

Echo Chamber Detection in Reddit

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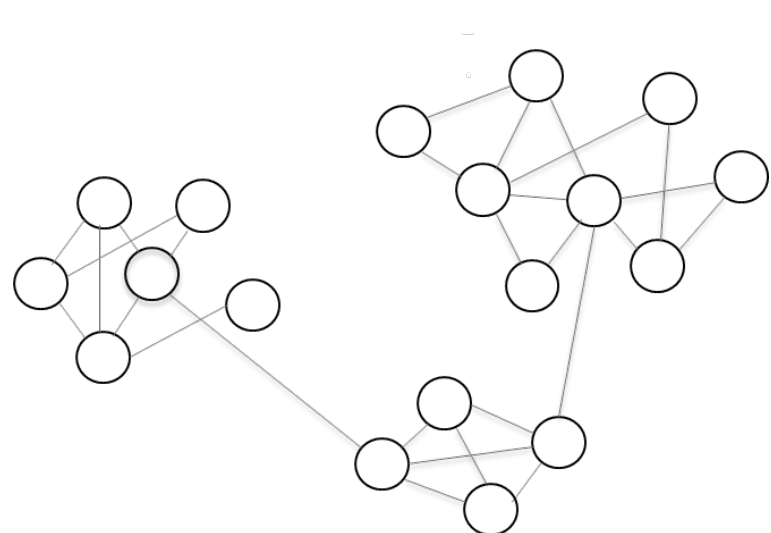
OBJECTIVE

People now have the freedom and convenience to access any kind of information online. This inevitably results in the phenomenon called “echo chamber” – people are trapped in an enclosed space where they concur with views that are consistent with their own, ignoring and dismissing other views that are different.

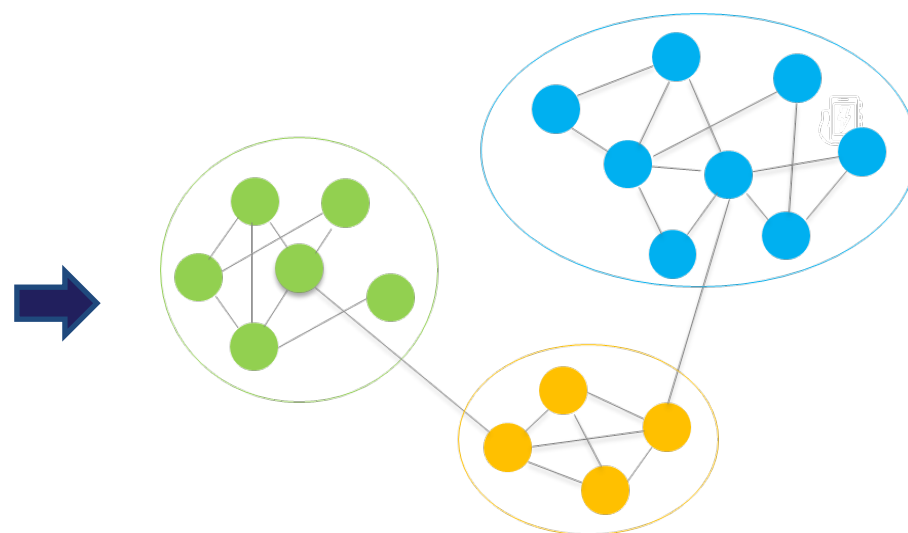
Echo chambers can be detrimental as it diminishes mutual understanding between groups of people with different ideologies, causing social tension. This report presents a novel and structured approach in detecting echo chambers at the subreddit level, in a widely popular social media platform named Reddit.

IMPLEMENTATION

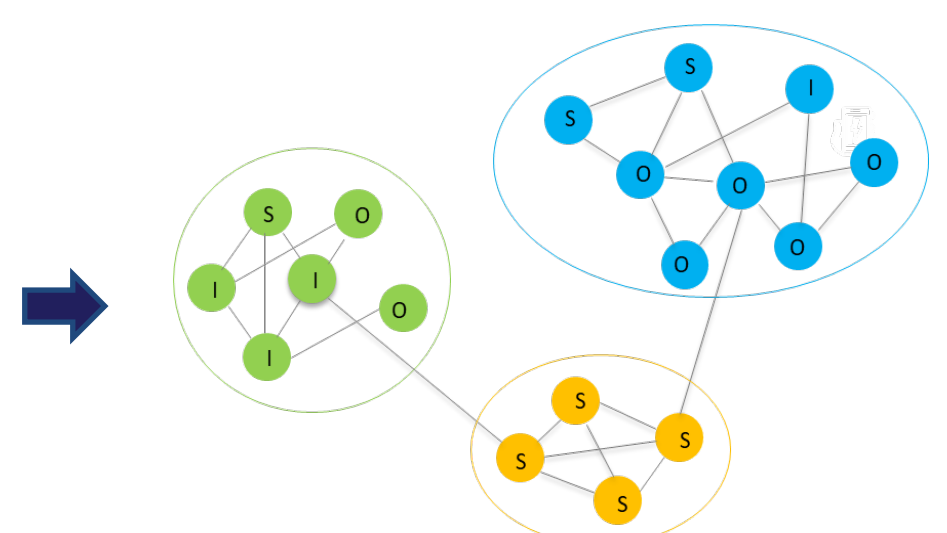
TOPOLOGICAL



1. Construct Network Graph
(from direct replies in Reddit)



2. Community Detection
(Louvain)



3. Stance Detection
(label each node their stance – S:
supports, I: indifferent, O:opposes)

- Stance Detection requires a topic as input (ie. stance towards a certain topic of interest)
- Echo Chamber Detection makes use of a hybrid approach (topological + semantic) and is done at 2 levels (community level – each colour is a community, followed by subreddit level – all communities included)
 - If $\geq 57\%$ of any individual community has a support or oppose stance, that **community** is an echo chamber
 - Then, if $\geq 50\%$ of the total number of communities in a subreddit are echo chambers, that **subreddit** is an echo chamber

FINDINGS

- Echo Chambers are directed towards a topic
- ie. subreddit r/gunpolitics is an echo chamber when the topic is gun rights, r/trump is not an echo chamber when topic is trump but is an echo chamber when topic is gun rights