

How did GameStop make a 'difference'?

An exploratory content analysis of
social media discussion on Reddit (r/WallStreetBets)

SOCI 40133 Final Project Presentation

Yile Chen

Mar 17 2022

GameStop: 'the mother of all short squeezes'

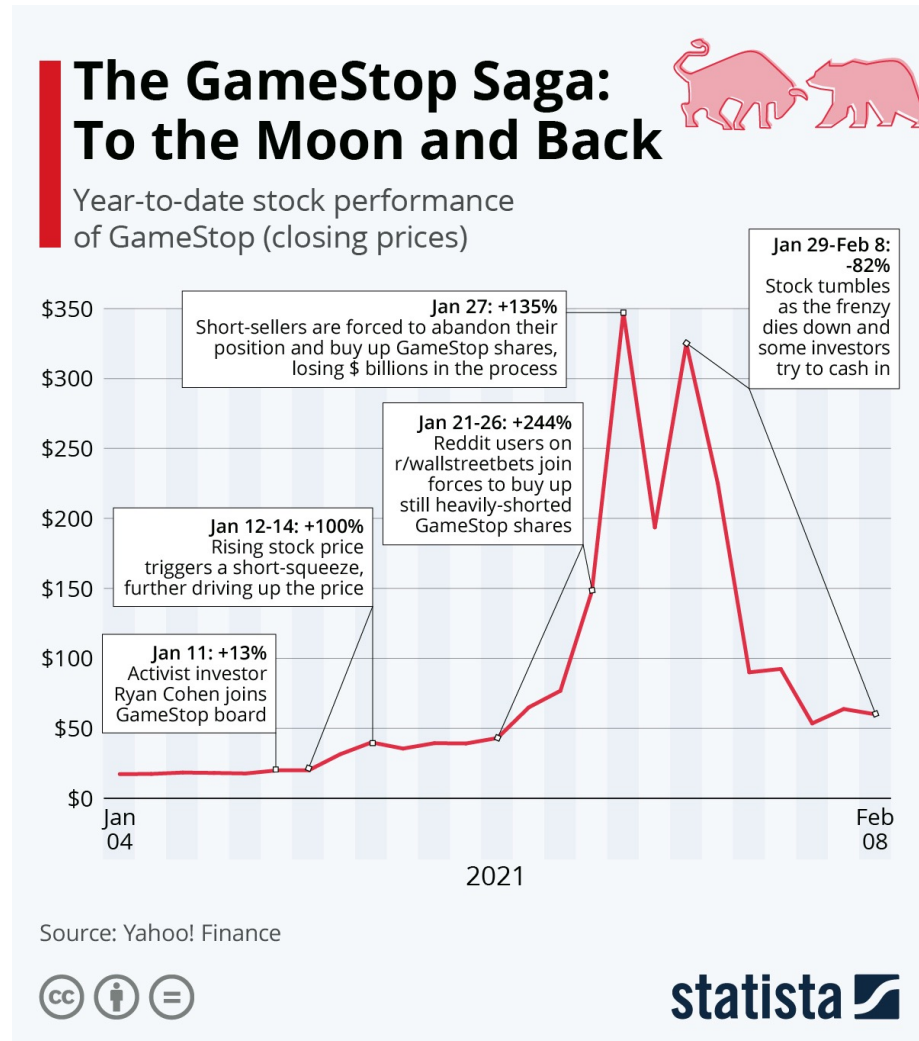


- A collective act of retail investors on social media platforms to buy and hold \$GME
- Dramatic increase of stock price
- Significant short squeeze - the stock is then called 'the mother of all short squeezes' (MOASS)

Research Questions:

How was GME discussed over time?
How does GME revolutionize social media discussion?

GameStop: 'the mother of all short squeezes'

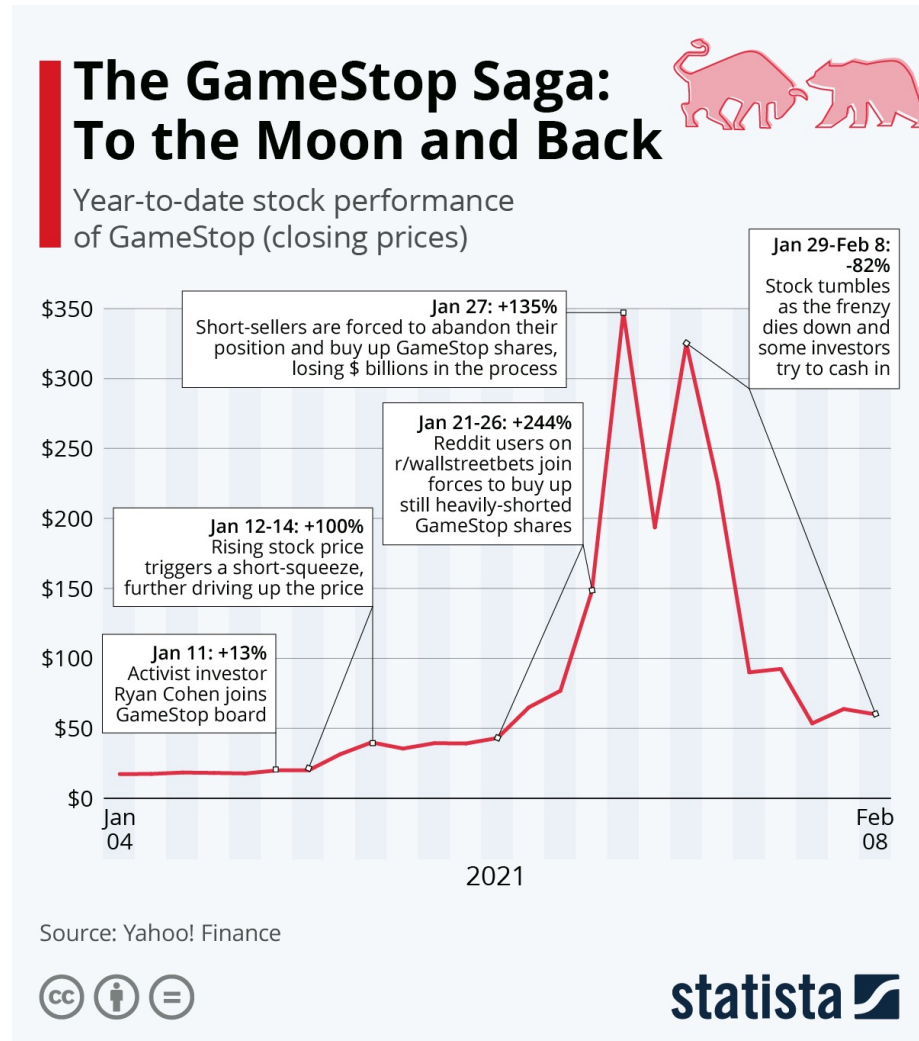


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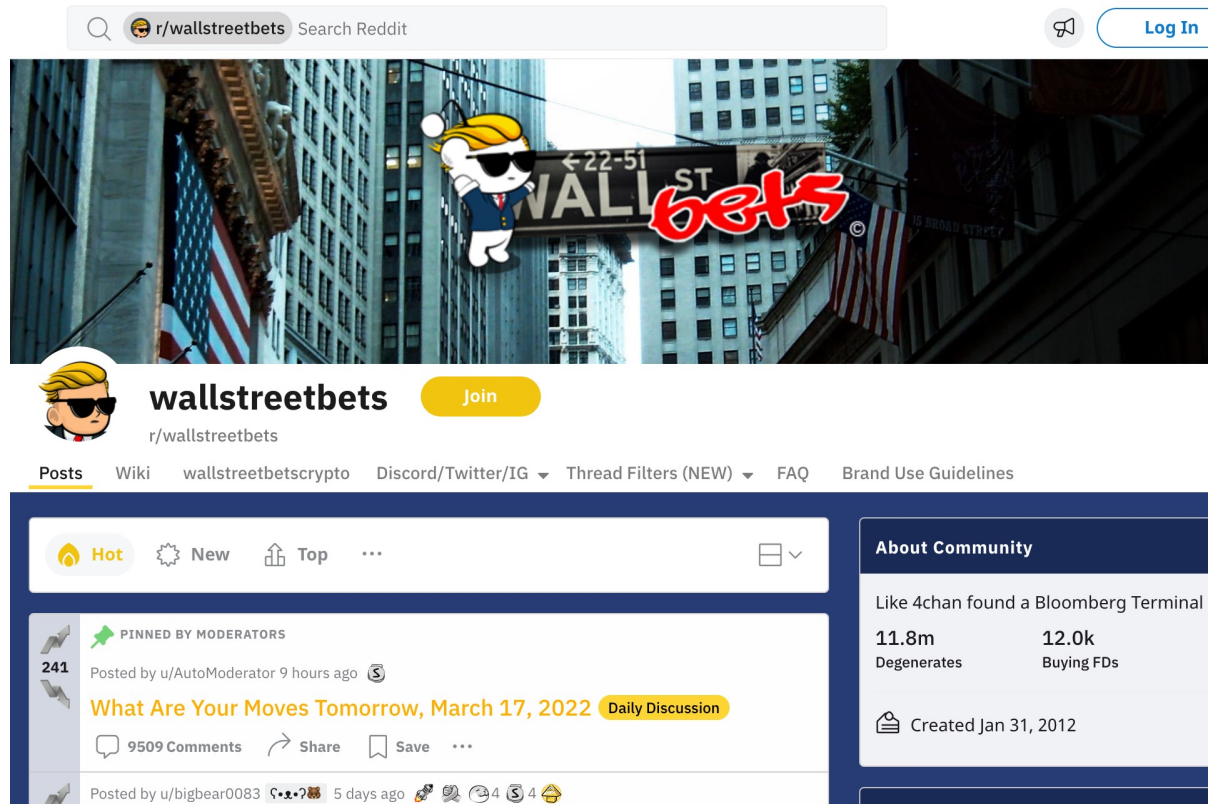


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Data and Method



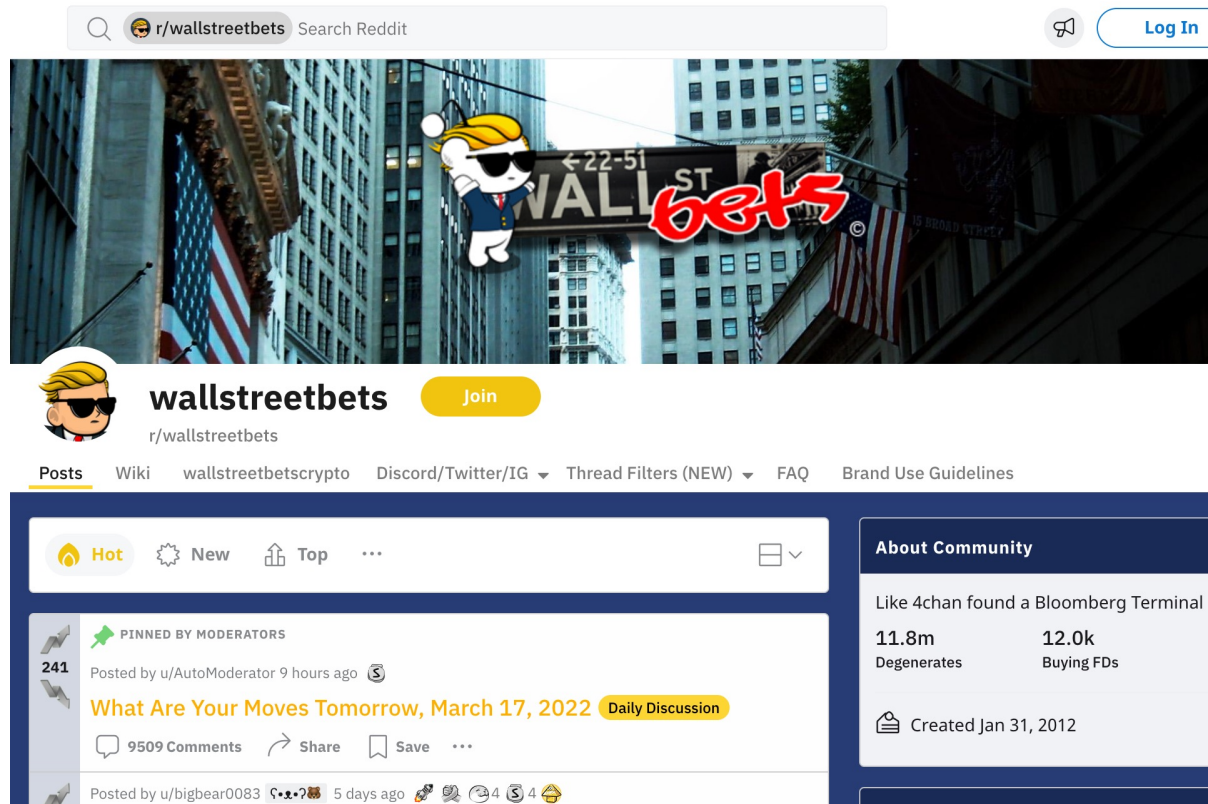
Data

- Nine Months of posts (over 1 million) between Oct 2020 and June 2021 from r/wallstreetbets (WSB)
- Collected by PMAW PushShift API

Method:

- Word Count
- Topic model
- Word2Vec
- Network Analysis

Data and Method



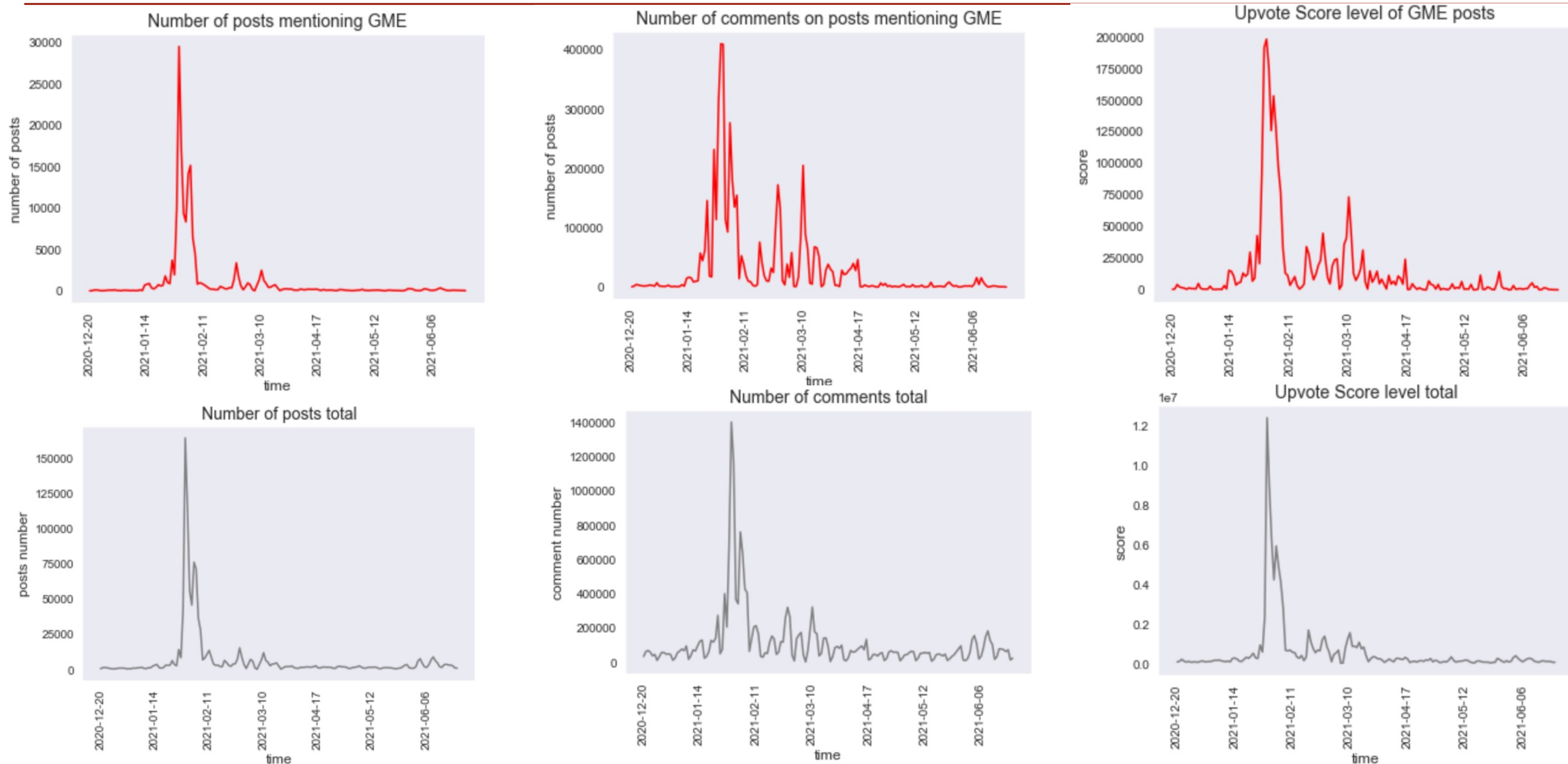
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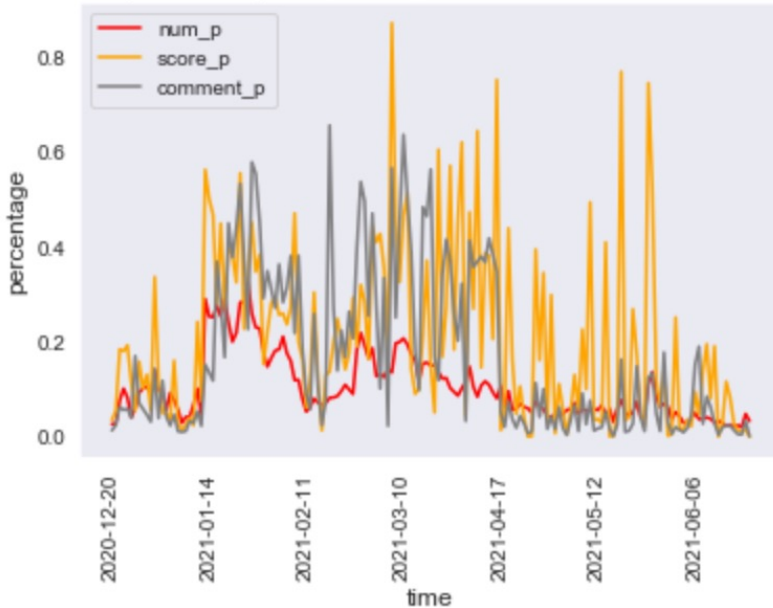
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The rise and fall of the GME social buzz

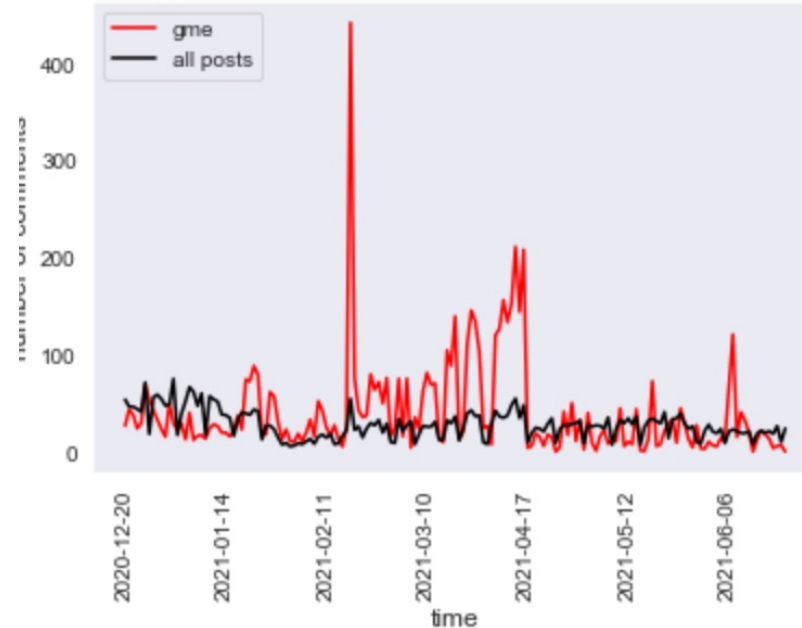


The rise and fall of the GME social buzz

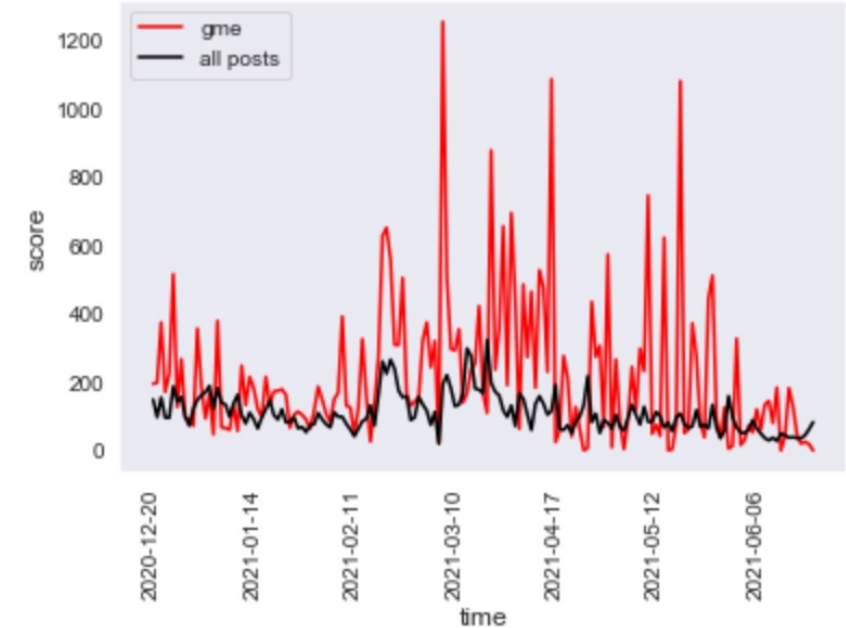
Proportion of posts, score, and comments about GME



Average num of comments per posts - gme vs. all posts

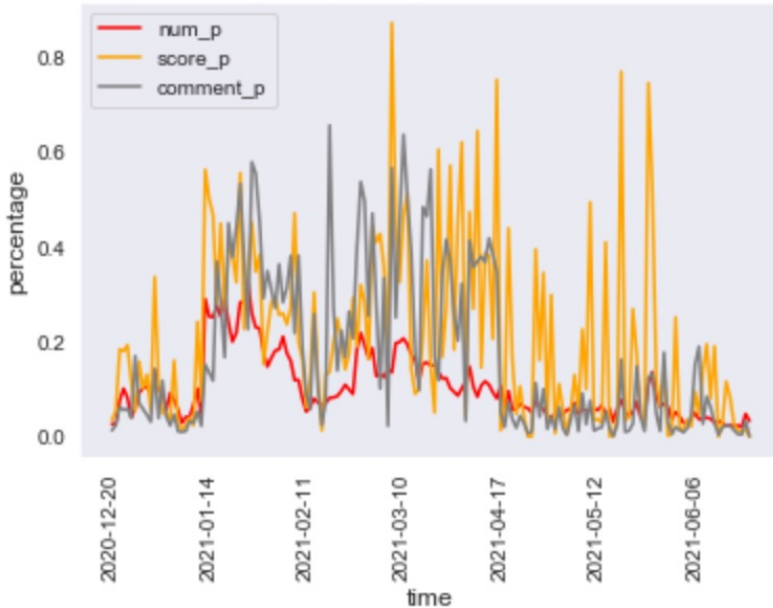


Average Upvote Score level per post - gme vs. all posts

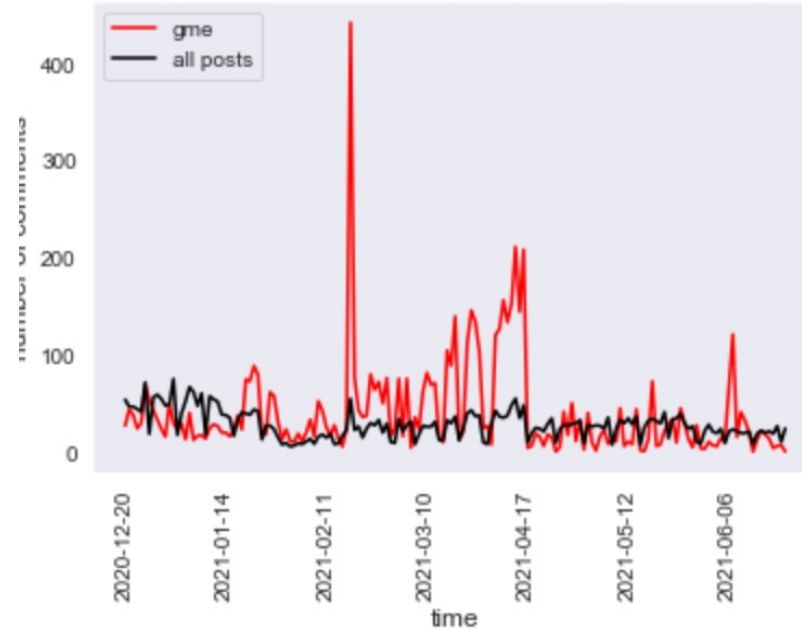


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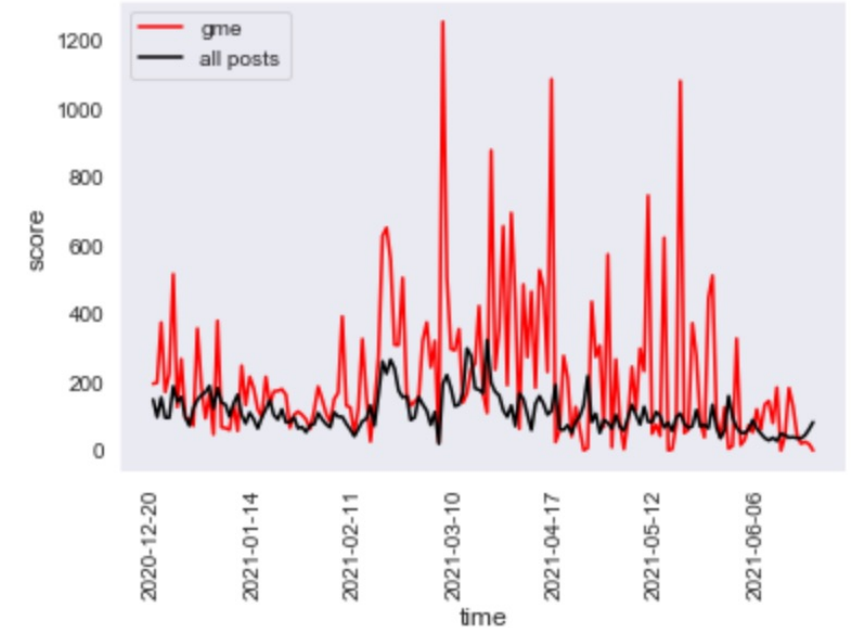
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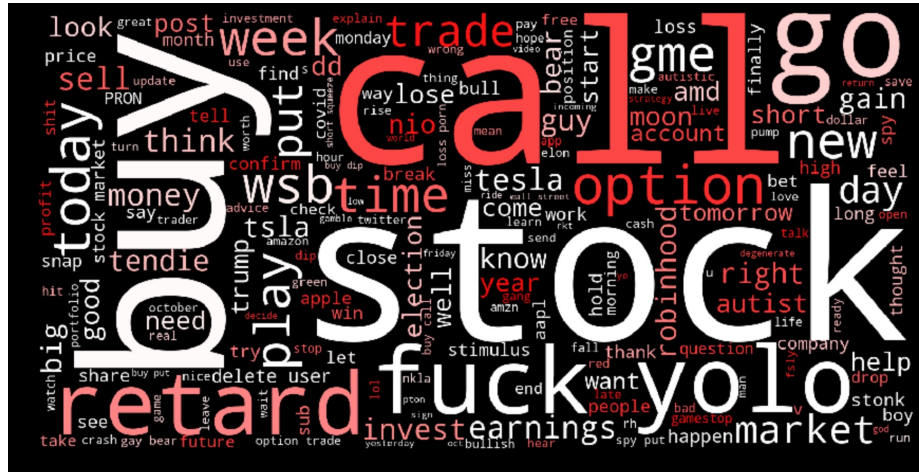


Average Upvote Score level per post - gme vs. all posts



\$GME opens an era of 'trending stocks'?

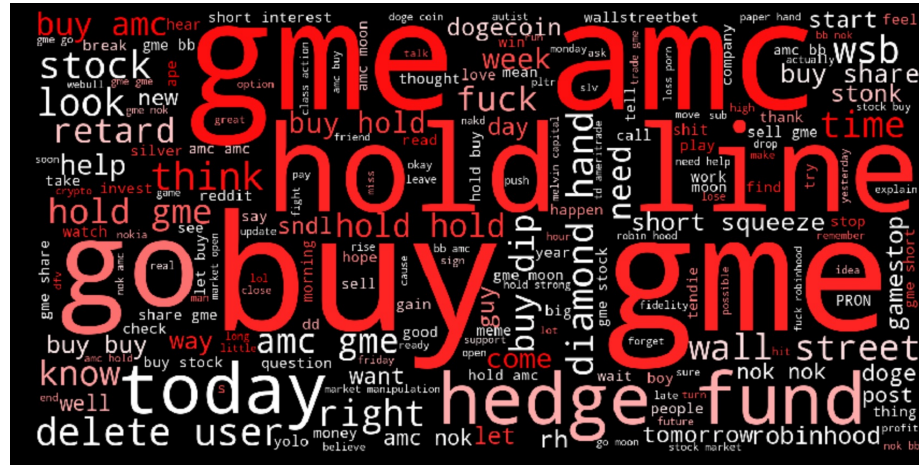
Word Cloud of posts from 2020-10-01 to 2021-11-01 (before the GME SS)



Word Cloud of posts from 2020-12-20 to 2021-01-20 (during the GME SS)



Word Cloud of posts from 2020-01-20 to 2021-02-20 (during the GME SS)

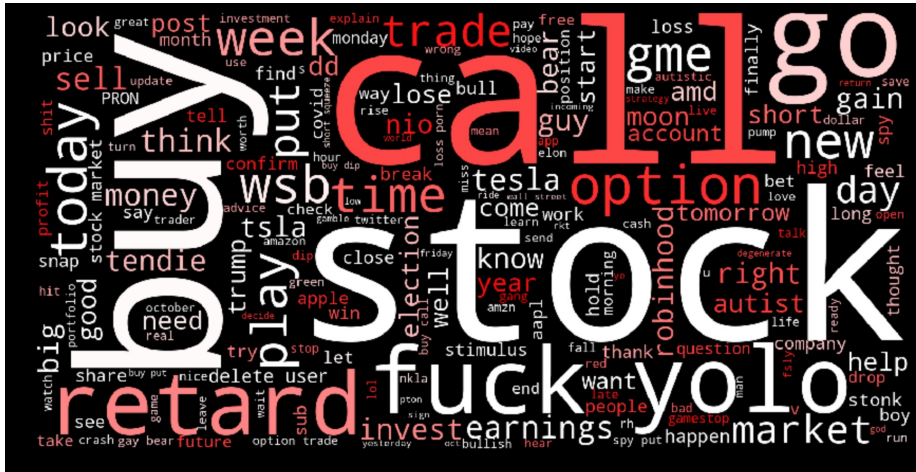


Word Cloud of posts from 2020-05-20 to 2021-06-20 (after the GME SS)



\$GME opens an era of ‘trending stocks’?

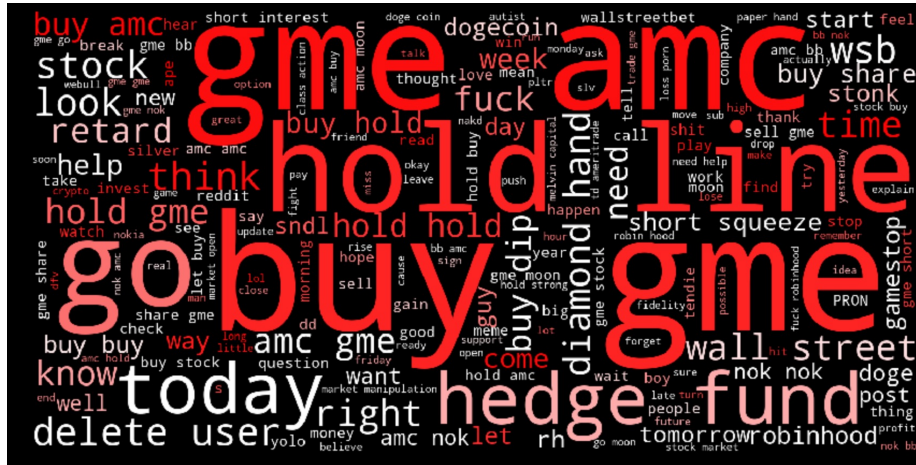
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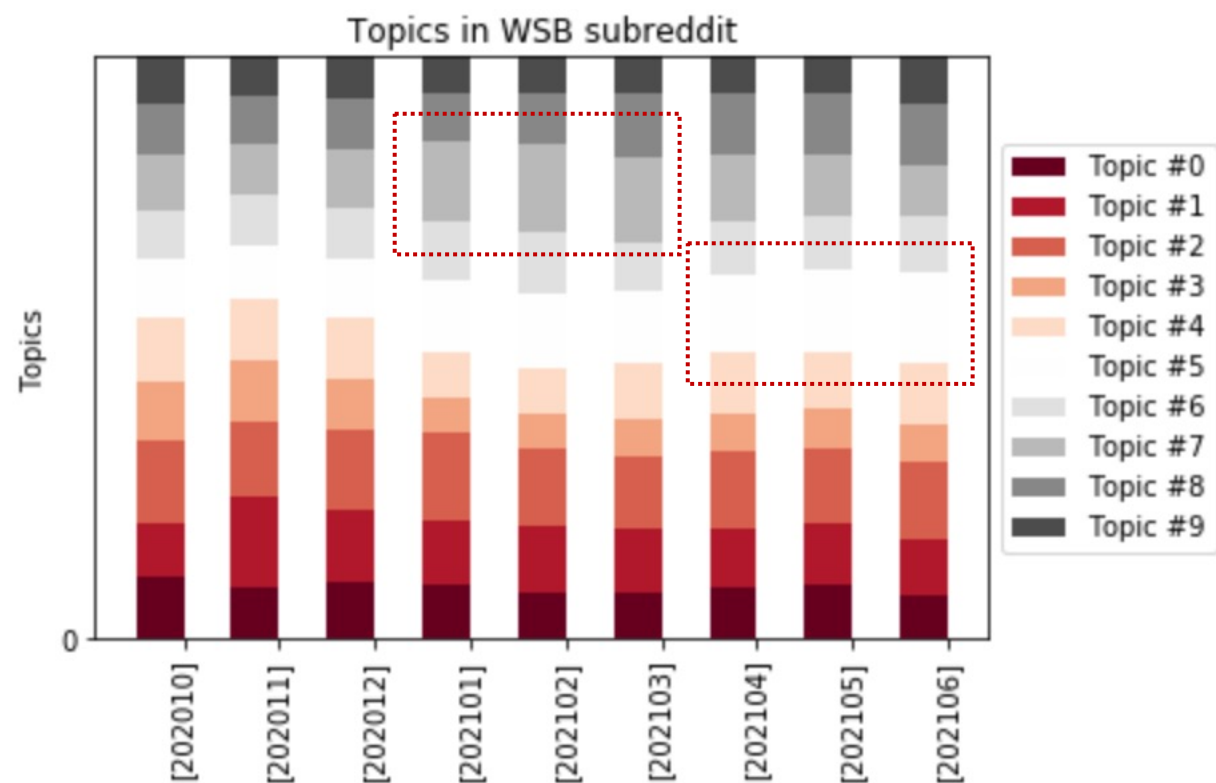
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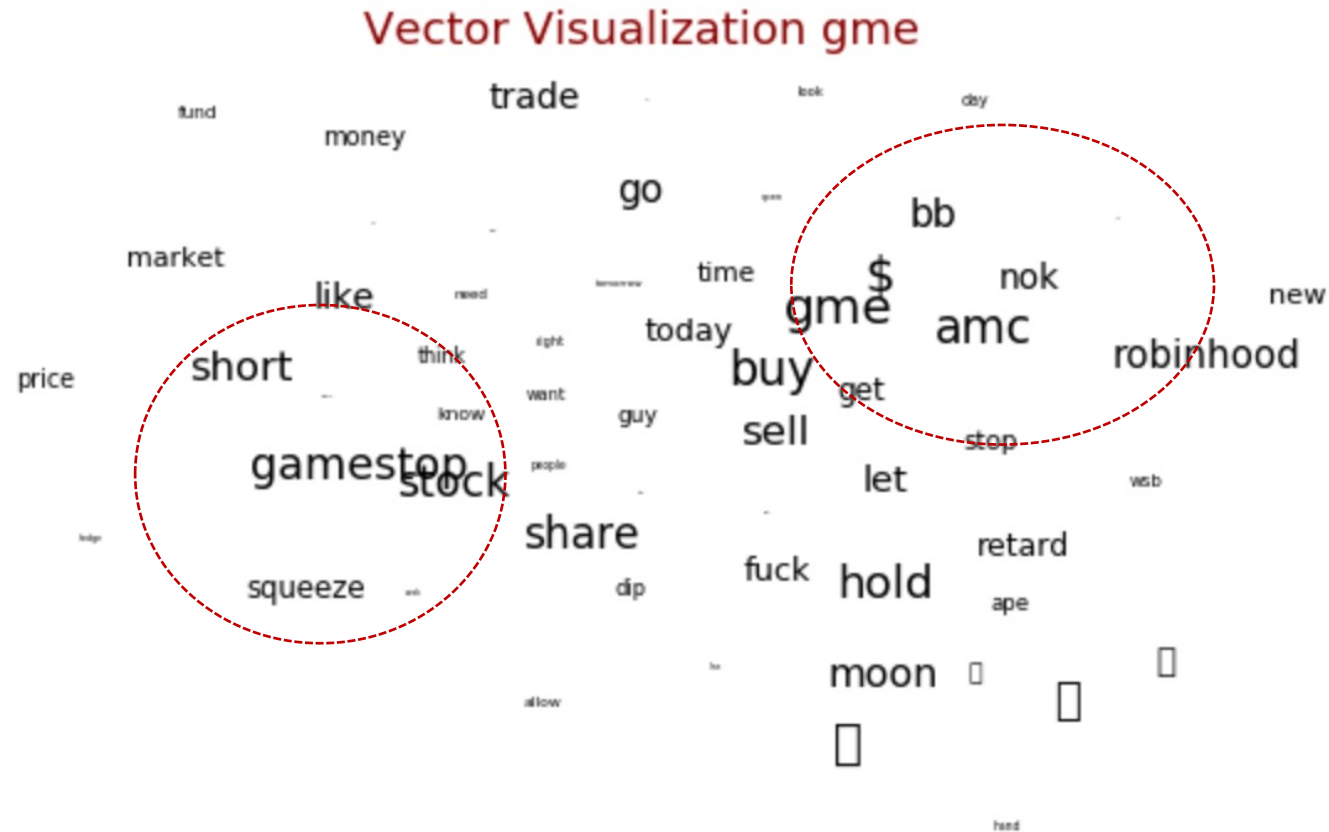
Topic Dynamics



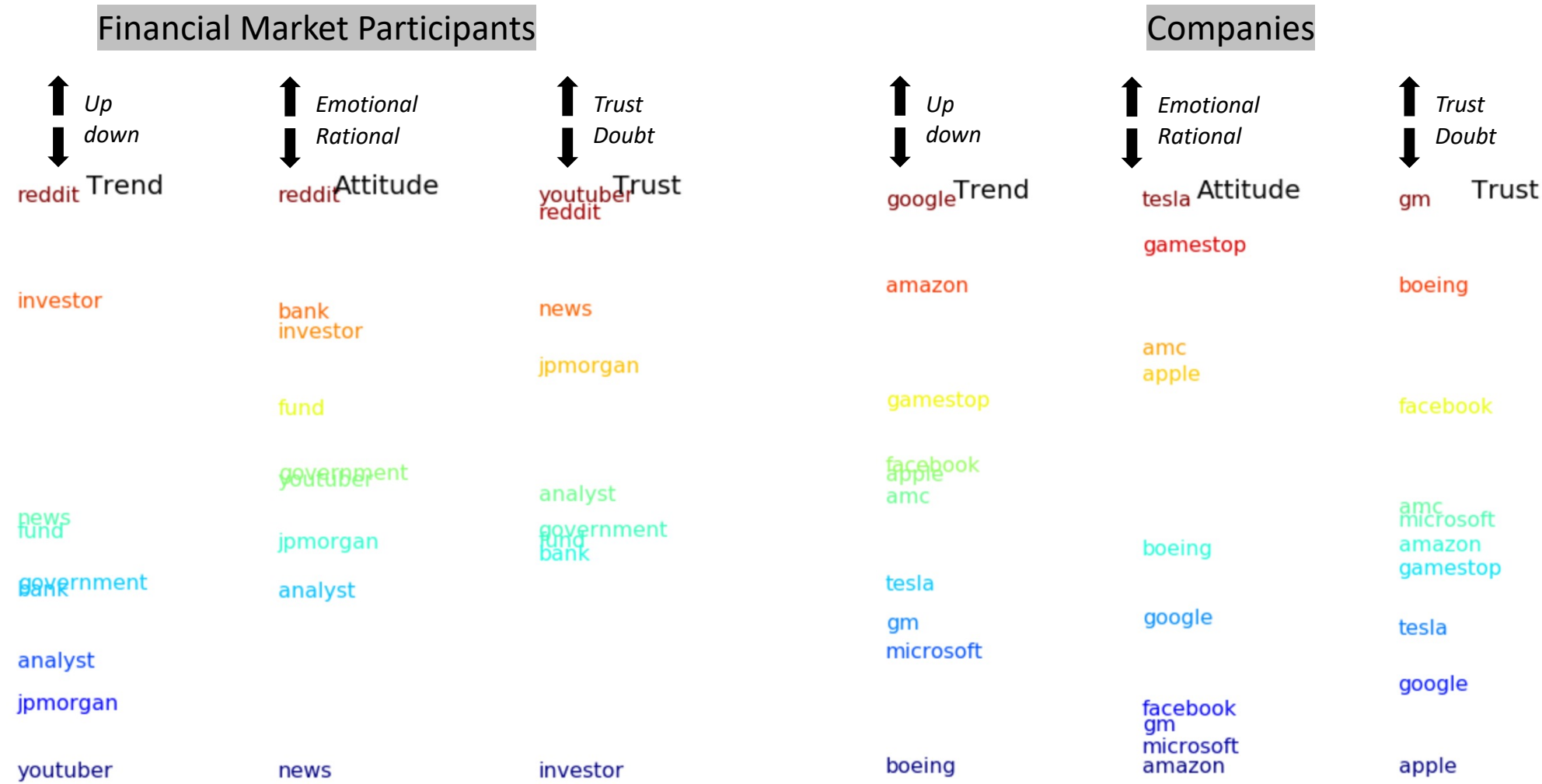
Topic_0	Topic_1	Topic_2	Topic_3	Topic_4	Topic_5	Topic_6	Topic_7	Topic_8	Topic_9
need	moon	stock	dd	wish	amc	clv	gme	ape	bb
option	buy	let	delete	yolo	short	hold	share	today	come
trade	day	clne	user	like	squeeze	time	market	week	right
help	tomorrow	money	play	think	sell	hodl	price	good	thought
invest	dip	guy	ready	look	new	fuck	way	strong	loss
sndl	ride	big	rocket	company	wkhs	uwmc	hand	great	month
coin	fund	know	run	gain	wsb	long	try	news	soon
position	hedge	meme	hit	post	high	year	tell	real	blackberry
break	thing	want	target	start	retard	clf	stop	huge	miss
boy	pltr	thank	tendies	love	potential	say	diamond	tly	hear

While topic 5 (Short Squeeze) keeps trending up, topic 7 (GME) first increases then decreases.

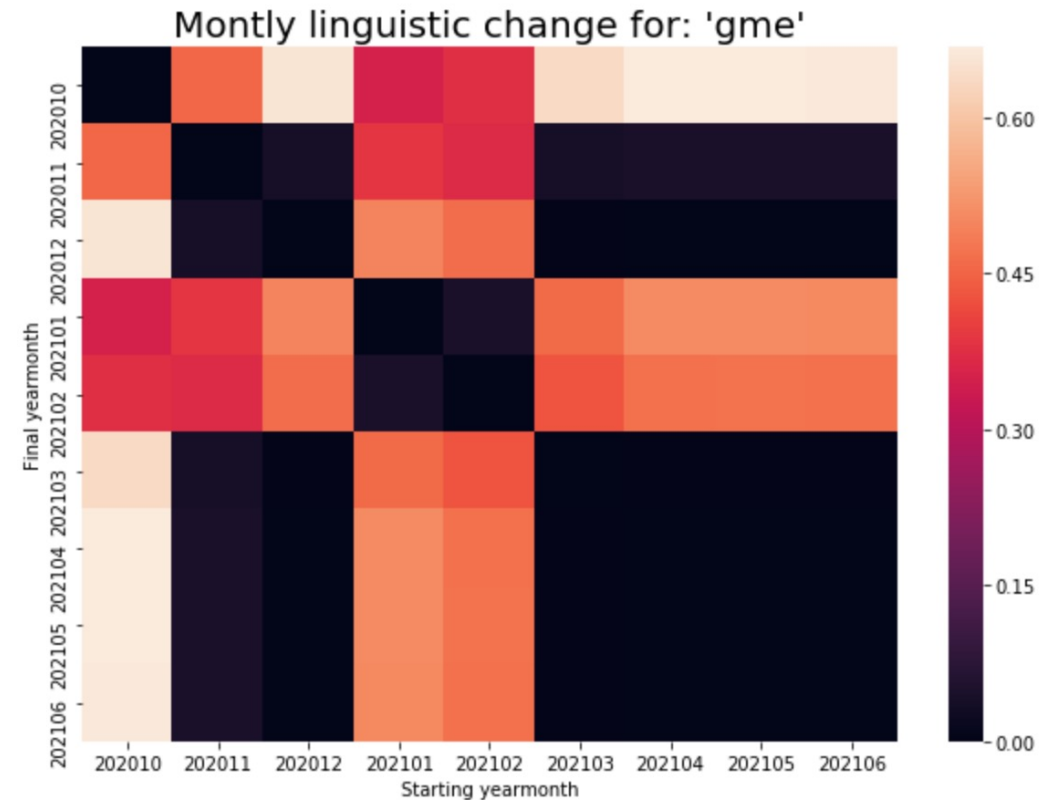
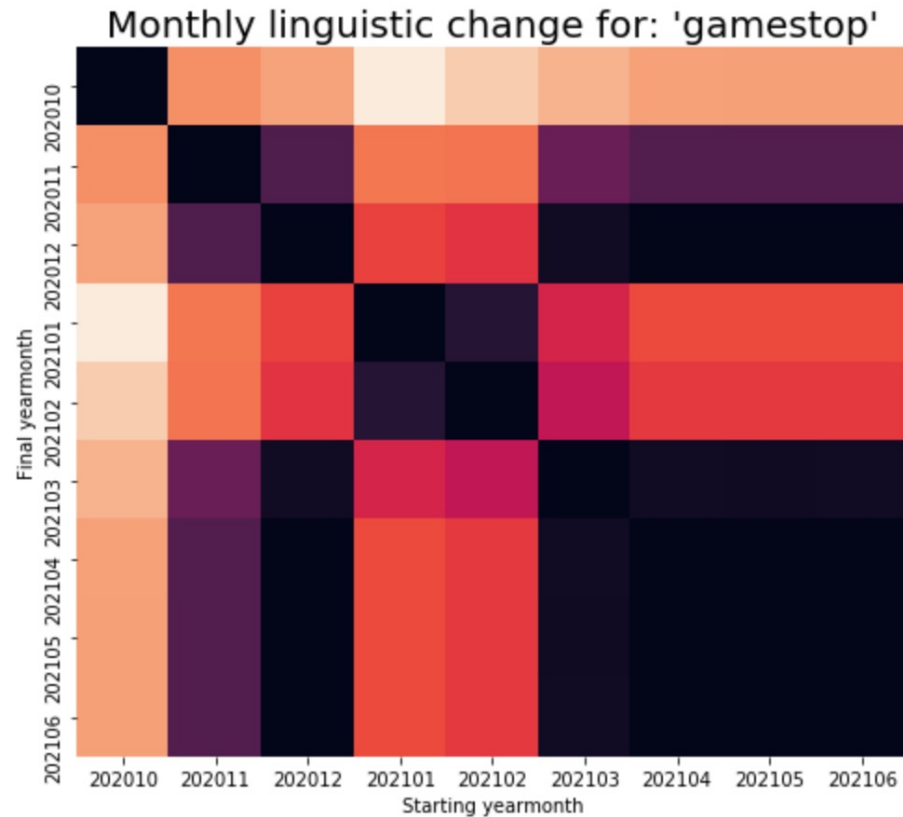
Word2Vec - vector visualization by TSNE



Word2Vec - dimension mapping



Word2Vec - monthly linguistic change

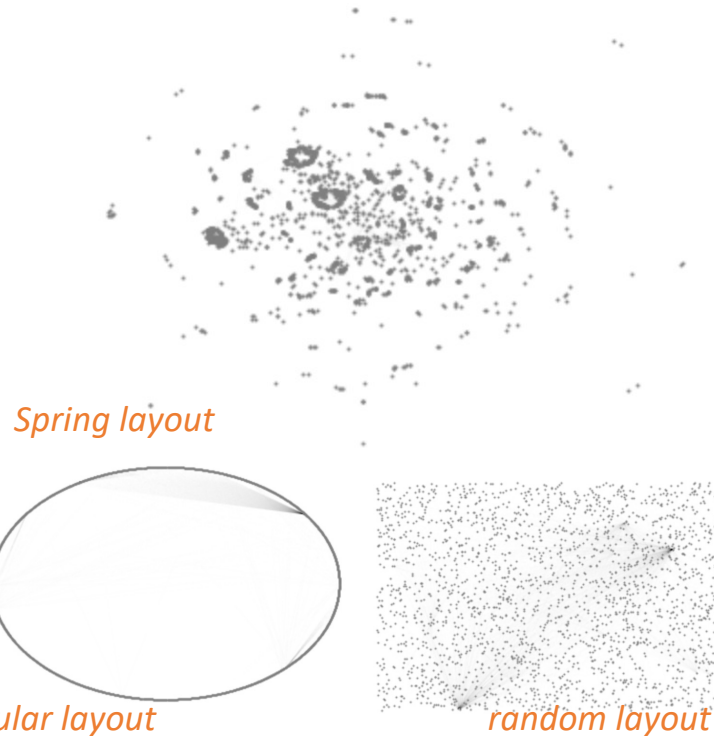


Comment Networks - visualizations of 3 sample dates

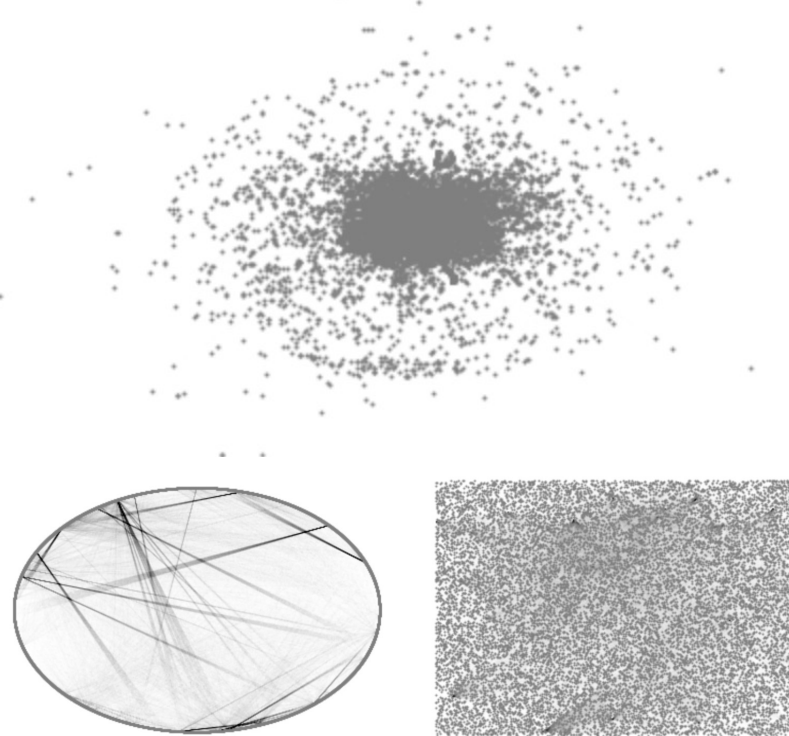
2020-11-01 (before)

2021-01-26 (during)

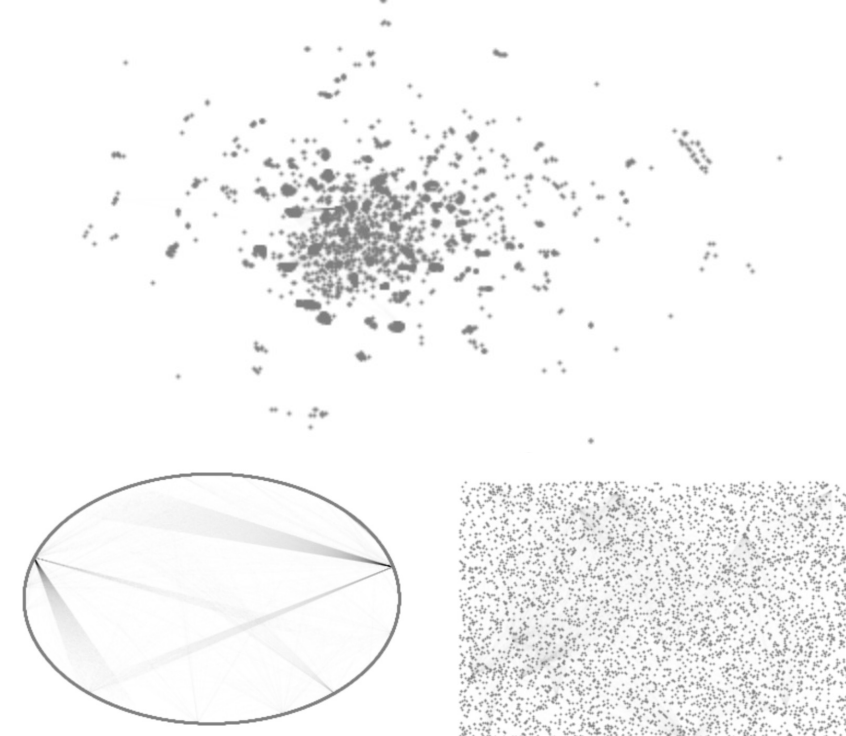
2021-06-01 (after)



- Number of nodes: 2201
- Network density: 0.0691



- Number of nodes: 18301
- Network density: 0.0152



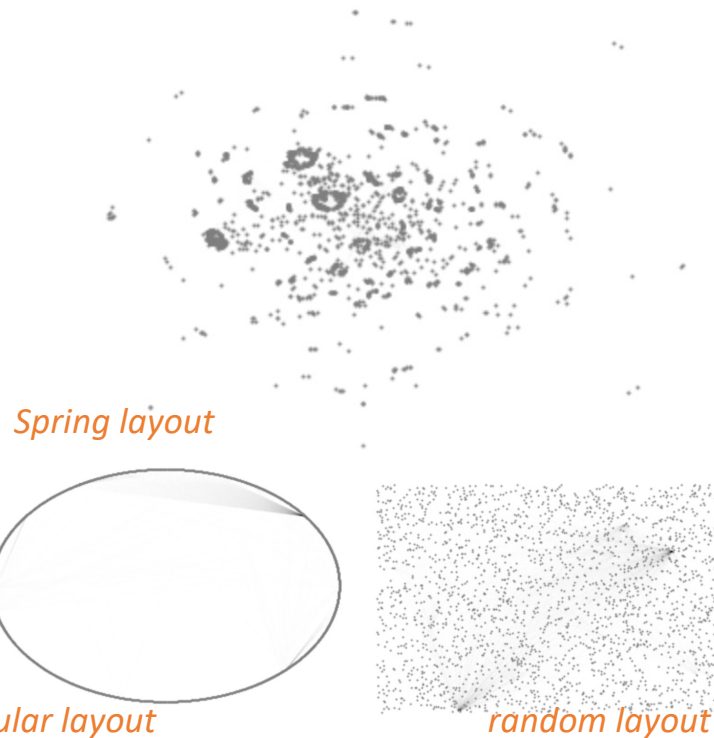
- Number of nodes: 5139
- Network density: 0.0397

Comment Networks - visualizations of 3 sample dates

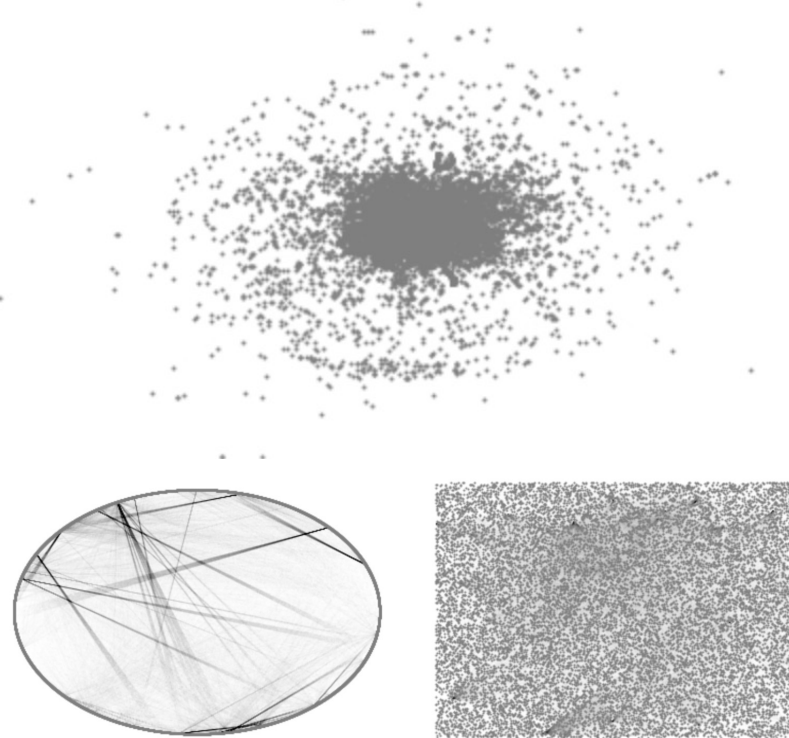
2020-11-01 (before)

2021-01-26 (during)

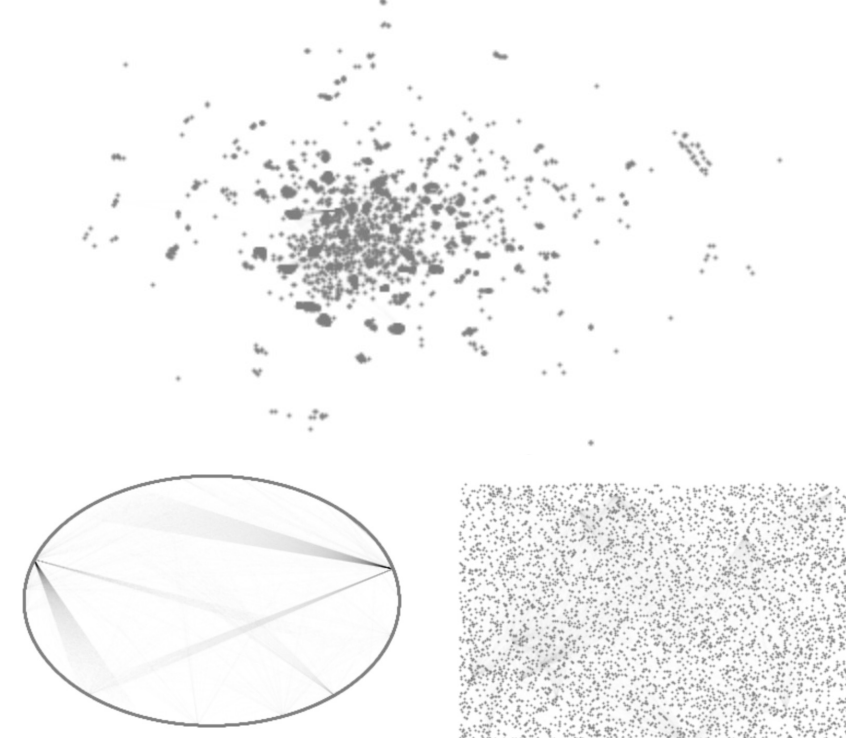
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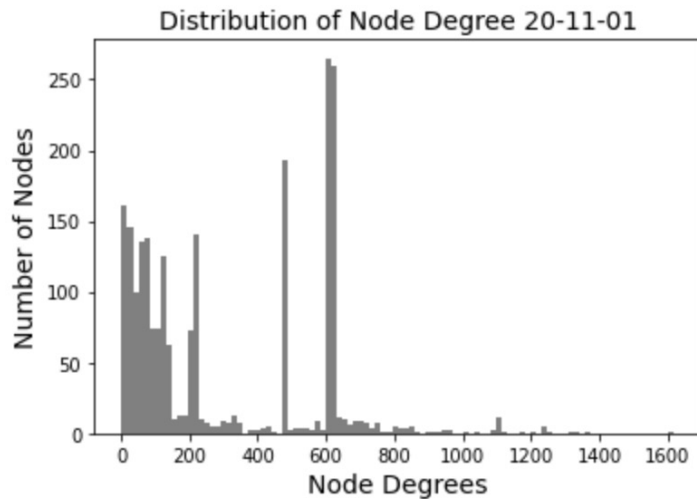
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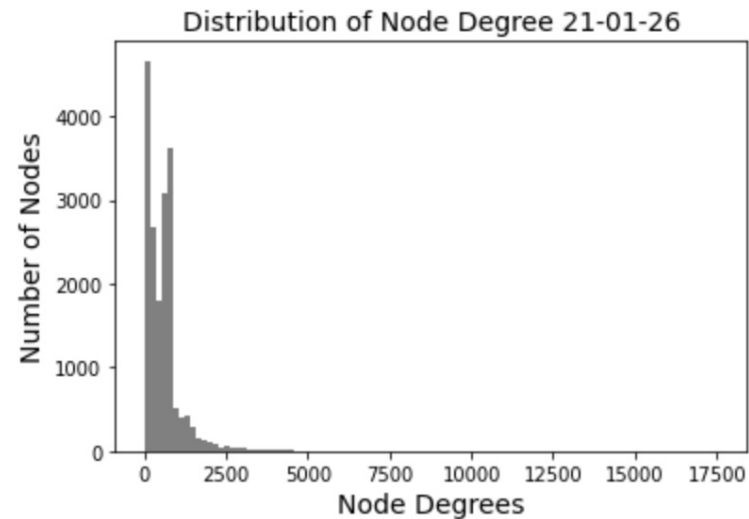
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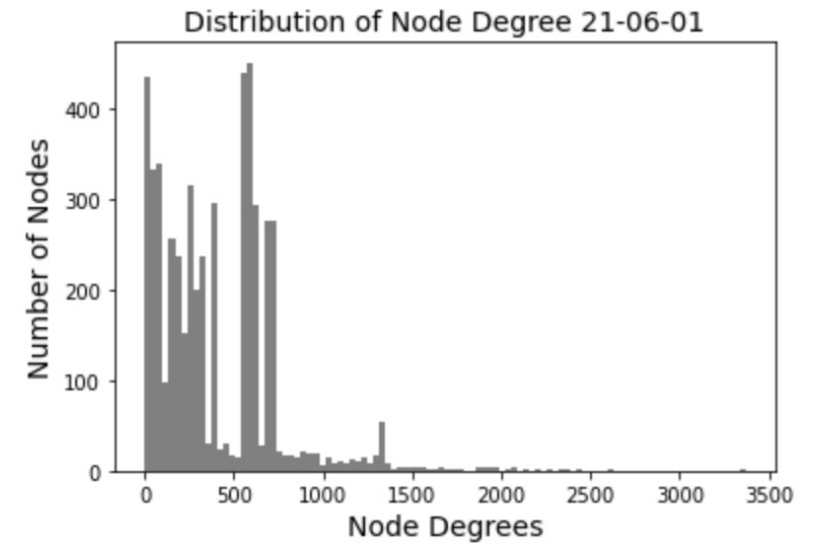
- Average degree: 152.84

2021-01-26 (during)



- Average degree: 284.17

2021-06-01 (after)



- Average degree: 205.23

Extensions

- Investigate a broader sample of stocks
 - Extend from \$GME to Robinhood50 stocks (favored by retail investors)
 - Extend to all publicly traded stocks
- Go beyond exploration to causal analysis and prediction
 - Extract features (e.g., sentiment and extremism) from text to explain price movement and investor behavior (e.g., attention and trading)
- Combine text analysis with largescale network analysis
 - Examine network formation, information dissemination, community cluster etc.
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