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Automated restaurant orders using digital assistant

ABSTRACT

This disclosure describes techniques that enable a user to place orders for food using a digital assistant. An order for restaurant food pickup or delivery is received from a user. The digital assistant obtains additional details of the restaurant, e.g., from the restaurant website with the use of machine learning techniques to extract text from the website or from other information sources. With user permission, a call is made by the digital assistant to the restaurant to confirm availability of requested items and to complete the order. Details such as an amount of payment to be made, estimated time of pickup or delivery are obtained by the digital assistant. Upon successful placement of the order with the restaurant, a confirmation is provided to the user.

KEYWORDS

- Virtual assistant
- Digital assistant
- Voice command
- Restaurant order
- Food delivery
- Food takeout
- Automated call

BACKGROUND

Users typically order pick-up or delivery of food from a food delivery software application or by calling a restaurant of their choice and then placing an order over the telephone. Users also utilize search engines to obtain information on restaurants and to connect

to the restaurant by clicking on a call button provided on the restaurant website or provided by the search engine. Voice interaction with a restaurant to place orders can be time consuming, particularly if the user is put on hold at a busy restaurant or if certain items are unavailable and the user needs to pick substitute items.

DESCRIPTION

This disclosure describes techniques that enable a user to place orders for food pick-up (or delivery) using a digital assistant. Food orders can be placed by the digital assistant with restaurant(s) of a user’s choice without the user having to call the restaurant(s).

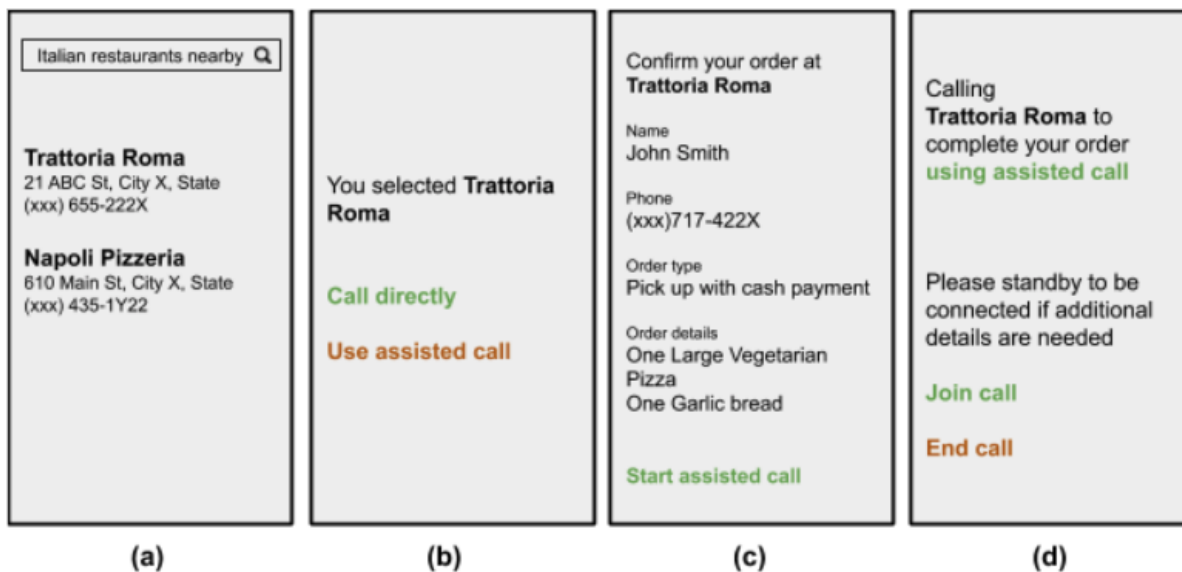


Fig. 1: A food order placed using a digital assistant

Fig. 1 illustrates an example sequence of user interface screenshots of a food order placed using a digital assistant, per techniques of this disclosure. As depicted in Fig. 1(a), a user searches for Italian restaurants in proximity of their current location. The location is obtained automatically, if permitted by the user, or is obtained from the query (e.g., “Italian restaurants in city X”). The user selects a restaurant, e.g., by tapping, clicking, or by a voice command, that

indicates the selection of “Trattoria Roma.” Fig. 1(b) depicts the user being provided with an option to either call the restaurant directly or use the digital assistant to complete their order.

In this illustrative example, the user selects the option to use the digital assistant and provides details of their order, e.g., user’s name, menu items for pickup, phone number, mode of payment, etc. Fig. 1(c) depicts confirmation of the order details and an option for the user to initiate an assisted call in which the digital assistant interacts with the restaurant. Fig. 1(d) illustrates a notification provided to the user regarding placement of the call to the restaurant. Additional options can be provided to the user, for example, to join or terminate the call. Once the call is placed, the digital assistant automatically interacts with the restaurant, using the user provided order details. During the call, if additional details are needed, e.g., if an item is unavailable and a substitute item needs to be picked, the digital assistant provides a user interface that enables the user to provide the additional details (e.g., the substitute item), or to join the call to speak to the restaurant.

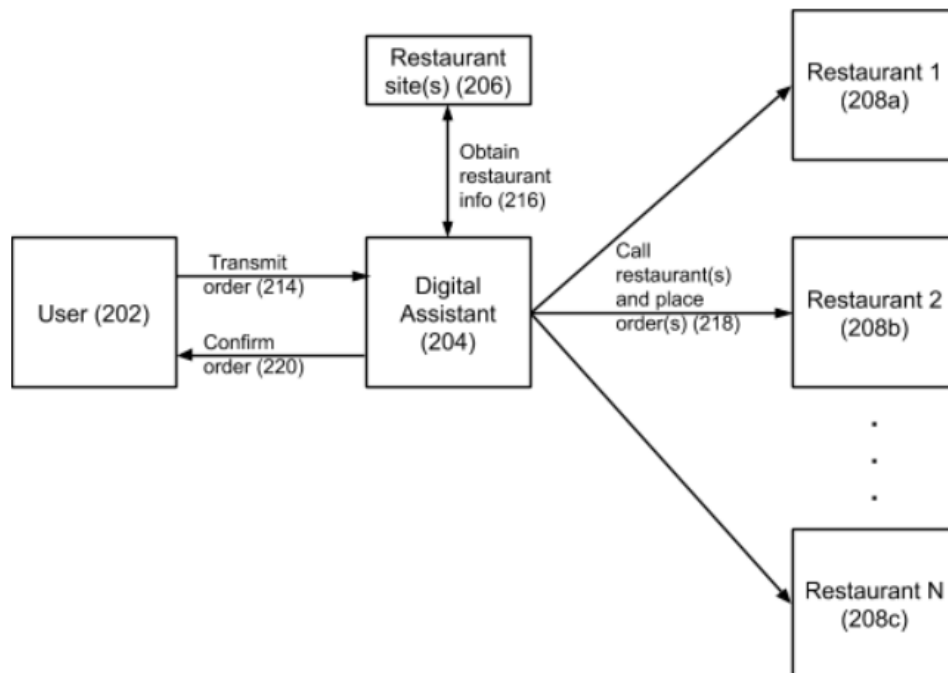


Fig. 2: Workflow for placement of food orders using the digital assistant

Fig. 2 illustrates example elements and workflow for the placement of food orders using a digital assistant, per techniques of this disclosure. A user (202) transmits (214) an order to the digital assistant (204) via a user interface, e.g., using a voice command, touch input, keyboard input, etc. The order can include a selection of food items, restaurant name, etc. With user permission and express consent, details of previously placed orders can be utilized, e.g., as suggestions that assist the user with selection of items.

Information regarding the restaurant, e.g., restaurant contact information, menu, etc. are obtained (216) from the restaurant website or from other information sources. For example, machine learning techniques are utilized to extract the details from the restaurant website.

With user permission, calls are made (218) by the digital assistant to the restaurants (208a-c) from which the user has selected items. During the calls, availability of requested items is confirmed, changes to the order made if necessary, and the order is placed. Details such as an amount of payment to be made, estimated time of pickup or delivery, etc. are obtained by the digital assistant. Upon successful placement of the order, a confirmation is provided (220) to the user, along with the obtained details.

The trained machine learning model that extracts information from restaurant websites can be implemented using any suitable technique, e.g., regression learning models, neural networks, support vector machines, random forests, boosted decision trees, etc.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user's social network, social actions or activities, profession, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. 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. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level), so that a particular location of a user cannot be determined. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

CONCLUSION

This disclosure describes techniques that enable a user to place orders for food using a digital assistant. An order for restaurant food pickup or delivery is received from a user. The digital assistant obtains additional details of the restaurant, e.g., from the restaurant website with the use of machine learning techniques to extract text from the website or from other information sources. With user permission, a call is made by the digital assistant to the restaurant to confirm availability of requested items and to complete the order. Details such as an amount of payment to be made, estimated time of pickup or delivery are obtained by the digital assistant. Upon successful placement of the order with the restaurant, a confirmation is provided to the user.