Moody: Somebody out there gets you

Final Paper for CS492F: Crowdsourcing and Social Computing

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ABSTRACT

We introduce Moody, where users can log and become aware of their current mental status and empathize with others to build an understanding community. Moody allows users to share emotions and empathize via a novel approach of psychologist-proven 2D graph of emotions. To make this happen, our platform supports three main tasks: Map and Input, Observe people and Create connection. Users can use the "radar" feature to view logs of their emotional interest, and choose to show their empathy.

After deploying the platform for a week, we received positive feedback from users regarding the design and impact of Moody on individual's mental health. Besides, an interesting emotion logging pattern was observed with the platform being released 1 week before final exam period. However, there are certain limitations of the platforms due to several factors such as time, user population, database, which make room for future enhancement.

Introductory video: https://youtu.be/zqW3YjsoLTA

ACM Classification Keywords

H.5.m. Group and Organization Interfaces; Asynchronous interaction; Web-based interaction

Author Keywords

Social Computing; Social Networks;HCI; Emotion Map.

INTRODUCTION

According to WHO in 2001, one in four people in the world is affected by mental or neurological disorders at some points in their life[16]. Even though treatment is available, nearly two-thirds of people with mental illness never reach out to seek help. As the society and technology develop so quickly, nowadays, people, especially millennials, are being isolated and the mental illness is becoming more severe than ever.

Korea is facing up to a severe social issue: mental illness. In 2017, the Ministry of Health and Welfare's survey of 5,102 adults announced that about 25 percent of the participants had suffered mental disorders, such as depression, schizophrenia, and alcohol addiction[13].The consequences of mental illness can vary from individual to the community. According to the survey, 75 percent of those who had attempted suicide and 68 percent of those who had planned to do so had experienced a mental disorder. That can be the explanation for the suicide rate in Korea: it ranks the second highest in the world and the highest among the OECD countries[13].

One cause for this is being mainly ignored by government and people: talking about mental illness is still seen as taboo in this country. Having mental illness makes one feel they are responsible for the failure of the whole family, as "being mentally weak" goes against the ideal model of Korean families. [14]

Understanding that stigma of mental illness seen in Korean culture, we came up with Moody, a platform which allows users to share and empathize with other people's feelings via a 2D map of emotions.

BACKGROUND

Experiencing emotions is fundamentally human[7], and it is shown that over 80% of all emotional episodes are shared between people[8, 9]. It is also shown that people are likely to feel more empowered after being comforted by someone else, which further suggests that they feel more capable of handling their problems themselves due to their interaction with their social sharing partner. [5] Sharing of emotions allow people to better regulate their emotional health.[10]. Emotions often affect people well after the initial emotion generating episode, leading people to share these emotions with others, particularly those which are stronger and more salient[9] feelings. Such sharing supports both self-oriented (self-soothing, expression of feelings) and other-oriented (receiving support and validation) mechanisms that help people move back into emotional equilibrium[8].

Specifically, this paper focuses on emotion sharing in online platforms. Moody offers a different approach unparalleled to the previous emotion-sharing platforms such as Vent [17],Facebook, and Twitter as it allows for navigation of different emotional posts from a 2D circumplex model of emotions. We also allow the user to navigate through the content by *radar*ing. This voluntary selection of content gives users the power to escape their own filter bubble [18], which resolves the potential problem of users' emotions undesirably aggravating in an echo chamber. [18]

The contribution of the paper is as follows :

- An introduction of a novel method of displaying emotional progression of a community, and its respective results (Final exams period in KAIST)
- A novel method of resolving filter bubble in emotion-sharing platforms by integrating the emotional circumplex model.
- A novel analysis of user communication with valence-arousal model.

SYSTEM

Our platform support three main tasks: **Map and Input, Observe, and Create connection.**

Map and Input

After logging, the user can start discovering the platform by making their input. Firstly, users locate their avatar at a suitable position on the map to represent their feeling as in Figure 1. After locating their avatar, there is a popup asking for the reason of the emotion mapping shown in Figure 2.

Figure 1. Map your feeling on the emotion map

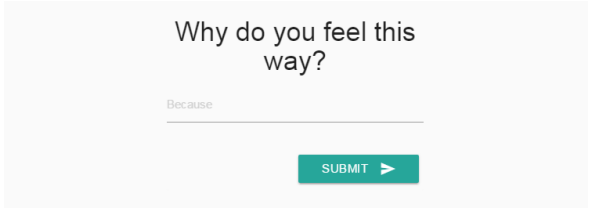

Figure 2. Input for the reason of the emotion

Observe people

Users can "radar" over the map to see where people mapped their emotion and hover over each avatar to see the reason behind every emotion (Figure 3). To visit what people have mapped on other days, the user can pick the date by using a slide at the bottom of the map(Figure 4). This makes our platform fundamentally different from social platforms like Facebook. In Facebook, users have to scroll down their feed without the ability to filter what they do not want to see. However, in our platform, a user can use radars to see emotions only they want to see. Therefore, this platform prevents emotional contagion.[15]

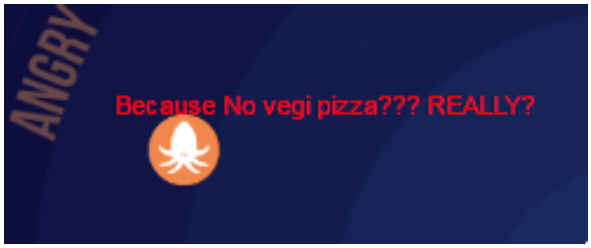

Figure 3. Observe the reason behind each emotion mapping

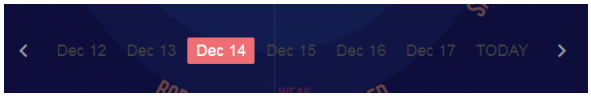

Figure 4. Choosing data from date you are interested

Create connection

Once users find a user whose emotion and reason they empathize with, they can click on the avatar and press on "I feel you" button to create a connection with that person. 5Upon pressing on "I feel you" a connection between two users is generated. Users can later observe the whole network and their own position in that network, where each node represents a user and each connection represents the empathy between two users.8

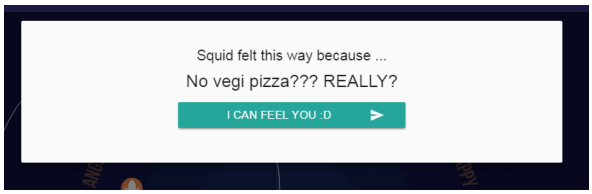

Figure 5. Empathize others' emotion by pressing "I feel you" button

EVALUATION

To test the capability of our interface at supporting the 3 core tasks described previously, we deployed our interface and advertised it on social media. Over a 7-day period, 92 people used Moody, making a total of 103 connections. The platform was heavily advertised in KAIST-related communities and as expected, the vast majority of users were from KAIST. The average age of website users was 22.6 years, with the majority of them being male undergraduate students.

Based on the logs made by the users, we tried to evaluate whether being close emotionally led to more empathizing in our users. We evaluated the connections distances both on the x-axis (valence) and y-axis (arousal). Based on the results we got, it appears to be the case that users with similar levels of arousal (y-axis position) tend to connect with users having similar levels of arousal. However, no such correlation was observed in regard to emotional valence (x-axis position) of users. (Figure 6)

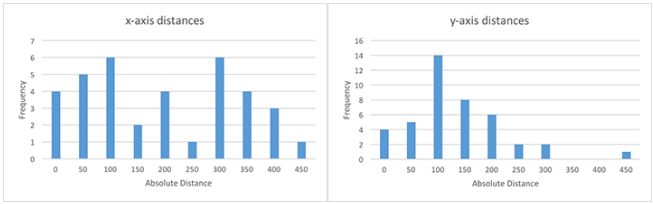

Figure 6. Left: x-axis distances in user connections showing emotional valence of source versus target in connections. Right: y-axis distances in user connections showing emotional arousal of source versus target in connections.

Another observation was the tendency of users to log their feelings at specific regions of the map at specific periods. We deployed our interface 1 week before the start of final examinations (the most hectic period during the semester), and as can be seen in Figure 7, the vast majority of users logged their feelings as belonging to the second quadrant, which is for feelings that are unpleasant and high arousal. This could be an indicator that users can, in fact, log their feelings properly on the map.

Figure 7. User logs concentrated in the second quadrant (unpleasant + high arousal) 1 week before the final examinations week.

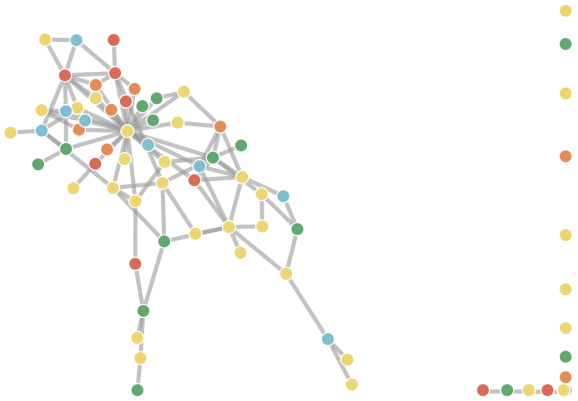

Figure 8. Tie graph made via "I feel you" between users

Further, it was shown that due to the nature of Moody's 2-step input, some users felt that it was harder to *troll*, as users had to plot their emotions on the graph to make any text input, where users may make inappropriate inputs. This made the efforts from trolling not immediately displayable, which dissuaded some of the trolls.

DISCUSSION

This was a system for intrinsically motivated crowd. Some users voluntarily provided useful feedback to improve Moody. Without monetary motivation, we realized it is hard to get users to consistently make daily input. Users sign up to our system, check what others have put, and input their logs. Sometimes, they make a number of connections too. However, after they log out, some of them do not have significant motivation to check the system again. This is because we do not notify users if somebody out there gets them. In order to solve this, we can have something like Daily Digest, a summary of the day in one notification (We don't want to spam our users by notifying them every time).

Another notification alert could be set for "new neighbours". If user A puts an input near user B in the map, user B will get notified. This notification tells user B that he/she is not alone, there are other people in the deep ocean that feel similar to him/her.

This platform does not give users joy instantly. The mental benefits of this platform are not clear to users who have a stable mental state. Even though users' mental states get better, only those who are close to that user can recognize the differences.

Design Implications

Some possible application of Moody are as follows.

Mental Health Tracking

Our primary goal when we started this project was to help people be more aware of their mental health by allowing individuals to track their feelings. This can help prevent mental illness like depression, trauma, etc. Multiple users have expressed that they were able to keep track of their emotions (P2, P6, P7, P11). "I could express my mood and possibly keep track of it."(P11). Other users gave comments pertaining to the moods during specific events (finals): "I needed someone to vent to during finals, but couldn't because everyone was sensitive – but now I can vent to Moody!" (P7)

Suicide prevention

Suicide is a major cause of deaths at young age [11]. We propose to prevent suicide attempts, especially among young people, by letting them keeping track of their emotions. Also, they can connect with others which will make them feel part of the society.

Finding other people that feel like you

This project can be extended to people looking for their "emotion buddies", those who feel similarly. Using our circumplex model, we can notify particular users when there are inputs close to theirs. Some feedback from users was: "It was quite a comfort to see other people in the same mood as I am (especially when I feel afraid or angry)." (P12) Other users pointed that sharing of happy feelings lead to positiveness: "I can be motivated or refreshed by others' source of happiness"(P9).

Limitations

This research was affected by some limitations.

Limited user diversity

Most of the users were KAIST students. Although we shared this platform via Facebook, the majority of the users were from KAIST due to our friend groups. Further, we advertised our platform on Ara, an online community within KAIST. This could have caused a potential bias in user inputs and interaction behaviors.

Firebase asynchronous issues

This project is implemented using Firebase API database. Asynchronous nature of Firebase brought about issues related to making the website real-time. This led to a below-instant speed and made some features hard to implement. Also, real-time interactions were sacrificed to let users to not feel the fatigue while using the platform.

Prompts are not thoroughly clear

Some users did not understand our prompts well enough. We already provide "Because" for their input so they should not input "Because" when they write their reason. However, some users mistakenly inserted "Because" which led to inputs like "Because Because.." on the screen(see Figure 9).

Figure 9. Example input from a user who could not understand the prompt

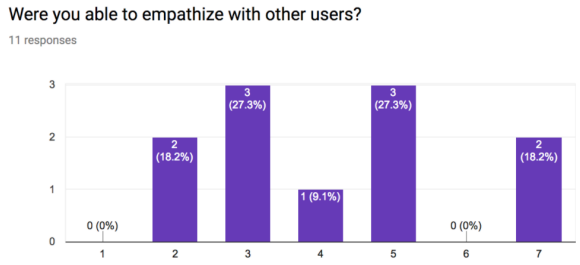

Figure 10. Result of question in the survey related to empathizing with others

Definition of Connections

We did not define what it means to have a connection or even what a connection is in the first place. In the platform, users have a connection if one of them "feels" the other on some day. The number of total "I feel you"'s for a particular user pair, indicates the strength of the tie. However, users are not aware of how to make a connection until they discover. We realized we need put it on our onboarding page.

Individualized page

We don't provide any page for individual inputs. Many of the social platforms have "my page" where users can track their feeling with respect to time.

Possible Improvements

We made a form to get feedback from our users. According to it (see Figure 10), we found that some users could not empathize with others. We see that our interface design lacked some components to empathize with others.

Connection logic

In the current version, we connect users if one feels the other on any day. However, this brought concerns for some users as they agree with the status of some day but not others. In the feedback, one user reported

> I didn't get what happens after I connect with someone (is it just that the connection-count gets incremented?)...

Tie strength

The tie strength is among the concepts relevant to our project. However, in our current version, we do not distinguish between a weak tie and a strong tie.

More strict quality control

The capabilities of a troll user are not very large in this platform. Trolls can populate random inputs, however this does not affect real users' input. That being said, there can be some additional features such as flagging posts.

REFERENCES

1. James A. Russell *Core Affect and the Psychological Construction of Emotion*. American Psychological Association, Inc, 2003.
2. Eric Gilbert, Karrie Karahalios *Predicting Tie Strength With Social Media*. CHI '09 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems
3. To Share, or Not to Share? Examining the Emotional Consequences of Social Sharing in the Case of Anger and Sadness, 2014 American Psychologist Association `http://dx.doi.org/10.1037/a0037604`
4. Recipients criteria for evaluating the skillfulness of comforting communication and the outcomes of comforting interactions, Communication Monographs, 68, 301–313 `doi:10.1080/03637750128064`
5. Bippus, A.M.(2001) *Recipients' criteria for evaluating the skillfulness of comforting communication and the outcome of comforting niteractions*. CHI '09 Communication Monographs ,68, 301-313 `doi:10.1080/03637750128064`
6. Natalya N. Bazarova, Yoon Hyung Choi, Victoria Schwanda Sosik, Dan Cosley, Janis Whitlock *Social Sharing of Emotions on Facebook: Channel Differences, Satisfaction, and Replies*. CSCW 2015
7. Barrett, L. F *Solving the emotion paradox: Categorization and the experience of emotion.*. Personality and Social Psychology Review, 10, 1 (2006), 20-46.
8. Rimé, B. *Interpersonal emotion regulation.* . Handbook of Emotion Regulation, (2007), 466-485.
9. Rimé, B *Emotion elicits the social sharing of emotion: Theory and empirical review.* . Emotion Review, 1 (2009), 60-85.
10. Zaki, J., and Williams, W. C. *Interpersonal emotion regulation*. Emotion, 13 (2013), 803-810
11. National Institute of Mental Health, `https://www.nimh.nih.gov/health/statistics/suicide/ir`
12. Stigma of mental illness rooted in Korean culture `http://www.ocregister.com/2016/08/29/stigma-of-mental`
13. 1 in 4 Koreans suffer mental illness: survey `http://www.koreaherald.com/view.php?ud=20170412000835`
14. Korea neglecting mental health issues: experts `http://www.koreaherald.com/view.php?ud=20170710000535`
15. Sigal G. Barsade *The Ripple Effect: Emotional Contagion and its Influence on Group Behavior* Administrative Science Quarterly, volume 47, number 4, pages 644-675, 2002
16. Mental disorders affect one in four people `http://www.who.int/whr/2001/media_centre/press_releas`
17. Vent, Express your feelings and connect with people who care `http://http://www.vent.co/`
18. Eli Pariser *The Filter Bubble, What the Internet is Hiding from You* The Penguin Press, New York, 2011