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Virtual assistant for restaurants

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ABSTRACT

Obtaining restaurant information requires users to visit a restaurant website or a restaurant listing website or app. Accessing specific information such as menu options, operating hours, calorie counts of specific dishes, etc. requires users to navigate websites or apps in search of such information. There are no easy techniques to access such information in a single place or while engaged in activities such as driving, gardening, etc. where the users' hands are engaged. This disclosure describes a virtual assistant that can provide specific responses to queries regarding restaurants, e.g., issued via voice. The virtual assistant builds a database of information regarding restaurants by accessing restaurant websites or third-party listings and parsing text and images obtained. The parsing is performed using semantic techniques such that the database includes answers to questions in different categories. Upon receiving a user query, the virtual assistant provides a response based on the stored information.

KEYWORDS

- Virtual Assistant

- Restaurant

- Voice UI

- Smart speaker

- Hands-free operation

BACKGROUND

In many contexts, users need to obtain restaurant information while they're away from a computer or engaged in activities that prevents them from providing input via traditional mechanisms such as keyboards. For example, a user may be driving or other activities that

require the user to utilize their hands. Hands-free access to restaurant information in such contexts is necessary.

Currently, users can obtain restaurant information by visiting the restaurant website, or a third-party resource, e.g., a website or application that aggregates restaurant information. These resources require users to read the information and do not generally support hands-free access. Virtual assistants, e.g., that respond to voice queries, currently lack the ability to provide in-depth responses for restaurant-related queries.

DESCRIPTION

This disclosure describes a virtual assistant that enables users to obtain in-depth responses for restaurant-related queries.
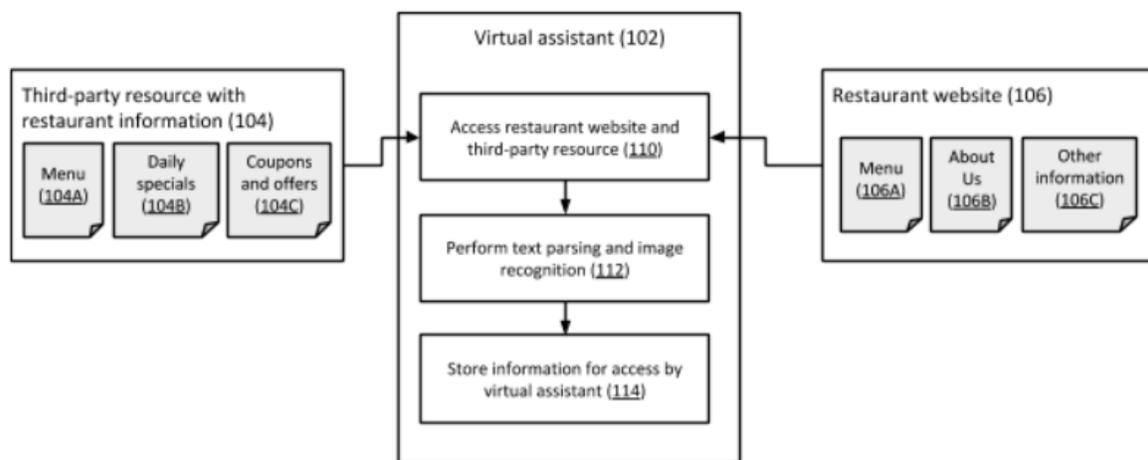

Fig. 1: Parsing online restaurant information to build virtual assistant knowledge

Fig. 1 illustrates an example process for a virtual assistant (102) to obtain information regarding restaurants. The virtual assistant accesses (110) third-party resources (104) and restaurant websites (106). Information from these resources is analyzed (112) using text parsing and/or image recognition techniques. For example, third-party resources may include pages related to restaurant menus (104A), daily specials (104B), coupons and offers (104C), etc.

Restaurant websites may include menu (106A), an about us page (106B), and other information (106C). The information extracted from these resources can include, e.g., address information, cuisine type, hours of operation, special offers, etc. Parsing can be performed using traditional techniques as well as with machine-learning techniques The obtained information is analyzed to develop semantic understanding, e.g., to categorize information as relevant for specific types of queries. For example, the information obtained may be categorized as relevant for specific user queries, e.g., "Does this restaurant offer vegan food options?" "Is this restaurant child-friendly?" etc.

The information is stored for access by the virtual assistant (114) upon receipt of a user query. Developers of third-party resources and restaurant websites can be provided with hints on how to provide additional context such that the virtual assistant can provide this information to users. For example, websites or apps can utilize such hints to enable the virtual assistant to obtain information regarding current specials, limited time offers, etc.
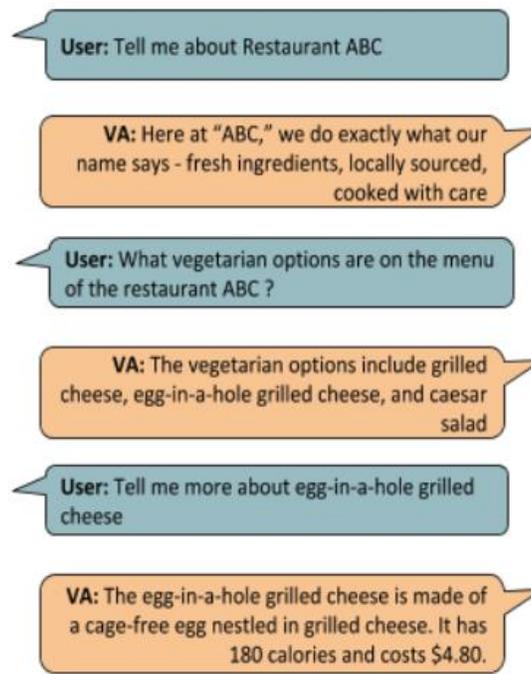

Fig. 2: Virtual assistant providing restaurant-specific guidance

Fig. 2 illustrates an example exchange between a user and a virtual assistant. The user requests restaurant information from the virtual assistant and receives responses based on information that was accessed from a restaurant website. As illustrated, the virtual assistant can utilize content from the restaurant website directly, e.g., by stating "Here at "ABC", we do exactly what our name says-fresh ingredients, locally sourced, cooked with care."

When the user issues a further query regarding vegetarian options, the virtual assistant provides a response "The vegetarian options include grilled cheese, egg-in-a-hole grilled cheese, and caesar salad" which are obtained from the menu of the restaurant. Further user queries are responded to using detailed information from the restaurant menu.

In this manner, the described techniques provide voice-based, hands-free access to restaurant information. Users can thus obtain such information while engaged in activities such as driving, gardening, playing with kids, etc. without having to disengage from the activity. The techniques also enable users with temporary or permanent disabilities to access restaurant information. Further, by providing restaurant websites with appropriate signals to tailor their content in a manner that enables the virtual assistant to provide in-depth responses to users, the techniques enable better discovery of restaurants and a rich interaction experience via a virtual assistant.

CONCLUSION

This disclosure describes a virtual assistant that can provide specific responses to queries regarding restaurants, e.g., issued via voice. The virtual assistant builds a database of information regarding restaurants by accessing restaurant websites or third-party listings and parsing text and images obtained. The parsing is performed using semantic techniques such that the database

includes answers to questions in different categories. Upon receiving a user query, the virtual

assistant provides a response based on the stored information.