Far-Right Forum Network and LDA analysis

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Extended Abstract

Over the past 15 years, 73 percent of deadly terrorist attacks on U.S. soil were carried out by far-right extremists [1]. While the emergence and persistence of these far-right groups is a complex process, influenced and enabled by structural forces and institutions, the organizations themselves often manifest as online social networks. These social networks serve as radicalizing and organizing spaces for extremist groups. In this paper, we analyze publicly available data from the Iron March website, a neo-nazi online forum active from 2011 through 2017 [2]. We provide a descriptive analysis of how the social network of users changes over time, and how the contents of their discourse appears to shift. The work presented here offers a step towards understanding the organizing behaviors of online extremist communities.

To construct networks from the forum data, we use direct replies to posts in the forum to construct edges between users in the network: a directed edge exists between two users \( u \) and \( v \) if \( u \) quotes \( v \) in a forum post. We are able to study how the structure of the network changes over time by using the timestamps of user interactions. In Fig. 1, we plot the interaction between users over time. Each subplot is a different year, and users (red dots) are always shown in the same position in each yearly subplot, which allows us to observe how user interaction evolves over time. We observe that the same core group of users develop outward and connect with new users between 2011 and 2013. Starting in 2014, the core user group shifts significantly to a new subset of core users by 2016. There is anecdotal evidence that this shift might be due to the divisive nature of Donald Trump’s election [3]. In 2017, after this shift, we see this new user base reaching out to forge new connections. We are actively investigating the mechanisms and causes of such a shift in network structure.

One possible mechanism may relate to how the main topics of discourse evolve over time within the forum posts. Prior work has shown that extremist discourse spreads through supporters generating highly-infectious cascades of information contagion [4], and the founder of Fascist Forge stated on the site that it was an “online platform to make connections, share resources, organize, and ultimately further the Fascist Worldview”. We hypothesize that the network structure reflects this active deliberation and creation of messaging and therefore analyze the text content of forum posts using LDA [5] with \( k=10 \) topics over time.

As can be seen in Fig. 2, we observe a distinct grouping of discourse by topic, with topic 1 describing Russian politics, topic 2 political ideology, topic 3 religion, etc. Next, we study the evolution of these topics over time in Fig. 3: we can see that the most popular topic in 2012 and 2013 centers around political ideology (topic 2), and that the fastest growing topics are topic 4 and 7 which have to do with forum users describing the functioning of the website itself or using the website itself (e.g. ‘http’ is from users sharing links, and ‘forum’, ‘post’ is related to people referring content on the website). Although these results are preliminary, they are in agreement with previous work that shows that organizations typically first establish a shared language and ideology, and then over time become more logistically and goal-focused [6].
This study provides evidence that extremist groups may start out ideologically centered, but that their growth may be understood as a process of social bonding. This challenges the notion that ideologies themselves need to be challenged in order to curb extremist movements, and further research must examine instead the disruption or redirection of social bonds formed as a result of these organizations.

Figure 1. Yearly communication networks between users. Each user is represented by a red dot, and does not change location over the years.

Figure 2 Left: Log-odds ratio of top 10 terms for each topic discovered by LDA with k=10, treating each forum thread as a single topic (each thread contains multiple posts). Right: Topic usage over time. Each band shows the % of each topic covered by forum posts.

References