

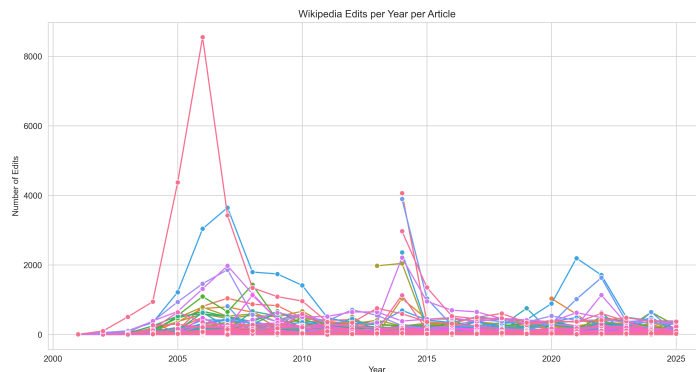


# Results — Midterm Analysis (16 Oct. 2025)

## 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.



- 2004 Ukrainian presidential election
- 2014 pro-Russian unrest in Ukraine
- 2022 Russian invasion of Ukraine
- Abortion in Ukraine
- Administrative divisions of Ukraine
- Alexander of Russia
- All Ukrainian Union of Churches of Evangelical Christian Baptists
- Andrei Sheptytsky
- Andriy Kyivov
- Andriy Shevchenko
- Annexation of Crimea by the Russian Federation
- Architecture of Ukraine
- Armed Forces of Ukraine
- Armenian Diocese of Ukraine
- Art of Ukraine
- Arts of Ukraine
- Banking in Ukraine
- Baptism in Kiev
- Baptists in Ukraine
- Belarusians in Ukraine
- Bessarabia
- Bibliography of Ukrainian history
- Brotherhood of Independent Baptist Churches and Ministries of Ukraine
- Buddhism in Ukraine
- Bukovina
- Bulgarians in Ukraine
- COVID-19 pandemic in Ukraine
- Carpathian Ruthenia
- Catharine the Great
- Catholic Church in Ukraine
- Censuses in Ukraine
- Christianity in Russia
- Christianity in Ukraine
- Christmas Eve/Ukraine
- Christmas in Ukraine
- Cinema of Ukraine
- Coat of arms of Ukraine
- Communist Party of Ukraine (Soviet Union)
- Communist Party of the Soviet Union
- Constitution of Ukraine
- Corruption in Ukraine
- Cossack Hetmanate
- Crime in Ukraine
- Crimea
- Crimen Karales
- Crimen Phanate
- Crimen Tatar language
- Crimen Tatar literature
- Crimen Tatars
- Crimen peninsula
- Culture of Russia
- Culture of Ukraine
- Dedication of Independence of Ukraine
- Demographics of Ukraine
- Discretions of Ukraine
- Disruption of the Soviet Union
- Dragon Cossacks
- Dona (Crimea)
- Eastern Front (World War I)
- Eastern Front (World War II)
- Economic history of Ukraine
- Economy of Ukraine
- Education in Ukraine
- Elections in Ukraine
- Electricity in Ukraine
- Encyclopedias of Ukraine
- Energy in Ukraine
- English Civil War
- Epiphany in Ukraine
- Ethnic groups in Ukraine
- Evangelical Lutheran Church in Russia, Ukraine, Kazakhstan and Central Asia
- Evangelical Presbyterian Church of Ukraine
- FC Dynamo Kyiv
- Flag of Ukraine
- Folklore of Ukraine
- Football in Ukraine
- Foreign relations of Ukraine
- Freedom of the press in Ukraine
- Galicia (Central Europe)
- Galicia (Eastern Europe)
- Gender inequality in Ukraine
- Geography of Ukraine
- Government of Ukraine
- Granting of autocephaly to the Orthodox Church of Ukraine
- HIV/AIDS in Ukraine
- Health in Ukraine
- Hills of Kiev
- Hilfing Church Kiev
- Hilfing Ukraine
- Holodomor
- Holocaust in Ukraine
- Historical regions in present-day Ukraine
- History of Christianity in Ukraine
- History of Crimea
- History of Kyiv
- History of Ukraine
- History of Ukraine/Early modern period
- History of Ukraine/World War II and the Nazi Occupation
- History of Ukrainian aviation
- History of banking in Ukraine
- History of jewelry in Ukraine
- History of all transport in Ukraine
- History of shipbuilding in Ukraine
- History of technology in Ukraine
- History of television in Ukraine
- History of the Cossacks
- History of the Jews in Ukraine
- History of the Russian Orthodox Church
- History of the Soviet Union (1985-1991)
- Holodomor
- Human rights in Ukraine
- Human trafficking in Ukraine
- Hungarians in Ukraine
- Humint invasion
- Immigration to Ukraine
- Imperial Russian Army
- Intangible Cultural Heritage of Ukraine
- Invasion of Poland
- Islam in Ukraine
- Ivan Franko
- Jamaica
- Judiciary of Ukraine
- Khmelnitsky Uprising
- Khoim Govenominate (Ukraine)
- Kiev
- Kiev Pechersk Lavra
- Kiev Voivodship
- Kievian Rus
- Kingdom of Galicia and Lodomeria
- Kulhan Cossacks
- Kyiv
- Kyiv Pechersk Lavra
- LGBT rights in Ukraine
- Language of Ukraine
- Latin Church in Ukraine
- Law of Ukraine
- Left bank Ukraine
- Leonid Kuchuk
- Leonid Kuchma
- Lex (Ukrainian instrument)
- List of Intangible Cultural Heritage elements in Russia
- List of Intangible Cultural Heritage elements in Ukraine
- List of Metropolises and Patriarchs of Kiev and All Ukraine
- List of Patriarchs and Metropolises of Ukraine
- List of UNESCO World Heritage Sites in Ukraine
- List of Ukrainian composers
- List of Ukrainian painters
- List of World Heritage Sites in Ukraine
- List of castles in Ukraine
- List of cities in Ukraine
- List of islands of Ukraine
- List of longest rivers of Ukraine
- List of mountains in Ukraine
- List of museums in Ukraine
- List of nature reserves of Ukraine
- List of places named after people/Ukraine
- List of waterfalls in Ukraine
- Literature of Ukraine
- Mass media in Ukraine
- Mass media in Volhynia and Eastern Galicia
- Massacres of Poles in Volhynia and Eastern Galicia
- Media in Ukraine
- Media of Ukraine
- Ministry of Internal Affairs (Ukraine)
- Mintores in Ukraine
- Modern history of Ukraine
- Moldavians in Ukraine
- Museums in Ukraine
- Music of Ukraine
- Mykhailo Hrushevsky
- Mykola Kostomarov
- Mythology of Ukraine
- Name of Ukraine
- National Art Museum of Ukraine
- National Historical Museum of Ukraine
- National Museum of Folk Architecture and Folkways of Ukraine
- National Parliamentary Library of Ukraine
- National anthem of Ukraine
- National parks of Ukraine
- Neo-Byzantine architecture in the Russian Empire
- New Russia
- November Uprising
- Opa of Kiev
- Ovars in Ukraine
- Orange Revolution
- Organization of Ukrainian Nationalists
- Orthodox Church of Ukraine
- Outline of Ukraine
- Outline of the Russo-Ukrainian War
- Partitions of Poland
- Photography in Ukraine
- Poltava
- Poles in Ukraine
- Polish areas annexed by the Soviet Union
- Polish-Soviet War
- Political parties in Ukraine
- Politics of Ukraine
- Pop music in Ukraine
- Populated places in Ukraine
- Populated places in Ukraine/Rural settlements
- Population transfers in the Soviet Union
- Post-Soviet transition in Ukraine
- President of Ukraine
- Principality of Kiev
- Prostitution in Ukraine
- Protestantism in Ukraine
- Protestants in Ukraine
- Public holidays in Ukraine
- Radio in Ukraine
- Radicalism/antiradical Ukraine
- Religion in Ukraine
- Revolution of Dignity
- Right bank Ukraine
- Rock music in Ukraine
- Roman Catholicism in Ukraine
- Romanians in Ukraine
- Russia
- Russian Architecture
- Russian Civil War
- Russian Empire
- Russian Monorail
- Russian Orthodox
- Russian Orthodox Church
- Russian Orthodox Old-Rite Church
- Russian Revolution of 1917
- Russian invasion of Ukraine
- Russian literature
- Russians in Ukraine
- Russification of Ukraine
- Russo-Ukrainian War
- Russo-Ukrainian War/Full-scale Russian invasion of Ukraine (2022-present)
- Rusophelia
- Rusophone
- Saint Sophia Cathedral in Kiev
- Saint Sophia Cathedral, Kyiv
- Science and technology in Ukraine
- Security Service of Ukraine
- Seven Natural Wonders of Ukraine
- Seven Wonders of Ukraine
- Seven Wonders of Ukraine/Seven Natural Wonders
- Sigobda Ukraine
- Soviet Top League
- Soviet Ukraine
- Soviet Union
- Soviet power
- Spot in Ukraine
- St. Nicholas Roman Catholic Cathedral, Kyiv
- Stock exchanges in Ukraine
- Sub-Carpathian Reformed Church
- Suicide in Ukraine
- Svyatoslav I of Kiev
- Symbols of Ukraine
- Taras Shevchenko
- Telecommunications in Ukraine
- Television in Ukraine
- The Church of Jesus Christ of Latter-day Saints in Ukraine
- The Ukrainian Week
- Theater in Ukraine
- Tourism in Ukraine
- Transport in Ukraine
- Turks in Ukraine
- USSR
- USSR national football team
- Ukraine
- Ukraine after the Russian Revolution
- Ukraine during World War I
- Ukraine national football team
- Ukrainian Autocephalous Orthodox Church
- Ukrainian Autonomous Orthodox Church
- Ukrainian Baroque
- Ukrainian Bible Society
- Ukrainian Greek Catholic Church
- Ukrainian Greeks
- Ukrainian Insurgent Army
- Ukrainian Lutheran Church
- Ukrainian Museum
- Ukrainian National Chernobyl Museum
- Ukrainian National Committee
- Ukrainian Orthodox Church (Moscow Patriarchate)
- Ukrainian Orthodox Church - Kyiv Patriarchate
- Ukrainian Orthodox Greek Catholic Church
- Ukrainian Premier League
- Ukrainian Rusophiles
- Ukrainian SSR
- Ukrainian Soviet Socialist Republic
- Ukrainian State
- Ukrainian War of Independence
- Ukrainian aviation
- Ukrainian architecture
- Ukrainian art
- Ukrainian avant-garde
- Ukrainian baroque
- Ukrainian cuisine
- Ukrainian culture
- Ukrainian dance
- Ukrainian diaspora
- Ukrainian embroidery
- Ukrainian fairy tale
- Ukrainian folk music
- Ukrainian folklore
- Ukrainian historical regions
- Ukrainian hymns
- Ukrainian language
- Ukrainian literature
- Ukrainian national clothing
- Ukrainian people
- Ukrainian underground
- Ukrainian wedding traditions
- Ukrainian wine
- Ukrainian wreath
- Ukrainians
- Ukrainians in Estonia
- Unification council of the Orthodox churches of Ukraine
- Vernadsky National Library of Ukraine
- Viktor Yanukovich
- Viktor Yushchenko
- Volhynia
- Volhynia genocide
- War in Donbas
- Western Ukrainian Cierge
- Wildlife of Ukraine
- Women in Ukraine
- World Network of Biosphere Reserves in Europe and North America/Ukraine
- World War II
- Zaporozhian Cossack
- Zaporozhian Cossacks

## 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**.

## 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*.

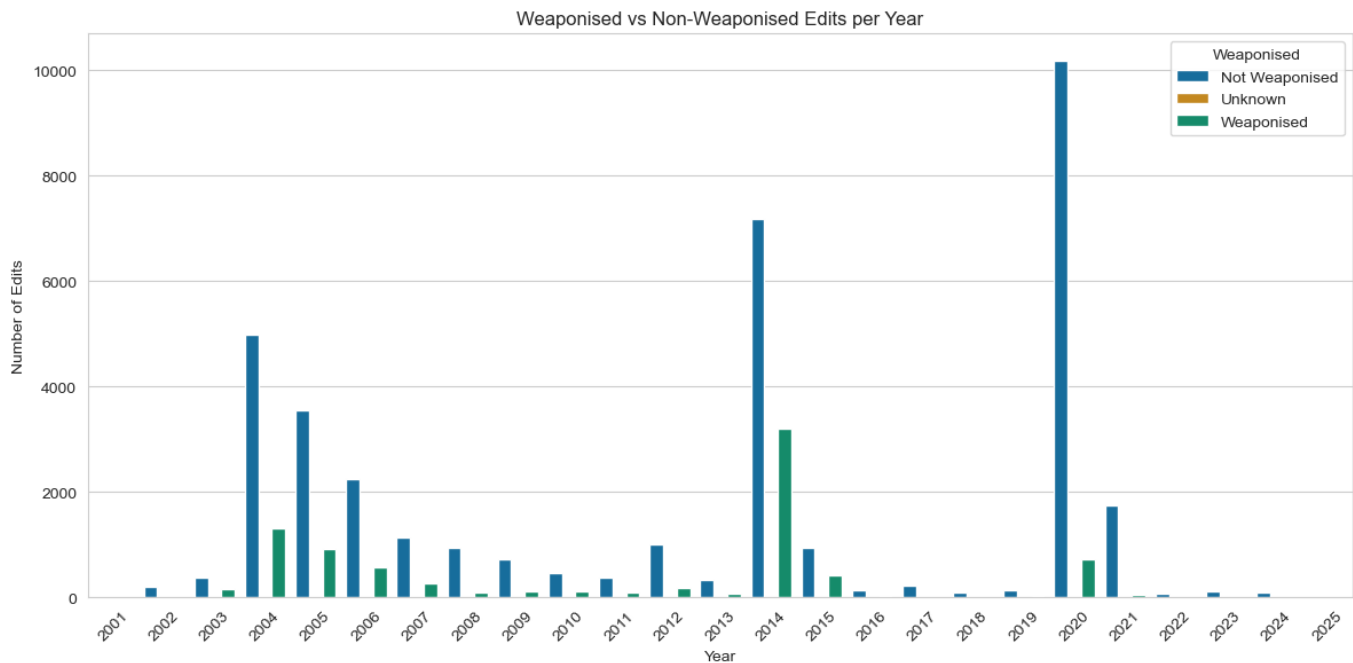
2. **Weaponising Users — Fine-Grained Analysis**

A focused investigation of **300 unique users** from the *fine-grained dataset*, restricted to edits identified as weaponising by the language model.

## 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 weaponising* 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 weaponising 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", "luts'k", "uzhhorod",
"dnipropetrovsk", "donetsk oblast",
    "luhansk oblast", "transcarpathia", "prikarpatia", "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",

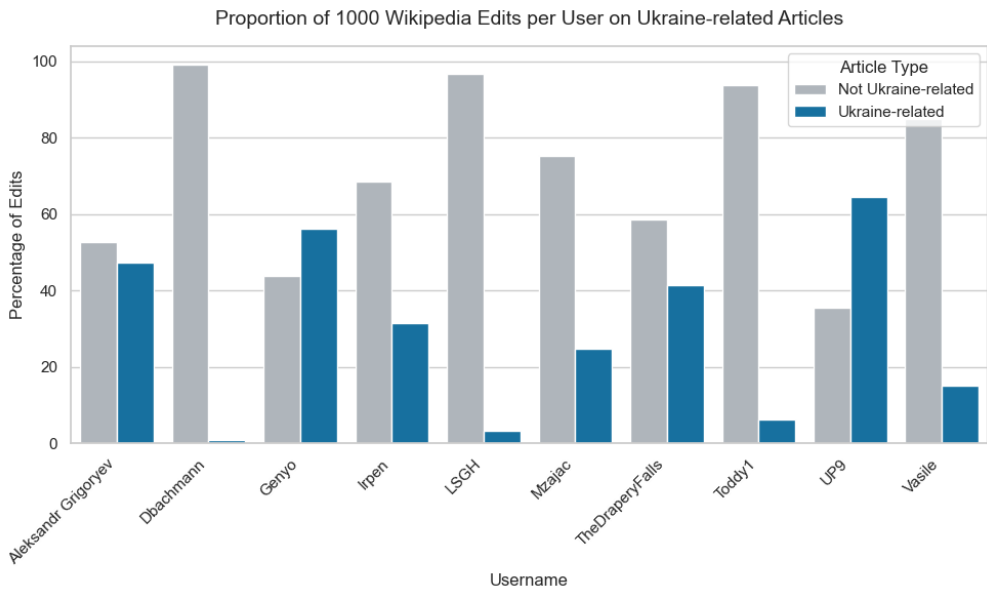
# current / modern references
    "donbas war", "russian invasion", "ukrainian front", "crimea bridge",
"moskva cruiser", "ukrainian army",
    "russian army", "zelensky", "kremlin propaganda", "occupation
administration", "territorial defense",
    "european union", "eu membership", "nato membership",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

```
"referendum in crimea",

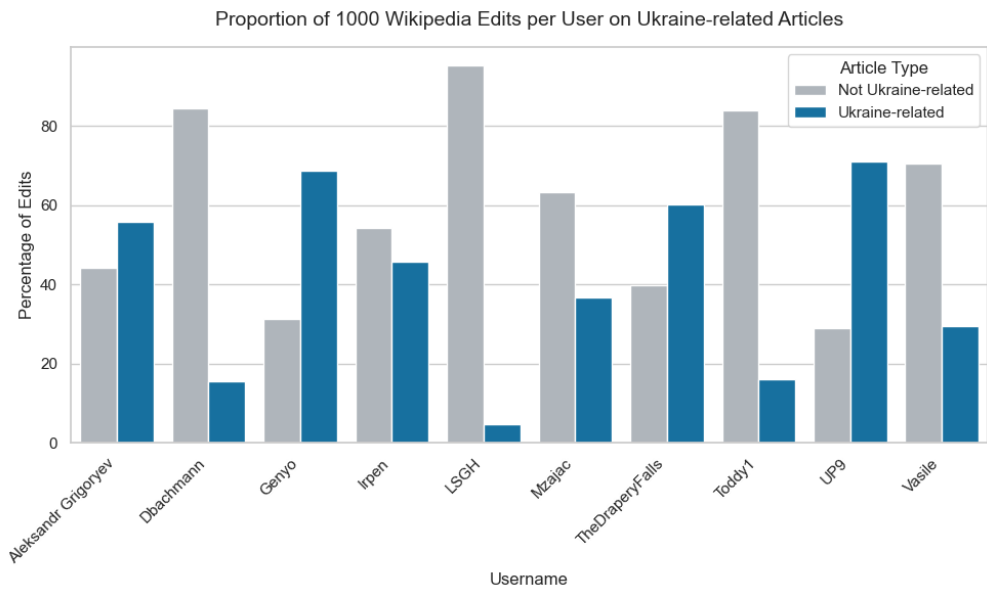
# other
"gas pipeline", "north stream", "energy crisis", "grain corridor",
"black sea fleet", "peace talks",
"donetsk people's republic", "luhansk people's republic", "kyiv
oblast", "liberation", "resistance",
"occupation zone", "ukrainian refugees", "mariupol steel plant",
"azovstal", "bucha", "irpin",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

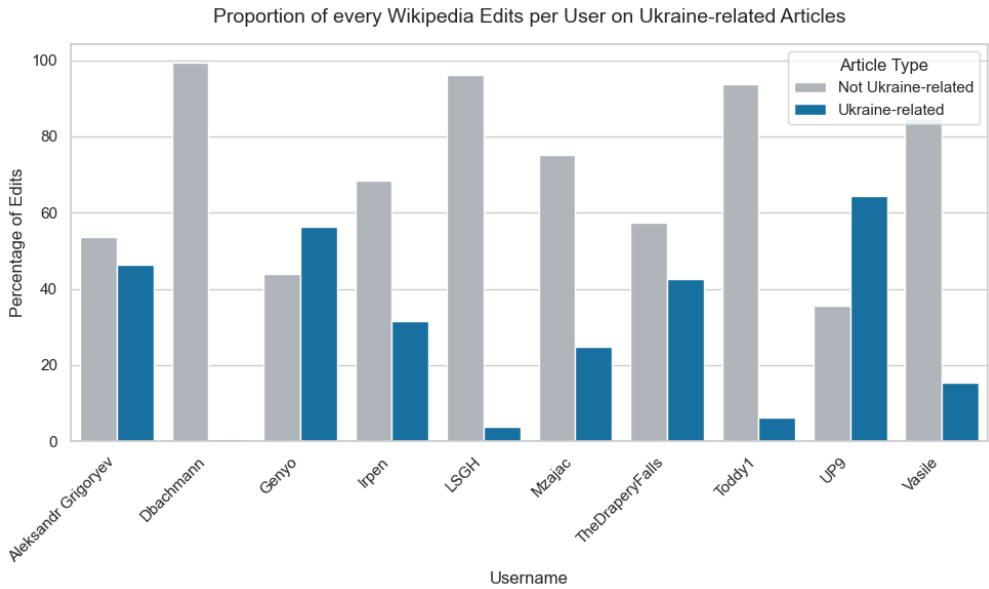
With the small set for 1000 edits per user :



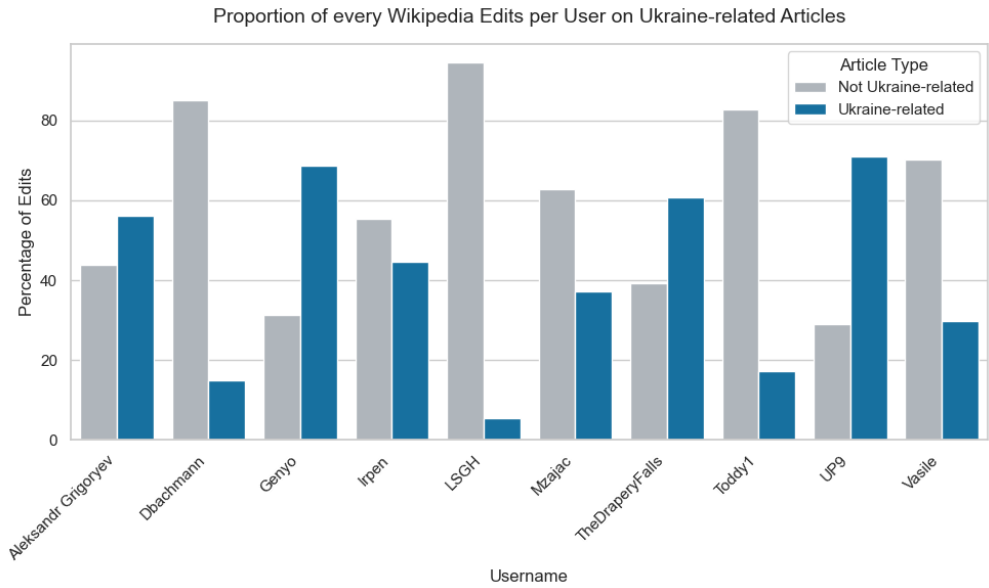
With the large set for 1000 edits per user :



With the small set for every edits per user :

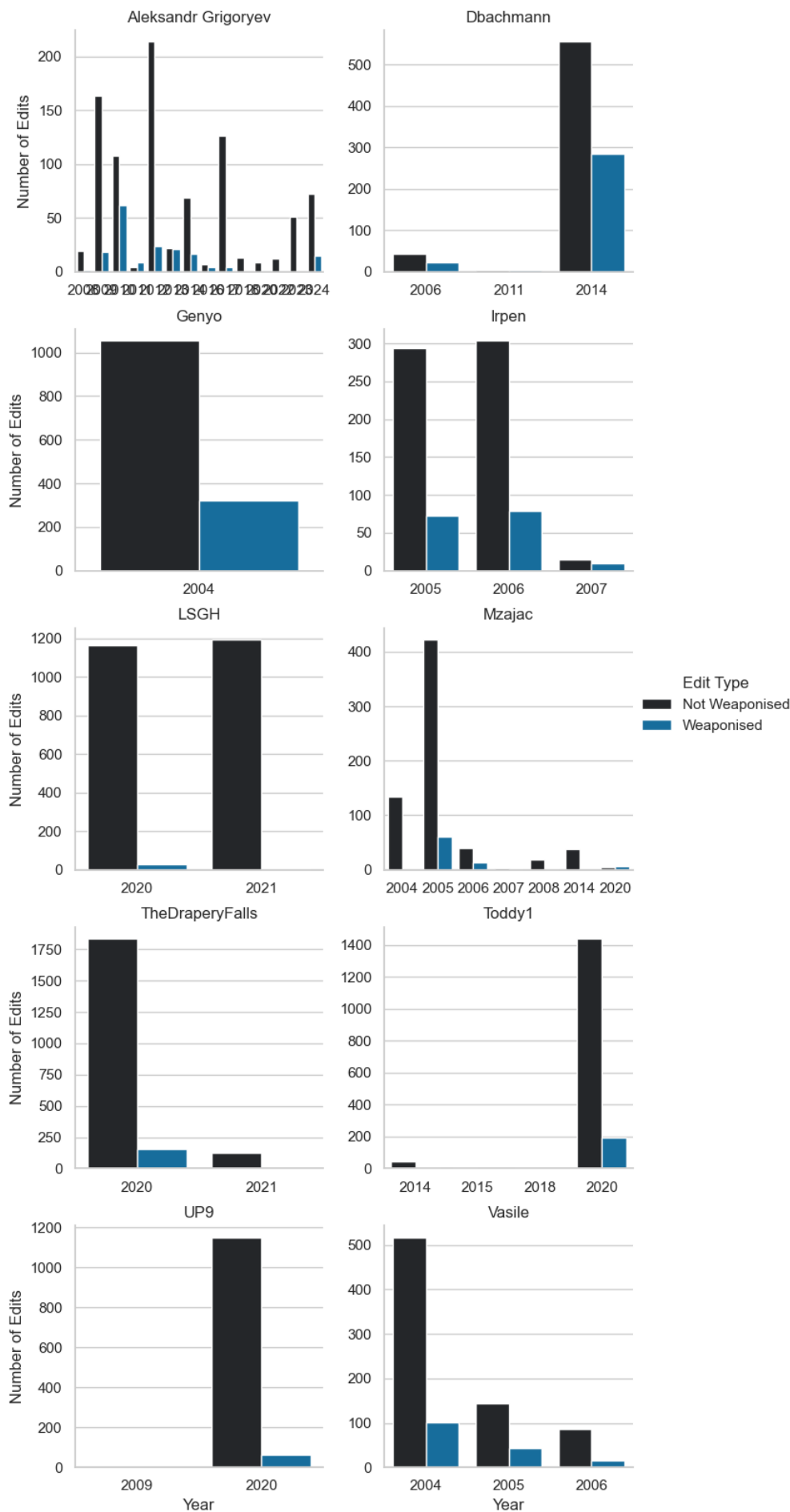


With the large set for every edits per user :



**Weaponising 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



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:

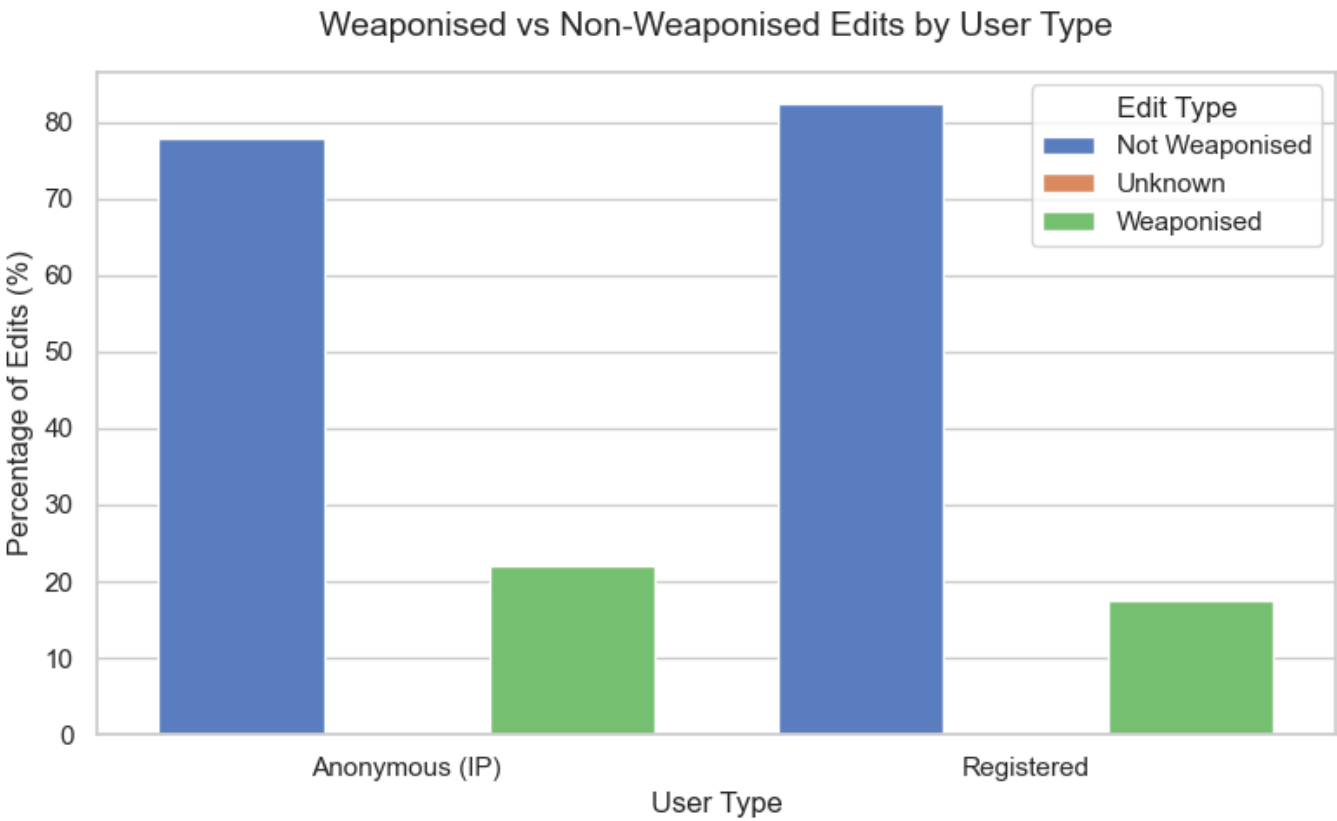
- Registered users: 36,006 edits
- Anonymous users: 8,315 edits

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 slightly 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](#)

### 3. Weaponised User Analysis