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Automatic polls in group chat conversations

Nicholas Felker

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ABSTRACT

Seeking opinion or choice from participants in a group conversation conducted via a messaging application is a common user activity. Currently, a participant poses a question, views responses from other participants, and provides results, e.g., the group preference for a particular option. This disclosure applies machine learning to chat conversations. With user permission, chat conversation is analyzed to detect a question and provide a poll automatically. The poll can be provided as explicit UI that enables participants to indicate a selection. Alternatively, responses from participants, e.g., using text, emoji, etc. can be analyzed. Results of the poll are automatically tallied and displayed with the group conversation.

KEYWORDS

- Group chat
- Polls
- Messaging app
- Automatic poll generation
- Natural language processing

BACKGROUND

During a group conversation conducted via a messaging application, when participants in the group conversation are asked a question, each participant responds separately with additional text. It requires manual effort, e.g., from a participant who initiated the question, to tally individual responses and generate results for the question. Some messaging applications support poll bots that can be added to the conversation; however, these require explicit invocation by the

participant, and are incapable of automatic interpretation of text responses within a chat conversation.

DESCRIPTION

This disclosure applies natural language processing and machine learning techniques to recognize a poll in a group chat conversation, e.g., conducted via a messaging application. The techniques are applied only upon user permission to perform such analysis, and users are provided with indicators (e.g., visual) that the features are enabled. If users do not provide permission, the techniques are not deployed and no portion of the chat conversation is subjected to analysis.

With user permission, machine learning is used to automatically recognize that a question has been posed in a group conversation conducted in a messaging application. When a question is detected, the question is converted into a poll. For example, the poll can be presented within the group conversation application to the participants in the conversation enabling participants to select options from the poll. Alternatively, participant responses to the question are recognized and tallied automatically, using machine learning. The poll results are presented to the group in the chat conversation user interface.
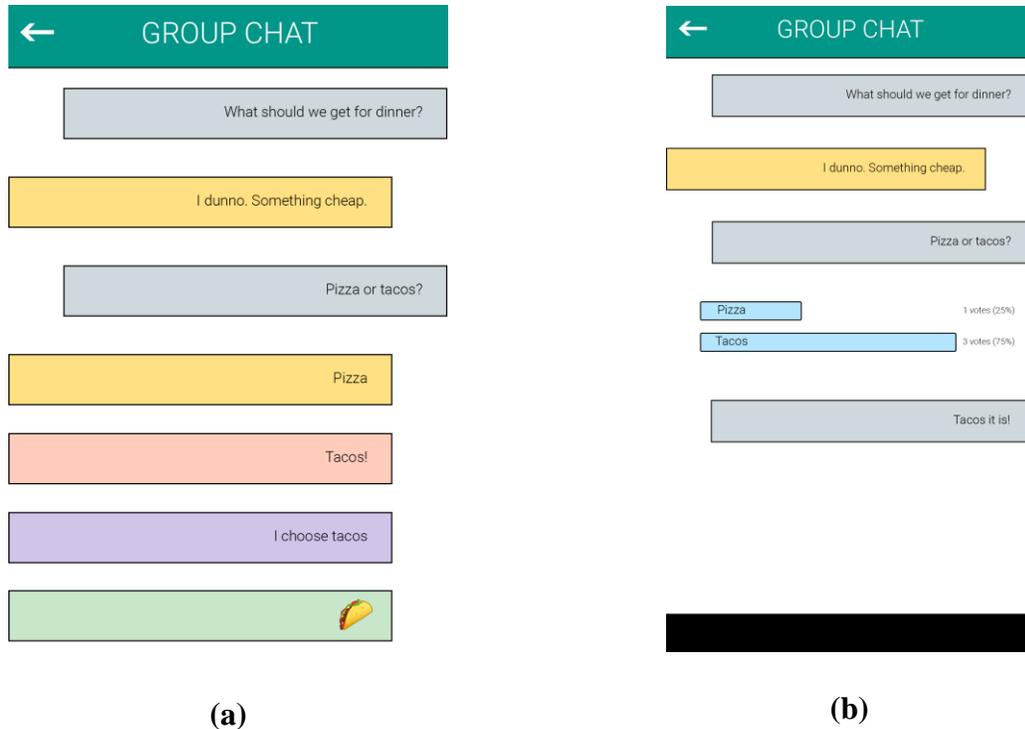
(a)

(b)

Fig. 1: Group chat conversation with automatic response detection and results

Fig. 1(a) illustrates a group chat conversation with a question posed to the group about dinner. With user permission, natural language processing techniques are utilized to analyze the chat to detect that the text "Pizza or tacos?" is a poll question. The responses to the question, e.g., "Pizza," "I want tacos!" "Tacos, please" and the tacos emoji (or image of a taco) are detected and automatically tallied as poll responses. Fig. 1(b) illustrates the results of the poll, indicating that one chat participant selected the option "pizza" and three chat participants selected the option "tacos."
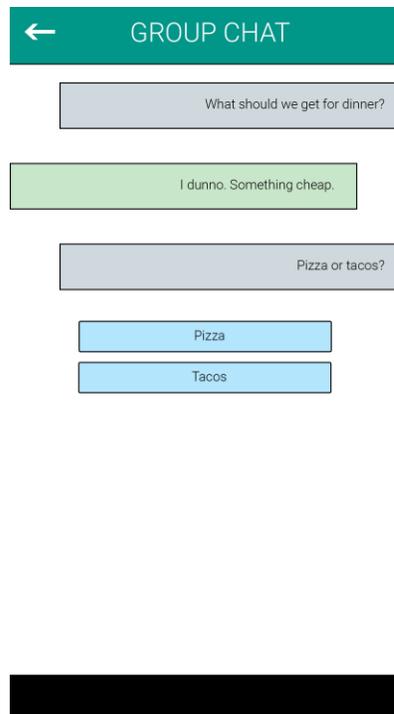
Fig. 2: Group chat conversation with automatic poll generation

Alternatively, upon detecting that the question, a user interface is presented in the chat conversation that enables participants to indicate their choice of response, as shown in Fig. 2. The question "Pizza or tacos?" is recognized and a poll is presented with two options "Pizza" and "Tacos." Participants can respond to the poll, e.g., by tapping or clicking on their preferred option. Participant responses are automatically tallied and displayed, e.g., similar to Fig. 1(b) above.

The present techniques employ machine learning and natural language processing to analyze participant responses during group conversations and predict whether a question within the conversation is suitable to convert into a poll. For example, a question: "Should we go to the shore or the park?" is detected and the conversation application displays a poll with two choices "park" and "shore." Participant responses to questions are then analyzed to identify each participant's choice and tallied automatically. By using machine learning techniques, the polls

within the conversation can recognize complex responses such as, "we should go to the park" or "The shore is beautiful this time of the day. Let's go!"

In situations in which certain implementations discussed herein may collect or use personal information about users (e.g., user data, information about a user's social network, user's location and time at the location, user's biometric information, user's activities and demographic information), users are provided with one or more opportunities to control whether information is collected, whether the personal information is stored, whether the personal information is used, and how the information is collected about the user, stored and used. That is, the techniques discussed herein collect, store and/or use user personal information specifically upon receiving explicit authorization from the relevant users to do so.

For example, a user is provided with control over whether programs or features collect user information about that particular user or other users relevant to the program or feature. Each user for which personal information is to be collected is presented with one or more options to allow control over the information collection relevant to that user, to provide permission or authorization as to whether the information is collected and as to which portions of the information are to be collected. For example, users can be provided with one or more such control options over a communication network. In addition, certain data may be treated in one or more ways before it is stored or used so that personally identifiable information is removed. As one example, a user's identity may be treated so that no personally identifiable information can be determined. As another example, a user's geographic location may be generalized to a larger region so that the user's particular location cannot be determined.

CONCLUSION

This disclosure applies machine learning to chat conversations. With user permission, chat conversation is analyzed to detect a question and provide a poll automatically. The poll can be provided as explicit UI that enables participants to indicate a selection. Alternatively, responses from participants, e.g., using text, emoji, etc. can be analyzed. Results of the poll are automatically tallied and displayed with the group conversation.