An Anonymous Social Network of Opinions

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Introduction

Modern Online Social Networks (OSNs) have many similarities. They use social ties, promote sharing and users get to vote or like content. Even their underlying structure is similar, tightly knit communities, power law distributions and the flow of information from stronger nodes to weaker, are prevalent in almost every network. Users spend time to maintain their online profile and therefore filter their interactions, social ties and sharing.

None of the above can be characterised as a negative behaviour. However, in modern networks, users tend to act in a peculiar, but interesting way. For example, in Twitter, Facebook and recently Instagram, celebrities are the most followed and befriended users. In Reddit, users post pretentious content in order to boost their profile “karma” – a counter of reputation. In Wikipedia, editors cluster into two groups that correct each other (Iba, 2010). In many forums, new users are often mocked or ignored. Finally, in almost every case, moderators are abusive.

What if we could form a social network where a user is represented only by his opinion? Where each user can –equally- judge and vote on the constructive side of an argument? What would be the underlying structure of the social graph?

Motivation

Our aim is to create a platform that eliminates biases generated by the structure of the social networks, promoting in parallel, two major and important aspects of communication. At the same time, it will allow us to thoroughly study and evaluate its structure and data. The three main axes in our platform are:

- equality on users voicing their opinion,
- equality on judging that opinion and
- researchers’ interest in the subsequent social graph.

In traditional OSN, a post from a specific user is initially visible to everyone who is connected to that user. The immediate effect is that users with fewer ties encounter a weak propagation of their information, even if their posts are more entertaining, meaningful or constructive. A more indirect outcome of this linkage is the information “suppression”, which new users experience. Connecting to an already established network, time is required in order to build connections and improve your profile.

Our first step is to cut those restricting ties. Unfortunately, this would mean that users who use ties on a “correct” way will also lose that ability. By not having ties visible to users we set
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a barrier to any biases, by any type of acquaintances. On the same direction, we decided to hide user names in posts, which is also in line with our next target.

Equality on judgment. Users usually rate online content based on their personal preferences. However a widely positive or negative post may drive preference. In Reddit, content rarely gets vote ratio above 2 (positive to negative). To such a diverse and multidisciplinary environment, this is a strong indication of voting influence. Although we are not sure how this influence is generated, we think that similar effects will not be present in our anonymous platform.

The next step towards anonymity and equality is to hide voting counters. It is important not to let public opinion influence the individual judgment of a user. Although we will closely monitor voting counters and create the underlying directed weighted graph, the users will not have any relevant information on that. Towards that anonymous scheme there will be no promotion of popular or highly rated posts.

What will be the structure of the network? Although many elements will be hidden, that does not mean they will not be recorded. Votes that resemble positive and negative affiliation in respect to the author of a post, also provide a measurement for subject interest. Each post will fall under one broad category (e.g. sports, politics) and will be classified based on a set of keywords (in a sense similar to hashtags in Twitter). Afterwards, the post could be replied, while every reply will form a separate discussion thread. Then a further separation based on submission date will promote comments on new posts. Finally, in order to provide some form of content personalisation, any user of our proposed platform can favourite any thread, follow it, reply to a post etc.

Concluding, our aim is two-fold: we want to investigate and analyse the structure of the created graph and evaluate this platform as a social network. Towards these goals, we count on employing user feedback (either implicit or explicit).

Background

Social aspects of OSNs, concerning bias, are largely unexplored. However, sociology studies provide some insight into social bias. A very interesting work on Persuasion Bias (DeMarzo, 2003) describes how individuals and groups are influenced. The influence on group opinions doesn’t only depend on accuracy, but also on how well connected one is the user on the given communication network. Additionally, the authors observe the phenomenon of unidimensional opinions, where opinions over versatile issues converge to a single “left-right” spectrum.

Authors of (Lin, 2011) note that in modern times “There are more voices than ever, but many are echoes”. Underlying the effect of reproducing one’s opinion, instead of every individual forming and expressing its own. A. L. Barabási and Z.N. Oltvai in (Barabasi, 2004), observed that when new users join a network, they tend to connect to an already strong node of the network, thus creating non-random connectivity power law distributions.

S. Counts in (Counts, 2011) argues that users in Twitter are biased positively towards their friends and negatively to unknown users. The researcher also notes that the name of a user, affects our perception in respect to the information the user shares.

Various studies have been also conducted for marketing biases in social networks. Although they may be considered out of the context of this research, they do provide some key remarks. Marketing campaigns in social networks are short lived, but they are accessed by many users and promote engagement with the brand, given that you are on the right side of bias. This is because (besides apparent negative comments) in online social networks, the lack of engagement - with a brand - also implies negativity.

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Interestingly, research on the field of bias in social network is limited. However, the impact and effect of it can be observed in real life scenarios. Several essays and books have been published that provide a deeper view into bias, such as (Keltner, 1997), (Jonathan St Evans BT. Lawrence Erlbaum Associates, 1989), (Kruglanski, 1983).

Description of the work

This project consists of 2 Work Packages (WPs).

**WP1: Technical foundations.** WP1 will develop the platform that our OSN will be hosted, as well as a strong underlying database structure, which will allow us to monitor user relations and content linkage. Our platform will be easy to use, accessible from any device and content focused. Most probably, a simple server-side programming language will be chosen (e.g. PHP). It this WP, we will also address several other technical issues, such as post topics, profiles, search and keywords functions, content sorting and recommendations algorithms.

**WP2: Testing and Analysis.** WP2 will include both the testing and tweaking of the platform. Our content algorithms will be thoroughly tested, as they present a key factor in the evolution of a social network. Database will also be addressed, in order to evaluate the importance of each monitored relation. Additionally, we will start out the initial invites, populating the OSN. As the network expands, users and their relations will evolve, data volume will increase and results will be reassessed.

**Methods.** Our research will utilise several methods commonly used in Online Social Networks. Such will be classification algorithms, data modelling, visualization and mathematical analysis. We strongly believe that the results obtained from the analysis of the network’s structure and user interactions, will be vastly different from any analysis of OSNs.

**Schedule.** Our schedule will be split into two parts and will be based on the needs of each WP. Ideally, our network will reach a statistically-significant size by 12 months after its launch. WP1 will take anywhere from 12 to 18 months, followed by a 6 to 12 months period for WP2.

**Dissemination.** We aim not to rush into publishing our research, if the results are inconclusive or could be enriched. Several journals (e.g. WWW, WISE, UMAP, ICWE, Journal of World-Wide-Web, Computer Networks, IJSWIS etc.) and IEEE Social Media Conference are our main publishing objectives. Ultimately, our results will show if there is a need for a tieless social network, a network that would promote and favour the exchange of ideas and opinions. Exploring the emergence of such need and the creation of a bias free network is the goal of the author’s project.

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