SUMMARY REPORT

on

Signals Matter: Understanding Popularity and Impact of Users
on Stack Overflow

The research paper analyses the impact of reward points on the users and how this popularity system affects the user behaviour, all backed by the statistical information obtained from a large dataset. One of the reasons which incentivizes the users to contribute is the rewarding system followed by the platform. The paper analyses this very system by initially taking a survey of all the Stack OverFlow users, then doing regression and statistical analysis on a huge dataset to find patterns and draw conclusions on user behaviour.

One of the possible problems that such platforms can face is Adverse Selection i.e selective participation to maximimize the reward points by the users. The rewarding system is divided into 2 categories, first one is digital signaling, called 'Reputation' which is determined by the number of upvotes/downvotes and other similar actions, and the second one is gamification, called 'Badges' which are given when a pre defined set of actions is completed.

The authors of the paper have gathered information by getting survey results from active users of different categories based on their badges and recognition points. Most of the users view the rewarding systems to have a positive affect on the user behaviour and that reputation is a better representation of helpfulness (not knowledge) than badges.

For performing the statistical analysis on the dataset, the authors divide the dataset into 3 models and then fitted into a gradient tree regression boosting model with maximum depth as 3, learning rate of 0.1 and number of trees to fit as 100. Then, the test is run 50 times over various training and evaluation sets. This model is then validated using the R2 model by checking the fit of popularity and impact scores with feature sets.

One of the major conclusions drawn from the results of the fit is that reputaion is a good measure of user popularity and impact but badges are highly circumstantial, only the 'answer' type badges provide an accurate measure of popularity. Contrary to results recived from the survey, answer badges are a better measure of user popularity and helpfulness than reputation.Thus, this paper provides insights on the affect that having a bias creates and the impact gamification in such platforms have on user behaviour.

One of the critique points for this paper is the limited number of survey responses. In order to a get a general opinion of a user set of 3,831,147 , a survey of 57 responses is insufficient to compare the results. Another point is the measurement of user popularity, which is measured by the number of distinct views on the user profile. Having just this criteria is insufficient to determine the popularity of a user. Other factors such as number of posts can also be incorporated to calculate this parameter.

To summarize, this paper draws some very significant conclusions on the affect the gamification strategies have on user behaviour and popularity. This study can be extended to other similar platforms and formulate the most effective rewarding system that positively impacts user popularity and leads to maximum participation on the platform.