

A Sensitive Model For Aggregation Of Significant Whatsapp Messages In Social Networking

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Abstract: Instant messaging plays an important role in competitive social networking market and lot of efforts has been taken for making it simple. One can receive many notifications from social networking Apps in a day. There are some easier and smoother ultimate solutions needed in Digital Mobile world. In this paper, we propose an aggregate and sensitive model to read the contents of WhatsApp messages. These messages are grouped by aggregate and sensitive mathematical models based on the keywords given. The simulation results show that the proposed method can work better in terms of number of message reading, delay and grouping of messages.

Index Terms: Aggregation, Aggregate function, Dataset, Instant Messages, Sensitive model, Social Network, WhatsApp Groups.

1.INTRODUCTION

Clients, customers, friends, classmates and family uses an internet-based programs to maintain connections between them is called social networking. Social networking is established by sites like Twitter, Classmates.com, Facebook and LinkedIn for social purposes. The marketers use Social networking as a primary tool for engaging users [1]. Internet could be used to offer instant messaging in Mobile Applications. MMS or SMS are the medium to offer low-cost messaging. Instant messaging plays an important role in sharing emotional content and sensitive information. Therefore, it upsurges the number of practical applications [2]. QQ Mobile and WeChat having the user base of 1.2 billion in 2017. Snapchat, Skype, Viber and Telegram are having a user base of 300 million. With new social networking sites being introduced every year, deciding which one is right for your business, professional use or personal use is an overwhelming affair. So, it becomes imperative that you have to be aware which social media sites will fit into your requirements and communication strategy. Using too many social networking sites to convey your message could dilute the entire social media strategy and your entire planning and effort will be ineffective. The best strategy is to focus on those social media sites, which are relevant to you so that you can share your content with appropriate audience. Our communication is modernized by the Internet. The ever-known communication model in the 20th century is E-mail. Millions of people in this world uses E-mail to communicate with each other. You might not know if a person you want to e-mail is online at that moment. Also, if you're e-mailing back and forth with someone, you usually have to click through a few steps.

This is why instant messaging (IM) has become so popular. [4] With IM, you can keep a list of people you interact with. You can IM with anyone on your buddy list or contact list as long as that person is online. You type messages to each other into a small window that shows up on both of your screens. Most of instant messaging programs provides instant messaging, video sharing, sharing images, chat etc.,[5]. The paper is systematized as follows: Section II describes the related work regarding Aggregation of WhatsApp Group messages. The dataset collection and used in this paper is discussed in Section III. The proposed WhatsApp aggregation message algorithm is discussed in Section IV. The Section V provide the Simulation Results and Section V discusses about the conclusions.

2. RELATED WORK

Anika Schwind et al. [6] approach indicates that all the WhatsApp chat histories is analysed by a web-based service named WhatsAnalyser. The input is in the form of text of histories of chat. As end-end encryption followed in WhatsApp, the text format is the method to access histories of chat. Thus, the real data could be composed without any deviation. The users privacy is involved in the collection of histories of chat. So that the type of the messages, timestamps, length of the messages and anonymous users activities can be analysed. The volume and frequency of network traffic and WhatsApp is inferred from the analysis. Fig.1 illustrates the processing procedure of WhatsAnalyser. Users and Companies are expecting a tool for analysing WhatsApp activities. There are some third-party tools used for analysing chat histories of WhatsApp. Some of the WhatsApp analysis tools are discussed below:

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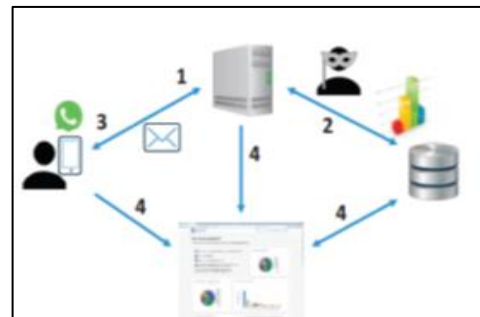


Fig. 1: Processing procedure of WhatsAnalyser

2.1. Chat Visualizer

It is the visualization tool for analysing group chat. Select the Export chat from the group for visualisation. The output of the Export option is in text format and should be sent to the chatvisualizer.com in mail. It does not contain any images and videos. It gives the details about chat duration, active time of the day and count the number of messages per day.

2.2. Chatlyzer

Chat Visualizer is lacking in the way of data metrics. The data metrics of your chat is given by chatlyzer. People often uses emojis to express their emotions. Chatlyzer analyses about commonly used emojis, images and top emojis. Fig.2 shows the analysis format of the chatlyzer. Pielot et. al [7] proposed a methodology to analyse the expected reply time for the WhatsApp and SMS sent by them. O'Hara et. al [8]



Fig.2 Chatlyzer report format.

projected a methodology to find out the kind of people with users wants to have relationships. Montag et. al [9], focused on WhatsApp usage by collecting data of 500 users. It infers the details about usage patterns of the users.

3.DATASET DESCRIPTION

The privacy is the important concern of the analysis of the social media data. By this, developed a mobile App for collecting WhatsApp chat histories of users. There is an ethical and prior permission followed for installing the mobile App. The users may have multiple groups and need to obtain each group messages separately. User ages considered between 30-40 years. Users are asked to enter the keywords to be monitored in each users WhatsApp group messages. The keyword used for dataset may be of any length and may be of any number. The maximum number of targeted users are from corporate companies and working in human resource department because Users are member of many numbers of Job consultancy WhatsApp groups. If users want to identify job related profiles, it can be easily identified. The users age, Date of Birth, Name and Data usage pattern also collected for analysis purpose.

4. PROPOSED METHODOLOGY

In this paper, we have proposed an algorithm to sort out the significant or obligatory messages from the WhatsApp without distressing users privacy and security. To do this, users has to install an App and setup the keywords to lookup in the messages for sorting out important messages. The users may be participants in various WhatsApp groups which is created for Business, Jobs, Educations or Personal purpose and it is difficult to read all the incoming messages between day to day activities since users are busy with their work in this fast-growing world. Messages with keywords are sorted out and stores as an important message. These important messages can be viewed in one of two ways: (i). Summary of messages (ii) special notification if we get such messages.

4.1 Summary of messages

This is the one of the methods to read the significant messages in WhatsApp. In this method, User preferences obtained with keywords and messages with those keywords are collected and summarised. The steps for collecting significant messages are given below in Fig.3. The Significant messages are taken to corresponding folder for easy reference for the users.

4.2 Decomposable Aggregate messages

A Decomposable aggregate functions mathematical model may be used for aggregating messages into groups. It is used for count, Maximum and minimum length of the messages. Self-decomposable message function is defined as function f and operator \diamond such that

$$f(XuY)=(X) \diamond f(Y)..... (1)$$

Eqn. (1) shows that composing of messages X and Y. If Keyword is found in a WhatsApp message, then messages can be composed by using self-decomposable operator. The total number of messages in a WhatsApp group also be calculated and analysed by the following Aggregate function in Eqn. (2):

$$\text{Sum}(Y) = \sum_{i=1}^n y_i..... (2)$$

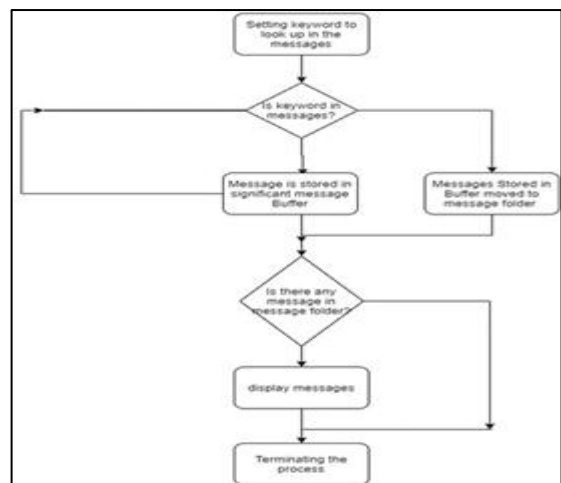


Fig.3 Significant message collection

The maximum number of significant messages of groups is identified by the following Aggregate function in Eqn. (3):
 $\text{Max}(Y) = Y_i; Y_i \geq Y_j, i \neq j, \forall i, j \in n, \dots (3)$

The Minimum number of messages of groups is identified using Eqn. (4):

$Min(Y) = Y_i : Y_i \leq Y_j, i \neq j, \forall i, j \in n \dots (4)$ Aggregate functions are very useful in calculating maximum and minimum messages.

5.SIMULATION AND RESULTS

The above discussed methodology is analysed by the following parameters: i) Reading Time of significant messages in Proposed Vs. Traditional method ii) No. of groups vs delay and iii) Categories of groups vs No. of Significant messages. Some interesting results have been obtained from the simulation. The simulation is been done using Python and Anaconda IDE platform. The proposed methodology was tested for delay in reading messages by the users. The methodology proposed is principally deal with No. of messages and delay time to read those messages.

5.1 Reading Time of significant messages in Proposed Vs. Traditional method:

The proposed methodology was tested against the reading of significant messages by our proposed methodology and traditional methodology against the delay. When the no. of messages in a group increases, finding the significant message and reading it becomes very difficult in traditional method. This scenario has given in the Fig.4 and conclude that our proposed methodology works better than traditional methodology.

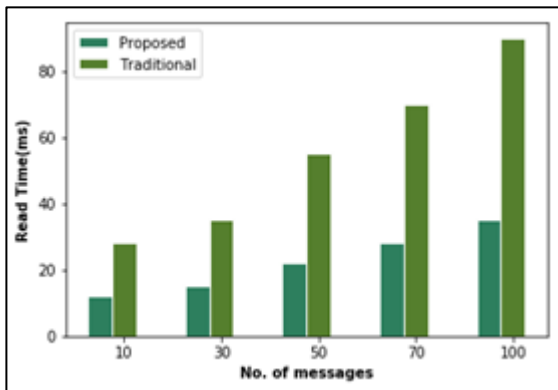


Fig.4 Reading Time of significant messages in Proposed Vs. Traditional method.

It shows that there is an enormous difference in time between reading the messages in Traditional and proposed methodology, when no. of messages increases.

5.2 Reading Time of Significant messages when no. of group increases

The second significant insights from our proposed analysis is reading significant messages of large no. of groups in WhatsApp. It is to analysis that reading of significant messages when users having large no. of groups. Obviously, The reading time of messages increases but when compared to traditional methodology our methodology yields better results. Fig.5 shows the comparison of reading time of messages in proposed and traditional methodology when no. of group increases. It is observed from the simulation graph that proposed method

takes lesser time than traditional method even no. of groups in a users WhatsApp increases.

5.3 Categories of groups vs No. of Significant messages

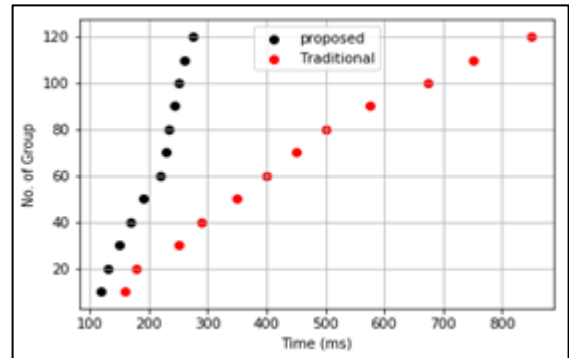


Fig.5 Reading Time of messages in proposed and traditional approach when no. of message group increases.

The third noteworthy solution observed from our proposed solution is that reading significant messages in proposed and traditional methodology when different categories of groups presented. The user may be participants in different categories of WhatsApp group like Jobs, Work, family, friends etc., The participants of the groups may share different types of messages like images, text, videos, animations etc., Fig.6 shows the reading of significant messages by proposed and traditional methodology when large no. of group presented.

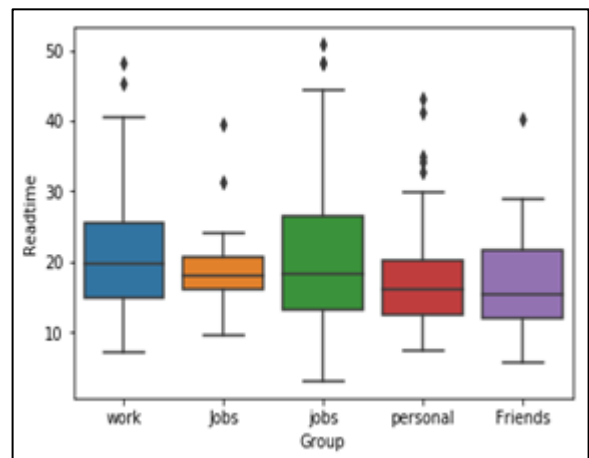


Fig.6 shows the reading significant messages in various categories of groups.

Boxplot is one of the ways of representing data in graphical format. It provides us rapid information about numerical values. It provides us information about median, lower and upper values. It divides the data value in to two parts by median. Fig.6 shows that reading of significant messages in various categories of groups. It is observed from the results that median, lower and upper value of jobs and works group is higher because of sensitive data's considered. The other groups median, lower and higher values are very less because non sensitive data's.

6.CONCLUSION

WhatsApp becomes an important communication media now a days. The users are expecting more fast and efficient way of reading the messages in social networks. The methodology proposed in our paper indicates that there is a mechanism to read and separate significant messages from normal messages will help to read the data efficiently and easily. Our simulation results shows that reading of significant messages is efficient as per our proposed methodology in terms of reading time, No. of groups and categories of group and also discussed about how aggregate function useful in reading significant messages. In future scope, our proposed methodology is extended to other social networks also.

7.REFERENCES

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