

## Vaccine Disinformation Campaign

December 23, 2020

### **Company Brief**



Cyabra is an AI-driven platform that detects disinformation to protect the public, government agencies and corporate brands from malicious fake accounts and social media campaigns. Developed by information warfare and cybersecurity experts, Cyabra's patented technology uses machine learning to detect disinformation, such as deep fakes, avatars, and bots. Breaking down and analyzing the billions of conversations taking place across social media, Cyabra connects the dots to measure impact and determine the authenticity of profiles to provide a deeper understanding of what's hidden behind these conversations.

### **Executive Summary**

- Amidst a global pandemic and the largest vaccination campaign in history, Cyabra actively analyzes the social media discourse surrounding the development and progress of COVID-19 vaccines on Facebook and Twitter.
- Cyabra analyzed a random sampling of over 132,000 accounts that are a part of its COVID Vaccine Project.
- Among the 132,000 accounts analyzed, Cyabra identified almost 18,000 accounts over 13% — as fake accounts.
- Among the communities of fake profiles analyzed, Cyabra identified two campaigns that spread positive messaging about AstraZeneca's vaccine and negative massaging on their competitors.
- A third campaign is actively spreading disinformation about COVID-19 and the various vaccines in general.
- On Facebook, Cyabra uncovered a campaign exploiting the vaccine discourse to promote Bitcoin.



## Findings

Cyabra scanned social media profiles and groups that are a part of COVID-19 vaccines conversation on Facebook and Twitter and analyzed their online behavior, connections, and messaging. In the 132,000 profiles scanned, Cyabra found nearly 18,000 fake profiles (13.5%). Based on Cyabra's experience with disinformation campaigns, this percentage of fake profiles indicates the presence of an online disinformation campaign. Cyabra typically encounters around seven to ten percent of fake profiles.



**Figures 1.1, 1.2** – Sum of profiles scanned by Cyabra for the project, segmented into real profiles, fake profiles, and profiles that have used negative sentiment language, otherwise known as bad actors.

Cyabra's tools analyze the connections between each profile in order to understand the impact and reach of each profile. The image below is a cluster from Cyabra's dashboard representing the main profiles participating in the vaccines discourse on Twitter and the manner in which they are connected. The red nodes represent fake profiles; the green nodes represent real profiles. The bigger the node, the more connections the profile has.



**Figure 2** – Visual link analysis of the profiles who participated in the discourse surrounding the vaccine.



While the visual link analysis depicted above shows all of the profiles that interacted with one another (following, replying, or retweeting), the images below represent segmented profiles, otherwise known as "communities." Cyabra's "community" function highlights profiles that are highly engaged with each other and share the greatest number of connections and, often, a common theme. The themes that Cyabra uncovered relating to COVID-19 vaccines are presented in the images below. Analyzing all of the fake profiles, Cyabra discovered three Twitter communities comprised of fake profiles tweeting three distinctive sets of messaging. Two of these fake campaigns actively spread favorable tweets about AstraZeneca's vaccine while criticizing other companies developing vaccines. The third fake campaign disputes the existence of COVID-19 and attacks the utility of all COVID-19 vaccines.







#### **Community A: Anti-Vaccine**

The anti-vaccine community contains 136 fake profiles that are actively spreading negative content against all COVID-19 vaccines.



Figures 4.2,4.3,4.4,4.5 – Examples of fake content and disinformation being spread by the anti-vaccine community



#### Community B: Pro-AstraZeneca (1)

Community B contains 239 fake profiles circulating positive content about AstraZeneca's vaccine progress and positive content about the company.





#### Community C: Pro-AstraZeneca (2)

Community C also praises AstraZeneca but spreads harmful content surrounding Pfizer's COVID-19 vaccine. This community contains **220** fake profiles.



Figures 6.2,6.3,6.4,6.5 – examples of fake content pushed by the pro-AstraZeneca community





Cyabra did not find a significant difference on Facebook between topics discussed by real profiles and the ones discussed by fake profiles. However, a trending topic that stood out amongst fake Facebook participating in the COVID-19 vaccine discourse was Bitcoin. The image below represents an example of the system's classification of subjects, with subjects used by real profiles shown in green and ones used by fake profiles shown in red.

FAKE SUBJECTS	D		٩	REAL SUBJECTS (1)			٩
Subject	Frequency (1)	Involved Profiles	(i) Max (i) Exposure	Subject	Subject Frequency (1)		Max <sup>(</sup> ) Exposure
Astrazeneca	1500	1251	NaN	Astrazeneca	9806	8612	NaN
Macron	746	746	NaN	Pfizer	3828	3651	NaN
Corona	582	407	NaN	Oxford	2945	2803	NaN
Pfizer	548	506	NaN	Moderna	1951	1828	NaN
Russia	430	352	NaN	@astrazeneca	1942	1851	NaN
Oxford	396	368	NaN	Covid	Covid 1781 1694		NaN
90%	275	253	NaN	90%	1725	1629	NaN
Moderna	268	247	NaN	The pfizer/moderna 1631 1631		1631	NaN
Covid	268	257	NaN	Rt @ringoraccoon	1630	1630	NaN
Sputnik	238	206	NaN	Russia	1610	1399	NaN
Previous	Page 1 of 3	10 rows 👻	Next	Previous	Page 1 of 3	10 rows 💌	Next

**Figure 7** – Cyabra's topics division into real and fake profiles from the system

While the real profiles did not discuss anything relating to Bitcoin, fake profiles used the subject of Bitcoin numerous times. Cyabra analysts found that these fake profiles spread content on Bitcoin for advertising as a part of a fake campaign.

Below is an image from Cyabra's platform showing the connections between the fake profiles on Facebook that posted about Bitcoin in discussions relating to COVID-19 vaccines. The fake campaign is taking advantage of the online interest in COVID-19 vaccines to promote a Bitcoin website. The fake profiles identified posts related to COVID-19 vaccines with high engagement and replied to them with promotional content about Bitcoin sites and Telegram groups.







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developed so fast 🕕 Ů 💙 🗃 36K

🖒 Like

Like · Reply · 3w

Bitcoin

Figure 8.1 – The community spreading content about Bitcoin on Twitter







Aside from communities, there is also merit to doing a deep dive of the most influential profiles. In a disinformation campaign, there are typically three types of profiles with the highest impact in a fake campaign:

- 1. The most content: The more posts, replies and shares a profile creates, the more influence it has in shaping the conversation, both within the campaign and with profiles that are only partially connected to the campaign.
- 2. The most connections: The more connections a profile has, the more it can control what people within the campaign see.
- **3. The most engaged**: Profiles that are the most active in a campaign can shape the way people who are new to the subject perceive it.

Cyabra marks the connections between fake and real profiles to emphasize which fake accounts "break through" the fake profile sphere and can influence real profiles. Understanding which fake profiles have the highest number of real connections is another method to understand which fake profile has the most influence.

The most connected fake profile on Twitter is esme\_hornbeam, with 63 fake connections. The system labeled the profile as fake due to a large percentage of its content being retweets, and its bot-oriented behavior. To identify any content possibly linked to the subject, Cyabra extracted multiple tweets that the profile tweeted about the COVID-19 vaccines.







Will Hutton @williamnhutton · Nov 24						
Pfizer, driven by shareholder value maximisation, looks to make a bonanza						
from its vaccine. AstraZeneca's purpose is to deliver life changing medicines.						
It has, and is pricing its vaccine at cost. It may eliminate Covid globally.						
Purpose driven companies really are different.						
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Q 121	Ĉ↓ 2.1K	💙 11.8K	Ť
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Jonathan Cook @Jonathan\_K\_Cook · Nov 24 000 AstraZeneca shares fell by £4bn on news it had produced a 'vaccine for the world' - one that, unlike its rivals, would be distributed to poorer nations at cost price. No surprises. Capitalism is structurally designed to punish 'weakness', like solidarity, altruism and compassion

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Figures 9.3,9.4,9.5 - Examples of the content tweeted by the most connected fake profiles







The fake profile that created or spread the highest number of content in the COVID-19 vaccines discussion on Twitter is Elizabeth Barnes, with 111 tweets.

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	Name	Content Sentiment	Authenticity	Network	Number of Posts	Max Exposure	Engagement (Like   Reply   Share)	Details
6	adventuremotive	NEGATIVE	FAKE PROFILE	У	111	10	0/0/0	Details



The profile tweeted about the Covid-19 and Australia's desire to reach the vaccine.

		TRAIL	•••• Follow		<b>Fi</b> sp ar	<b>gure 10.2</b> – The fa bread the highest ad shares on Twit	ike profile that cro number of posts ter	eated or , replies
Elizabeth E @adventurem@	Barnes otive							
Photojournalis trying to help i	t and activist dedicated mprove the living cond	d to exposing the corrup ditions of all people.	tion of this world while					
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	Elizabeth Barnes Europe might wan	@adventuremotive · t to reach for Corona	• Nov 22 a Virus vaccine withc	out worry.		C.*	~	
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Figures 10.3,10.4,10.5,10.6 – Examples of ontent of the fake profile that created or spread the highest number of content in the report





The fake profile with the highest number of engagements is FXdestination (Richard N), with 2,436 likes, ten comments, and 835 shares. The fake profile posted content claiming Coronavirus does not exist and accusing world governments of fabricating the virus as a plan to control humans.



### Conclusion

With COVID-19 vaccines currently being developed and deployed worldwide, the public now faces its next public health challenge- that of disinformation. In efforts to shed light on some of the ongoing fake campaigns circulating on social media, Cyabra scanned 132,000 accounts where advanced AI uncovered multiple, harmful agendas. Within this sample, 18,000 profiles were fake, resulting in a significant reach of each of these disinformation campaigns. With two of the fake Twitter campaigns favoring the AstraZeneca COVID-19 vaccine, the misleading agenda intended to promote the vaccine as superior to the other COVID-19 vaccines in development. The third Twitter disinformation campaign, and perhaps the most dangerous, attacked the existence of the Coronavirus and all COVID-19 vaccines, claiming that the Coronavirus does not exist and is a guise by governments planning to control human actions. Additionally, Cyabra identified another campaign of fake profiles on Facebook that exploited the online interest in COVID-19 to advertise Bitcoin.

As disinformation becomes a more prevalent threat, Cyabra continues to monitor the disinformation surrounding COVID-19.







# More Than Listening

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