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October 04, 2019

Automatic Alerts Based On Departure From Routine

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Automatic Alerts Based On Departure From Routine

ABSTRACT

Research indicates that a task or item that is forgotten is presaged by a change in routine. This disclosure describes techniques to automatically determine that a user may have forgotten a task or item. The determination is made based on analysis of user permitted data such as calendar appointments, location, etc. that indicate a change in routine. Upon determination that the user is likely to forget a task or item, e.g., due to change in routine, an alert is provided to the user.

KEYWORDS

- Change in routine
- Forgotten task
- Alert generation
- Calendar reminder
- Contextual reminder
- Smart speaker
- Virtual assistant

BACKGROUND

Research indicates that a task or item that is forgotten is presaged by a change in routine. Items or tasks that are forgotten can have consequences that range from annoying to serious. For example, a forgotten key can result in the annoyance associated with delayed entry to a house or office. Other incidences such as forgetting to turn off the stove, forgetting to take medication, forgetting a child in a car, etc. can have serious consequences.

DESCRIPTION

Research indicates that a task or item that is forgotten is presaged by a change in routine. For example, many individuals have a routine of making a morning coffee on the stove; if there is a change in the morning routine, e.g., an appointment on a user's calendar, this change in routine may cause the user to forget to turn off the stove.
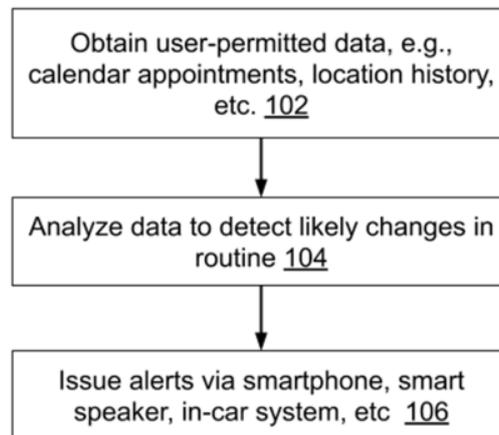

Fig. 1: Providing alerts based on change in routine

A user that wishes to receive automatic alerts can choose to receive alerts via a device such as a smartphone, smart speaker, in-car system, or other user device. For example, the user can configure such devices and online services, e.g., that provide virtual assistant functionality to provide alerts. The user is presented with options to enable or disable alerts, along with examples of alerts that can be provided based on change of routine. Further, the user can choose to grant access to user data when enabling such functionality. The sign-up procedure for the alerts as described herein can also include providing the user with statistics or research that indicate that a change in routine presages occurrences where users typically forget items or tasks.

Fig. 1 illustrates an example process to detect a change in the user's routine and provide alerts. As illustrated in Fig. 1, user data such as calendar appointments, location history and/or

current location, etc. are obtained (102). The data are analyzed and a change in user routine is detected (104). An alert is provided to the user (106). For example, the alert can remind the user that he or she may have forgotten something or is likely to forget something, based on change in routine. The alert can be provided as an app notification, as an audio or visual message from a virtual assistant, as a reminder in a calendar application, etc. For example, if it is detected that the user has a meeting in the morning, which is an unusual occurrence, the user can be provided an alert "did you turn off the stove?"

A change in routine can include situations such as the arrival or departure of the user at an earlier or later time from typical locations such as home or office on a particular day of the week or month; an uncommon calendar event, e.g., a doctor's appointment; a change in route; the lack of a usual stop along a commonly traveled route, etc. For example, a machine learning model can be trained to detect changes in routines. Providing alerts as described herein does not require any extra hardware and can supplement other mechanisms, e.g., car alarms when a user forgets to remove the key; in-car sensors that detect items left behind and alert users; 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 to automatically determine that a user may have forgotten a task or item. The determination is made based on analysis of user permitted data such as calendar appointments, location, etc. that indicate a change in routine. Upon determination that the user is likely to forget a task or item, e.g., due to change in routine, an alert is provided to the user.