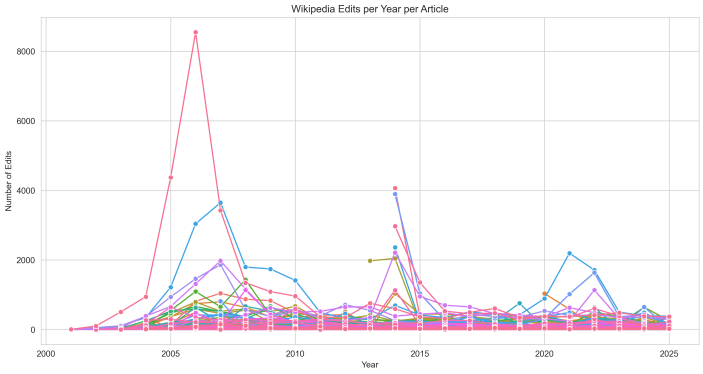
Results — Midterm Analysis (16 Oct. 2025)

1. Motivation

In the file `Wikipedia_articles.txt`, we gathered around **340 Wikipedia articles** related to **Ukrainian and Russian culture, history, and politics**.

By retrieving all the edits made to these articles, we aim to identify **patterns of activity** — for instance, peaks in editing activity during major historical or geopolitical events.



Observed Peaks of Activity

Distinct peaks can be identified around several key periods:

- **2005–2008** → Post–Orange Revolution period, marked by Russo-Ukrainian gas disputes and general geopolitical tension. This era also coincides with Wikipedia's "golden age," with roughly **50,000 active users** at its 2007 peak.
- **2014** → The **Russian annexation of Crimea**.
- **2020–2021** → The **COVID-19 pandemic**, which likely increased online activity overall.

- **2022–2025** → The **large-scale Russian invasion of Ukraine**, generating global attention and narrative conflict.

These observations motivate a deeper investigation into **editor behavior and content modification patterns**.

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2. Research Structure

This midterm analysis is divided into two complementary parts:

1. **Weaponised vs. Non-Weaponised User Analysis**
   A global overview of editing patterns among a sample of **2,454 unique users**, distinguishing between edits classified as *weaponising* or *non-weaponising*.

2. **Weaponising Users — Fine-Grained Analysis**
   A focused investigation of **300 unique users** from the *fine-grained dataset*, restricted to edits identified as weaponising by the language model.

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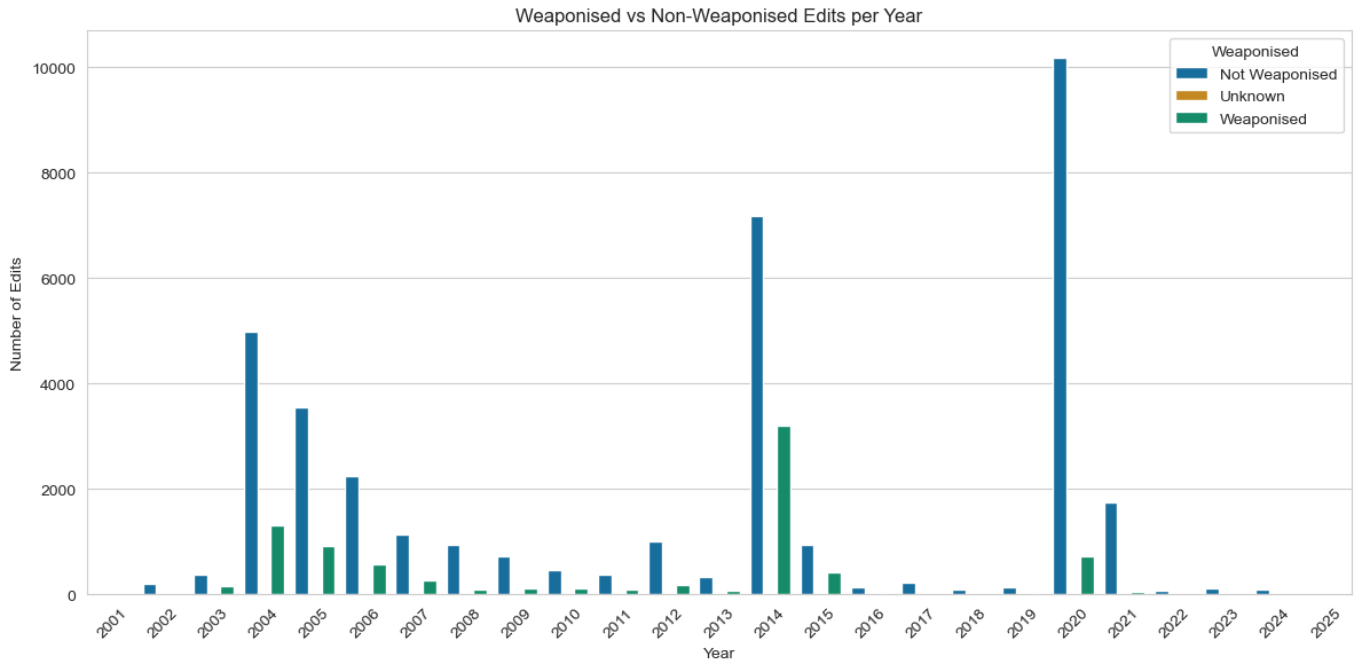
3. Weaponised vs. Non-Weaponised User Analysis

This section is based on the file `matched_edits_all.csv`, produced by **Emanuela**, which aligns fine-grained edits with corresponding user data from the *LLM Results* folder.
One can first check how *Weaponising* VS *Non weaponsing* edits are distributed over time.



There is a clear correlation with the first graph, showing more edits on crucial geopolitical periods as well as a peak of weaponsing edits. No peaks are displayed for the 2022-2025 periods since no article in the dataset was about Russian large scale invasion in Ukraine.

Metadata of the `matched_edits_all.csv`

```
{'total_edits': 45697,
 'total_unique_users': 2454,
 'number_unique_articles': 41,
 'num_bot_users': 92,
 'num_anonymous_users': 1011,
 'num_registered_users': 1351,
 'num_bot_edits': 1376,
 'num_anonymous_edits': 8315,
 'num_registered_edits': 36006,
 'weaponised_edits': 8388,
 'non_weaponised_edits': 37278,
 'unknown_weaponised_edits': 31}
```

There is a lot we can analyse coming from this metadata. We first start to focus on the **registered** users and specially the top 10 most frequent editors among the 1351 registered users.

Top 10 users general info

The top 10 registered editors are :

```
['LSGH',
 'Toddy1',
 'TheDraperyFalls',
 'UP9',
 'Genyo',
 'Aleksandr Grigoryev',
 'Dbachmann',
 'Vasile',
 'Irpen',
 'Mzajac']
```

Proportion regarding Ur/Ru articles

To identify how much each of the top 10 users focused on Ukraine- or Russia-related content, I filtered their edited articles using both small and large sets of keywords related to these two countries.

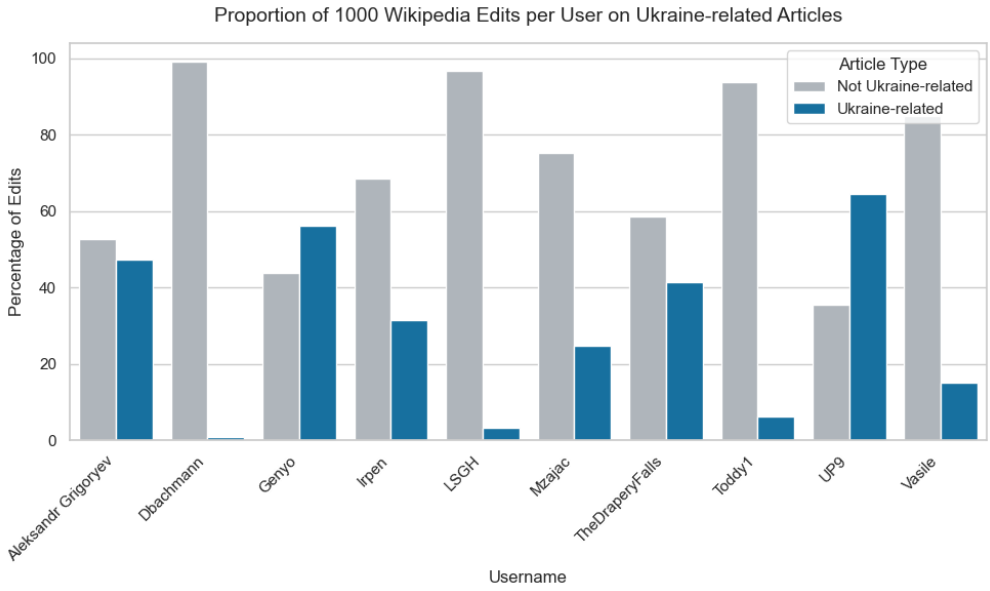
```
ukraine_keywords_small = [
    "ukraine", "ukrainian", "kyiv", "kiev", "crimea", "crimean", "kuban",
"donbas", "donetsk", "luhansk",
    "maidan", "yanukovych", "yushchenko", "zelenskyy", "poroshenko",
"catherine", "bukovina", "bessarabia", "eastern",
    "euromaidan", "dnipro", "odessa", "sevastopol", "putin", "rus'",
"russia", "russian", "moscow", "kremlin", "soviet"
]

ukraine_keywords_large = [
    # core country and people
    "ukraine", "ukrainian", "kyiv", "kiev", "crimea", "crimean", "kuban",
```

```
"donbas", "donetsk", "luhansk",
    "maidan", "yanukovych", "yushchenko", "zelenskyy", "poroshenko",
"catherine", "bukovina", "bessarabia",
    "eastern", "euromaidan", "dnipro", "odessa", "sevastopol", "putin",
"rus'", "russia", "russian", "moscow",
    "kremlin", "soviet",

    # politics & government
    "verkhovna rada", "president", "prime minister", "parliament",
"government", "cabinet", "federation",
    "referendum", "annexation", "independence", "revolution", "reforms",
"corruption", "sanctions",
    "occupation", "treaty", "agreement", "ceasefire", "negotiations",
"elections", "coup", "unification",

    # geography & regions
    "zaporizhzhia", "mariupol", "kharkiv", "kherson", "mykolaiv",
"chernihiv", "sumy", "poltava", "vinnytsia",
    "lviv", "ivano-frankivsk", "ternopil", "lutsk", "uzhhorod",
"dnipropetrovsk", "donetsk oblast",
    "luhansk oblast", "transcarpathia", "prykarpattia", "galicia",
"novorossiya", "black sea", "azov sea",

    # historical references
    "kyivan rus", "tsar", "imperial", "empire", "ussr", "communist",
"lenin", "stalin", "bolshevik",
    "cold war", "perestroika", "glasnost", "collapse", "partition",
"catherine the great", "brezhnev",
    "chernobyl", "orange revolution", "revolution of dignity",
"holodomor", "soviet union",

    # war and military
    "invasion", "occupation", "annexed", "frontline", "offensive",
"defense", "army", "forces", "military",
    "russian troops", "ukrainian forces", "separatist", "rebels",
"paramilitary", "nato", "eu", "un", "war",
    "conflict", "shelling", "bombing", "airstrike", "occupation forces",
"mobilization", "martial law",

    # culture, identity & language
    "language", "identity", "heritage", "culture", "orthodox", "church",
"patriarch", "ukrainian language",
    "russian language", "minority", "bilingual", "autonomy",
"nationalism", "independence day", "flag",
    "anthem", "symbol", "national identity", "sovereignty",

    # current / modern references
    "donbas war", "russian invasion", "ukrainian front", "crimea bridge",
"moskva cruiser", "ukrainian army",
    "russian army", "zelensky", "kremlin propaganda", "occupation
administration", "territorial defense",
    "european union", "eu membership", "nato membership", "nato
expansion", "eu sanctions", "ukraine war",
    "full-scale invasion", "special military operation", "mobilisation",
```

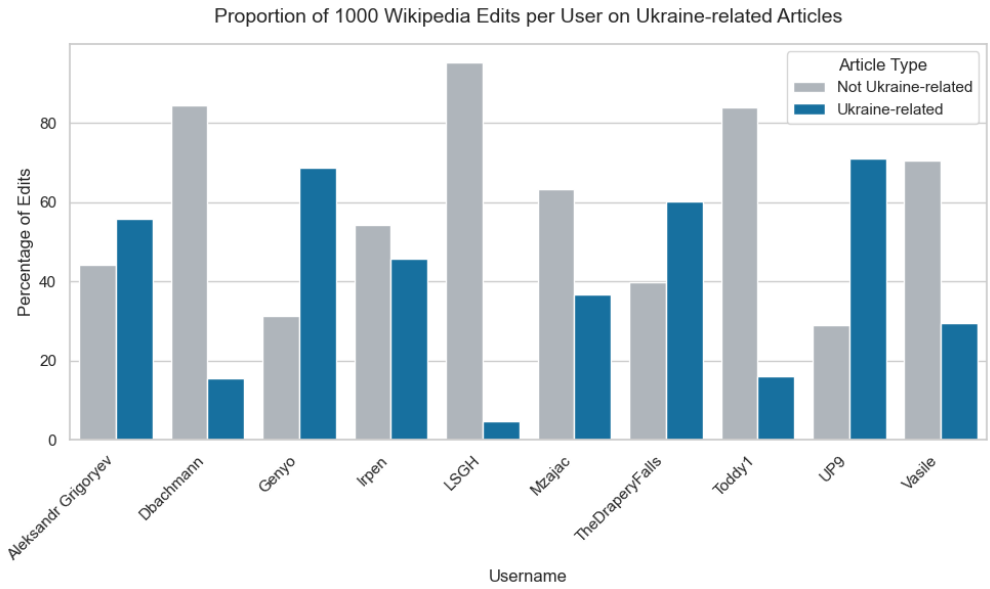
```
"referendum in crimea",

    # other
    "gas pipeline", "north stream", "energy crisis", "grain corridor",
"black sea fleet", "peace talks",
    "donetsk people's republic", "luhansk people's republic", "kyiv
oblast", "liberation", "resistance",
    "occupation zone", "ukrainian refugees", "mariupol steel plant",
"azovstal", "bucha", "irpin", "kharkiv offensive"
]
```

I did the analysis for a sub sample of 1000 analysis per user and for all the edits the user made since the creation of his account using Wikipedia's user API.

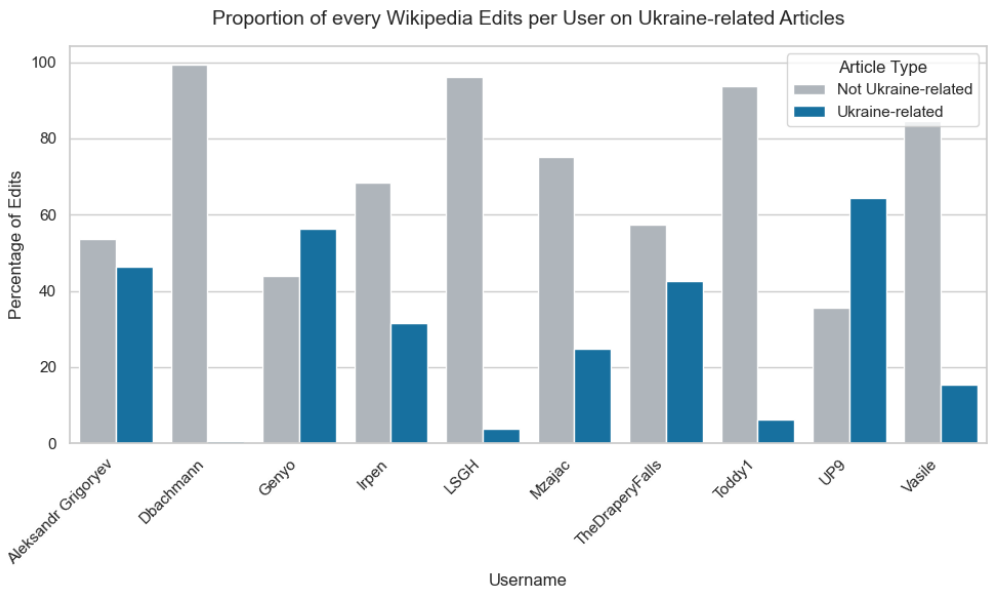
With the small set for 1000 edits per user :



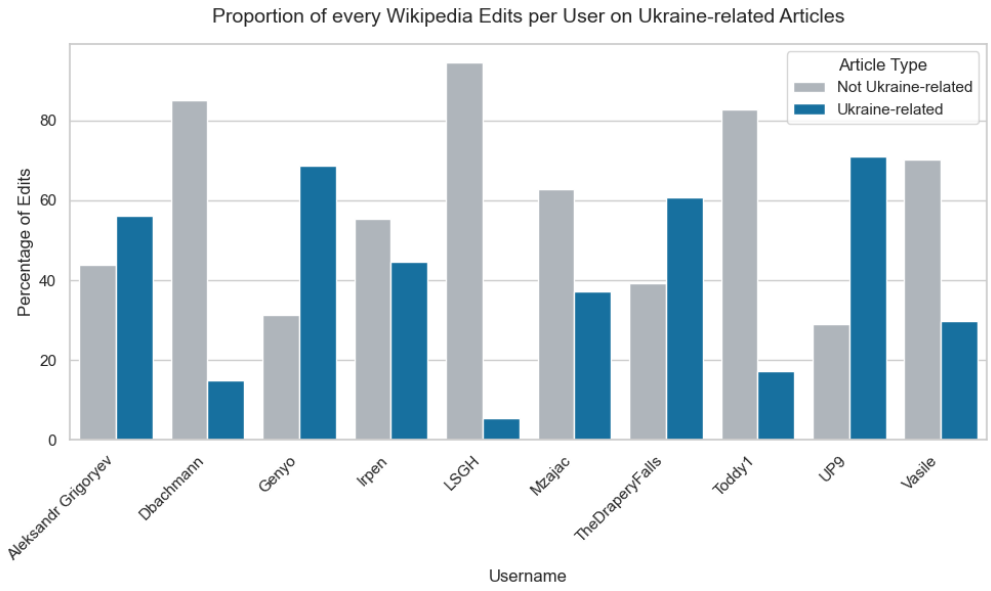
With the large set for 1000 edits per user :



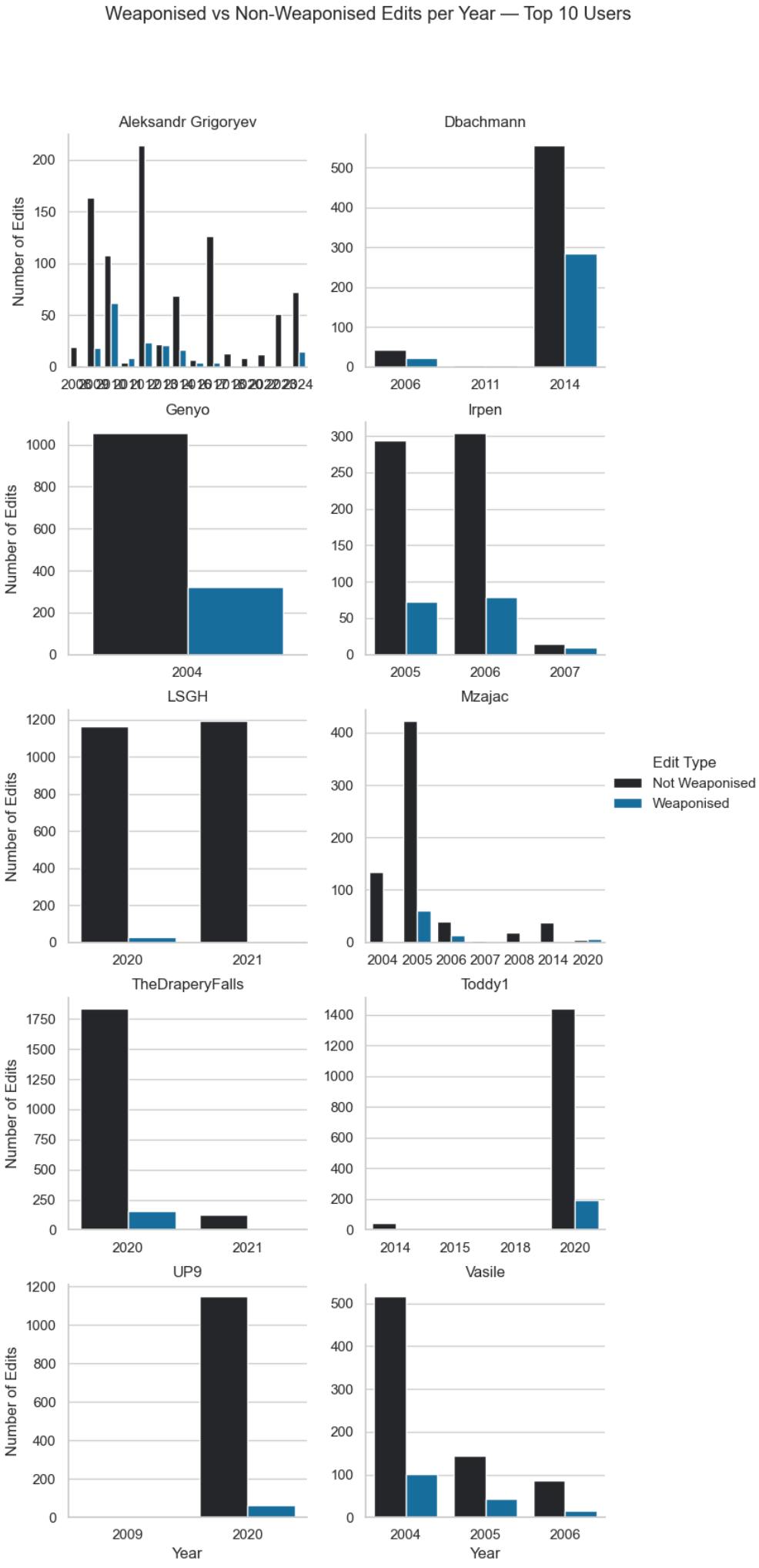
With the small set for every edits per user :



With the large set for every edits per user :



Weaponsing edits vs non weaponising edits per year for top 10 for only Ur/Ru related article


Weaponised vs Non-Weaponised Edits per Year — Top 10 Users
Aleksandr Grigoryev
Dbachmann
Genyo
Irpen
LSGH
Mzajac
TheDraperyFalls
Toddy1
UP9
Vasile
Number of Edits
Year
Edit Type
Not Weaponised
Weaponised

The graph shows that while Dbachmann seldom edits Ukraine- or Russia-related pages, those few edits are more likely to be weaponising compared to others. In general, these top users are broad Wikipedia contributors, with limited focus on Ukraine/Russia topics and little evidence of weaponising behaviour.

Groups

Group	Who it includes	Typical criteria	Can edit semi-protected pages?	Can edit extended-protected pages?
`*`	Anyone (even IPs)	none	❌	❌
`user`	Registered users	account created	✅	❌
`autoconfirmed`	Older + ≥10 edits	~4 days, ≥10 edits	✅	❌
`extendedconfirmed`	Sustained editors	≥30 days, ≥500 edits	✅	✅

> hard to get some relevant information for only the top 10 users. Maybe will me more relevant when focus only on the weaponising users for the fiengrained file.

Registered vs IP adress users

The file, as displayed in the metadata, includes 2,454 unique users, of which:

- 1,351 are registered accounts
- 1,011 are anonymous (IP addresses)
- 92 are bots

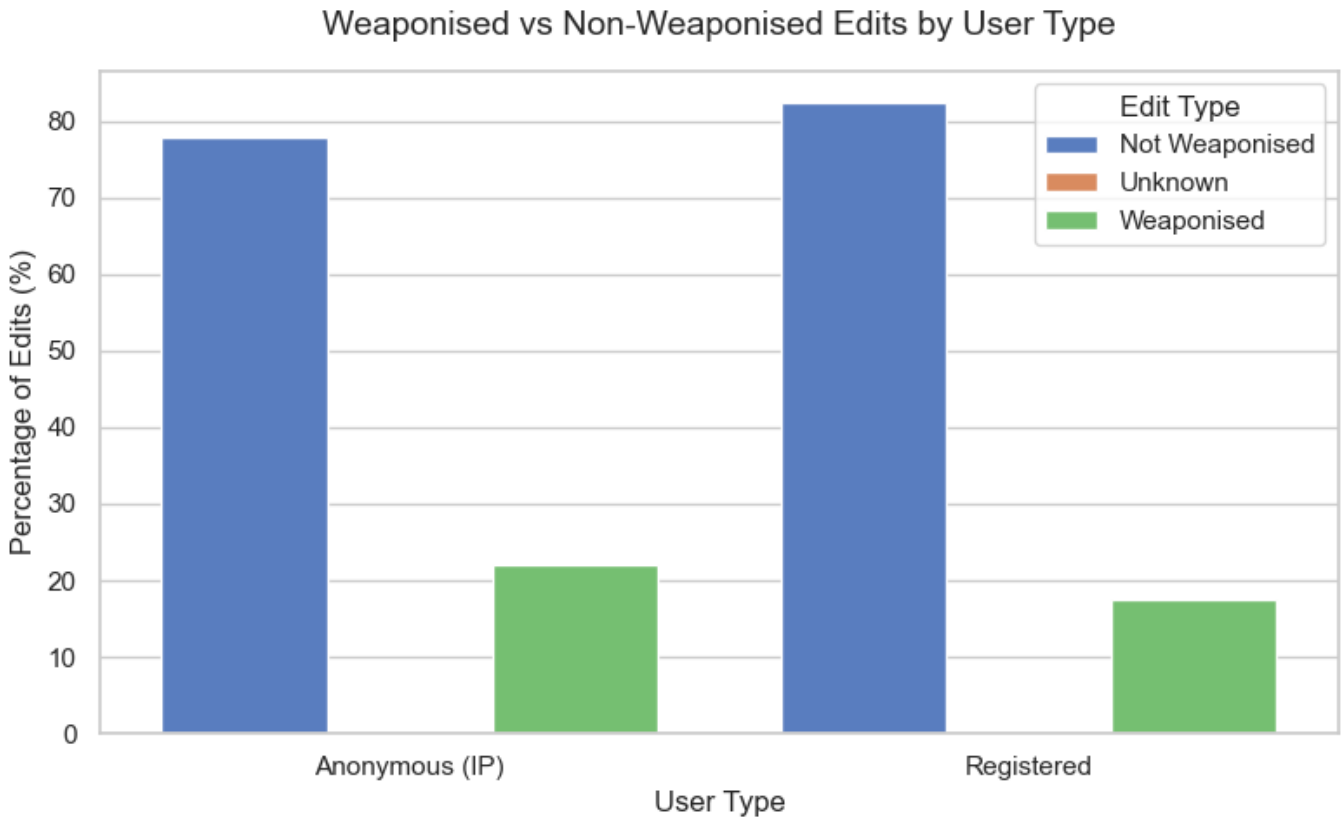
Although the number of registered and anonymous users is roughly comparable, the volume of edits differs significantly:

- Registered users: 36,006 edits
- Anonymous users: 8,315 edits

This implies that registered users contribute over four times more edits than anonymous users. Thus we can raise the following research question

> **Are anonymous (IP address) users more likely to produce weaponising edits compared to registered users due to their anonymity?**

The graph below shows that in proportion, IP adress user are slighlty more weaponsing than registered user. They feel maybe more confortable to weaponise under anonymity.



By using an IP Geolocation API, we can check wether the used IP adress is from a proxy or not and where the edit is located :

🌍 View Interactive IP Map

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3. Weaponised User Analysis