

# Quantifying signals of radicalization and clustering users engaging with QAnon conspiracy theories on Twitter

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## Problem Statement

**What is QAnon?** umbrella of conspiracy theories; core theory is that a cabal of Satanic, cannibalistic sexual abusers of children conspired against former U.S. President Trump

**Motivation** Conspiracy theories (CTs) proliferate on social platforms; unlike most CTs, the QAnon conspiracy has tangible influence in the political sphere and is associated with violence

**RQ1:** Can we quantify users' signals of radicalization within the QAnon conspiracy theory?

**RQ2:** Can we group users based on their signals of radicalization?

**Dataset** U.S. Elections Twitter data between June 20 - Sept 6, 2020, specifically set of 1.2 million active users who have  $\geq 20$  appearances in the dataset within this time frame

## Signals of Radicalization (SOR)

**QAnon content:** 30 keywords [1] and 324 domains [2]

Table 1: Examples of QAnon-affiliated keywords and domains

Keyword	Domain	Keywords and URLs detected in: 1) Self-drafted content • Original tweets • Comment part of quote retweets • Replies 2) Retweets 3) Profile description
wwg1wga	qanon.pub	
#obamagate	qdrop.pub	
#qanon	operationq.pub	
thestorm	x22report.com	
deepstate	thepatriothub.weebly.com	

**SOR #1: content engagement (L):**

$$L = \frac{\# \text{ of QAnon keywords} + \# \text{ of QAnon URLs}}{\# \text{ of total tweets}}$$

**SOR #2: profile % QAnon:**

$$\text{Profile \% QAnon} = \frac{\text{length of QAnon keywords and URLs in profile}}{\text{length of profile}}$$

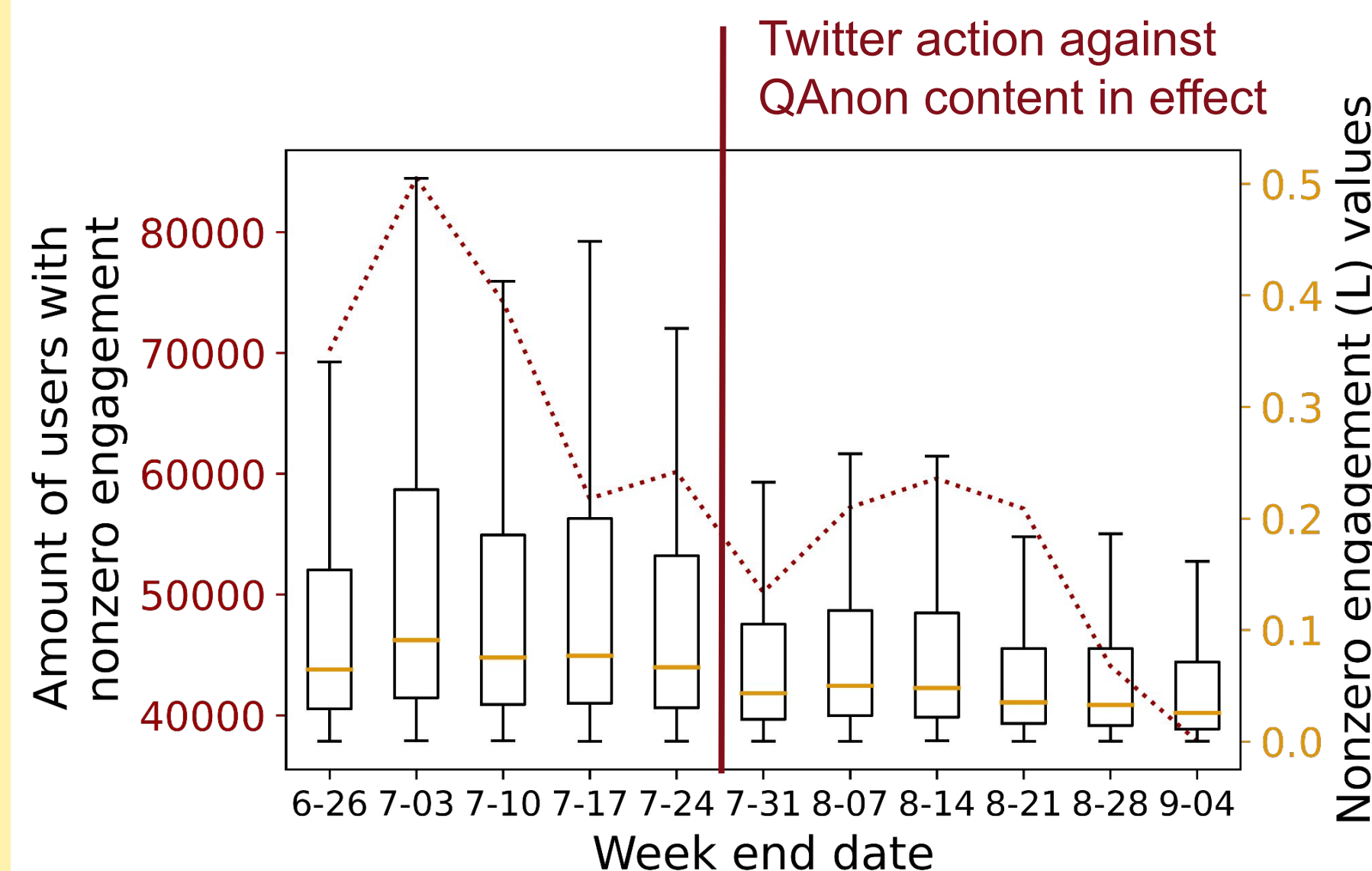
[1] Sharma, Karishma, Emilio Ferrara, and Yan Liu. 2022. Characterizing Online Engagement with Disinformation and Conspiracies in the 2020 U.S. Presidential Election. ICWSM (2022)

[2] Hans W. A. Hanley, Deepak Kumar, and Zakir Durumeric. 2022. No Calm in The Storm: Investigating QAnon Website Relationships. ICWSM (2022)

## Content Engagement Patterns

QAnon engagement on Twitter decreases within our time period: some of this is likely due to bans of over 7,000 QAnon accounts on July 21st, 2020 and ban avoidance

Figure 1: Trends in QAnon participation and engagement



**Persistently engaged users:** set of 6,486 users who satisfy

- For the first five weeks of the dataset,  $L > 0$  and sufficient sample size ( $> 10$  total tweets)
- Over the entire time period,  $L > 0$  in self-drafted content
- Inferred right-leaning [1]

**SOR #3: proportion of retweets of persistent users (L\_RT):**

$$L_{RT} = \frac{\# \text{ retweets of persistent accounts}}{\# \text{ total retweets}}$$

**Persistent lexicon:** 16,238 tokens developed from comparing token frequency in all self-drafted tweets of persistent users vs. all other users using a weighted log-odds ratio

→ Filtered for stopwords, punctuation, and words with less than three characters or no alphabetic characters (keeping emojis)

**SOR #4: lexical similarity with persistent users in self-drafted tweets:**

$$\text{Lexical similarity} = \frac{\# \text{ occurrences of persistent lexicon words}}{\# \text{ of total words}}$$

## Clustering Users

Figure 2: K-Means clustering of 736,508 users who have  $> 0$  self-drafted tweets,  $> 0$  retweets, and a profile description

