

COVID-19 & DISINFORMATION: WHAT KILLS THE VIRUS

An abstract graphic consisting of multiple thin, flowing orange lines that originate from the bottom left and curve upwards and to the right, creating a sense of movement and flow. The lines vary in thickness and curvature, some forming loops and others extending straight out.

Presented by Ananya Ghosh and Steffi Nazareth

About the Data

315417 TWEETS

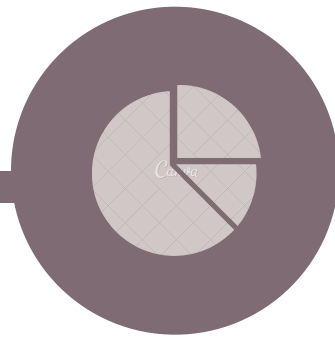
JAN 29TH 2020 - FEB 28TH 2020

277636 AGENTS

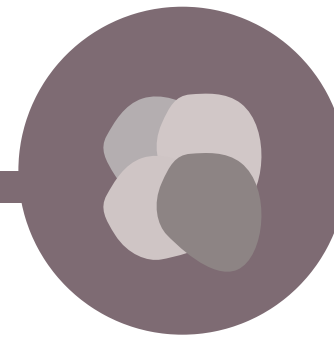
2033 HASHTAGS

Exploratory Data Analysis

PART - I



PARTITION INTO WEEKS



LEIDEN GROUP



FIND STORYLINES

PART - I: Storylines Found

CORONA BEER

beer, coronavirus, virus, searches, google, spike, China, outbreak, linked

BLEACH

bleach, drinking, QAnon, cure, miracle, nuts, tout, Trump-loving

COCAINE

cocaine, kill, Pablo Escobar, heard, cures, hearing, rumor, pops, told, legalize

1+ FAKE CURES

bleach, coronavirus, drink, drinking, cure, kill, cocaine, virus, QAnon

CONSPIRACY

beer, Chinese, covid-19, deadly, supposedly, paid warfare, biological

CHINA'S RESPONSE

cities, China, spraying, thinking, guess, Wu, Han, trucks, spray

PREVENTION

amp, surfaces, clorox, disinfection, Amazon, inanimate, peroxide

SILVER SOLUTION

Jim, selling, Bakker, QAnon, televangelist, liquid, sell, snake, followers, telling

PART - II: Observations

Use of the hashtag 'coronavirus<insert_country_name>' increased over time

8/10 super spreaders were news agencies and/or verified users

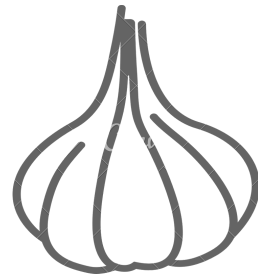
Agent Bleach_Mx - super spreader - spoke about an Anime called Bleach

Agents were communicating across multiple groups

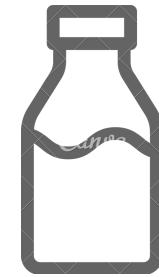
Storylines Considered



COCAINE



GARLIC



SILVER SOLUTION



BLEACH

1. Cocaine

FILTER DATA

Accept list: cocaine, Cocaine
Used **delete list** and **thesaurus**
#Tweets: 2266
#Agents: 2050
#Hashtags: 48

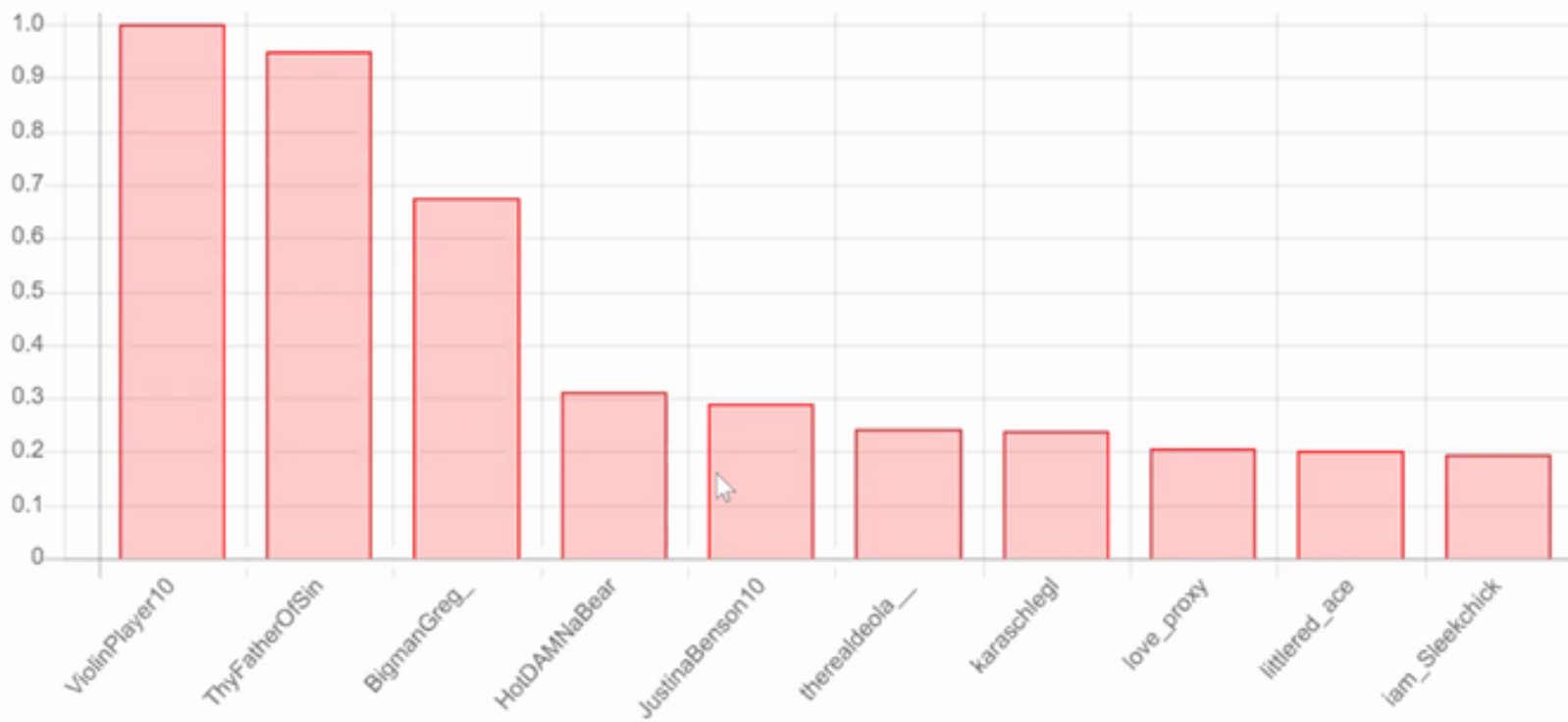
LEIDEN GROUPING

Locate Groups report
#Groups: 53
Average Size: 115

EXTRACT GROUP 1

#Tweets: 586
#Agents: 586
#Hashtags: 15
Density: 0.002
Keywords: cocaine, coronavirus, kills, heard, Me, cures, drug, breaking, dealer, Man's

ANALYZE TWITTER REPORT: OVERALL TOP RANKED AGENTS



2. Garlic

FILTER DATA

Accept list: garlic

Used **delete list** and **thesaurus**

#Tweets: 78

#Agents: 66

#Hashtags: 1

ANALYZE RETWEET NETWORK

All the agents were either **calling out** or **mocking** the fake cures

BOT SCORES

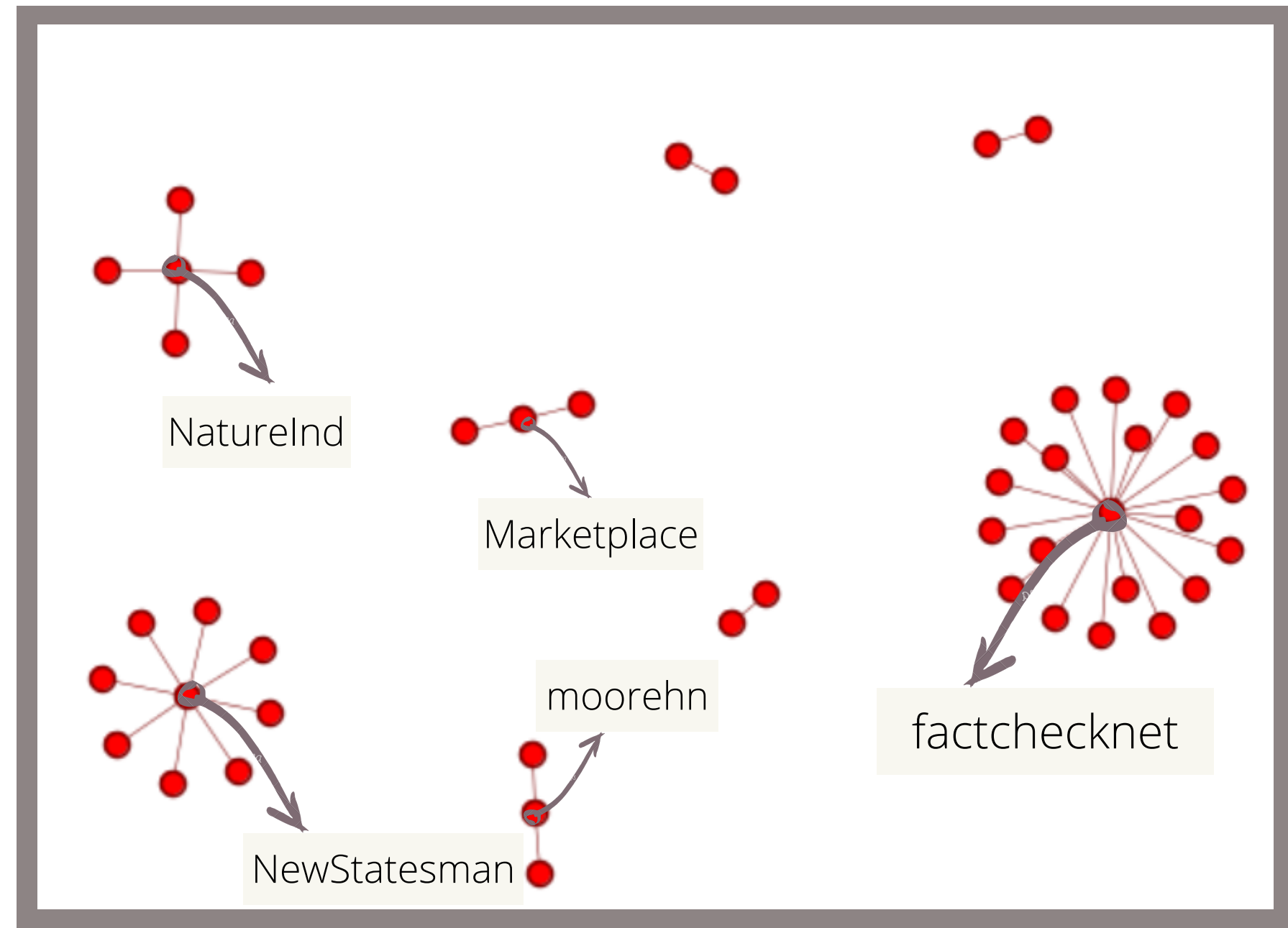
Super Spreader: 1/10

Super Friends: NA

Overall Bot Percentage: 45%

Although there is a significantly high number of bots in the network, both bot and human agents are not promoting garlic related fake cures

Agent x Agent - Retweet Network



3. Silver Solution

FILTER DATA

Accept list: 'silver solution','Silver solution',silver solution, Silver solution

Used **delete list** and **thesaurus**

#Tweets: 342

#Agents: 336

#Hashtags: 15

VISUALIZE META-NETWORK

Agents talking about Silver solution were also talking about bleach

LEIDEN GROUPING

Saved out **Group 1** and **Group 6**

Performed **Stance Detection** - using URL and hashtags - on the new meta-network

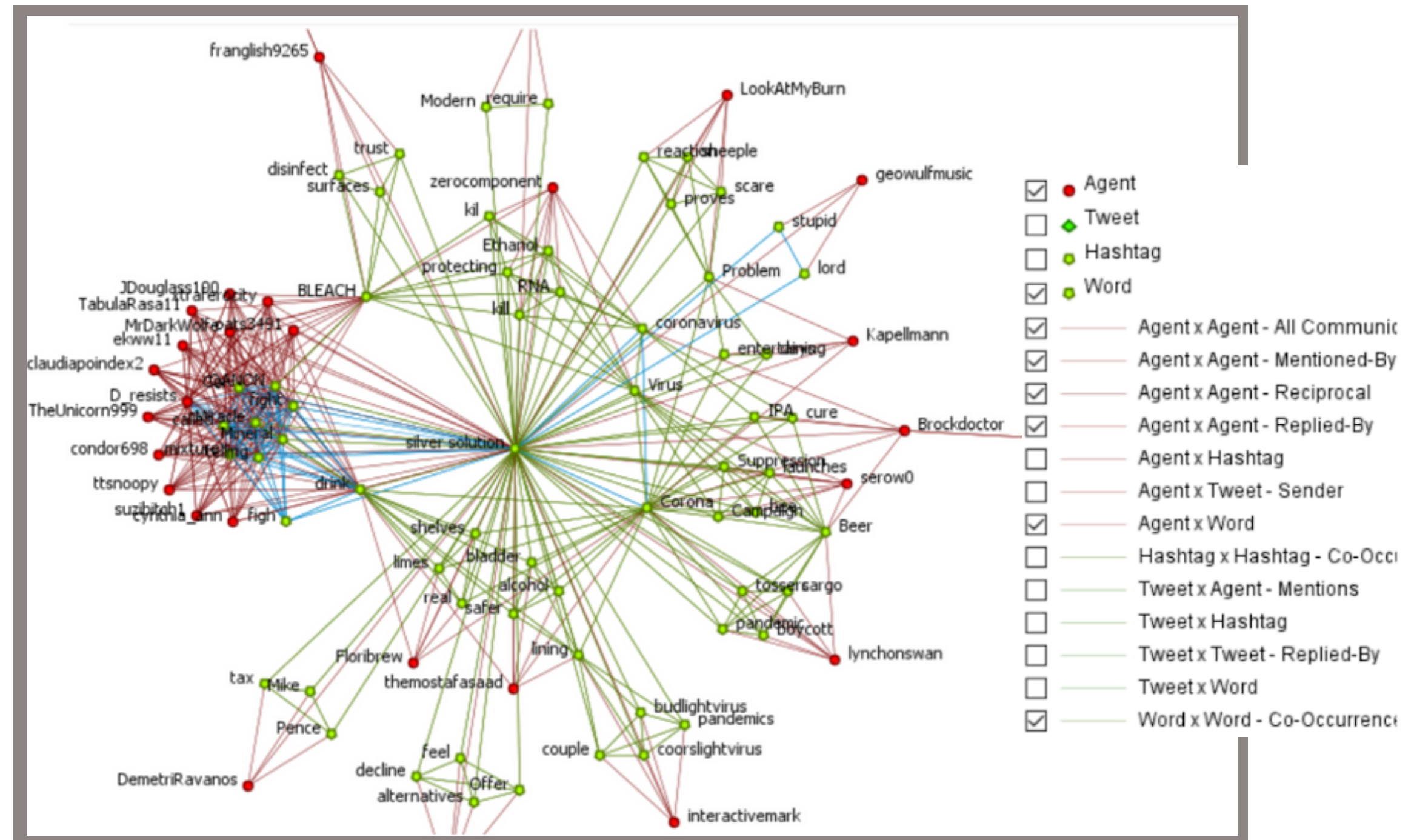
Stance detection Result: All agents were Contra stance

BOT SCORE

Super Spreader: 5/10

Super Friends: 3/10

Overall Bot Percentage: 53.6%



4. Bleach

FILTER DATA

Accept list: bleach, Bleach

Used **delete list** and **thesaurus**

Removed agent Bleach_Mx to eliminated tweets related to Anime called Bleach

LEIDEN GROUPING

Multiple sub-story lines:

1. Drinking bleach can cure coronavirus +
Drinking bleach is a conspiracy by QAnon
2. Possible sarcasm/hate about people believing
drinking bleach cures covid
3. China spraying bleach in cities using trucks
4. Bleach/Clorox being used as a disinfectant

Group-1	value	Group-2	value	Group-3	value	Group-4	value
bleach	5,570	drink	2,488	cities	1,136	CLOROX	962
drinking	4,245	people	1,780	China	1,048	soup	492
coronavirus	4,154	ward	645	spraying	661	stocks	492
cure	3,546	telling	608	1226429555130458112	602	good	451
QAnon	2,563	supporters	502	spray	512	Canned	395
conspiracy	2,508	dumb	430	trucks	477	kills	394
miracle	1,826	don	372	bleaching	451	wipes	387
tout	1,803	protect	303	guess	435	today	372
nuts	1,795	fcking	282	thinking	424	Campbell	352
Trump-loving	1,764	encouraging	275	Wu	421	disinfectant	330

4. Bleach

FURTHER DATA FILTERING

Accept list: 'drinking bleach',Drinking bleach,"drink bleach","drinking bleach","drinking BLEACH"

Used **delete list** and **thesaurus**

#Tweets: 12259

#Agents: 11531

#Hashtags: 263

STANCE DETECTION

Assigned stance according to the table

Nodeset	Node	Stance
Hashtag	QanonPosts	pro
Hashtag	FUCKQANON	contra
Url	https://trofire.com/2020/01/29/qanon-tells-followers-to-drink-bleach-to-fight-coronavirus/	pro
Url	https://vibemylife.com/qanon-youtubers-are-telling-people-to-drink-bleach-to-ward-off-coronavirus/	pro
Url	https://www.thedailybeast.com/qanon-conspiracy-theorists-magic-cure-for-coronavirus-is-drinking-lethal-bleach?ref=author	contra
Url	https://www.salon.com/2020/01/28/trump-loving-conspiracy-nuts-tout-drinking-dangerous-bleach-as-miracle-cure-for-coronavirus_partner/	contra
Url	https://deadstate.org/pro-trump-conspiracy-theorists-suggest-drinking-bleach-to-cure-coronavirus/	contra
Url	https://www.iflscience.com/health-and-medicine/conspiracy-nuts-claim-drinking-bleach-miracle-cure-can-cure-coronavirus-/	contra
Url	https://tecake.com/news/coronavirus-not-related-to-corona-beer-cant-be-cured-with-bleach-41985.html	contra
Url	https://www.cracked.com/article_27054_sigh-please-dont-drink-bleach-to-stave-off-coronavirus.html	contra

4. Bleach

STANCE DETECTION RESULT

	Number of nodes	Mean node confidence
Pro Nodes	9	1
Contra Nodes	10,702	0.560
Not Assigned	820	

AGENT PRO STANCE

Rank	Agent	Value
1	Arkancideisreal	1
2	Bobbythekai2	1
3	RestingBastard	1
4	TheRightAnomaly	1
5	farronbalanced	1
6	iamthatiambitxh	1
7	johndalytv	1
8	jpacek	1
9	liza62981406	1



arkancide_is_real @Arkancideisreal · Jan 30
Wow, @rollingstone promoting a #conspiracytheory that tells you to drink bleach (nothing to do with #QAnon)

How the hell are they still allowed on twitter?

Please report and RT



Rolling Stone @RollingStone · Jan 29
QAnon supporters are encouraging people to drink bleach to ward off coronavirus. Please don't do this rol.st/2SczgO7



Commonalities Across Story Lines

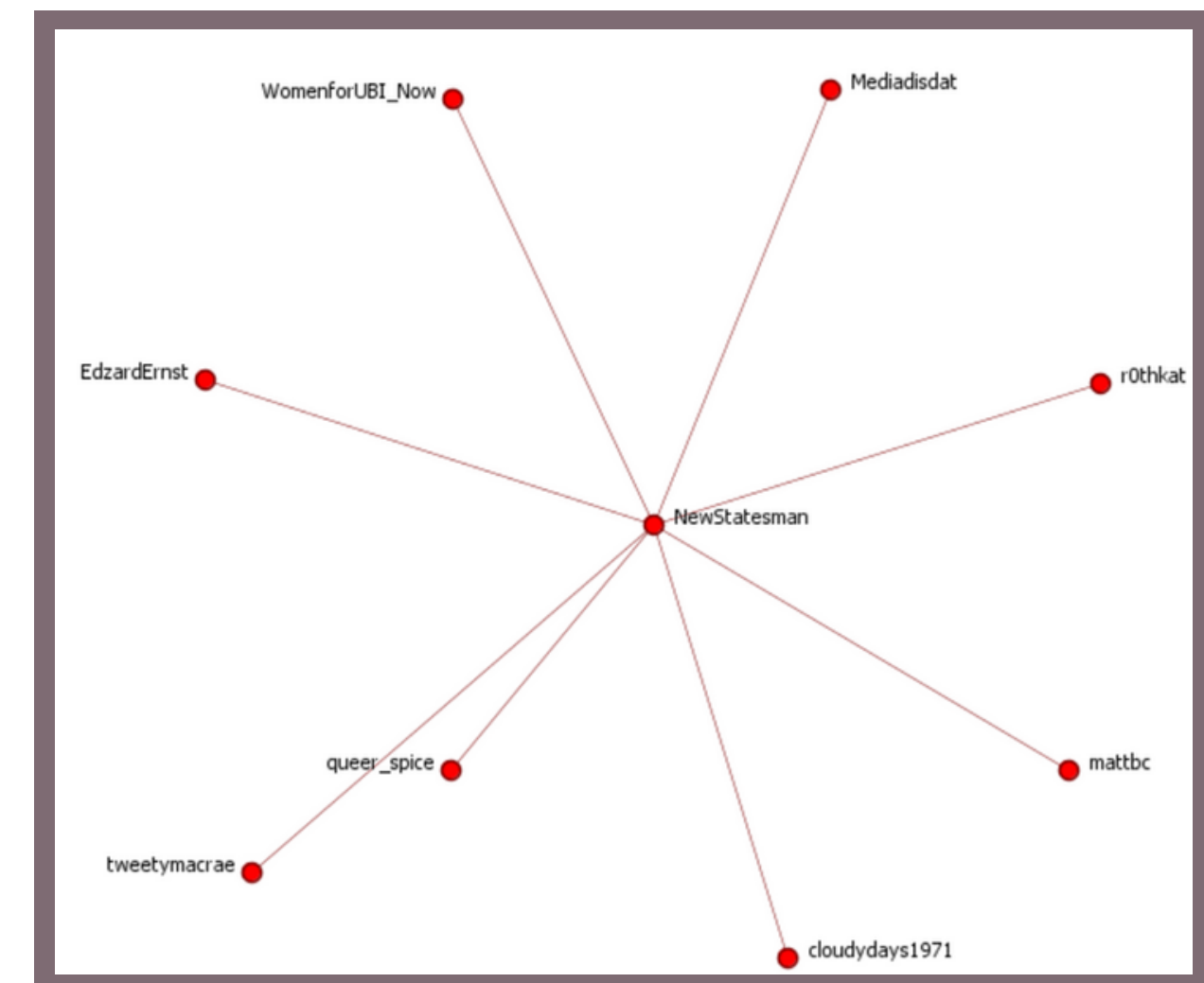
Agents

NewStatesman
EdzardErnst
r0thkat
Mediadisdat
WomenforUBI_Now
mattbc
tweetymacrae
queer_spice
cloudydays1971

Tweet



Agent x Agent - All Communication



Things we tried but didn't work

Word trend by creating dynamic network

Topic Analysis report

Group Talk report

Identify agents involved in promoting multiple fake cures using E/I index

Limitations

Difficult to perform stance detection on the given dataset

Couldn't find the date when these fake cures were first mentioned on Twitter

Dataset didn't contain tweets from origin of such fake cures

Twitter deleted many tweets which seemed to promote fake cures

Future Work

Get data from previous months and from sources besides Twitter

Partition each story line to before and after a fake cure is called out

Acknowledgements

Professor Kathleen Carley

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CASOS

Inputs and suggestions from classmates