Understanding Chinese-speaking Trump Supporters Online: Features, Factors, and Intervention Strategies of Political Opinion Extremism in the X Network during the 2020 U.S. Election

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Presence of Chinese-Speaking Trump Supporters (CTSs hereafter)

Presence of CTSs

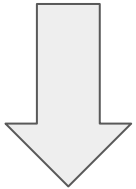
- Driven by political Beaconism: a near-perfect imagined west
- Racist, colonialist, and social Darwinist underpinnings of Chinese liberal (Lin, 2021)

CTSs on X


· 1分
我只能慢慢地打字，因为我的眼睛充满了遗憾的泪水。
我永远都会感谢您为我们所做的一切，您将永远是我们的总统🇺🇸！
上帝祝福您，伟大的川普总统！
· 19h
Replying to
我们是川普，我们是千千万万个川普。
1
6
Replying to
今天，我们都是川普。
7
· 16h
Replying to
我们都是川普
3
Replying to
川普没有倒下！永远也不会倒下！！！
5
· 22h
Replying to
嘿，咱两长的真像
5

Understanding CTSs

- Driven by political Beaconism: a near-perfect imagined west
- Racist, colonialist, and social Darwinist underpinnings of Chinese liberal (Lin, 2021)



- Do online interactions (e.g., Twitter) influence the extremity level of Chinese Trump supporters' ideology?

Polarization and Extremity in Networks

- Polarization: opinion dispersion and bimodality (DiMaggio et al., 1996)
  - Ideological polarization: the alignment of actors' attitudes (Converse, 2006)
  - Relational polarization is based on the co-occurrence of aligned attitudes and social ties (Conover et al., 2011)

- Extremity: simply referring to position on an abstract opinion continuum (Franks et al., 2008)

Echo chambers and Polarization/Extremity

- Definition
  - participants choose to preferentially connect with each other, to the exclusion of outsiders. The more fully formed this network is (more connections are created within the group, more connections with outsiders are severed), the more isolated from the introduction of outside views is the group, while the views of its members are able to circulate internally (Bruns, 2017)

- Echo chamber effects
  - social selection, social influence and latent-cause (personal traits) reinforcement facilitate ideological polarization (Mepham et al., 2025)
  - Higher, more frequent involvement in echo chambers results in more negative emotions (Del Vicario et al., 2016)

Operationalizing Echo Chamber Effect

Degree Centrality:

- **Definition**: Degree centrality measures the number of direct connections a node has in a network.

Clustering Coefficient:

- **Definition**: The clustering coefficient of a node quantifies how close its neighbors are to forming a complete subgraph (i.e., a clique).

Average Local Homogeneity:

- **Definition**: Local homogeneity measures the similarity of a node to its neighbors based on a given attribute (e.g., node labels, weights). It evaluates how "alike" a node is in comparison to its nearest connections.

Intra-Edge Ratio:

- **Definition**: The ratio of the number of edges within communities (intra-community edges) to the total number of edges in the network. It indicates how tightly connected the communities are internally.

Operationalizing Echo Chamber Effect

Community Fragmentation:

- **Definition**:how fragmented the network is based on its community structure. It evaluates the existence of many small, disconnected components or a few large, cohesive communities.

Density:

- **Definition**: how interconnected the nodes are in the network. It is the ratio of the number of edges in the network to the maximum possible number of edges.

Mean Clustering:

- **Definition**: The mean clustering coefficient is the average clustering coefficient across all nodes in the network. It provides a global measure of the tendency of nodes to form tightly connected clusters.

Intra-Edge Ratio:

- **Definition**: The ratio of the number of edges within communities (intra-community edges) to the total number of edges in the network. It indicates how tightly connected the communities are internally.

Research Questions

- RQ1: What topics are CTSs' discussed and what are the features of CTSs' retweeting network on X?
- RQ2: What structural factors of CTSs' retweeting network contribute to the ideological extremity?
- RQ3: What is the most effective algorithm for reducing ideological extremity as a network intervention strategy?

Research methods

- RQ1: LDA topic modeling and Network Analysis
- RQ2: Regression and SHAP (SHapley Additive exPlanations) (network metrics → extremity); GNNExplainer (edges → extremity)
- RQ3: Network dynamics simulation and algorithm comparison

Sampling Strategies

- **Empirical Cite: @Trump_Chinese**
  - Into Chinese
  - As of April 11, 2022, this account had over 260,000 followers

- **Who are CTSs?**
  - (1) followed @Trump_Chinese.
  - (2) Retweeted more than once between August 1, 2020 and January 31, 2021.
    - *Retweets are stronger signs of a supporter than quote retweets since the latter allow users to leave their critical comments. They are also more publicly visible than "liking" (Reese & Chen, 2022).*
  - Stratified random sampling: **260**

Reese, S. D., & Chen, B. (2022). Emerging hybrid networks of verification, accountability, and institutional resilience: The US Capitol Riot and the work of open-source investigation. *Journal of Communication*, *72*(6), 633-646.

RQ1

DESCRIPTIVE ANALYSIS 1
LDA Topic Modeling

Table 1. *Summary of Topics Identified by LDA Topic Modeling Algorithm*

Topic Number	Theme	Corpus Proportion	Top 10 Most Frequently Mentioned Words
Topic 1	The 2020 U.S. presidential election and election fraud	26.4%	media, election, presidential election, Twitter, ballots, Democratic Party, voting, Republican Party, lawyer, fraud
Topic 2	The 2019–2020 HK movements	19.5%	Hong Kong, children, (…), video, students, (…), protest, son, woman, mother
Topic 3	Global military and diplomacy	15.6%	Ukraine, Russia, China, CCP, war, Putin, Taiwan, Russian army, sanctions, military
Topic 4	Conspiracy Disinformation Campaign	14.7%	China, CCP, Communist Party, comrades, federation, Taiwan, whistleblower, politics, live broadcast, revolution
Topic 5	Global politics and COVID-19	12.6%	President, China, CCP, Ukraine, COVID, Russian, Russia, media, country, Ukrainian
Topic 6	Domestic politics in China	11.2%	vaccine, virus, Shanghai, pandemic, CCP, COVID-19, Wuhan, vaccination, death, hospital

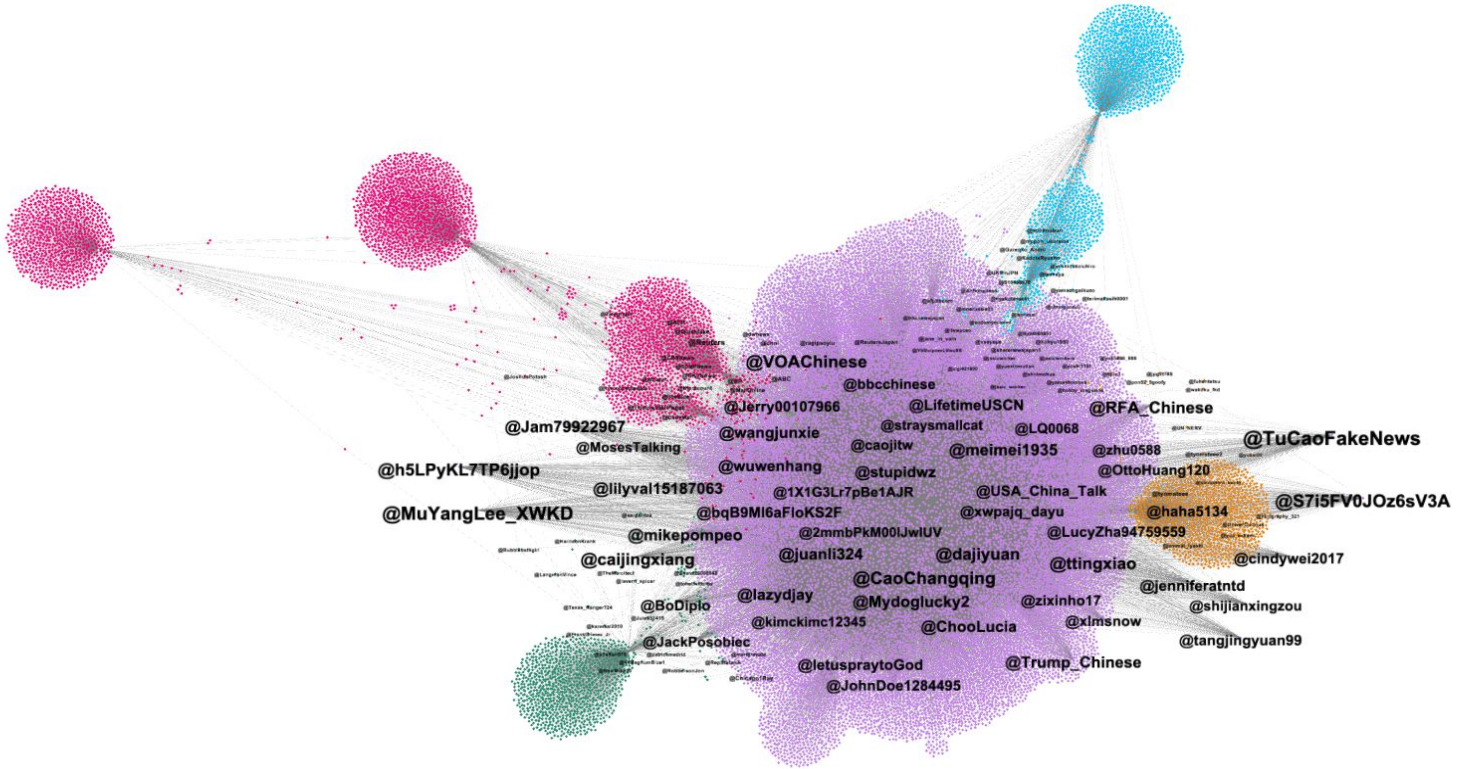
DESCRIPTIVE ANALYSIS 2
Unique Counts of Hashtags

Table 2. *Top 50 Hashtags Based on Unique ID Counts*

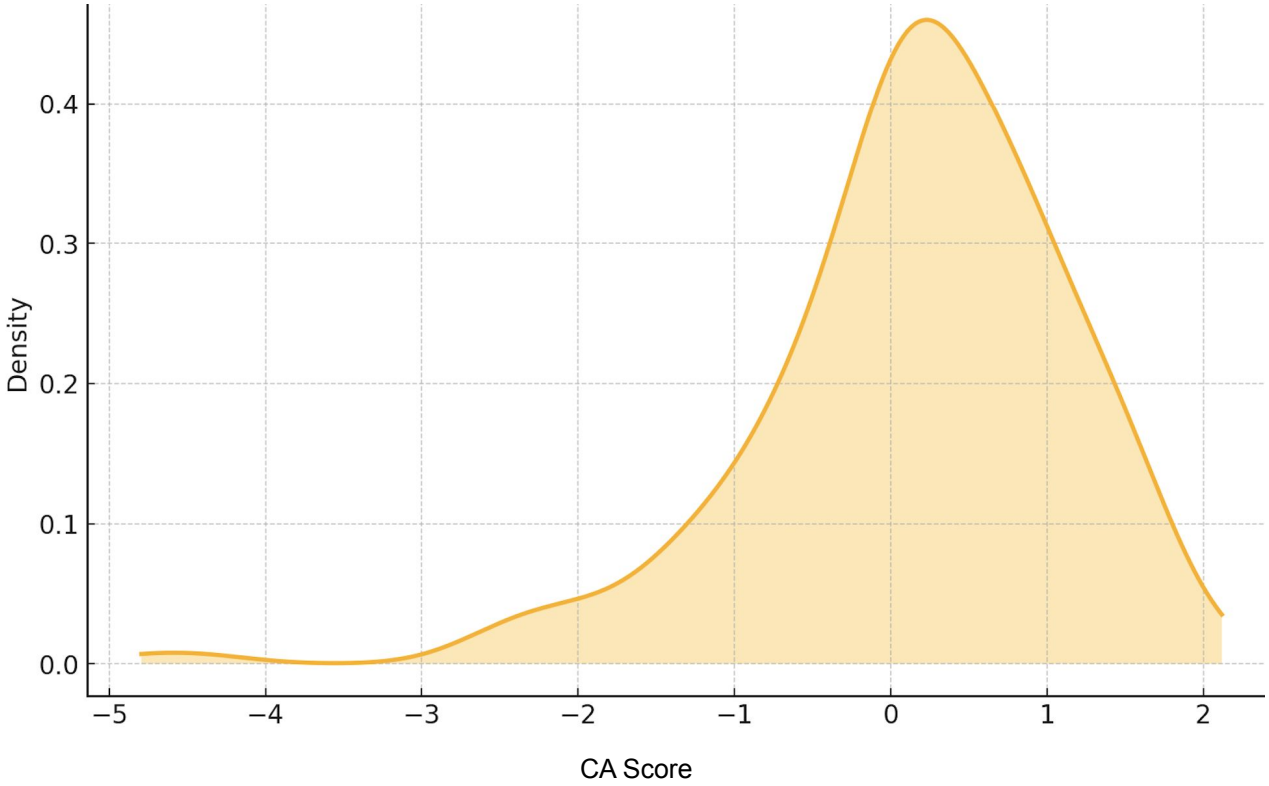
Hashtag	Unique ID Count	Hashtag	Unique ID Count	Hashtag	Unique ID Count
#CCP	160	#Russia	74	#Pompeo	55
#CCP (#中共)	152	#Pandemic	74	#CCPChina	54
#China	151	#USA	74	#Shanghai	54
#COVID19	137	#BREAKING	72	#Shanghai Pandemic	54
#Trump	131	#Taiwan (#台湾)	71	#CCP China (#中共国)	52
#Biden (#拜登)	120	#Ukraine (#乌克兰)	69	#Great Translation Movement	51
#CCP Virus	116	#MAGA	65	#USA (#美國)	51
#Taiwan	97	#Twitter	60	#COVID	49
#Ukraine	96	#New Federal State of China	60	#TakeDownTheCCP	49
#Xi Jinping	95	#Guo Wengui	60	#COVID Virus	49
#HongKong	93	#Beijing	59	#Whistleblower Movement	49
#Epoch Times	89	#MilesGuo	58	#GETTR	48
#Hong Kong (#香港)	89	#Russia (#俄罗斯)	58	#Putin	46
#CCPVirus	87	#Retweet	58	#Pompeo (#蓬佩奥)	46
#China (#中国)	87	#Communist Party	57	#Biden	45
#Vaccine	83	#StandWithUkraine	55	#Shanghai Lockdown	45
#Shanghai (#上海)	75	#US	55		

Note. All non-English hashtags are translated into English. The content in parentheses is the original hashtag, used to distinguish between hashtags that share the same translation in English.

DESCRIPTIVE ANALYSIS 3
Retweeting Network



DESCRIPTIVE ANALYSIS 4
Correspondence Analysis



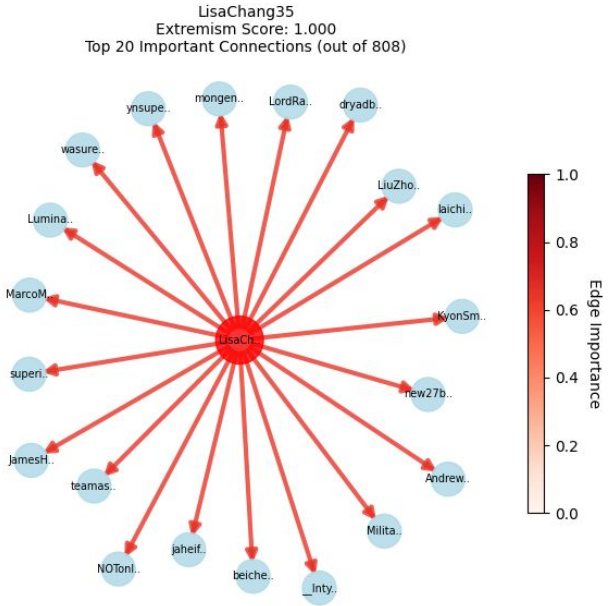
RQ2

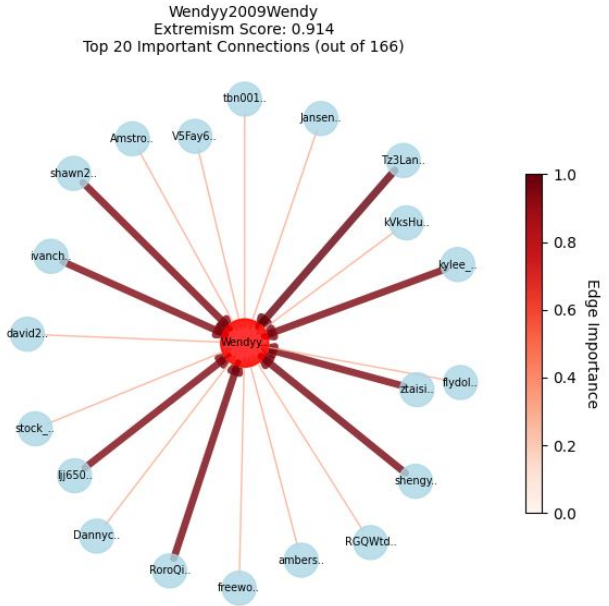
Regression Results

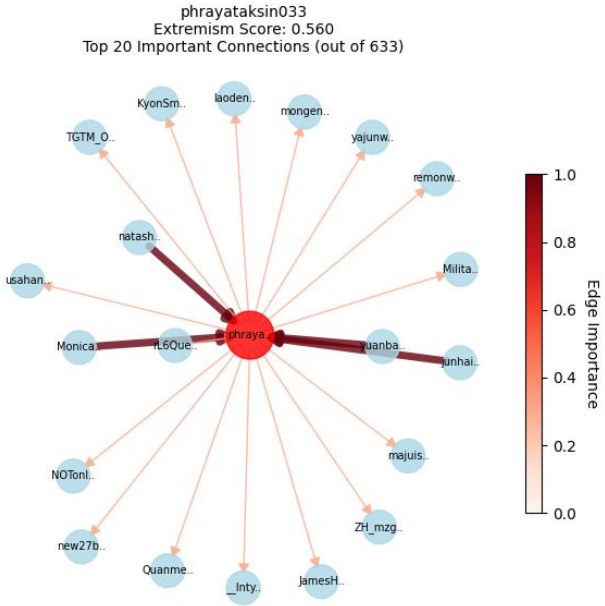
Variable	Coefficient
clustering_coefficient	1.111***
	(0.401)
k_core	-0.002
	(0.001)
local_homogeneity	0.122*
	(0.069)
betweenness_centrality	0.147
	(1.101)
avg_local_homogeneity	-1.227***
	(0.331)
intra_edge_ratio	0.584***
	(0.176)
community_fragmentation	0.258***
	(0.098)

Notes: Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

GNNExplainer Results: What ties contribute to extremity and their relative importance

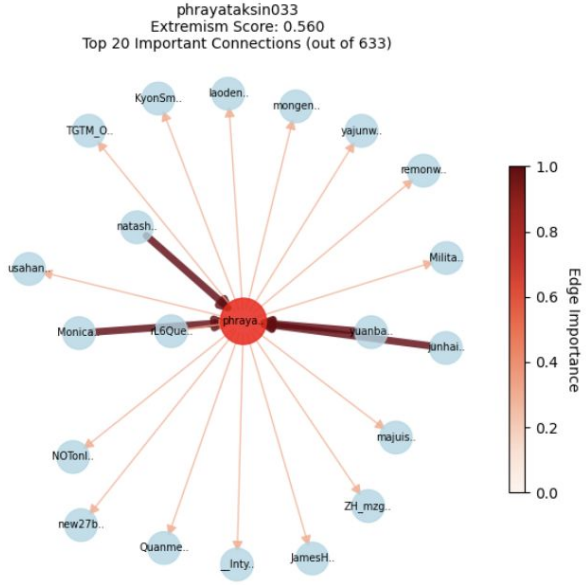






	Explained User	Importance Rank	Connection Type	Connected User	Importance Score	Source User	Target Us
20	phrayataksin033	1	<- retweeted by	natashaxuhk	0.9272	natashaxuhk	phrayataksin0
21	phrayataksin033	2	<- retweeted by	yuanbao929	0.9242	yuanbao929	phrayataksin0
22	phrayataksin033	3	<- retweeted by	Monica77644936	0.9206	Monica77644936	phrayataksin0
23	phrayataksin033	4	<- retweeted by	junhai53	0.9162	junhai53	phrayataksin0
24	phrayataksin033	5	<- retweeted by	rL6Quei41jeZlyf	0.0895	rL6Quei41jeZlyf	phrayataksin0
25	phrayataksin033	6	retweeted ->	Military_idv_tw	0.0000	phrayataksin033	Military_idv_
26	phrayataksin033	7	retweeted ->	KyonSmithInTW	0.0000	phrayataksin033	KyonSmithInT
27	phrayataksin033	8	retweeted ->	__Inty__	0.0000	phrayataksin033	__Inty_
28	phrayataksin033	9	retweeted ->	new27brigade	0.0000	phrayataksin033	new27briga
29	phrayataksin033	10	retweeted ->	TGTM_Official	0.0000	phrayataksin033	TGTM_Offic

Edge Importance

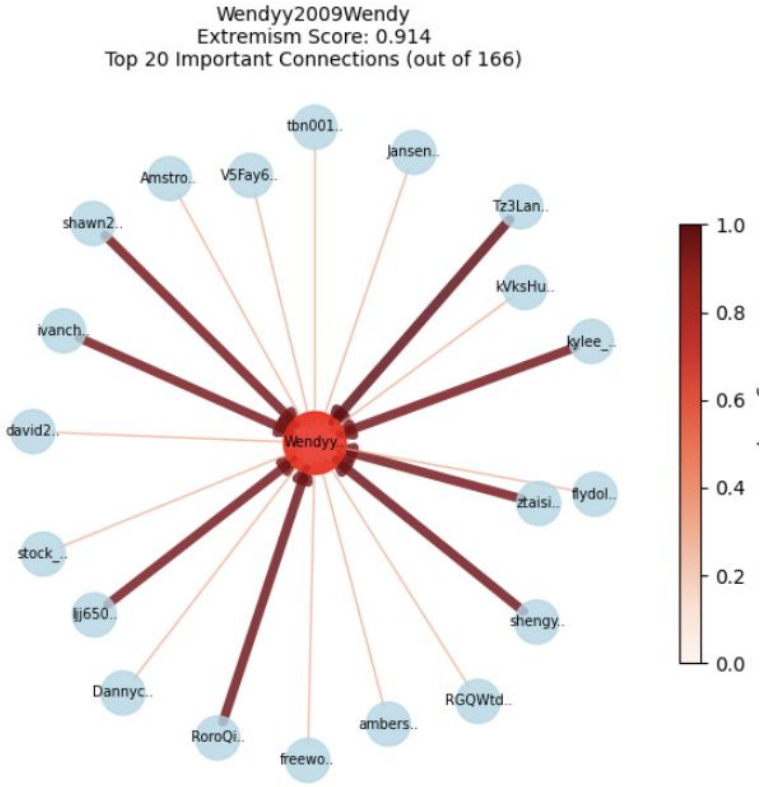


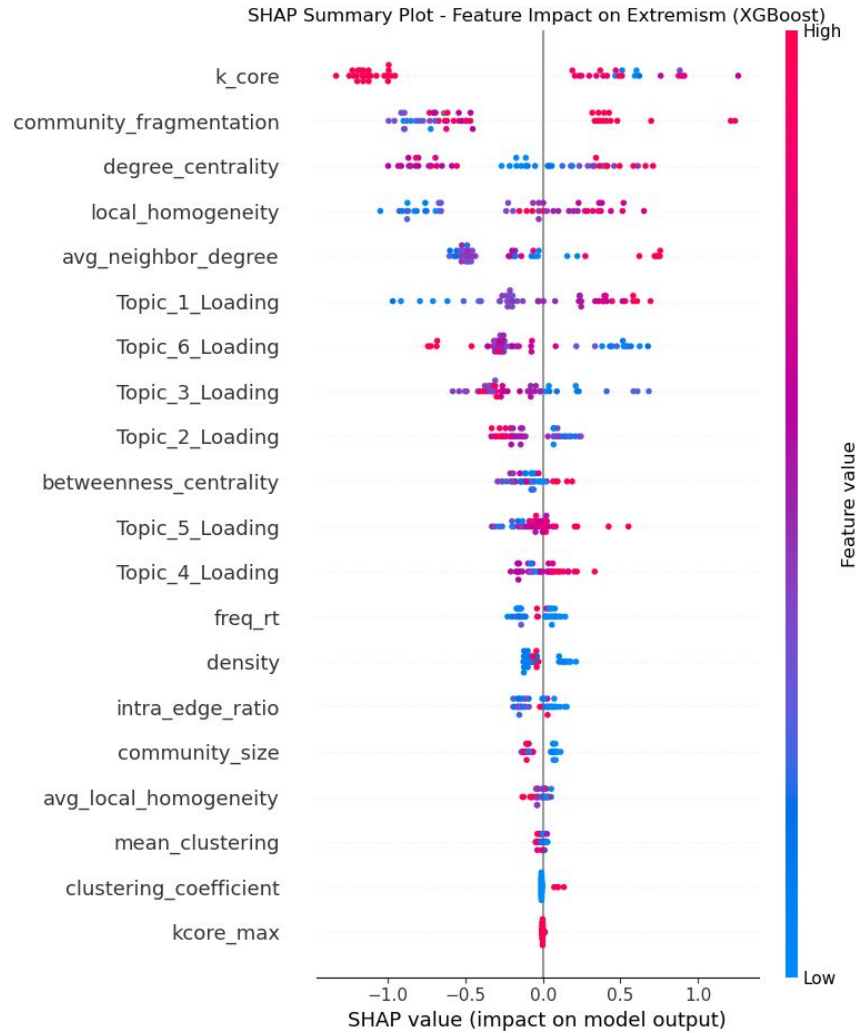
Our analysis reveals that users become more extreme when they are retweeted by others, rather than when they retweet other users' content.


We Are the Citizens of the NFSC
Our Mission is to Take Down the EVIL CCP
Ліквідувати Комуністичну партію
新中國聯邦人
Follow
wendy
@Wendyy2009Wendy
Joined November 2016
1,600 Following 6,956 Followers


Follow
shengyun
@shengyun1000
Joined December 2017
178 Following 335 Followers
Not followed by anyone you're following
Posts
Replies
Media
shengyun reposted
菲菲4.0 @meimei1935 · Jun 22
重磅：我们刚刚成功完成了对伊朗三个核设施的打击，包括福尔多、纳坦兹（Natanz）和伊斯法罕（Esfahan）
所有战机目前已飞出伊朗领空。我们对主要目标福尔多投下了满载的炸弹。所有飞机都已安全返航。
向我们伟大的美国战士们致敬
这个世界上没有其他军队能做到这一点。
现在是追求和平的时候了


民運大叔王丹
14小時
Follow
政庇党主席
@ivanchen86
Translate bio
⚠️ 下列10家美国华人政治庇护业务公司都不是真的中国民主党：
中国民主党中央委员会、中国民主党联合总部、中国民主党世界同盟、中国民主党全国委员会、中国民主党海外总部、中国民主党海外委员会、中国民主党美洲委员会、中国民主党北美党部、中国民主党美国总部、中国民主党福建委员会。


Wendyy2009Wendy
Extremism Score: 0.914
Top 20 Important Connections (out of 166)
tbn001..
Jansen..
Amstro..
V5Fay6..
Tz3Lan..
shawn2..
KVksHu..
ivanch..
kylee_..
david2..
Wendyy
ztaisi..
flydol..
stock_..
shengy..
tj650..
Dannyc..
RGQWtd..
ambers..
RoroQi..
freewo..
1.0
0.8
0.6
0.4
0.2
0.0



SHAP Results: What variables contributes to extremity

Topic 1: Media, Election, General Election, Twitter, Votes, Democratic Party, Voting, Republican Party, Lawyer, Fraud

Topic 2: Hong Kong, Children, Police, Video, Students, Freedom, Protest, Son, Woman, Mother

Topic 3: Ukraine, Russia, China, CCP, War, Putin, Taiwan, Russian Army, Sanctions, Military

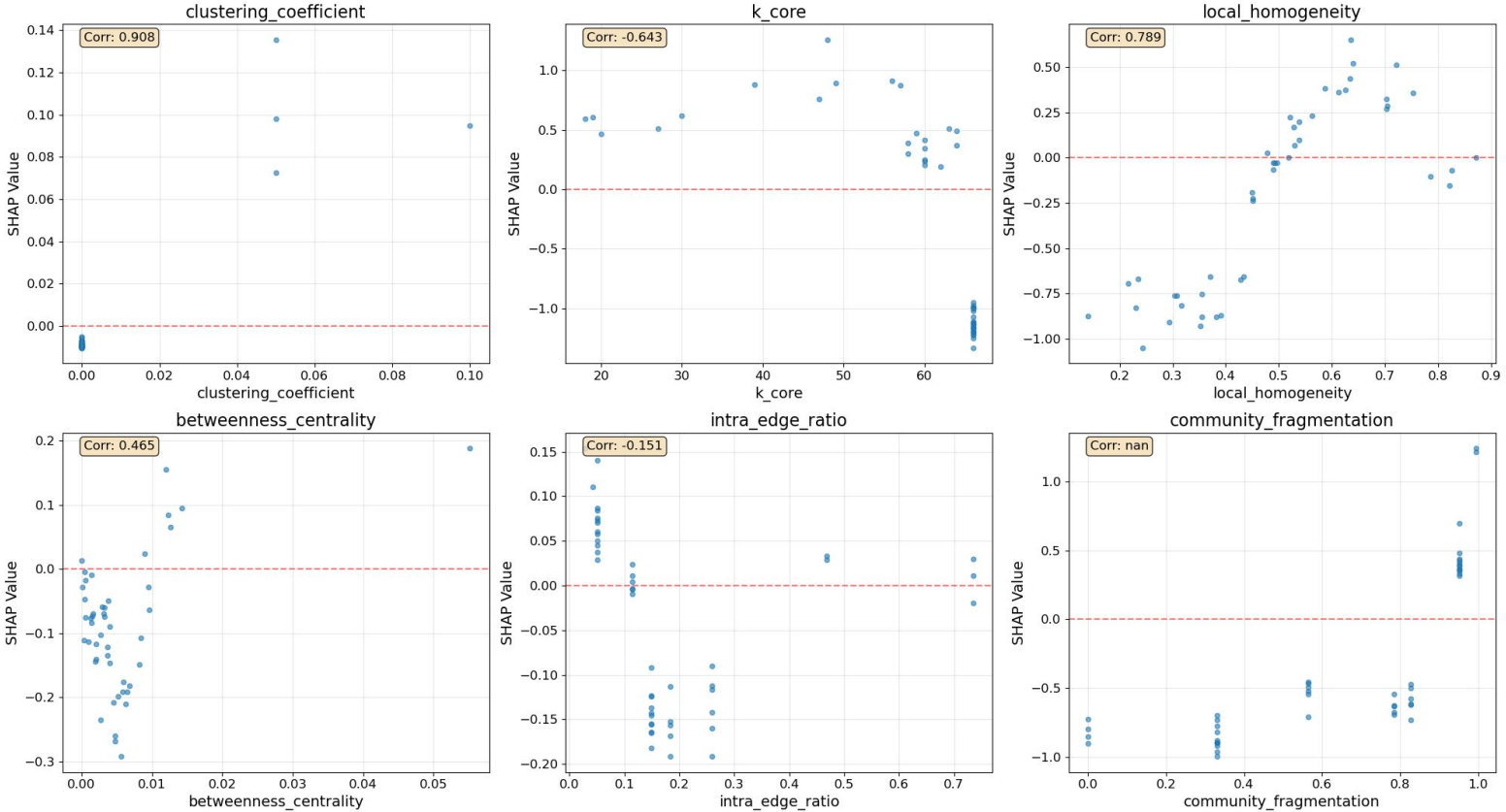
Topic 4: China, CCP, Communist Party, Comrades, Federal, Taiwan, Whistleblowing/Leaks, Politics, Live Streaming, Revolution

Topic 5: President, China, CCP, amp, Ukraine, COVID, Russian, Russia, media, country

Topic 6: Vaccine, Virus, Shanghai, Epidemic, CCP, COVID-19, Wuhan, Vaccination, Death, Hospital

SHAP Results: How do these variables contribute to extremity?

Selected 6 Features: Relationship between Feature Values and SHAP Values



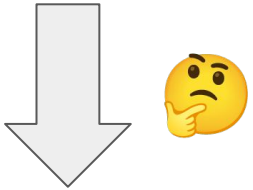
Future Work

(1)We will utilize DeepSeek's API or GPT's API to annotate ideology scores and manually validate the precision rate of these annotations.
(2)Based on preliminary results from explainable machine learning, we will conduct further research to test causal effects.

RQ3

From Understanding Network to Intervening Network

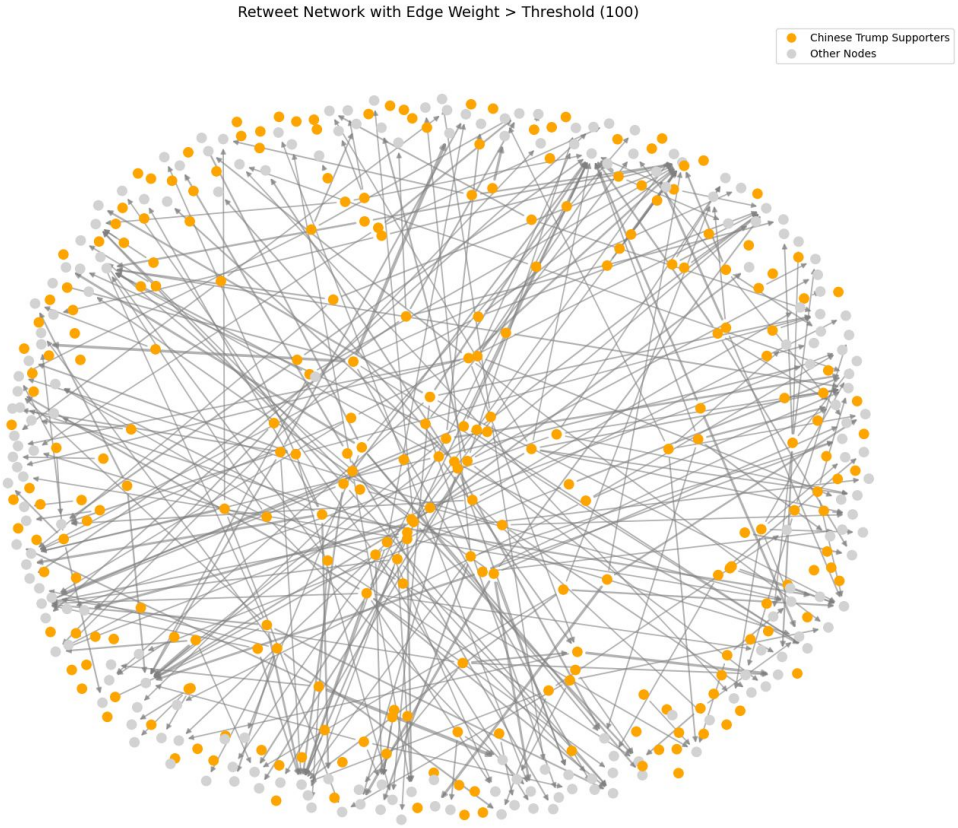
- Network structure affects ideological extremity



- Edit network structure to reduce ideological extremity

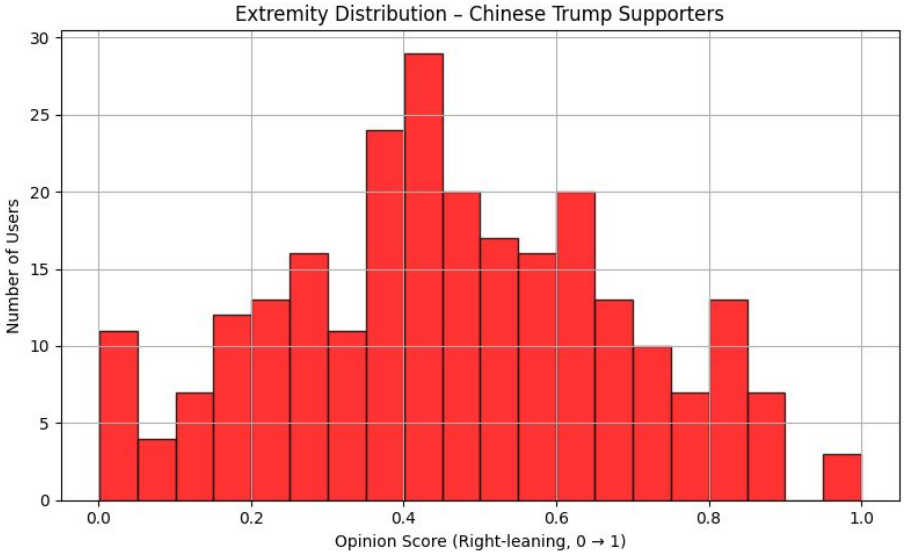
Next Step: Test (edge rewiring) algorithms by simulation

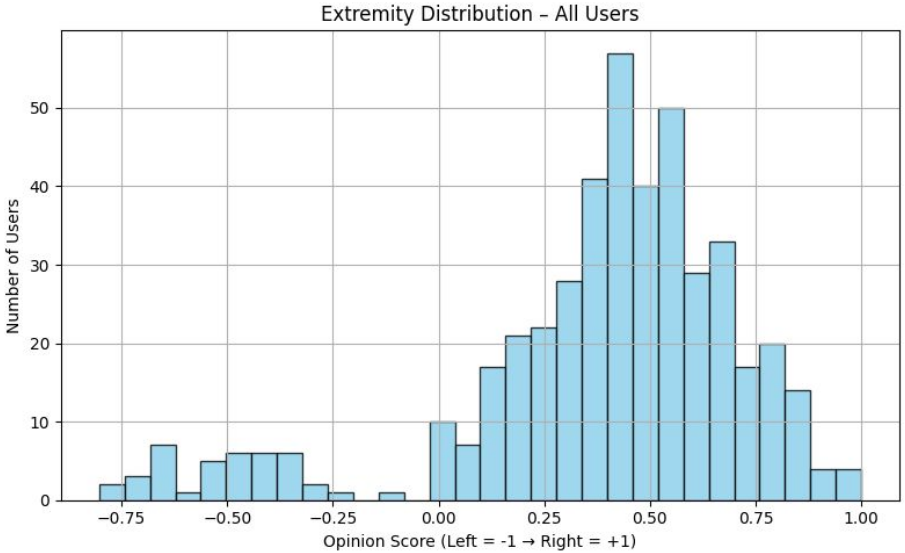
Simulation Setup 1: Filtering Retweet Network



# of total nodes: 454
# of supporters: 253
# of non-supporters: 201

Simulation Setup 2: Ideology Assignment & Objective





Objective Function: $$\min \frac{1}{N} \sum_{i \in \text{Chinese Trump supporters}} s_i^2$$

Simulation Setup 3: Opinion Dynamics Model

Friedkin-Johnsen (FJ) Model

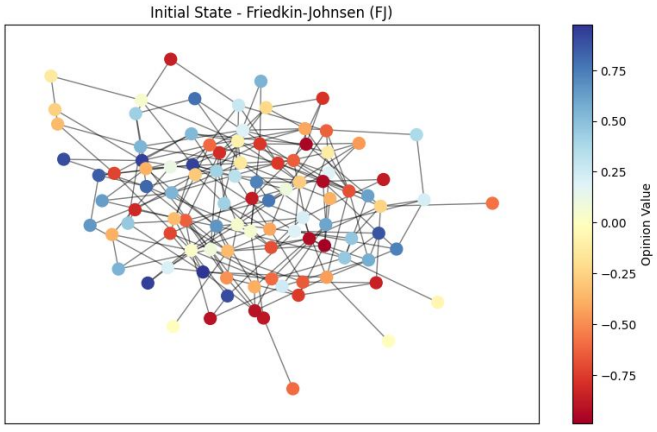
Initial Opinion + Neighbors' Opinions (Attraction!)

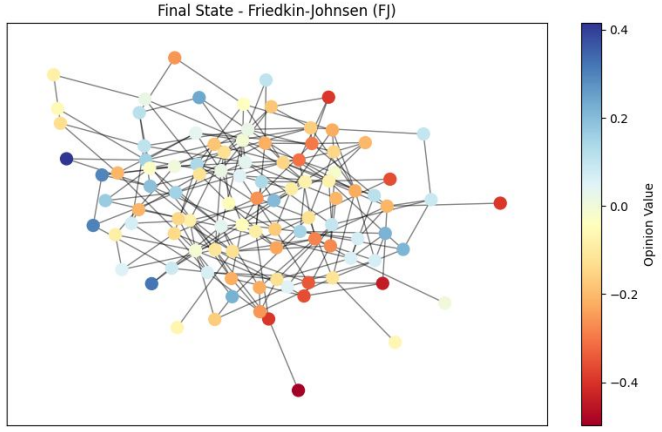
Recursive Update Rule:

$$s_i(t+1) = \frac{s_i(0) + \sum_{j \in N(i)} w_{ij} s_j(t)}{1 + \sum_{j \in N(i)} w_{ij}}$$

Steady-State (Fixed Point):

$$s^* = (I + L)^{-1} s$$

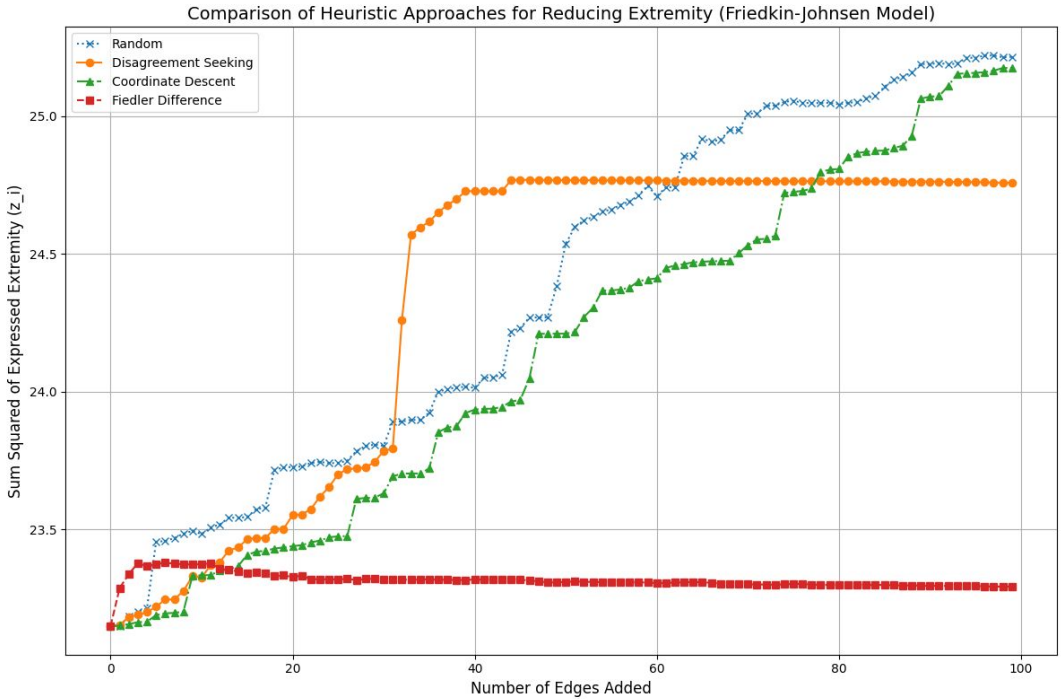




Result 1: Four Algorithms by Rácz & Rigobon (2023)

Towards consensus: Reducing polarization by perturbing social networks (Rácz & Rigobon, 2023)

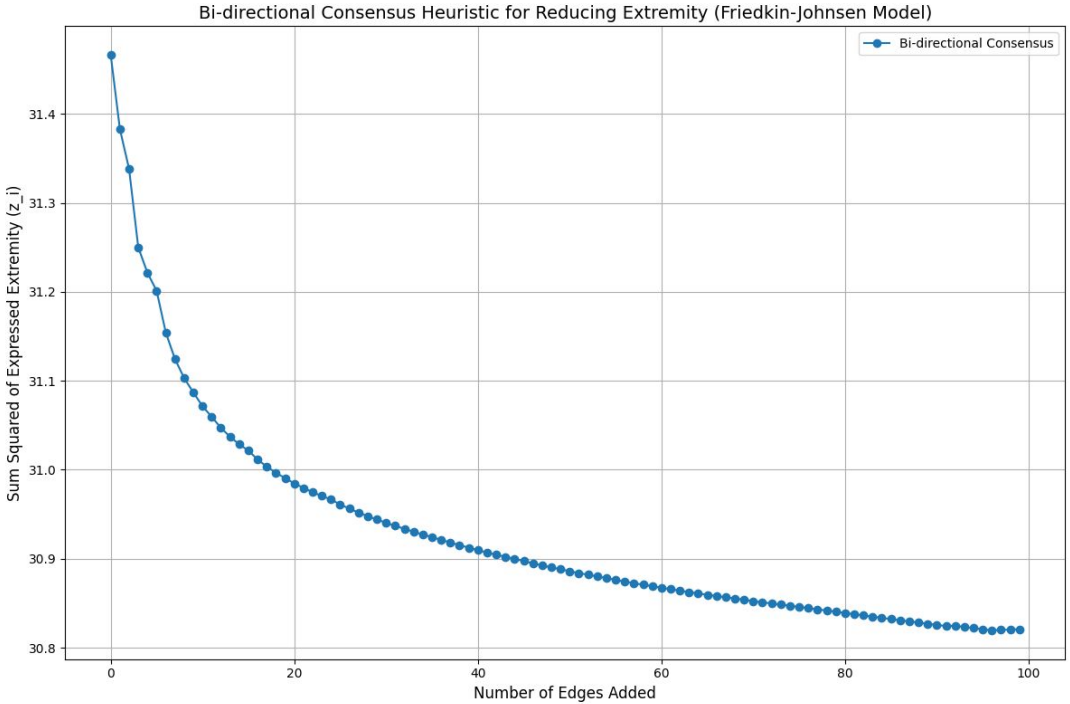
- Random Heuristic
- Disagreement Seeking (DS) Heuristic
- Coordinate Descent (CD) Heuristic
- Fiedler Difference (FD) Heuristic



Result 2: Bi-directional Consensus Heuristic

Algorithm Description:

- Start with the most different non-supporter compared to supporters
- Connect with all supporters iteratively based on opinion difference
- Iterate on remaining non-supporters



Concluding Remarks

Future Work for Simulation:

- Alternative opinion evolution pattern: attraction vs repulsion (Evidence from Bail et al., 2018)
- Robustness and time complexity in large-scale networks
- Trade-off between reducing polarization and reducing extremity: A balanced algorithm

Policy Insights:

- Improve algorithm development and content recommendation systems in social media
- Track, monitor, and evaluate platform dynamics using structural features

Thank You!

Extremism is pizza with pineapple — don’t fight, just cut it down to size!