

Advocator - Web application

A Technical Report
presented to the faculty of the
School of Engineering and Applied Science
University of Virginia

by

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with

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May 7, 2021

On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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Advocator - Web Application

A Tool to Increase Digital Democracy

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ABSTRACT

A digital platform is one of the best ways for people to be informed and discuss issues. As such, the platform under research combines debate and face-to-face discussions with stakeholders to foster consensus. The goal of the platform is to facilitate constructive conversation and consensus-building between diverse opinion groups to address the problem of division on social matters. There exist several platforms that can be used to address the problem, but none do so effectively in the US. Countries such as Taiwan and Brazil have launched digital platforms that help solve this issue that has proven to be successful. The US has long been divided with political affiliation being the number one factor dividing society (Doherty, 2019). It is important to address this issue to avoid creating an ineffective and unresponsive government or society. The digital platform under research will help mitigate this division and ease the process of obtaining unbiased information. To develop this platform, Python with the Django web framework, GitHub, and Heroku were used. To avoid toxic behavior on the platform such as negative commentary and the spread of disinformation, users of the platform will only have the option to vote on statements written by others. This allows users to indicate whether they agree or disagree with another user's statement. Then an algorithm will be used to sort these users into opinion groups to identify which topics users have consensus on and which topics have division. Afterward, this information will be summarized and made available to relevant government agencies and to the public.

1 Introduction

America is constantly struggling with biases in the media and low political involvement amongst citizens. The best way to solve this problem is to improve democracy through the use of the internet. There are currently many applications that serve to improve digital democracy, but they all fall short due to having other purposes, misinformation, and biases.

Currently, social media platforms such as Twitter and Facebook help improve digital democracy, but they also serve as a threat to democracy. These sites are used by people to communicate directly and share information, but they have been subject to the spread of misinformation and disinformation with the intent of undermining people's trust in institutions. This weakens core aspects of democracy and democratic representation as it prevents diverse groups of people from participating in constructive conversations to reach consensus on a social issue. Since these platforms were not created for the sake of promoting social welfare or broad-based civic participation, the platform's design choices do not properly or effectively convey information in the interests of improving digital democracy (Anderson, 2020). These open platforms that are prone to the spread of false information can result in the loss of trust by people in our democratic institutions (Anderson, 2020). Thus, the goal of the project under research is to prevent this by offering an unbiased platform with a more restrictive type of environment to facilitate constructive conversation.

It is also hard to gauge where public opinion particularly stands on a political topic. For example, a user using Twitter or Facebook will most likely fall within a group of people that already share their views. So when the user is already in an enclosed circle, a person may think a lot of people agree with them, but in reality, they are only viewing people's

opinions that already agree with them. Also, when looking at political opinions on these social sites they often contain information with heavy biases making it so more people than regularly will respond in agreement due to the biased wording. But, if the user is placed in an environment with less bias, they may have different opinions.

Other platforms that try to improve digital democracy are independent fact-checking websites, such as Snopes and Politifact. These websites are extremely useful, but they are often victim to biased selective fact picking. Essentially meaning, depending on the fact-checking political orientation, the site may choose to disprove statements made from the other side while confirming many statements made from their own side. (Ceci & Williams, 2020) For example, PolitiFact was found to have 98 statements out of 500 to have been rated as false mainly by republicans from January of 2010 to January of 2011 despite the fact that the sources cited against the statements were untrustworthy. (Hemingway, 2012)

2 Related Work

Taiwan faced a similar issue in 2014 and has since then been able to improve digital democracy through the use of several online platforms such as GOv (“gov zero”) and vTaiwan, platforms that have enabled citizens and representatives to discuss proposed laws via its website and have allowed citizens easy access to vital information. (Kao, 2011) These sites have seen a lot of success in Taiwan and are the main inspirations to our app. These sites have allowed more citizens to engage in rational discussions on societal issues that have shaped civil society by improving transparency with the government and its stakeholders through digitalization.

Since these platforms were able to successfully improve democracy by solving several social issues through stakeholder involvement, our system is modeled after GOv’s pol.is and vTaiwan’s web applications. (Kao, 2011) The system as a whole would be great to have in America, although currently as-is, we believe it falls short of completely adapting to how American politics functions. America is becoming more and more polarized, and issues are almost always pushed to one side. America needs a way for its citizens to view issues outside a left or right issue point of view as best as possible. These are

issues we considered when creating our application to best suit the platform for American digitized democracy.

Another related work would be a social site called Reddit.(Huffman, 2005) Reddit allows its users to submit posts that other users can upvote or downvote based on if they like it. If a post receives enough upvotes then it moves up the rankings and is displayed at the top of the page. But, the key difference between our project and Reddit is that commentaries are not allowed and only specific users may post on the platform who are seeking an opinion from people on social issues such as politicians. Also, since Reddit does not restrict the type of content that is posted on the platform, topics vary in a range which does not make it an ideal platform for social welfare.

Another difference is that Reddit does not properly handle the anonymity of the posts being shared. Anonymity raises many different types of problems, but a lot of these problems in our platform are remedied by having only credible officials being able to make posts to our site.

Similarly, other social media platforms such as Facebook and Twitter can be used to engage in conversations to promote social welfare, but the platform remains too open and unrestrictive as it allows any person to join the network even bad actors to abuse the platform for malicious purposes such as the spread of disinformation or “fake news”.

3 System Design

Our solution to address the problem of political division on social issues with the goal of improving democracy is to offer users a platform where their voice and opinions matter. Our system presents users with unbiased and verified information from credible officials unlike other platforms such as Facebook, Reddit, or PolitiFact. Also, since users of our platform are able to vote on statements made by officials, this gives politicians insight into the public opinion on the social issue thus giving every user of our platform a voice.

For the web application’s architecture, we used SQLite as the relational database management system. We decided to use SQLite because it integrates well with the Django web framework and chose Django as our framework since it allowed us to easily separate different functions of the app into

modules. This makes any future contributions to the project more easily maintainable. Maintainability was something we put a lot of thought into because, in order for this application to flourish, it would need to be continuously worked on to improve its features.

We decided to deploy our application on a platform-as-a-service tool called Heroku. This site allows us to have our website in a cloud environment. The benefit of this being our site will be able to handle heavy traffic. This is a keynote to our design because our site needs to be able to handle a lot of traffic as more participants in our digital democracy tool will indeed improve democracy. The cloud environment also provides us with decentralized servers, allowing for our application to stay up and running through various server errors.

In designing the system, we wanted to primarily focus on implementing two key features: the ability to post and the ability to vote on selected issues. This is the key fundamentals of our application. Currently, we have it set so any user can create a topic to be further voted on. This allows posts to be easily moderated for spam and non-political posts. The goal for our app is to have admin users only be able to post topics that will then further be voted on. Implementation details on this are seen in the Future Plans Section.

4 Procedure

First and foremost to visit our website, users can go to <https://advocator-capstone.herokuapp.com/>. Here, how one will interact with the application depends on the individual's role.

Our application consists of a variety of roles, each with different functionalities. First, we have the user. Ideally, this will be an American citizen, as this tool is used to promote digital democracy within the US. But, we do not have the ability to verify the citizenship status of our users. The best we can do is verifying a US phone number. Once logged in, the user is able to see the various hot topics posted on the forum and can increase the rank of a post they see as an issue to be addressed by voting on the topic. The typical user will not be able to post topics to vote on a completed version of this app as this is the job of admins. However, in the early stages of our app with no traffic, users are free to post as manual moderation is quite easy and the site lacks admins.

The admins are people from various political backgrounds across various political ideologies and

are handpicked to gain this status. These admins can post an opinion that will be anonymous by clicking the create post button on the main page. After clicking this button they simply fill out the title and the contents of the post. Admins are encouraged to make their posts retain this anonymity. The anonymous posting is an attempt to prevent users from voting based on political affiliation. This will prevent the contribution to a left vs right war. Instead, shifting the focus to building consensus with the goal of improving digital democracy. However, the admins will all be listed somewhere on the site to show the credibility of the posters as a whole and to show users which side may have a greater influence on the site.

Another participant is moderators. This group consists of both of us, the creators, and will only have the role of moderators when the site has low traffic. The jobs of the moderator are to filter out any post that looks like spam and posts that are not related to politics. Our job is not to filter out posts based on personal opinions as long as they are related to politics. There is a lot of bias that can stem here so it is important to stress this is not a permanent role.

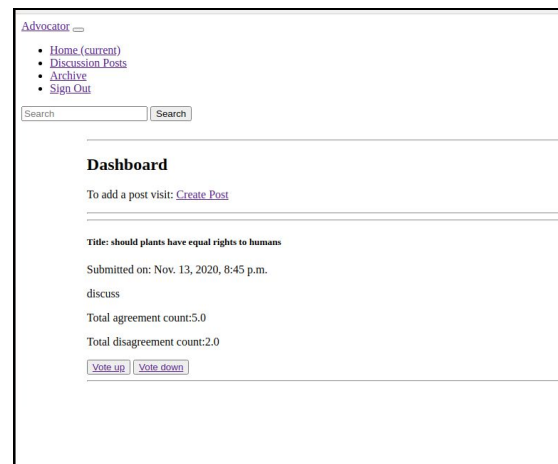


Figure 1: Home page of our application

5 Results

To test the platform, we have asked 10 people to try out the system. The participants were asked to create a post on the platform about a social issue they believed should be addressed. They were then asked to vote on each other's statements by agreeing or disagreeing on their post. After using the platform the participants were asked the following questions: "Was creating a post complicated?", "What other features

would you like to see on the platform?”, “Was the process of voting on other statements easy?”, and “Did you notice anything odd about the ordering of the statements on the Dashboard?”.

After conducting interviews with each of the participants on their experience, a majority of them said that the system is simple, easy to use, and allows users to know what issue is currently a hot topic or major concern since all participants have noticed that the post with the highest vote count was at the top of the page. Some users have suggested to include a tag system, and a search feature to allow users to search through posts with a specified tag.

6 Conclusion

We designed a system to address the problem of polarization on specified issues, to avoid the spread of misinformation, and to offer a medium where users can be informed of societal issues. We also created a way for political topics to be shared anonymously, but at the same time by credit officials to promote real discussions on various topics, not just a battle between two parties. Unlike other platforms such as social media or fact-checker sites that are susceptible to the spread of misinformation or biases, our platform handles this accordingly by allowing users to vote on issues of their particular interest which allows the issue to rank higher than misinformed or biased statements as they are largely ignored or disagreed upon. Also, since these platforms contributed to the decrement of democracy due to their open platform that allows any user to post on their site despite having malicious intentions, our platform allows only credible officials to post on our site which is then verified by users of the platform. Also, since statements on our platform that have a high vote count are at the top of our site, this allows users to be informed of issues of high debate and gives elected officials insight into the public opinion on the social issue. After evaluating the platform under a small test group that received a majority approval rating, the platform is successfully able to strengthen core aspects of democracy and democratic representation.

7 Future Work

If we had more time to develop this platform to utilize its full potential, we would first want to increase

the security of the app. If this app expands to include other aspects of societal issues and increases the amount of incoming traffic, it is important that only American citizens are participating in the polling and not foreign entities. The idea would be to implement phone verification for US numbers. This is only one step of verification as it does not contribute a lot to the potential problem. As our app grows, however, we will continue to need ways to verify the US citizenship of our participants and will explore different options to do so. Verification is important, but we can also look at the security of the site as a whole. Implementing 2-step authentication would help here as well as investing in security solutions of the site as a whole.

This application as it currently stands doesn't support the two roles of user and admin yet. This is because since our application has low traffic we want any user to be able to contribute to the discussion. As our app grows, manual moderation gets out of hand, thus we will implement the account's features for admin and assign credible people as admins. It is important to make sure the admin accounts are secure because those accounts being compromised provide an increased risk of harming democracy. Having these two roles now limits the user to be only able to upvote and downvote. We see this as a flaw as user involvement may go down as the site just becomes a chore than a tool to gather new information for democracy.

Another feature we are planning to implement is a post-discussion board which is a lobby for discussing the topic of a given post. Once a post receives a lot of attraction it would be helpful to the poster and stakeholders to be able to discuss together the topic. After a specified amount of time the post has maintained its rank, the poster will have the option of starting and opening a lobby inviting stakeholders from both sides to participate in a group discussion.

Lastly, another feature we planned to implement would be a comment section to posts. These comments to post can be created by anyone wanting to further continue the discussion to the comment sections. This brings back the problem of needing some form of moderation. One approach we were considering is to allow users to serve as moderators by allowing them to be able to vote on each comment saying whether it is related or unrelated. These choices attempt to promote users to filter out

unrelated comments and not downvote comments they disagree with.

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