

Towards Greater Perceived Fairness: Crowdsourcing Moderation Work to Online Deliberation Participants

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Abstract. Online deliberation is a way of collecting “wisdom of crowd” through public debate for decision making, problem solving and policy making. Structured online deliberation platforms keep a clear structure of deliberation map, avoiding information overload and facilitating knowledge formation. However it relies on professional moderators to manage the structure, leading to perceived unfairness of the debate and extra human resource costs. We propose to crowd-source moderation work to online deliberation participants themselves, which may increase perceived fairness of the process and reduce expenses. We also integrate machine intelligence into the process of crowdsourcing to reduce the workload of participants and increase the accuracy of moderation.

1 Introduction

Millions of online users are being engaged to solve problems collectively in a large number of domains. One of the most popular examples is discussion forum or Question-Answering community (e.g. Quora). In most forums, expert moderators do the moderation and the normal users do not interact with the posts created by others extensively. The practice does not only cause some users to think that the moderation is not fair due to the subjective nature of the evaluation, but also increase the burden on the moderators, especially if the forum has a complex structure and the volume of posts is large.

Structured online deliberation systems aim to make discussions clear and beneficial to the formation of decisions. Online deliberation platforms thus commonly require users to post according to some rules so that the posts are displayed in a tree structure or graph structure (e.g. MIT Deliberatorium [9], Debate Graph [6]). However, users in such systems may not observe the rules due to negligence or difficulty in finding a right position for their new post in a large existing discussion. Professional moderators are hired to solve the above problem. This practice leads to other vital problems such as perceived fairness and scalability. Generally, the less control the participants feel they have over the final decision, the less perceived fairness will be. Also, when discussions are of large-scale, a few moderators could not complete the tasks efficiently and thus hinder the further development of the discussions.

We propose a novel crowdsourcing-oriented moderation framework to enable the forum participants to join the moderation process. It not only helps to enhance procedural fairness in an online deliberation context, but also makes structured forum systems scalable: The bigger the discussion forum becomes; the more human power is available for moderation tasks. Thus the forum size is not limited by the fixed capacity of a few designated moderators. By doing the moderation tasks, participants naturally read and become aware of the posts of other users in the forum. However, the accuracy of moderated results might be affected if the participants are not skilled enough and the time taken to accomplish the moderation tasks is likely to be longer due to the possibly low response rate from the participants. It might incur a large cost when the deliberation map becomes too big as there might be too many permutations to form crowdsourcing micro-tasks. In order to resolve these problems, we propose to introduce machine intelligence into the picture. Machine intelligence reduces the number of crowdsourcing micro-tasks by providing predictive suggestions.

2 Related Work

2.1 Online Deliberation

Online deliberation recently became an important topic in Citizen Science and Political Communication, as it has certain advantages over traditional offline communication. Deliberative democracy is an idealistic form of democracy which affirms the need to justify decisions made by citizens and their representatives through public discourses [7]. There is a worldwide growing interest in implementing such systems to invite citizens to propose solutions to political issues and evaluate the solutions within the community, such as Debate Graph, Climate Colab and MIT deliberatorium [6,8,9]. Though the structured argumentation system is vital for citizens to think and respond reasonably about discussion issues, they require a huge amount of moderation work from professional moderators. The moderators need to be familiar with the mapping structure and have an overall picture of the current discussion map. They need to make decisions generally on the post type, post position, and the relevance to other issues in the map [10]. In addition to this scalability problem, what appears to be even more challenging is the perceived unfairness by participants due to their lack of access to the moderation process. It has been found in previous works that the less control the citizens felt over the final decision outcome; the less they perceived fairness in deliberation [15]. It imposes a question of procedure fairness in the moderation process when a few professional moderators make decisions on the forum structure and content presentation.

2.2 Crowdsourcing

Crowdsourcing is to solve complex problems by harnessing collective human intelligence on a crowd-powered system [1]. The existing applications mainly focus on replacing expert users with average users [11]. It is a suitable technique to supply human intelligence to problems that require high-level cognitive capacity.

In current industry practice, the task distribution is mainly pull-based, which means that the workers voluntarily browse the task list and filter the tasks to complete [2]. It poses challenges for real time applications and undermines the task completion rate for underpaid tasks as they receive less attention in general. However, in view of the proliferation of use of Mobile Instant Messaging (MIM), there is room to explore push-based mobile crowdsourcing model on MIM platforms as they could push notifications to a large number of users based on certain algorithms. In 2014, WeChat, the most popular Chinese MIM successfully conducted a crowdsourcing campaign, the Voice Donor Project, reaching out to

more than 200,000 users within a few months [13]. In this paper, we propose to use WeChat as the platform for testing also because of the built-in payment channel, so the users could be paid easily for the tasks they complete [3].

2.3 Combining Crowdsourcing with Machine Intelligence

Machine intelligence has the benefit of lower cost and faster response rate, which make it a fast growing field. In order to take advantage of both human intelligence and machine intelligence, there are many attempts to combine crowdsourcing with machine intelligence in different domains [12,14]. Those combined methods have been proved successful to solve some problems in those domains. In our work, we aim to design a combined strategy from the point of crowdsourcing, where machine intelligence promotes crowdsourcing. Such combination not only widens the domains of solvable problems but also leads to the potential saving in cost and time.

3 Design and Research Challenges

It is challenging to design a crowd-sourced moderation system for online deliberation because of various reasons. Firstly, we must make sure that the accuracy of moderation result is good enough; secondly, we must shorten the time and lessen the cost of moderation for ordinary participants; thirdly, we need to increase the engagement of the participants. Although crowdsourcing is a practice standard for collecting annotated data, it is challenging to ensure the achievement for complex tasks that need domain knowledge and logical thinking. For such complex tasks, the selection of crowdsourcing workers and the design of crowdsourcing process are vital to the quality of crowdsourcing results. Moreover, although crowdsourcing hires cheaper workers to do tasks, it may still produce significant cost if the number of tasks is large. So reducing the number of micro-tasks to save the money is another challenge. Additionally, the speed of crowdsourcing should be fast enough to satisfy the need of users. Therefore, the design and the number of micro-tasks should be carefully considered when introducing machine intelligence into the picture.

In order to test the success of the design, it is necessary to conduct user study in a large scale. However, the design of the experiment is itself a challenge because of the ambiguity in the methods to measure accuracy, user engagement and perceived fairness in the current literature. Formative studies based on ground up theory need to be executed before user study could be scientifically designed.

4 Conclusion

In conclusion, there is a need to improve the moderation process in the state-of-art online deliberation platforms because of the perceived fairness and scalability issues. We propose to combine crowdsourcing and machine intelligence to break down the task into simpler micro-tasks, which could be accomplished by forum participants themselves.

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