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Analytics & Software



Coordinated inauthentic behaviour in YouTube comments

RUSSIAN INVASION OF UKRAINE CASE

Photo by: [instagram.com/goopsik](https://www.instagram.com/goopsik)

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This report presents key findings of the study on coordinated inauthentic behaviour in YouTube comments on videos related to Ukraine during the full-scale Russian invasion of Ukraine in 2022.

Trementum Analytics is a data science company focusing on data visualisation and studying social media manipulation, disinformation, election interference, hate speech, extremist ideologies, and conspiracy theories. We produce evidence-based research to inform civil society and policymakers about existing trends and threats in social media.

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This report and its underlying data are available at: cib-yt-2022.trementum.net

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<https://trementum.net>



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KEY FINDINGS

1. **3 590 user accounts** were registered on **24-25 February 2022** – the first two days of the full-scale Russian invasion of Ukraine, which is 6.9 times more than the average registration rate in our sample.
2. **930 users** commented at a rate of more than **5 comments** per minute; **5 speedy users** managed more than **55 comments** per minute.
3. **Of the ten** most mentioned videos in the comments, **three** promote the narrative *“Ukrainians are nazis”*.
4. **The most shared** YouTube channel was pro-Kremlin English-speaking blogger Patrick Lancaster; it appears in **344 comments** from our sample.
5. Out of ~1.5 million user names in our sample, **260 513 were used at least twice**, with three main types among them: placeholder, non-alphabetic, and “user”.
6. Users with suspicious names posted pro-Kremlin narratives: *“Western media promote fake/propaganda”* was used by John Smiths and John Does (placeholder names) more than 100 times; *“bravo rusia uraa”* was posted by non-alphabetic users 72 times.
7. **16.7%** of textual comments in our sample appear at least twice. The most popular duplicate¹ is *“Fake news”* (4 474 times). Other peculiar top-duplicates: *“Propaganda”* (2 378 times), *“Z”*² (2 238 times).
8. There are **255 identical copies** of the following message in our sample: *“Nato military force must leave the territory of the former USSR in order to prevent mutual destruction”*.
9. Among pro-Kremlin narratives, the most promoted was *“NATO bombed Iraq / Afghanistan / Syria / Libya and other countries”*. This message is more popular than any pro-Ukrainian narrative.
10. Although most users were from the United States, **34.7%** of pro-Kremlin comments left users from Indonesia, Canada, the United Kingdom, Pakistan, and Bangladesh, with just a few accounts self-reported as being from Russia.
11. The number of suspicious users that fit at least one of the detected  criteria is **30 291**, which is **1.9%** of the sample size, however, they produced **20.5%** of all comments.

¹ Duplicate comments are comments that appeared at least twice in our sample. Duplicate links are links that appeared at least twice in our sample.

² Z was originally used as insignia of Russian invasion forces and later popularised by Russian propaganda. It is seen by many as Russian analogue to swastika and banned for public display in several countries.

Coordinated inauthentic behaviour ranges from relatively low-end commercial applications of spam bots to the high-end public opinion manipulations³. It should be noted that the issue of coordinated inauthentic behaviour is common to any major social media⁴ as well as it is a global problem⁵.

On 24 February 2022 Russia launched a full-scale invasion of Ukraine preceded by 8 years of proxy and hybrid warfare. In attempts to justify its war, the Kremlin conducts a large-scale disinformation campaign designed to manipulate international public opinion, trying to grow support for their war, and recruiting new Putin sympathisers⁶.

This research aims to study coordinated inauthentic behaviour in YouTube comments on videos related to Russian invasion of Ukraine.

METHODOLOGY

YouTube Data API⁷ was used to acquire data that was then processed in Python for an aggregate presentation. Perspective API⁸ was used to measure comment toxicity.

Data

1. We selected 20 YouTube channels of English-language media that cover world news and have more than 100k subscribers: [Washington Post](#), [BBC News](#), [FRANCE 24 English](#), [DW News](#), [Euronews](#), [POLITICO](#), [Radio Free Europe/Radio Liberty](#), [CNN](#), [The New York Times](#), [Al Jazeera English](#), [Reuters](#), [ABC News](#), [TIME](#), [The Independent](#), [The Sun](#), [CTV News](#), [Sky News](#), [Global News](#), [Fox News](#), [NBC News](#).
2. We acquired videos from these channels containing at least one of the following keywords from the list in the title or description: Ukraine, Ukrainian, Russia, Russian, Zelensky, Zelenskyy, Klitschko, Putin, Bucha, Dnipro, Kyiv, Kharkiv, Lviv, Mariupol, Mykolaiv, Odesa, Odessa, Zaporizhzhia, Crimea, Moscow, Muscovite, Kremlin.
3. We acquired comments beneath these videos.

We collected **6 902 986** textual comments left by **1 579 167** users under **9 148** YouTube videos from **23 February 2022** to **7 April 2022**.

³ <https://www.nature.com/articles/d41586-019-02235-x>

⁴ <https://stratcomcoe.org/publications/social-media-manipulation-20212022-assessing-the-ability-of-social-media-companies-to-combat-platform-manipulation/242>

⁵ <https://web.archive.org/web/20220409082530/https://www.telegraph.co.uk/technology/2017/11/14/governments-30-countries-pay-keyboard-armies-spread-propaganda/>

⁶ <https://www.gov.uk/government/news/uk-exposes-sick-russian-troll-factory-plaquing-social-media-with-kremlin-propaganda>

⁷ <https://developers.google.com/youtube/v3/>

⁸ <https://perspectiveapi.com/>

Assumptions

To identify potential coordinated inauthentic behaviour, hereinafter marked as , we tested the following assumptions:

01. A regular user creates an account at random, while bot accounts are created in batches during a short period.
02. Choosing the account's name is essential for a regular user, while bot accounts, created in batches, simplify the naming process.
03. A regular user writes no more than one comment per minute, while bots' commenting activity is higher on average.
04. A regular user watches a video before commenting, while a bot skips watching.
05. A regular user publishes a link in a comment to explain his statement, while a bot uses links to promote its own content.
06. A regular user replies to comment considering the comment context, while a bot uses "reply" for spamming.
07. A regular user rarely duplicates his/her comment, while a bot uses duplicates to a great extent.

We were also focusing on distinguishing political bots from commercial spammers:

08. A political bot provokes replies, while a commercial spammer uses "replies" to promote its own content.
09. Commercial spammers use duplicates to a greater extent than political bots.
10. A political bot's content relates to the discussed topic, while a commercial spammer promotes its own content.
11. A political bot leaves comments beneath videos related to his subject, while a commercial spammer disregards the topic of a video.
12. On average, commercial bots are faster than political spammers.

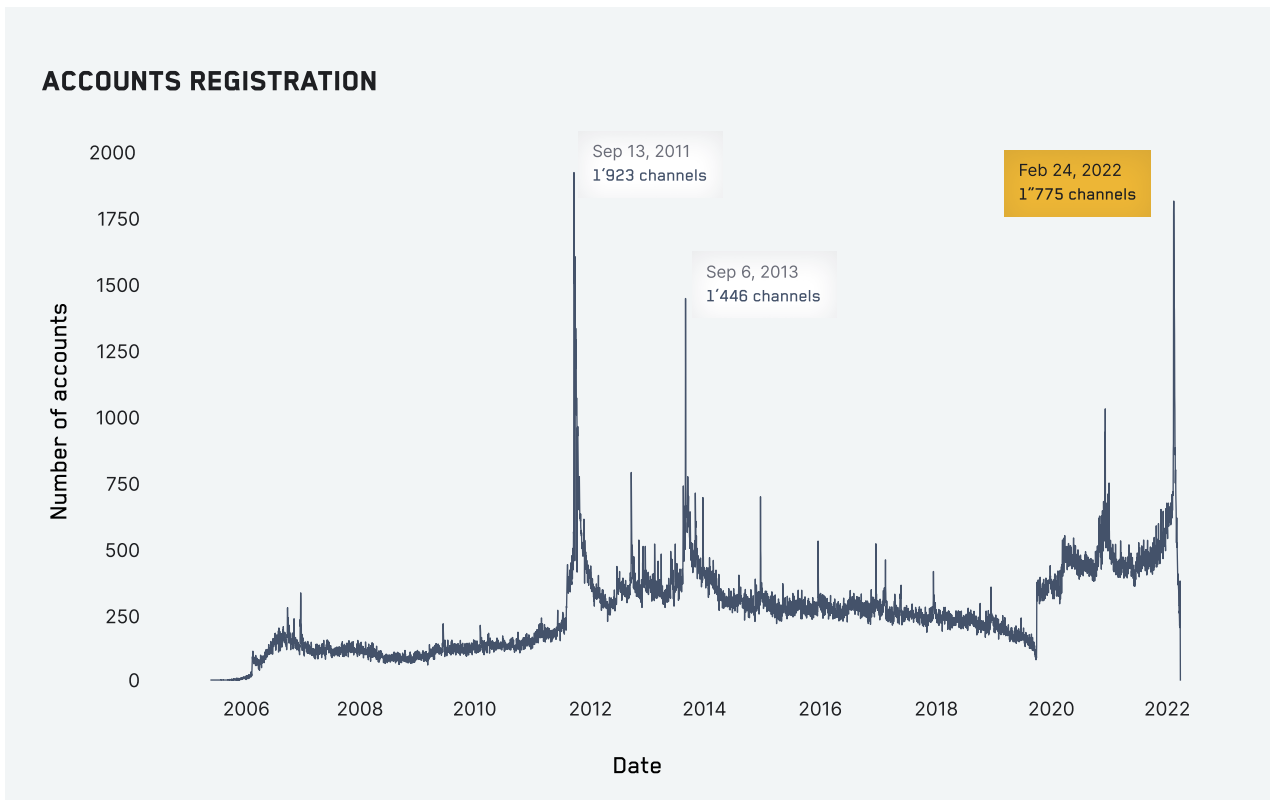
FINDINGS

Accounts


Accounts / Creation time

Assumption 1: A regular user creates an account at random, while bot accounts are created in batches during a short period.


The studied 1 579 167 YouTube accounts were created between 6 June 2005 and 7 April 2022 – 261 accounts per day on average. It is natural to assume that their creation times should be more or less evenly distributed in time, perhaps with some long-term trend, seasonal fluctuation, or weekly variation. However, we observed three significant spikes in user registration dynamics:



At least one of these peaks has a clear connection to a real-world event – the full-scale Russian invasion of Ukraine on 24 February 2022.

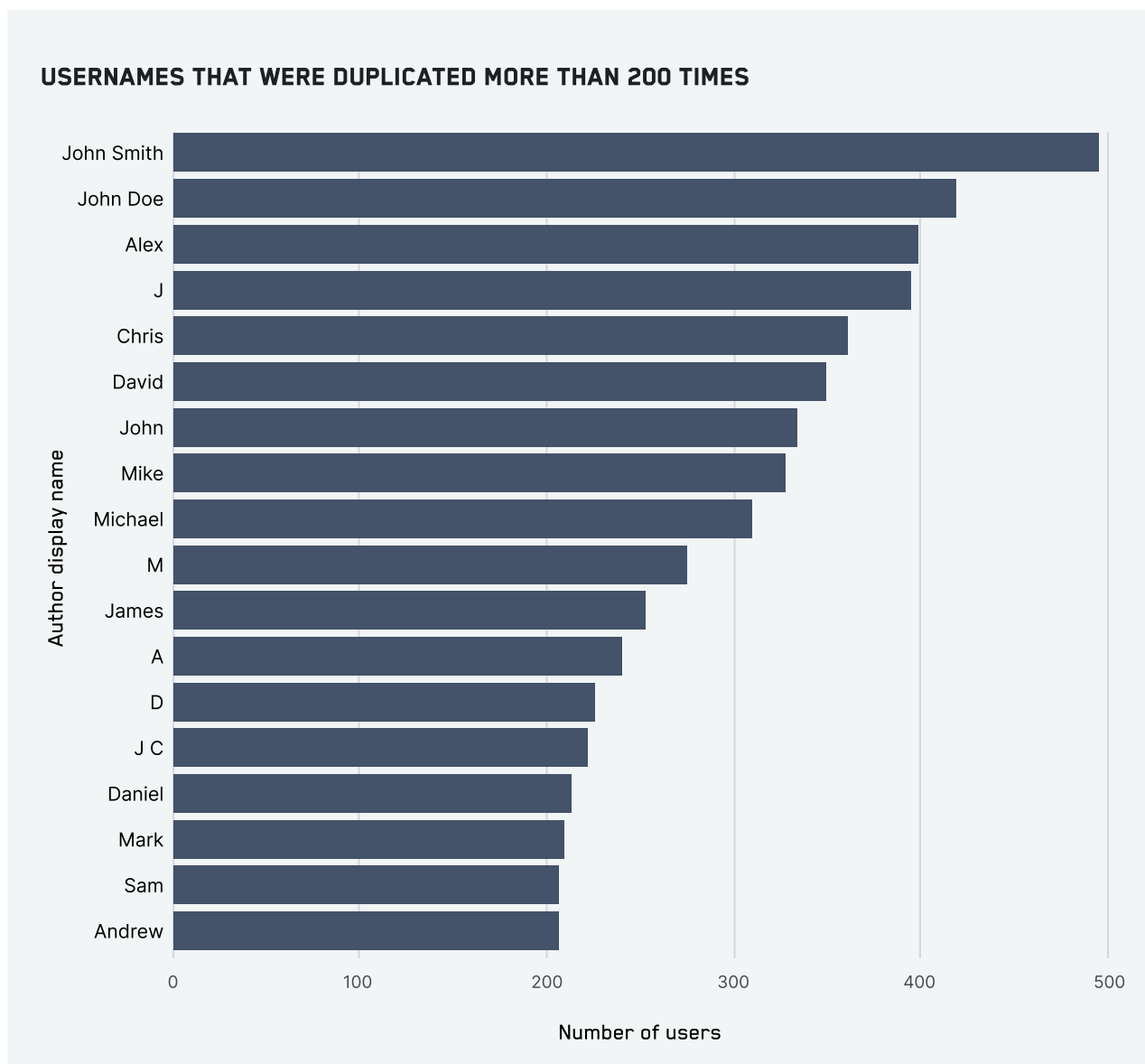
In our database, there are 3 590 “24-25 Feb” accounts that left 18 234 comments under 3 948 videos. 12.3% of them were duplicates .

Assumption 2: For a regular user, choosing the account’s name is essential, while bot accounts, created in batches, sometimes simplify the naming process.

Our analysis shows that out of 1 579 167 author display names (hereinafter usernames), **260 513** were **duplicates** with 67 833 unique variations among them⁹ . We detected three groups of such names: *placeholder*, *non-alphabetic*, and “*user*” names.

Accounts / Usernames / Placeholder names

The most popular names among commentators are *John Smith*¹⁰ and *John Doe*¹¹, known as placeholder names.



⁹ 539 of them were created from 24-25 Feb (or 15% of accounts created on that day in our sample).

¹⁰ 493 users which left 4 030 comments (94.6% of comments are unique).

¹¹ 418 users which left 2 349 comments (96.6% of comments are unique).

Accounts / Usernames / Placeholder names / John Smith [493 accounts]

The majority of users (75%¹²) named *John Smith* wrote up to 5 comments. At the same time, 14% of the most active *John Smiths* left 71%¹³ of the comments, including three users who wrote more than 100 comments each.


We have detected two main narratives in comments written by users named John Smith: “US energy” and “Fake/propaganda”¹⁴.

// *Biden kills US energy market*


9 John Smiths
176 times

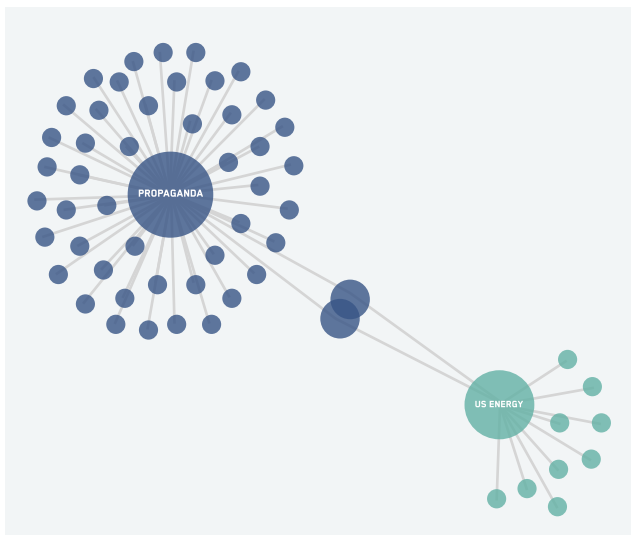
// *Western media promote fake/propaganda*

48 John Smiths
106 times

Applying fuzzy search, we found 176 comments related to “US energy” and 106 comments about “fake/propaganda.” Despite the higher number of “US energy” comments, these messages were left by a smaller group of users¹⁵ .

Accounts / Usernames / Placeholder names / John Doe [418 accounts]

Like *John Smiths*, 75% of *John Does* wrote up to 5 comments, while 10.8% of such users left more than ten comments (the most active one wrote 111 comments). 72 comments written by 44 John Does promote the “fake / propaganda” narrative. Dissemination of the same narrative by two groups of suspicious users may indicate .



// *Western media promote fake/propaganda*

44 John Does
72 times

¹² Out of 493 users.

¹³ Out of 4,030 comments.

¹⁴ Please refer to Annex 2 to see examples of narrative use.

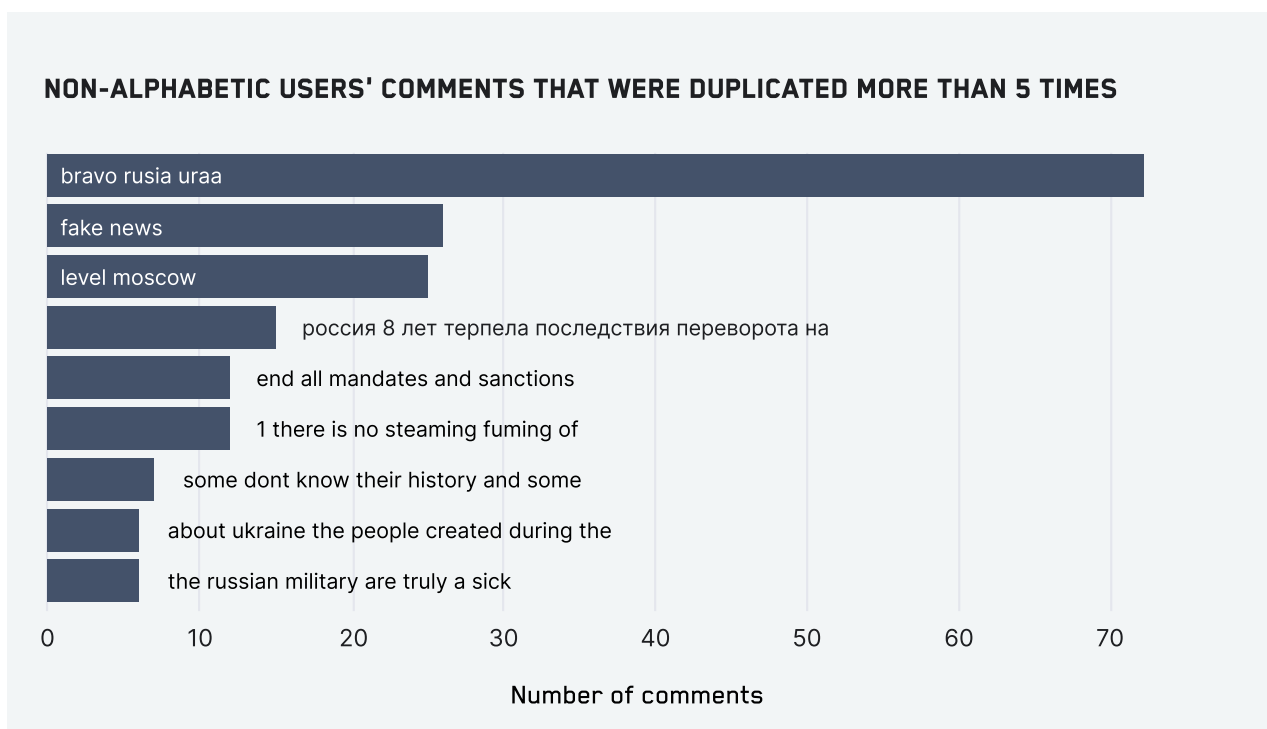
¹⁵ 'US energy' was mentioned by one user in 156 comments, while other users wrote up to 10 comments with this narrative. 'Propaganda' was mentioned by the most active user in the 16 comments, while 87.5% of users wrote up to 3 comments with this narrative.


A group of 1 574 users did not use alphabetic characters in the names; only 55.9% have unique names, and 134 names were repeated at least twice. Duplicated *“non-alphabetic”* names have 827 users, including 125 users without names.

This group of users left 4 387 comments, 11.3% of which were duplicates¹⁶.

Although the most popular comment, repeated **72 times**, consists of three words *“bravo rusia uraa”*, 59% of duplicates contain over five words. There were also nine long reads with more than 100 words, published 55 times.

“Bravo rusia uraa”
72 times



Among non-alphabetic users was one who posted 18 unique duplicates with pro-Kremlin rhetoric such as *“The west promotes fake news”*¹⁷, *“Nazis from Azov”*, *“Ukrainians are nazis”*, *“Ukraine was invented and made by Lenin”*, *“Zelensky is a clown and drug addict”*, and *“For 8 years, the Ukrainian army bombed Donbas”*. This user also posted long reads, for example, 15 duplicates under 4 videos with a pro-Kremlin explanation of *“the reasons for the invasion of Ukraine”* and 12 duplicates within 5 minutes with *“the arguments that the bombing of the maternity hospital in Mariupol is a fake”*¹⁸ .

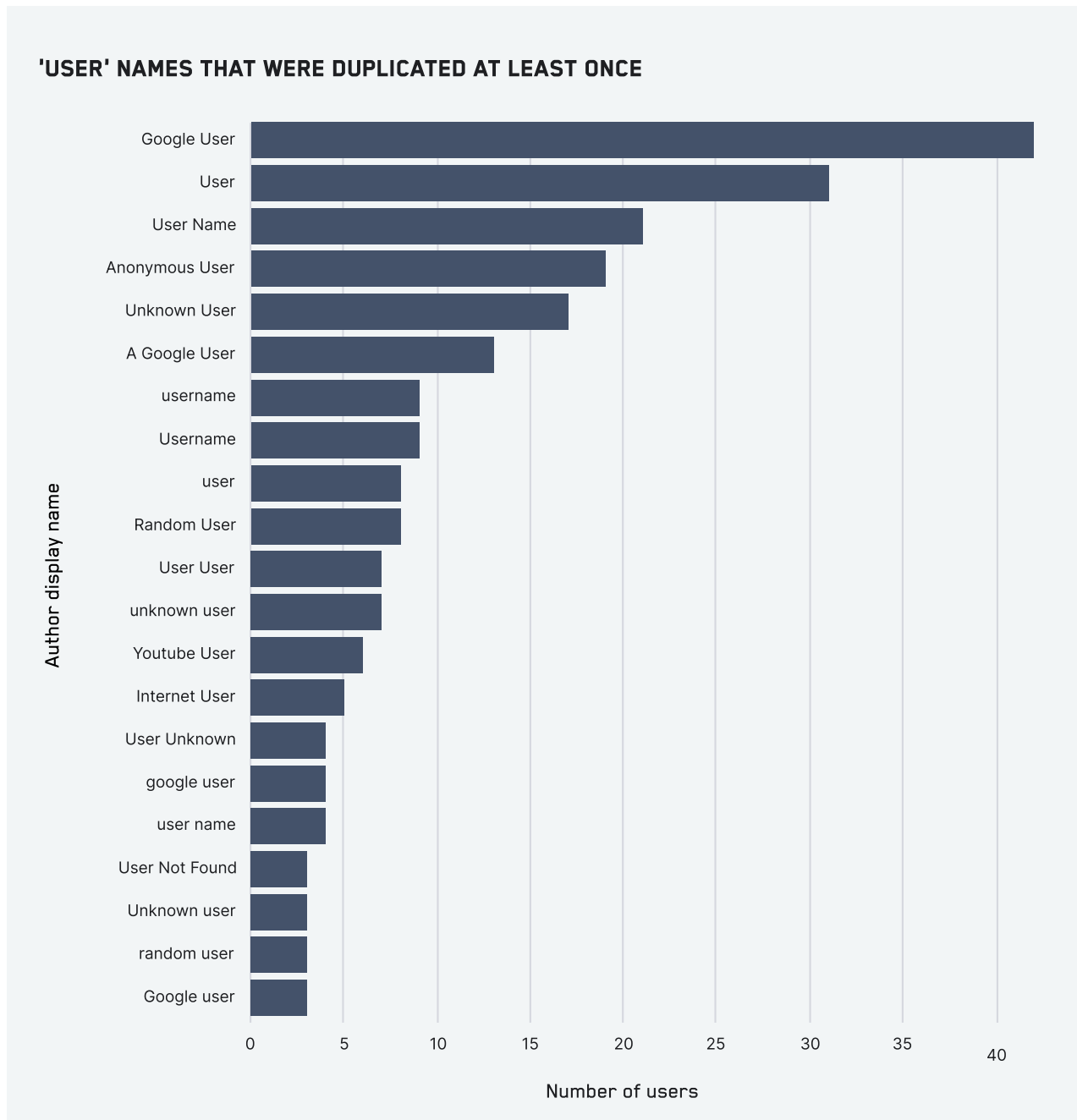
¹⁶ Please refer to Annex 1 to see the [duplicates](https://data.tremontum.net/cib-2022-2023-2024-duplicates) (available at [cib-2022-data.tremontum.net](https://data.tremontum.net/cib-2022-2023-2024-duplicates))

¹⁷ He is responsible for 22 of 26 “fake news” comments.

¹⁸ Please refer to Annex 2 to see examples of narratives use.


A group of 1 044 users mentioned “user” in their names: 78.4% of them were unique, and 41 names were repeated by at least two users¹⁹. This group wrote 5 091 comments, 3.6% of which were duplicates.


A user with the most repeated name (“Google user”) wrote the most popular comment in this group²⁰, duplicated 18 times and copied and edited twice. It left the same comment under 18 different videos within 17.5 minutes.



¹⁹ 266 users has duplicated names.


²⁰ 'AMERICA, BRITAIN, GIARMONY, AUSTRALIA, HISTORICAL DISLOYAL, COUNTRIES. 🇺🇸🇬🇧'

Another user with the same name wrote two identical comments under different videos within 51 seconds. The comments used pro-Kremlin rhetoric about *“Western propaganda”* and *“Ukraine should surrender, Russia will win”*  .


Analysing the duplicate comment overlap among those written by users with suspicious names revealed that they all promoted the *“fake/propaganda”* narrative to discredit Western media’s reputation  .

Accounts / Commenting activity

Assumption 3: A regular user writes no more than one comment per minute, while bot commenting activity is, on average, higher.

Over **44 days**, 75% of users wrote up to 3 comments. At the same time, **4 614** most active users (**0.3% of the sample**) left more than 100 comments each during the studied period, including 16 users who wrote over 1 000 comments each  .

Comments of users	Numbers of users	% of all users	Sum of comments	% of all comments
> 2	490 390	31.1%	5 559 567	80.5%
> 10	121 819	7.7%	3 747 172	54.3%
> 100	4 614	0.3%	848 058	12.3%
> 1000	16	0.001%	22 741	0.3%

On average, 86.3% of users left **one comment per day**. At the same time, 2 451 users wrote, on average, more than ten comments per day. On the high end, 37 users left more than 100 comments per day; 96.3% of users posted no more than one comment per minute  .


930 users had a maximum posting speed of more than **five comments** per minute. The **5** fastest users posted over **fifty-five comments** per minute (almost one comment per second)  .

58.6% of duplicate comments posted by *“24-25 Feb”* accounts were posted more frequently than once every 10 minutes. For these users, we observed two primary means of duplicate dissemination:

1. **Mass commenting** under one video in a short period (up to 2 minutes).
2. **Posting duplicates** by the same user under different videos in period up to 10 minutes.
3. We also found examples of combining these two strategies (see Annex 1 for examples).

Assumption 4: A regular user watches a video before commenting, while a bot skips watching.

The median interval between posting a video and commenting on it was 4.2 hours.

At the same time, **65 351** users posted 133 068 *immediate* comments in the first 10 minutes after the video was published. While 72.5% of these users wrote only one *immediate* comment, **1 199 users** posted more than ten *immediate* comments, and 41 – more than 100 *immediate* comments .

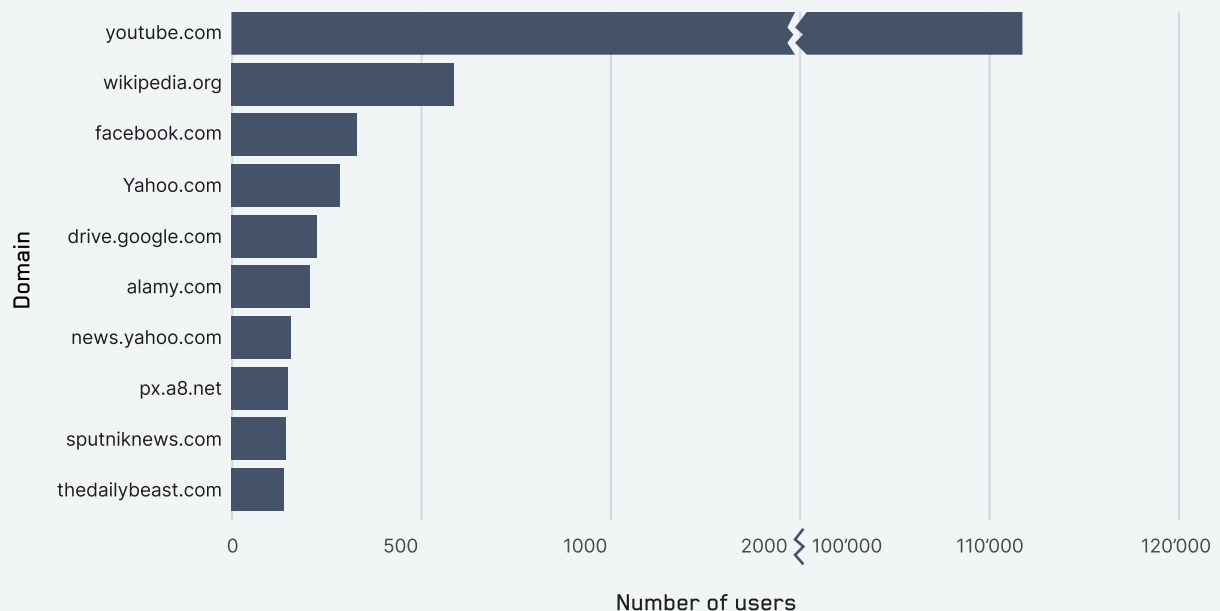
Content

Content / Features / Links

Assumption 5: A regular user publishes a link in a comment to explain his or her statement, while a bot uses links to promote its own content.

101 881 comments published by 20 556 users contained **132 646 links**²¹, 116 613²² of which were mentioned at least twice. The most popular domain shared in the comments was **youtube.com**; it was mentioned 111 254 times²³.

TOP 10 DOMAINS SHARED IN COMMENTS



²¹ 28 443 of them unique.

²² 12 410 of them unique.

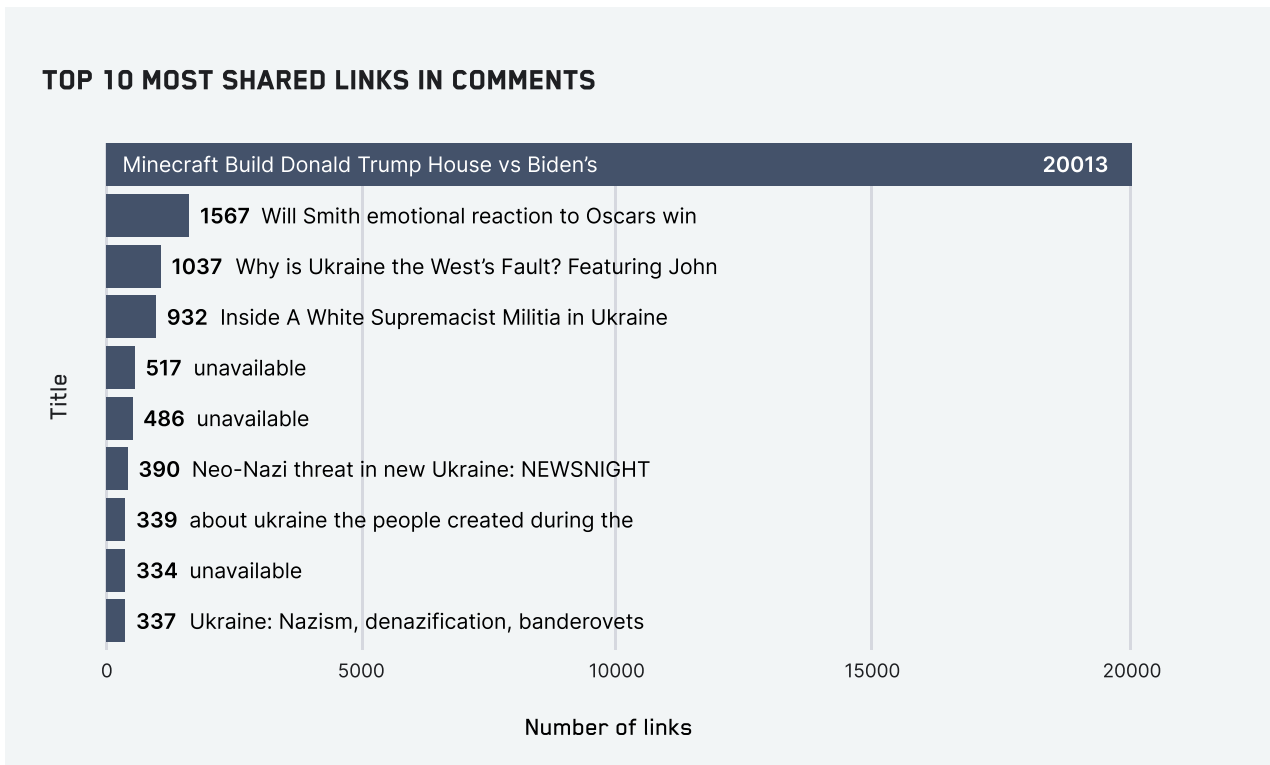
²³ There were 1 866 links to the YouTube [channels](#); 109 388 – to the [videos](#) (see Annex 1).

Of the ten most mentioned videos in the comments, three can be classified as neutral²⁴, three are no longer available, and four are related to Ukraine:

- ▶ [Why is Ukraine the West's Fault? Featuring John Mearsheimer](#)²⁵
- ▶ [Inside A White Supremacist Militia in Ukraine](#)
- ▶ [Neo-Nazi threat in new Ukraine: NEWSNIGHT](#)
- ▶ [Ukraine: Nazism, denazification, banderovets, residential area artillery, and guns for everyone](#)

The last video from the list was blocked in Ukraine but allowed in other countries. Except for the first video, three videos from the list promote the pro-Kremlin narrative *“Ukrainians are nazis”*.

Of the ten most mentioned videos in the comments, three videos promote the narrative *“Ukrainians are Nazis”*.




²⁴[Minecraft Build Donald Trump House vs Biden's White House](#) | [Monkey Gaming](#)
[Will Smith emotional reaction to Oscars win and Chris Rock.](#)
[채장암에서 살리신 치유의 하나님 사랑제일교회 김대경 목사 C채널 \[힐링토크 회복 플러스\] 454회](#)

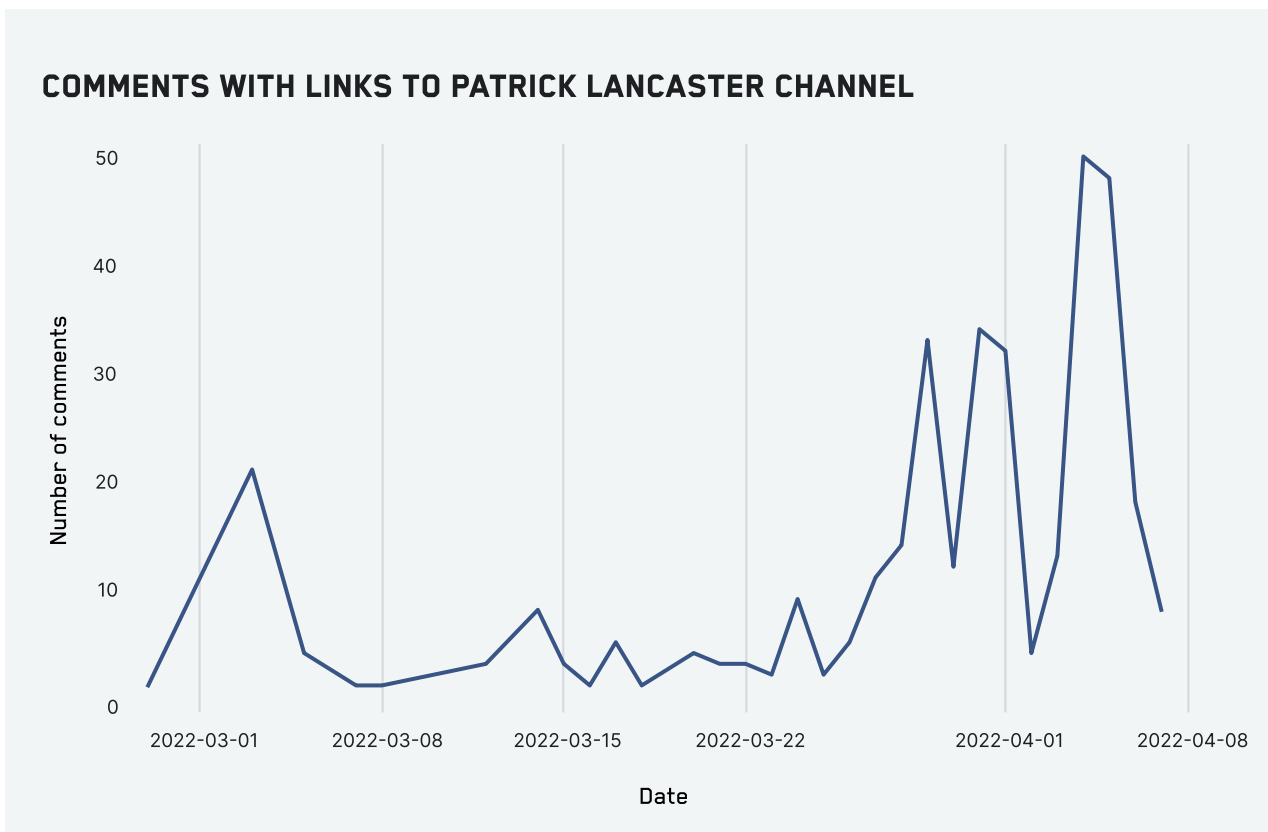
²⁵ This link was duplicated 1 037 times in the comments.

Out of 180 channels mentioned in the comments, **65 channels had over 1 000 subscribers**; six were terminated.

Most channels were associated with the following countries: the United States (25), Ukraine (16), and the United Kingdom (10). Six channels were associated with Russia, including [the official channel](#) of the Russian Ministry of Defence.


The most shared YouTube channel was pro-Kremlin channel [Patrick Lancaster](#) with 498 000 subscribers. It appears in 344 comments from our sample, which may be just scratching the surface.

Most of the comments with links to the Patrick Lancaster channel were published on 4 April and 5 April²⁶. On 5 April, this channel had the largest increase of **about 27K subscribers** (before this day, the average increase in subscribers was 8 667 subscribers per day) .



²⁶ 50 and 48 comments in our sample respectively.

Assumption 6: A regular user replies to the statement in a comment, while a bot uses *“reply”* for spamming.

On average, 11.6% of comments posted by a user were *“replies”*, and the average share of comments that received *“replies”* was 7.9% per user. Moreover, analysing users who left more than ten comments during the studied period revealed some cases of quite atypical *“replies”* behaviour: we found **4 085** users (let’s call them *“repliers”*), more than 90% of whose comments were replies, and 40 users whose comments provoked replies in about 90% of cases. We assume that such users could be involved in .

Assumption 8: A political bot provokes replies, while a commercial spammer uses *“replies”* to promote its own content.

An analysis of the commenting activity of such users allowed us to find the first criterion for distinguishing political bots from commercial spammers. We have detected 724 repliers who posted 50 876²⁷ comments actively²⁸. 22 331 of these comments contained links, 99.97% of which appeared at least twice in our sample²⁹. Their content did not relate to Ukraine or any other politically sensitive topic. These users were responsible for commercial spam.

²⁷ 34.2% are duplicates.

²⁸ Over 10 comments per day.

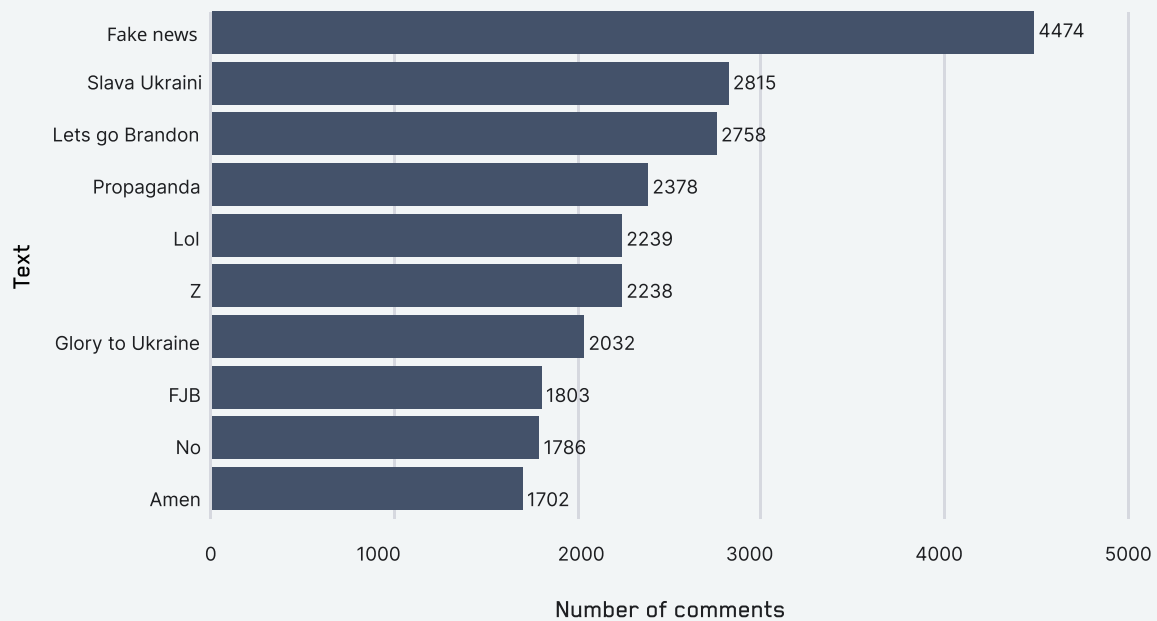
²⁹ The most popular link was the [Minecraft video](#) mentioned in 19 984 comments.

Assumption 7: A regular user rarely duplicates his or her comment, while a bot uses duplicates to a great extent.

16.7%³⁰ of textual comments written by 376 610 users were **duplicated** at least twice³¹.

One of the ten most popular comments with multiple occurrences was “Z”, a symbol of Russian aggression against Ukraine³². It was posted 1 844 times by 967 users under 952 videos.

TOP 10 DUPLICATE COMMENTS




³⁰ There are 1 152 140 duplicates by 205 657 unique comments in our sample.

³¹ From 3 045 duplicates written by “24-25 Feb” accounts, we identified 799 unique duplicates. In 90% of cases, one user was responsible for one unique duplicate promoting one particular message.

³² See Annex 2 for examples.

Along with short comments, users also duplicated relatively longer messages – 44.7% of duplicate comments consist of more than five words.

The pro-Kremlin³³ message, *“Nato military force must leave the territory of the former USSR in order to prevent mutual destruction”*, was duplicated 255 times .

Assumption 9: Commercial spammers use duplicates to a greater extent than political bots.

At the same time, the most duplicated comment was in Spanish. It was repeated 2 239 times; however, this comment wasn't related to the studied topic, spamming about *“the best concert ever”*³⁴.

Assumption 10: A political bot's content relates to the discussed topic, while a commercial spammer promotes its own content.

There were a lot of duplicates about investing in crypto and about religion (usually, the longest comments). Since the content of these duplicates did not relate to the topic discussed in a video, we considered such messages as commercial spam instead of political.

Content / Narratives

To find narratives, we considered comments longer than five words. 78% of comments met this requirement. Of **3 592 329 long comments**, 90% were written only once; the rest were duplicates. Focused on CIB analysis, we looked for narratives in 90 140 unique duplicates and then searched for such narratives in the whole dataset.

³³ See Annex 2 for more examples of pro-Kremlin messages.

³⁴ Example: “unos mejores conciertos puede pero solo verlos desde pantalla estuvo sorprendente”.

By clustering duplicates, we revealed 19 narratives represented to a great extent in about 10% of duplicated comments. These narratives could be assigned to the following **groups**:

1. Pro-Kremlin:

- Zelensky is a pathetic comedian/actor/liar
- West promotes fake news and propaganda
- US/NATO/America destroyed/bombed Iraq/Afghanistan/Syria/Libya/Yemen, and others
- Ukrainians are nazis/fascists, they bombed Donbas for 8 years

2. Pro-Ukrainian:

- Zelensky is a hero, leader
- Putin is a new Hitler
- Ukrainian cities / Mariupol are ruined, people suffer from shelling
- Russians killed innocent civilians/children/women

3. Neutral or controversial:

- Biological/chemical weapon could be applied
- UN/EU/US actions during the war in Ukraine
- NATO's heavy weapons could escalate the conflict
- West (US/NATO/Biden/America/Europe) play own game
- China can invade Taiwan or help Russia invade Ukraine
- If Trump had won all would have been fine
- Jesus Christ comes soon
- Let's pray for peace and love

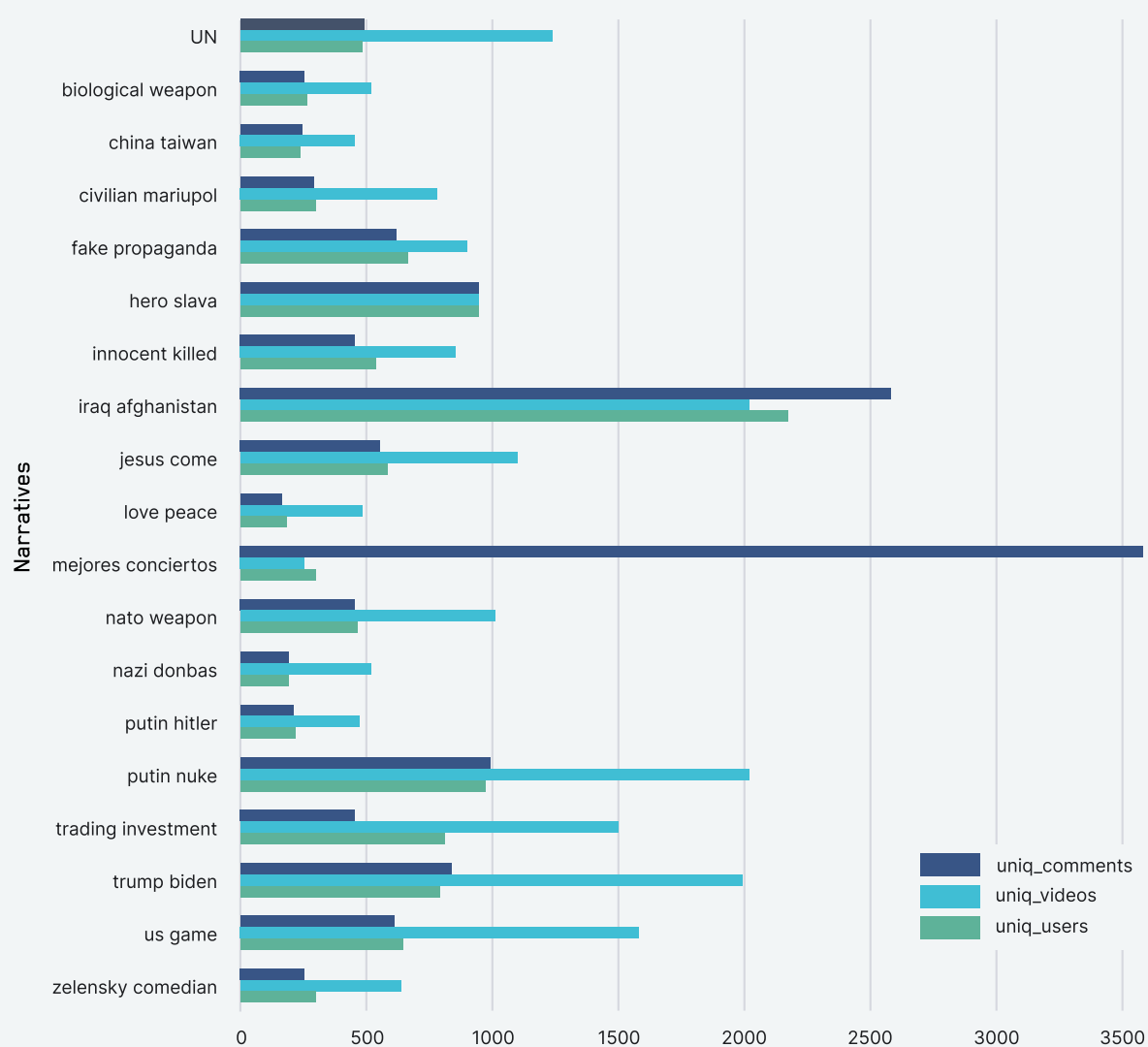
4. Spam:

- Mejores conciertos desde elecciones culturales
- In a crisis, it's important to apply new financial instruments (bitcoin/crypto)

Applying the results of clustering and fuzzy search to the whole dataset, we succeeded in marking down 43 631³⁵ comments.

³⁵ About 11% of all duplicated comments.

NARRATIVES FEATURES



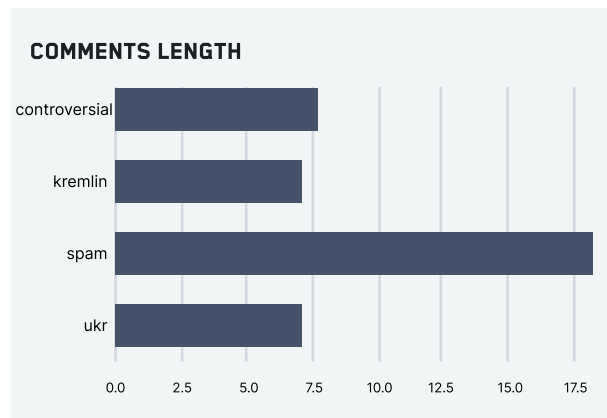
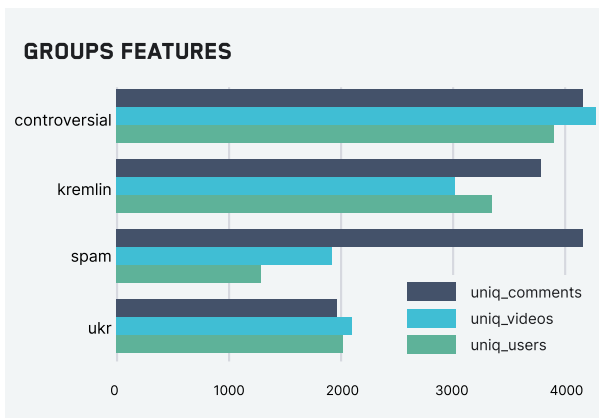
Among pro-Kremlin narratives, the most promoted was *“NATO bombed Iraq/ Afghanistan/Syria/Libya/Yemen and other countries”*. This message is significantly more popular than any pro-Ukrainian narrative, *“Mariupol is ruined, people suffer from shelling”* or *“Russians killed innocent civilians”*.

The proportion of comments in Spanish to the number of related videos differs from other groups. Out of 11 229 comments related to the *‘mejores conciertos’* cluster, 10 854 comments contain links, only three of which were unique links to the YouTube videos. None of them related to Ukraine.

Assumption 11: A political bot leaves comments beneath videos related to his topic, while a commercial spammer disregards the topic of a video.

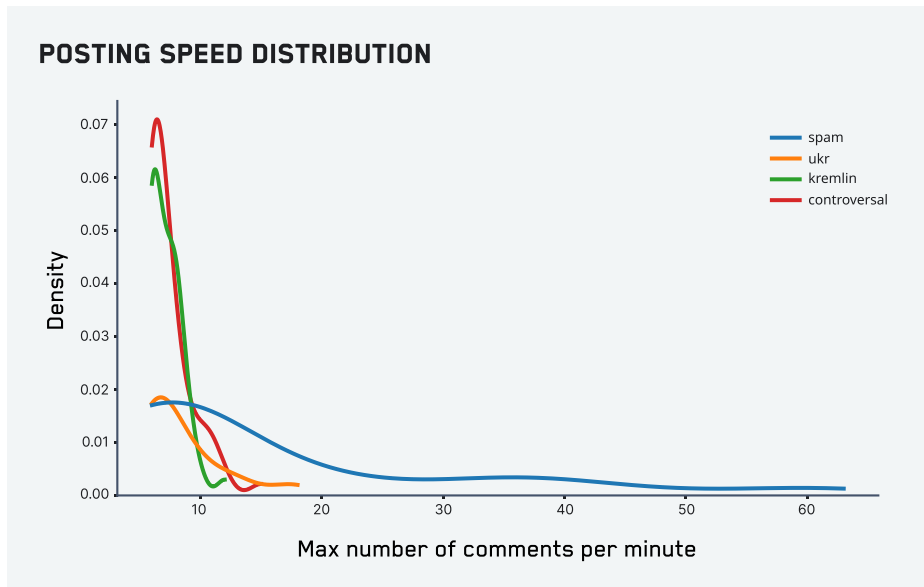
Considering revealed clusters by groups, one can see that *pro-Kremlin* rhetoric dominates *pro-Ukrainian*. At the same time, groups of *controversial* narratives and *spam* are bigger than clear ones.

In the group of *spam* messages, we observe an atypical (compared to other groups) ratio between content and reactions. On average, commercial spammers leave more comments beneath fewer videos related to the particular topic than political bots that aim at uniform coverage of videos related to the topic. Additionally, *spam* messages, on average, were longer than others.

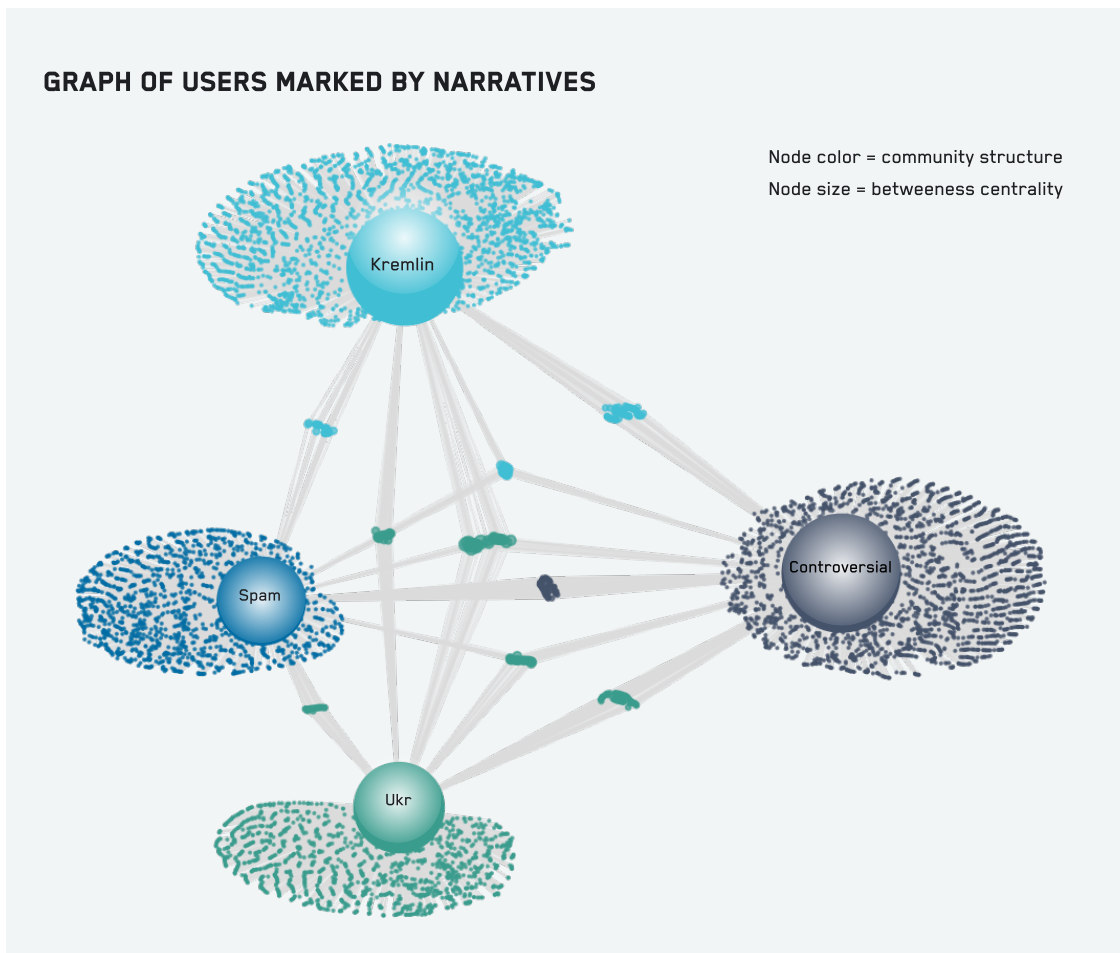


Assumption 12: On average, commercial bots are faster than political spammers.

Upon checking the commenting activity of these four groups, we detected a significant difference in posting speed between commercial and political spammers. This observation testifies to the presence of commercial spammers.




The graph of users marked by narratives³⁶ shows that detected groups of users almost never overlap (taking into account the false positives rate).



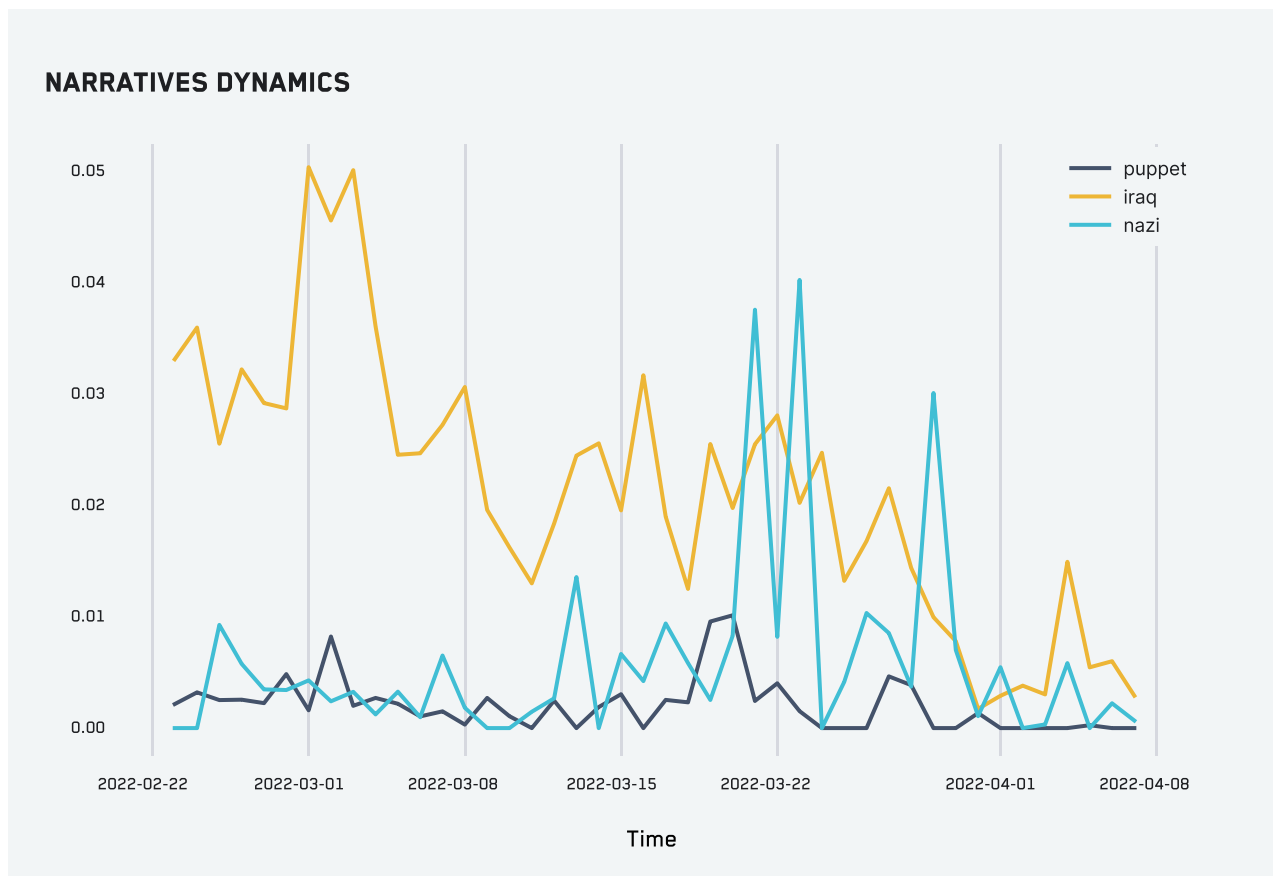
³⁶ It features 10 190 (users) nodes and 10 823 edges (one-direction connection = user left a comment related to a certain group).

The dynamics analysis shows that pro-Kremlin propaganda follows the news feed. For example, mentions of a humanitarian catastrophe in Mariupol are followed by pro-Kremlin messages that *“western news shouldn’t be trusted”*. Messages about *“killed innocent children and women”* go under the message that *“western media promote propaganda”*,

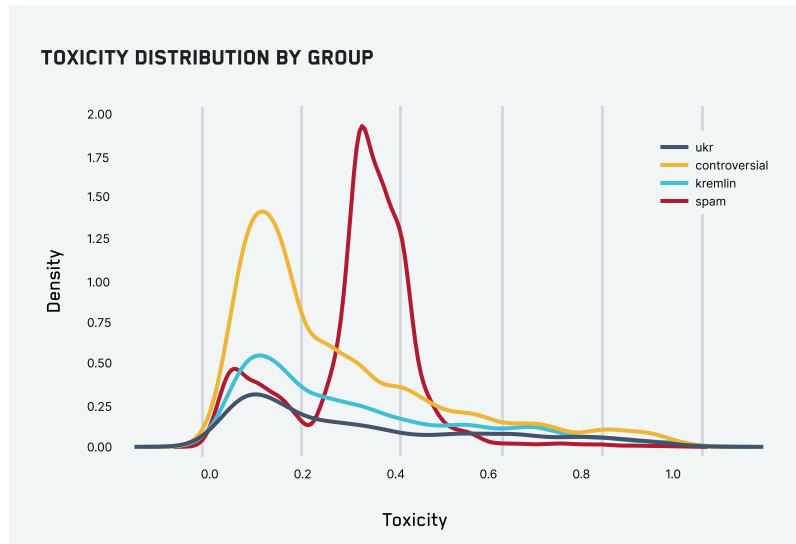
// *NATO bombed Iraq*
pro-Kremlin

Some narratives, such as *“nazi”*, grew during the studied period. Some, like *“Zelenskiy is a puppet”*, were used from time to time. Some, like *“Nato bombed Iraq and other countries”*, declined .

// *Zelenskiy is a puppet*
pro-Kremlin

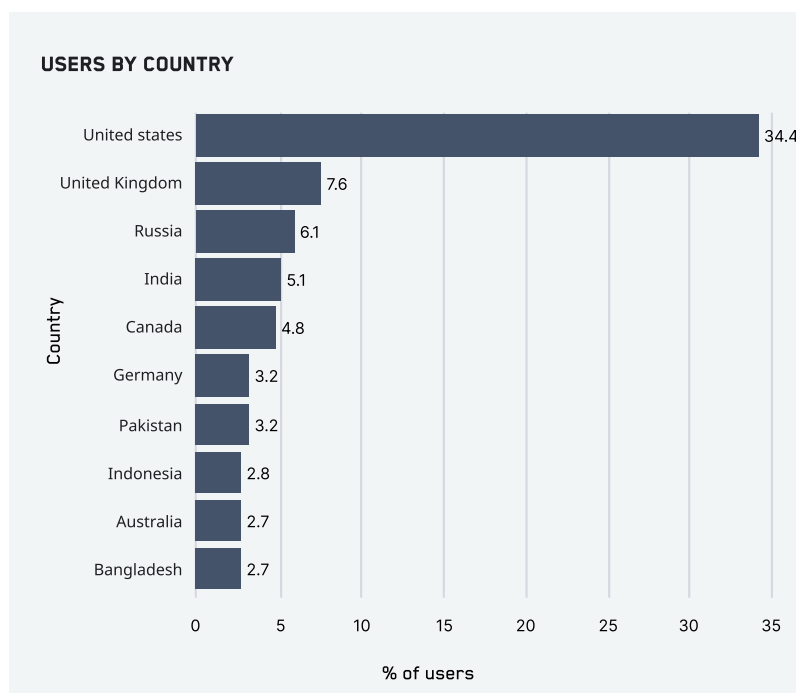


As for toxicity, *pro-Kremlin* comments were marginally more toxic than *pro-Ukrainian*. At the same time, controversial comments were even more toxic than *pro-Kremlin*. *Spam* comments show unusual bimodal toxicity distribution:



Content / Narratives / By countries

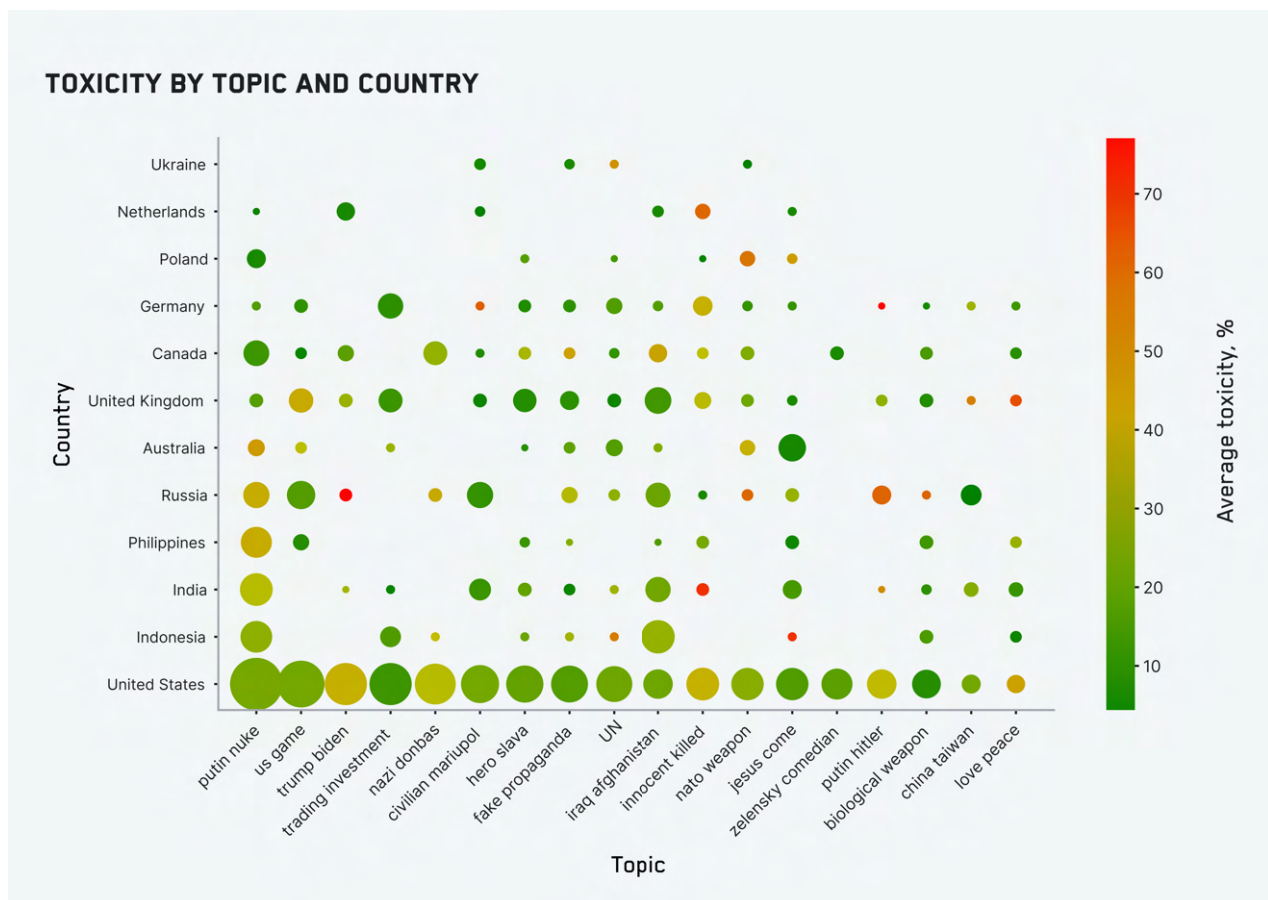
According to the YouTube API, 749³⁷ users were associated with certain countries. The graph below shows countries that have been associated with more than five accounts. We managed to mark down 2 904 comments by topic and country. The distribution is in line with the user distribution of the full research sample.



³⁷We classified 43 631 comments by topics; 10 177 unique users wrote these comments.

Analysis shows that comments that promote the most popular pro-Kremlin narrative, *“Nato bombed Iraq”*, were published by users from different countries. Although most channels are from the USA, most *“Nato bombed Iraq”* comments were written by users from **Indonesia** (13.5%³⁸), while the United States is in second place (10.5%³⁹). Users from countries such as the United Kingdom, Bangladesh, India, Russia, Kuwait, and Pakistan wrote 43.6%⁴⁰ of comments related to this narrative.

Surprisingly, highly toxic comments came from Vietnam, Sri Lanka, India, and Indonesia. Toxic comments related to the *“Putin is a new Hitler”* from Germany and about *“Trump vs Biden”* from Russia seemed to be more expected.



Although the majority of users were from the United States, 34.7%⁴¹ pro-Kremlin comments were left by users from Indonesia, Canada, the United Kingdom, Pakistan, and Bangladesh. Russia doesn't dominate this list. It seems that Russians are outsourcing the promotion of English-language narratives.

³⁸ 46 out of 342.

³⁹ 36 out of 342.

⁴⁰ 149 out of 342.

⁴¹ 174 out of 501.

SUMMARY

Even though we could only use publicly available information about account activity with a limited sample, we managed to find evidence of coordinated behaviour. Thus, YouTube, having access to far more data, including browser fingerprints, IPs, cookies, and complete activity logs, can definitely do more to identify and prevent coordinated inauthentic behaviour and safeguard its platform.

We have found the following signs of coordinated activity among users who left comments beneath the video about Ukraine on YouTube channels of English-language media:

1. **Bulk account creation:** A substantial number of accounts were created in the two first days of the Russian invasion of Ukraine. 12.3% of comments from these accounts were duplicates.
2. **Placeholders instead of names:** We detected several groups of users with suspicious names. These groups spread pro-Kremlin narratives, the most popular of which was *"Western media is fake and propaganda"*. This message aims to discredit the Western media.
3. **Unusual posting activity:** For some users, we observed extreme posting activity (e.g. more than 100 comments per day). For some comments, we detected short periods between publishing (e.g. less than one-minute intervals).
4. **Copy-pasted long comments:** We found duplicated comments that include pro-Kremlin narratives.
5. **Kremlin channels promotion in comments:** There were links that promoted YouTube channels and videos related to Kremlin propaganda.

CIB criteria	Number of users
Created on 24-25 Feb	3 590
Suspicious names (John Smith, John Doe, non-alphabetic, 'user')	3 529
Posted > 100 comments during the 44 days	4 614
Max posting speed > 5 comments per minute	930
Posted comments in the first 10 minutes after the publication of the video	1 199
Posted over 5 comments, 90% of comments were replies	4 085
Posted over 5 duplicate links	2 647
Posted over 5 duplicate comments longer than five words	16 124

Number of unique users that fit at least one of the criteria is 30 291, which is **1.9%** of the sample size. However, they produced **20.5%** of all comments.

Other findings include:

1. In the narratives, pro-Kremlin rhetoric dominates pro-Ukrainian.
2. Among pro-Kremlin narratives, the most promoted is: *"Nato bombed Iraq, Afghanistan, Syria, Libya, and other countries"*.
3. Kremlin seems to be outsourcing the promotion of English-language narratives.

Underlying data can be accessed on cib-yt-2022-data.trementum.net, including:

- The list of Seed YouTube channels with links
- Keywords
- Duplicates
- Mass commenting
- Posting duplicates
- Mix of CIB strategies
- Duplicate links to channels
- Duplicate links to videos

John Smith





FAKE/PROPAGANDA

// *Western media promote fake/propaganda*
John Smith (106) & John Doe (44)

-  **John Smith** 1 month ago
 Fake news Neil pushing go erment propaganda
 👍 🗨️ REPLY
-  **John Smith** 1 month ago
 Fake news pushing government propaganda
 👍 🗨️ REPLY
-  **John Smith** 1 month ago
 Fake news! Putin is just trying to rid people of deep state corruption!
 👍 1 🗨️ REPLY

US ENERGY

// *Biden kills US energy market*
John Smith (176)


-  **John Smith** 1 month ago
 Except for Biden.. Still killing US energy production and buying 100s of millions of barrels of Putin oil in its stead.
 👍 1 🗨️ REPLY
-  **John Smith** 1 month ago
 Biden = kills US energy but approves it for Putin? wtf!
 👍 1 🗨️ REPLY
-  **John Smith** 1 month ago
 Biden kills US energy markets and increases Putin oil imports with 100 millions of barrels. Now the arsonists want credit for trying to put out their own fires, but NOT reverse their hammering of US energy ? wtf!
 👍 1 🗨️ REPLY
-  **John Smith** 2 months ago
 Can you think of any US president who sanctions energy for Americans, yet approves and expands it for tyrants we and the world are at war with?
 👍 2 🗨️ REPLY

Non-alphabetic

8 YEARS

// *Ukraine bombed Donbas for 8 years*

Highlighted comment

 2 months ago

Россия 8 лет терпела последствия переворота на Украине и прихода к власти нацистов в надежде, что украинский народ разберётся и справится с происходящим в стране. Но украинский народ молча терпел, а украинские власти громко грабили, угрожали, взращивали русофобию и поощряли нацизм.

Россия 8 лет терпела издевательства украинской армии над соотечественниками, а в результате над российскими гражданами, живущими на Донбассе. Убийства детей, женщин, стариков... Да, конечно Россия помогла, чем могла и позволила нам выжить. Без этой помощи мы бы не продержались. Тем не менее Россия, просто ждала, что украинцы образуются... Не образовались. Не было никаких антивоенных митингов не на Украине, ни в России. Модные звёзды также не призывали украинские власти остановить кровопролитие...

Россия 8 лет терпела угрозы в свой адрес от марионеточного киевского режима. Терпела оскорбления в адрес своего лидера. Терпела подлые политические и экономические подставы Киева. Россия ждала, что может быть новый Президент сможет что-то изменить. Опять мимо...

Россия 8 лет терпела присутствие НАТО на территории Украины. Установки военных баз, присутствие НАТОвских военных и вооружения. Россия ждала, что НАТО услышит и не будет обострять и без того опасную ситуацию, но с каждым годом становилось только хуже и опаснее.







Non-alphabetic

MATERNITY HOSPITAL IN MARIUPOL


// Bombing of the maternity hospital in Mariupol is fake

- 1 month ago
1. There is no steaming /fuming of the ground in the places of alleged ammunition explosions.
 2. There is no dust suspension on the street and in the building from the destruction of plasterboard piers and ceilings, as well as from the destroyed ventilated facade of the building (the inner lining of which is made of glass wool).
 3. There are no women with newborns, maternity hospital staff, emergency medical personnel and rescuers in the pictures. Only representatives of the VFU and "photo models".
 4. There is a huge amount of broken glass in the corridors and premises of the institution. That is, the breaks were outside the building and the shock wave of glass flew into the premises. With such destruction, there would be a huge number of victims with characteristic wounds: faces and hands cut by glass fragments. In the pictures, none of the (two) "models" have no such damage. Hands, all without exception, without any damage and traces of blood. As, however, there are no injured and dead in the corridors and rooms of the maternity hospital.
 5. The faces, hair, outerwear and blankets of the "victims" are without traces of blood, dirt, dust and soot.
 6. The poses of the models are static, there is no dynamics and haste in the pictures, except for the frame with the stretcher.
 7. Group shot + model with a blanket. In the left part of the frame there are representatives of the VFU, who are heating something in pots on fire.
 9. Large portrait of a girl in a mask. The same thing... there is no damage and dust, dirt on the hair, face and hands. Fresh manicure on the nails. The mask is also obviously new, dressed so that the face is unrecognizable.
 10. Traces of dried blood on the faces are also of a strange shape. That is, it looks like small local bleeding, in which a person was lying down and the blood had time to curdle. There are no streaks all over the face, like a vertically standing person. There are no drops of blood on the clothes. In addition, even when a person's nose bleeds, he instinctively wipes it away. I.e., if a person is injured, the victim would try to wipe the blood at least once or make sure that he is really injured.
 11. File numbering and erased EXIF data. All the pictures were taken with a professional camera, not with phones. There is not a single picture from the civil services or random eyewitnesses
- Show less
- 2 REPLY

'Z' COMMENTS

 <p>Dragan J. Prokic 4 weeks ago</p> <p>Z</p> <p>1 REPLY</p>	 <p>user profile 3 weeks ago</p> <p>Z</p> <p>REPLY</p>	 <p>filigall 1 month ago</p> <p>Z</p> <p>REPLY</p>
 <p>strange love 1 month ago</p> <p>Z</p>	 <p>Not A Stone 1 month ago</p> <p>Z</p> <p>REPLY</p>	 <p>user profile 3 weeks ago</p> <p>Z</p> <p>1 REPLY</p>


PRO-KREMLIN

 **Sky News** 4.83M subscribers


President Zelenskyy claims '10,000 Russian soldiers have already died' during the Russian invasion of his country.

SHOW MORE

4,983 Comments SORT BY

 Add a comment...

Highlighted comment

 1 month ago

As soon as Russia manages Ukraine, the war will end,
Unconditional surrender to Russia is the only way for Ukraine to save its people !!!



AI Jazeera English ✓
9M subscribers

Despite desperate appeals from Ukraine, NATO's Secretary General Jens Stoltenberg says the alliance cannot impose a no-fly zone, without getting directly involved in the conflict. Ukraine's president has condemned the move, saying that NATO knows strikes and casualties are inevitable.

SHOW MORE

511 Comments SORT BY



Add a comment...

Highlighted comment



1 month ago

As soon as Russia manages Ukraine, the war will end,
Unconditional surrender to Russia is the only way for Ukraine to save its people !!!

1 REPLY



Washington Post ✓
2M subscribers

Russia announced on March 29 it would scale back its assault on Kyiv. But in the village of Moshchun, just 20 miles north of the capital, the battle raged on. Read more: <https://wapo.st/3wPdnKs>. Subscribe to The Washington Post on YouTube:

SHOW MORE

7,953 Comments SORT BY



Add a comment...

Highlighted comment



3 weeks ago

Ukrainians killed civilians in the Donbass.10,000 civilians have been killed in these 8 years of time. These are the Nazis.

1 REPLY



The New York Times ✓
4.05M subscribers

As Russia pledges to scale back operations in Kyiv, soldiers from the 112th Brigade of Ukraine's Territorial Defense are still preparing for the worst. Our cameras went inside their makeshift base.

SHOW MORE

5,507 Comments SORT BY



Add a comment...

Highlighted comment



3 weeks ago

Ukrainians killed civilians in the Donbass.10,000 civilians have been killed in these 8 years of time. These are the Nazis.

REPLY



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Show less



2



REPLY

[sic]