



# Applying Social Media Analysis to Detect Virality

Presented by Karim Hazimeh

Let's start



# Who are our influencers?

## Olga Tokariuk

*Independent  
journalist*

- 404,932 followers
- 2087 following
- 18743 tweets
- Ukraine

## Anders Östlund

*Non resident  
fellow at cepa*

- 245,397 followers
- 17,219 following
- 55976 tweets
- Sweden Ukraine

## Jennifer Rubin

*pro-democracy  
opinion writer*

- 667,468 followers
- 1052 following
- 117983 tweets
- Washington DC

## Hanna Liubakova

*Journalist from Minsk, Belarus.*

- 137307 followers
- 1419 following
- 18256 tweets
- Moving around

# Who are our influencers?

## Nolan Peterson

*War reporter based in Ukraine*

- 544,267 followers
- 4000 following
- 8221 tweets
- Ukraine

## Olexander Scherba

*Non resident fellow at cepa*

- 273,256 followers
- 972 following
- 28,088 tweets
- Kyiv

## Oleksandra Matviichuk

*head of the Center for Civil Liberties*

- 152,473 followers
- 67 following
- 2060 tweets
- Kyiv

## Sofiia Shevchuk

*Independent Researcher, Project Manager.*

- 1748 followers
- 1777 following
- 5119 tweets
- Brussels

# Who are our influencers?

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Yaroslav Trofimov	Bianna Golodryga	Olena Halushka	Anastasiia Lapatina
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*Chief Foreign-Affairs  
Correspondent*

- 86,767 followers
- 3504 following
- 22395 tweets
- Home is where my suitcase is

*CNN Senior Global  
Affairs analyst*

- 246,471 followers
- 4311 following
- 20967 tweets
- New York

*Board member*

- 57,698 followers
- 286 following
- 5901 tweets
- Kyiv

*Ukrainian journalist  
At KyivIndependent*

- 638,691 followers
  - 504 following
  - 3181 tweets
  - Lviv
-



# Hashtags used: #Ukraine, #Stand with Ukraine

## Goal:

- 1.to analyze engagement and sentiment analysis of 12 influencers tweeting about Ukrainian war
2. Which user has the most influence on tweeting about our topic and which hashtags are the most effective

- We used tweepy api to analyze each influencer's tweets and we picked these influencers based on politics and journalism background since they know and tweet each moment during the war in this political conflict
- We differentiated our influencers so that we may check how our analysis will evolve based on different metrics (followers,retweets,likes etc.)



Discover

# twitter sentiments

Score: 0.773, Tweet: Disgusting  
<https://t.co/aqh1DXaaIM>

Score: 0.82, Tweet: Looting,  
raping, murdering.  
<https://t.co/F12QSfD9UZ>

Score: 0.762, Tweet:  
Heartbreaking, infuriating  
news.  
<https://t.co/Qupm0OyvV3>

Score: 0.897, Tweet:  
@NormOrnstein Weak,  
weak, weak

Score: 0.767, Tweet: @DALperovitch  
Sick.

Score: 0.697, Tweet:  
Soviet hell  
<https://t.co/R8aFfxcWTB>



# Correlation map of Oleksandra Matviichuck



1

After applying the sentiment analysis for each influencer, we build a correlation map

2

We noticed that there is a positive correlation between retweet count and favorite count (0.34). It means that the more retweets will yield to more likes

3

Tweets with negative sentiments are getting more retweets than tweets with positive sentiments







## Most likes per influencer

[@olgatokariuk, 87,932likes:](#)

Prime ministers of Poland, Czech Republic and Slovenia arrived to Kyiv today, in a powerful show of solidarity with...  
<https://t.co/7sjveum5Xw>

[@andersostlund, 54,398likes:](#)

Went out to get gasoline today. 20 liters maximum. Drove some 15 km in Kyiv and then back again. Without going into... <https://t.co/26kBwoSLYh>

[@JRubinBlogger, 75,711likes:](#)

We have the poorest quality senators in history. No contest.

[@nolanwpeterson, 602,325likes:](#)

In the bomb shelter with my cat. She's been very brave.  
<https://t.co/tk7nuj87zQ>

[@HannaLiubakova, 96,346likes:](#)

#Ukraine Irpin. Andriy Kulik is trying to comfort his dog, paralyzed by fear. The dog refuses to walk after shellin...

[@olex\\_scherba, 108,316likes:](#)

If true, it's probably the first tank ever stolen by a farmer...  
)Ukrainians are tough cookies indeed....  
<https://t.co/vOixNAQN1U>

[@avalaina, 129,850likes:](#)

Andriy Piddubny: My colleague, Anastasiia Yalanskaya died yesterday. Nastya was shot dead by Russian troops while d...  
<https://t.co/KsMbNBFUEi>

[@sophie\\_shevchuk, 107likes:](#)

New Year, New Beginnings 🌟 \n\nI am excited and honoured to share that as of today I have joined the team of MEP Dr... <https://t.co/g9m3lAd8ag>

[@yarotrof, 104,221likes:](#)

Trump visits the coronavirus swab production line in Maine, without a mask, and the manufacturer says it will now h...  
<https://t.co/U4TvbgtKjy>

[@biannagolodryga, 175,733likes:](#)

Just listened to an interview with the father of a Russian soldier who had been captured in Ukraine. After praying...  
<https://t.co/rOSMSK712Shttps://t.co/tk7nuj87zQ>

[@OlenaHalushka, 121,666likes:](#)

Stolen lives\nBy Sasha Anisimova from Kharkiv  
<https://t.co/Aojl9D6ZTs>

[@lapatina\\_, 682,573likes:](#)

A Russian soldier surrendered. Ukrainians gave him tea, food, and let him call his mother on video. I want to cry f...  
<https://t.co/AJiYadigVv>

## Most retweets retweeted by the influencer

[@olgatokariuk, 84,159retweets:](#)

RT @lapatina\_: Ukrainian mothers are writing their family contacts on the bodies of their children in case they get killed and the child su...

[@andersostlund 74,155retweets:](#)

RT @ZelenskyyUa: To the world: what is the point of saying «never again» for 80 years, if the world stays silent when a bomb drops on the s...

[@JRubinBlogger, 31,070retweets:](#)

RT @DocRah\_Peds: My great-grandmother only had a 3rd grade education.\n\nMy grandmother died at the age of 39 after having a massive heart at...

[@nolanwpeterson, 566472retweets:](#)

RT @JoeBiden: America, I'm honored that you have chosen me to lead our great country.\n\nThe work ahead of us will be hard, but I promise you...

[@HannaLiubakova, 140,221retweets:](#)

RT @elonmusk: @FedorovMykhailo Starlink service is now active in Ukraine. More terminals en route.

[@olex\\_scherba, 433,721retweets:](#)

RT @Schwarzenegger: I love the Russian people. That is why I have to tell you the truth. Please watch and share.

<https://t.co/6gyVRhgpFV>

[@avalaina, 84,159retweets:](#)

RT @lapatina\_: Ukrainian mothers are writing their family contacts on the bodies of their children in case they get killed and the child su...

[@sophie\\_shevchuk, 530,530retweets:](#)

RT @Levance\_: Know the difference.

<https://t.co/einoHMXvHn>

[@yarotrof, 208,284retweets:](#)

RT @borzou: Stunning video shows explosions just minutes ago at Beirut port <https://t.co/ZjltFOVcTr>

[@biannagolodryga, 126.292retweets:](#)

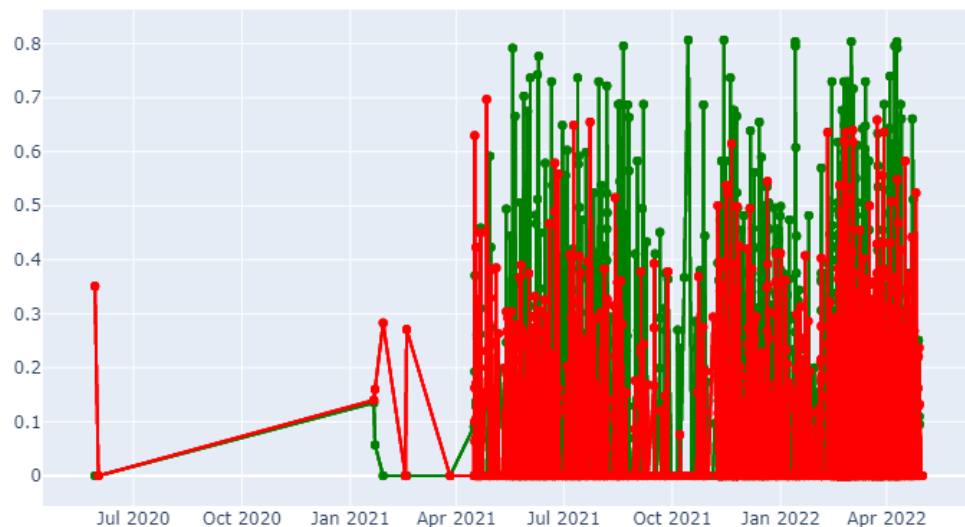
RT @mjluxmoore: People marching through central Moscow this evening chanting "No to War!" <https://t.co/BTQ3ZOGTan>

[@OlenaHalushka, 38,178retweets:](#)

RT @avalaina: Andriy Piddubny: My colleague, Anastasiia Yalanskaya died yesterday. Nastya was shot dead by Russian troops while driving in...

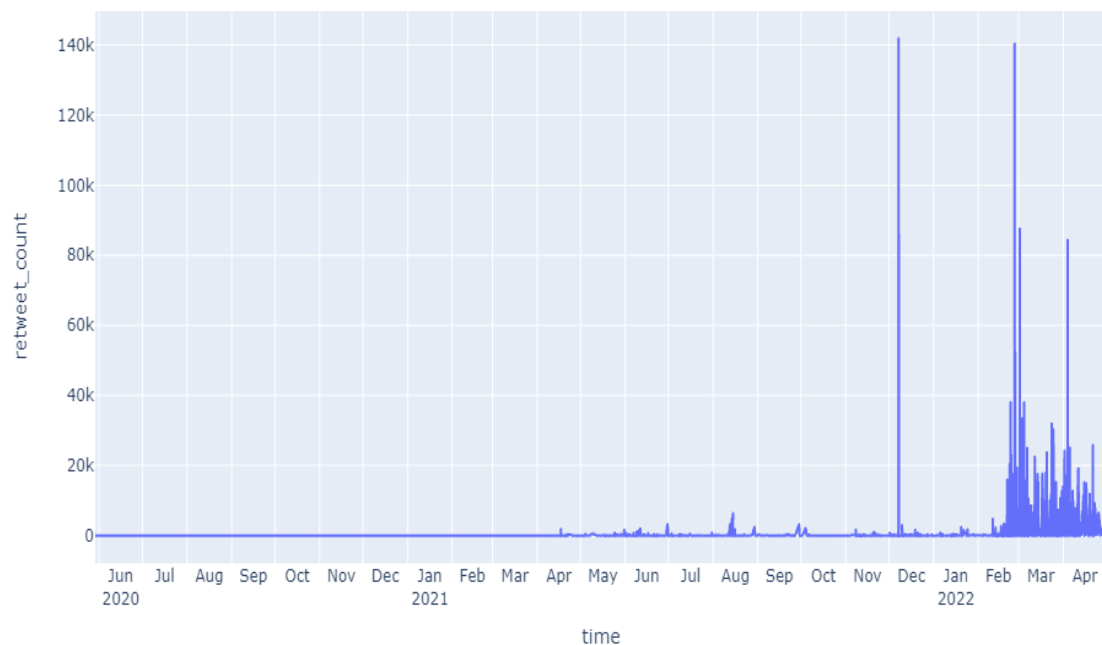
[@lapatina\\_, 141796retweets:](#)

RT @Ukraine: <https://t.co/bBtsdr7wmX>



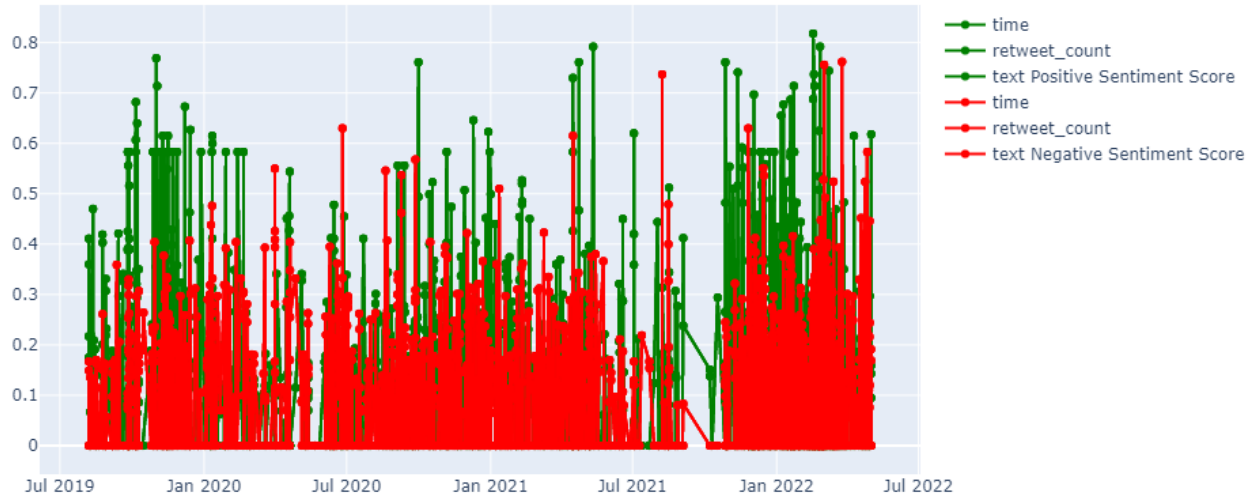
time  
retweet\_count  
text Positive Sentiment Score  
time  
retweet\_count  
text Negative Sentiment Score

We notice how positive tweets were more distributed on 2021 and when the war starts, negative tweets stated to be more spread especially on mid to end of April 2022

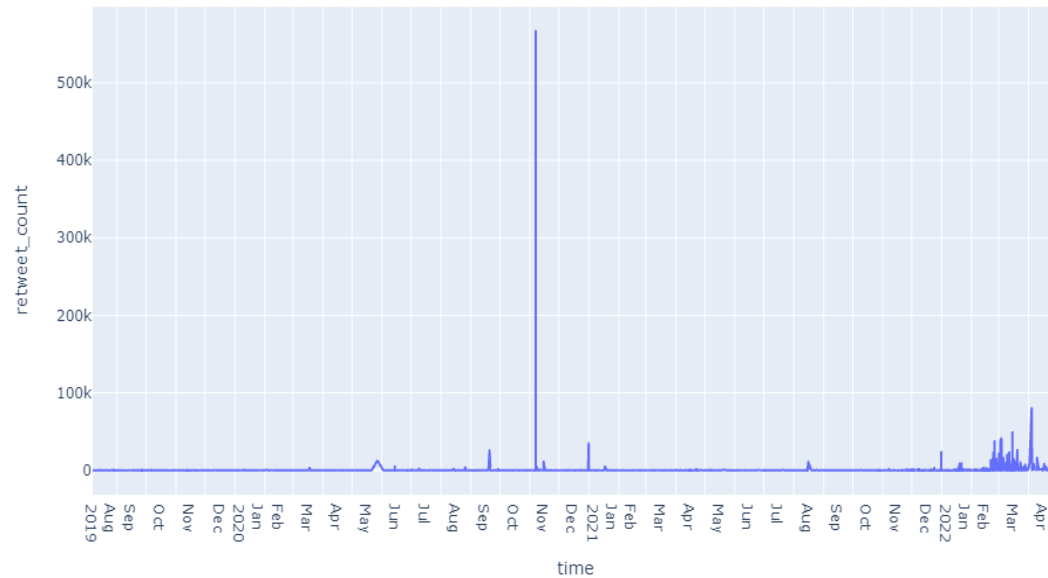


If we look for instance for the distribution of retweets made by Anastasiia, we noticed that she barely retweets on 2020 and 2021, however and when the war starts on 2022, she started retweeting and in very large number





We notice how the tweets on Nolan's case are distributed. He doesn't retweet a lot but his tweets has lots of negative sentiments moreover the retweets are higher on positive tweets



And when the war starts , negative tweets stated to be more spread especially on mid to end of April 2022



# Studying the virality and picking the best one to have a campaign

01

Build more variables on the dataset like tweet length, hashtag count, link count, words length per tweet

02

Build a Knn model with labels virality measure  
Compare it with our pre-analysis

03

**Why Knn?**  
KNN classifies the new data points based on the similarity measure of the earlier stored data points. For example,. KNN will store similar measures like virality . When a new variable comes it will check its similarity wether it should be viral or not.



## Knn influencers score

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### Olga Tokariuk

*Independent  
journalist*

- K=50
- Score=0.77

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### Anders Östlund

*Non resident  
fellow at cepa*

- K=31
- Score=0.87

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### Jennifer Rubin

*pro-democracy  
opinion writer*

- K=2
- Score=0.91

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### Hanna Liubakova

*Journalist from Minsk, Belarus.*

- K=5
  - Score=0.918
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# Knn influencers score

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## Nolan Peterson

## Olexander Scherba

## Oleksandra Matviichuk

## Sofiia Shevchuk

*War reporter based in Ukraine*

*Non resident  
fellow at cepa*

*head of the Center  
for Civil Liberties*

*Independent Researcher,  
Project Manager.*

- K=5
- Score=0.92

- K=49
- Score=0.82

- K=5
- Score=0.91

- K=14
  - Score=0.94
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# Knn influencers score

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Yaroslav Trofimov	Bianna Golodryga	Olena Halushka	Anastasiia Lapatina
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*Chief Foreign-Affairs  
Correspondent*

- K=8
- Score=0.916

*CNN Senior Global  
Affairs analyst*

- K=9
- Score=0.909

*Board member*

- K=52
- Score=0.87

*Ukrainian journalist  
At KyivIndependent*

- K=16
  - Score=0.89
-

## Conclusion

Whats happening?

### Based on our analysis:

In order that the tweets go viral, they should have a content and the influencer should have a large audience for reach and engagement

- If we take a look back at the most retweets and likes for tweets of influencer picked, we noticed that Sophie chevshuk has retweeted a tweet with most retweets but does it mean she should be the one picked for the campaign?

- The answer is no, since we are focusing on the content of our campaign and therefore the person chosen should be really engaged with the hashtags used and the audience should be waiting for his/her news right on the moment to engage and retweet



## Conclusion



Hashtag used:  
#inspirationalukranianstories  
With influencer: Nolan Peterson

The influencer that we will pick is based not only on the audience (number of followers, verified account) but the content of the tweets as well

Looking at the tweets sentiments, words used and score of our model, we will notice that Nolan Peterson's tweets are really written in form of **story-telling catchy tweets** where we realized on the graphs shared earlier even on the toughest time of war, he was spreading **positive sentiments** to the followers and a good cause is that he is a war reporter.

- He touches and pictures things in real-eyes and since the content of any tweet shared on social media should be honest and clear as well. Our picked influencer is **Nolan Peterson**

# #inspirationalukranianstories



## Official campaign

Other influencers are great in posting tweets and sharing live events but when it comes to telling real life stories, we should hire a person who is in the field watching how Ukrainians are suffering and give inspirations accordingly!



## Direct Message

Therefore, we chose Nolen Peterson to share a tweet with such inspiring pictures . Our tweet and campaign will be live soon. Stay Tuned!

**Thank you!**

