Time Series



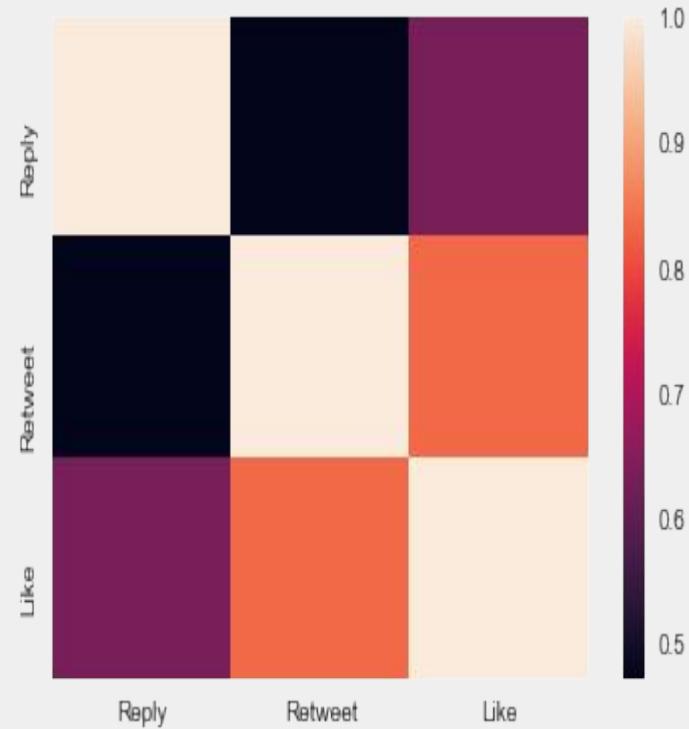
Tweet Count over the years



Statistics and Correlations

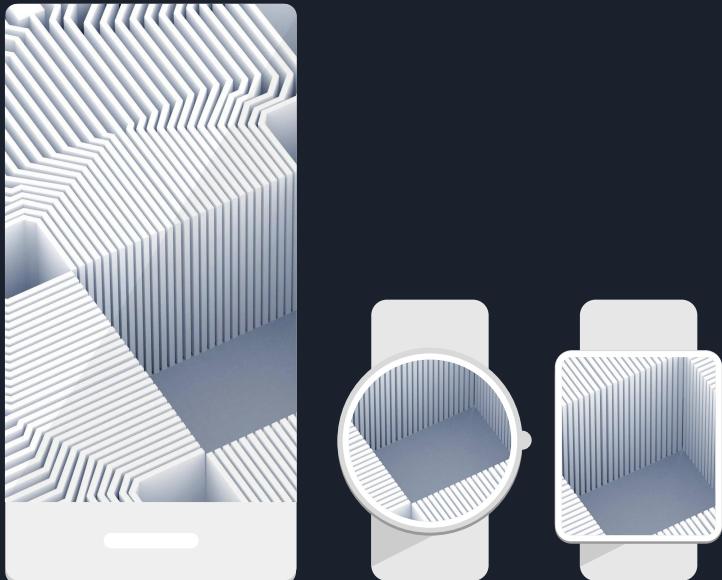
```
df.describe()
```

	Reply	Retweet	Like
count	439.000000	439.000000	439.000000
mean	2.293850	33.521640	38.143508
std	4.714471	43.289446	54.321425
min	0.000000	1.000000	0.000000
25%	0.000000	10.000000	10.000000
50%	1.000000	18.000000	20.000000
75%	2.000000	38.500000	40.000000
max	46.000000	297.000000	348.000000





Spotlight on QML



Future Applications

Machine Learning algorithms for financial services, big pharma, & logistical problem-solving are among the major applications of quantum technology so keep these developments in mind as you continue your data science journey.

Thank you!

“Anyone who is not shocked by
quantum theory has not understood it.”

- Niels Bohr

