Data-driven ideology detection: a case study of far-right extremist

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Background: Influence and information campaigns often make use of domestic groups with extreme views. At the state level, influence operations are best understood as a campaign: a suite of information actions deployed to mislead the public and influence decision-makers. Increasingly, influence operations are disinformation narratives targeting social cohesion (Asmolov G., 2018) and trust in democratic functions and alliances. For both of these goals, the domestic extremist groups are a perfect audience and an amplification tool for the desired effect.

Aim: Social media is the preferred conduit that allows disinformation narratives to reach domestic and global audiences cheaply, remotely and in real-time, with spill-over into the traditional information ecosystem of target audiences. It is also where the domestic extremist groups congregate, exchange and plan; extremist participation leads to violent acts (Hassan G. et al., 2018). The sheer size of the social media platforms such as Twitter, Gab and Telegram makes policing them impractical – the extremists hide in plain sight. Platform mitigation strategies – like Twitter's account suspension – only make things worse as the individuals will create new accounts while the investigators have lost their trail. So, **how can we construct an *ideology detection* tool that uses advanced machine learning to single out potential far-right activists?**

Method: This work builds social media data-driven ideology detection based on language usage in social media posts. Our solution is based on homophilic similarity (Ackland & Shorish, 2014). We assume that social media users who spend significant amounts of time surrounded by specific groups (like the far-right) will adopt their thinking and their narratives. We use how users write their content (or otherwise interact with topical concepts such as hashtags or news links) as proxies for their ideological similarity. *Users of the same narratives flock together.*

From a technical view, our solution leverages deep neural architectures like transformers (Cer D. et al., 2018). For a new user, we embed the text they author into a numerical description space. We also account for their hashtag usage (if on Twitter) and the news articles they link. We process this information through the transformers and classification algorithms, predicting whether the users are similar to known far-right activists.

Results: We apply our approach to a dataset of Twitter posts concerning conspiracy theories about climate change, COVID-19 and vaccination (Kong Q. et al., 2022). We train our model with 1496 accounts labelled as far-right. We use a cross-validation setup to test the generalisation error and find that we can accurately detect far-right posts (Area Under Curve ROC: 0.853). We perform ablations, and we find that, by far, how people write is most informative.

Conclusions: Our method is domain agnostic: we can quickly deploy it to a new discussion domain without requiring further data annotation. This can considerably reduce the time needed to deploy the solution and the required expert annotation time.

Implications for Defence: State-backed influence operations hurt Australia's and its allies' interests abroad. Our research provides a robust framework for identifying sympathisers of particular extremist ideologies that state-backed actors can peddle.

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