

Inferring Political Preferences of Active Content Consumers in Twitter

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Abstract

Despite the huge increase in the amount of produced content in OSNs, many users consume content on certain topics rather than provide content themselves. So, it is a challenge to discover preferences of content consumers who are silent on a given topic. In this study, a novel approach is proposed that predicts preferences of content consumers through what they read rather than what they write. It is shown that only relying on followees to predict preferences of content consumers in Twitter leads to promising results.

Introduction

Users can have different roles in OSNs in terms of providing content as follows: 1)Active content producers
2)Active Content consumers (AC consumers)

Based on *homophily* principle, connected users are more similar than two random users. However, AC consumers do not provide enough content on a given topic to attract attention of other users with similar views to follow them. Thus, preferences of AC consumers can not be inferred from those of their neighbors without considering the direction of the friendship links.

The objective of this work is to develop a method to infer political preferences of ordinary users who are AC consumers in Twitter. The goal is to show whether followees only are reliable predictors of personal preferences of AC consumers.

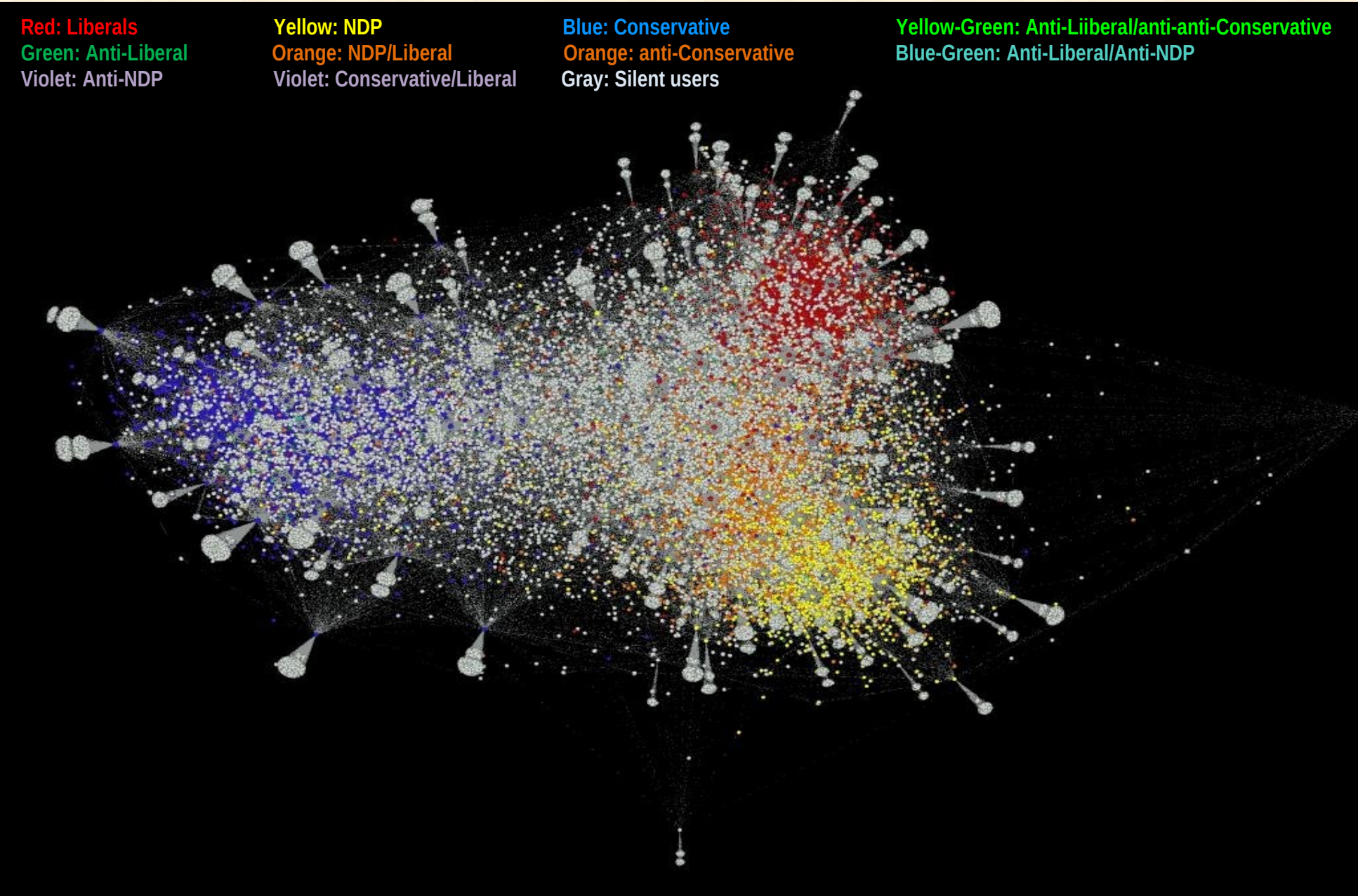
Methodology

- Create a Directed Graph:**
 - Nodes are active content consumers and their follow networks in Twitter
 - Edges are followers/followees relationships
- Classify Nodes (both supporters and non-supporters) By a Semi-Automatic Approach**
- Infer Political Preferences of AC consumers:**

Apply the weighted vote system on political preferences of followers and followees separately
- Compare the results:**

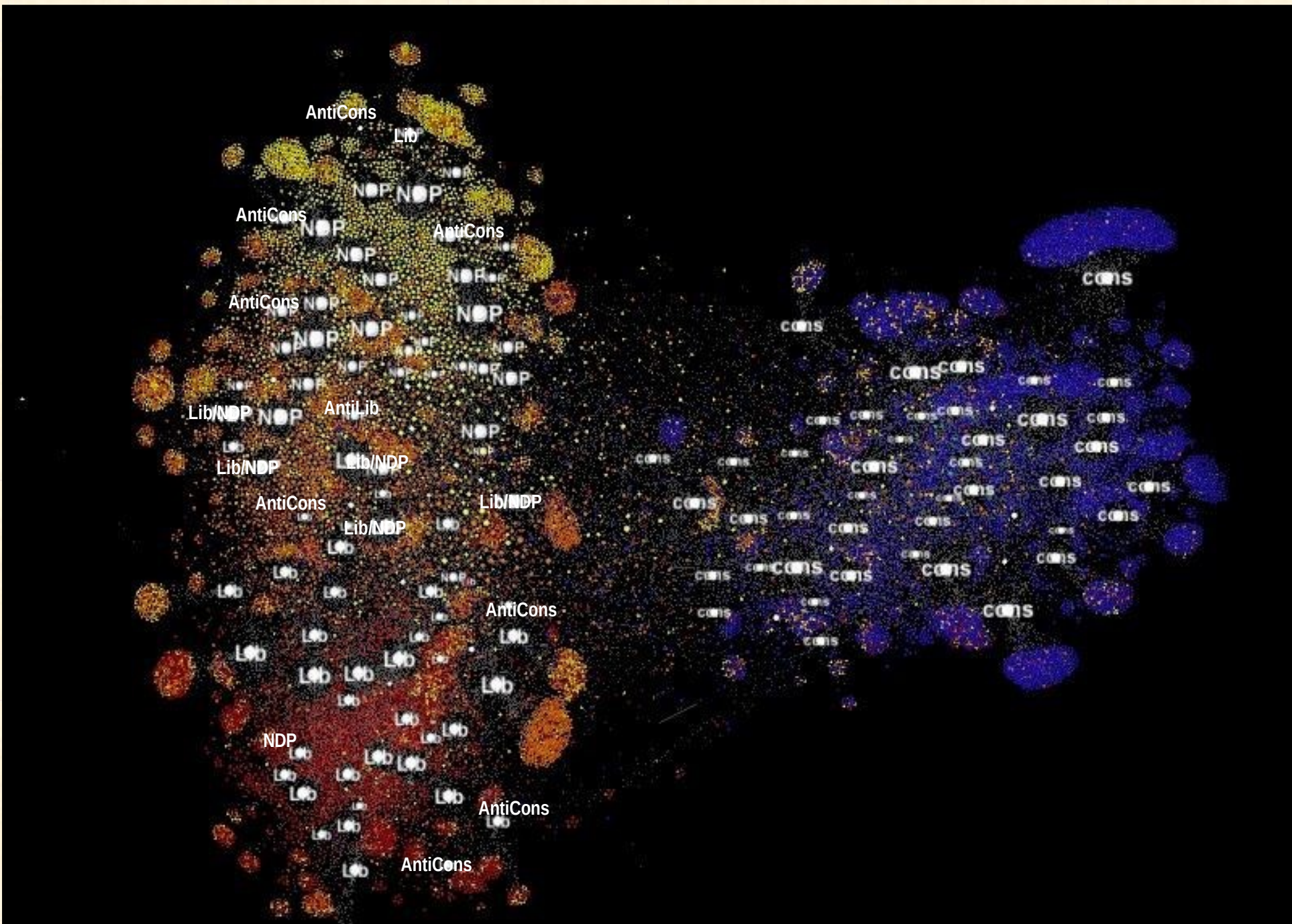
Compare the obtained accuracies to determine whether followees only are reliable preference predictors

Visualization of the Problem



Distribution of silent users (gray nodes) compared with content consumers (colored nodes)

Visualization of the Effectiveness of the Approach

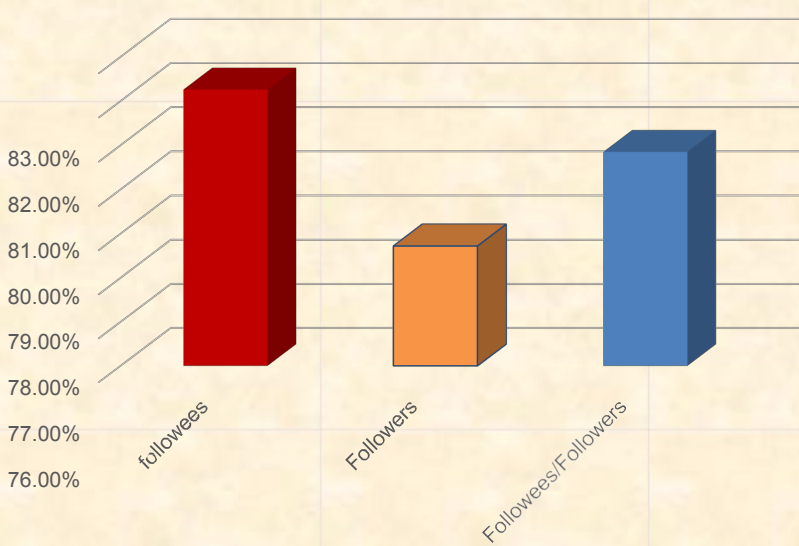


Predicted labels by using only followees

Results

Accuracy of predicted labels of AC consumers by applying the weighted vote system.

Fe	Fr	Fe/Fr
82.26%	78.72%	80.85%



Followees, the only information available for AC consumers, produced a satisfactory accuracy for predicting AC consumers' preferences.

Conclusion

The goal of this study was inferring political preferences of AC consumers representative of ordinary users on Twitter. Because those AC consumers do not have enough content to reflect their preferences regarding a given topic, based on the homophily principle, preferences of their neighbors can be used for this purpose. However, AC consumers' neighbors consist of more followees than followers, because AC consumers do not provide an adequate amount of content on a certain topic to attract many users with similar tastes. Consequently, they would not have enough followers to make accurate predictions possible. Thus, the objective was to find if preferences of AC consumers can be inferred by using their followees with satisfactory accuracy.

The experiments revealed that by assigning appropriate weights to users' follow networks, their followees can be used to predict their preferences with **82.26%** accuracy. With similar settings, followers and combination of followers and followees predict preferences of AC consumers with **78.72%** and **80.85%** accuracies respectively. The results show followees are more effective in predicting AC consumers' preferences.