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Automated Smart Meeting Scheduling

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ABSTRACT

Scheduling meetings requires hosts to manually check invitee calendars to find available time slots. Further, it requires invitees to manually accept invites or reject/propose new times. Meeting scheduling currently does not take into account historical user behavior or user preferences that may not be explicitly indicated. This disclosure describes the use of machine learning techniques to automate and simplify meeting scheduling. The techniques are implemented with specific user permission to access the user's calendar and other data. User data are accessed specifically for the purposes of meeting scheduling and in accordance with user preferences. Trained machine learning models can automatically determine suitable time slots and can take actions on behalf of the user to set up meetings, to accept/reject invitations, propose alternate time slots, and prioritize important meetings.

KEYWORDS

- Calendar invite
- Meeting invite
- Meeting priority
- Time slot
- Meeting scheduling
- Automatic calendaring
- Collaboration suite
- Calendar app

BACKGROUND

When a user wishes to schedule a meeting, the typical process flow includes opening a calendar application, looking up availability of the other participants (where supported), manually checking for availability of non-colliding times among the participants, and creating a calendar event (meeting) based on a common open slot on the calendar. Similarly, for the recipients of a calendar invite, decision points involved in accepting or rejecting the calendar invite typically include determining if other meetings or events are scheduled during the particular time slot; in case of conflicting events, deciding which one is important to attend; and accordingly, sending acceptance or rejection emails (possibly with alternative time proposals) to the hosts. This is a tedious process that includes many manual steps for the host as well as invitees to a meeting.

DESCRIPTION

This disclosure describes the use of machine learning techniques to automate and simplify meeting scheduling. The techniques are implemented with specific user permission to access the user's calendar and other data. User data are accessed specifically for the purposes of meeting scheduling and in accordance with user preferences. Per techniques described herein, trained machine learning models can automatically determine suitable time slots and can take actions on behalf of the user to set up meetings, to accept/reject invitations, propose alternate time slots, and prioritize important meetings.

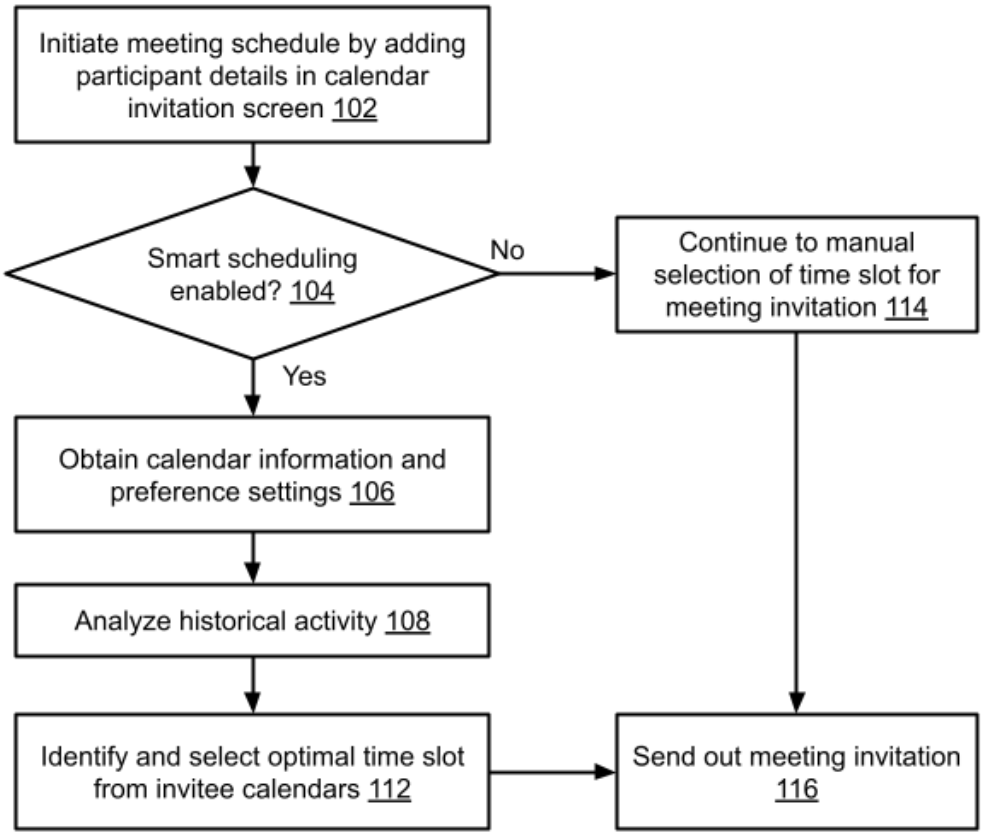

Fig.1: Smart meeting scheduler for creating meeting invites

Fig. 1 shows an example of a smart meeting scheduler for creating calendar invites, per techniques of this disclosure. A new meeting invite is initiated in the calendar (102) by a meeting host. The list of participants is selected. If the meeting host does not enable smart scheduling (104), the meeting invite flow proceeds as normal to manual selection of time slot (114) followed by the invite being sent out (116) to the invitees.

If the host chooses to use smart meeting scheduling, with appropriate permissions from the host and the invitees, calendar information and preference settings are obtained (106). The calendar information is utilized to determine available open slots and preferences as indicated by the invitees (106). With user permission, historical activities of the invitees are analyzed

(108) to determine the likely open slots. For example, the invitees' historical record may indicate their commute times, busy times, booked time slots (e.g., regular meetings), focus time, etc. A user can set their preferences to restrict such information to a particular set of members (e.g., team members, superiors, customers). Based on the information gathered, the optimal time slot is identified and selected (112). Post selection, the calendar invitation is sent out to the participants (116).

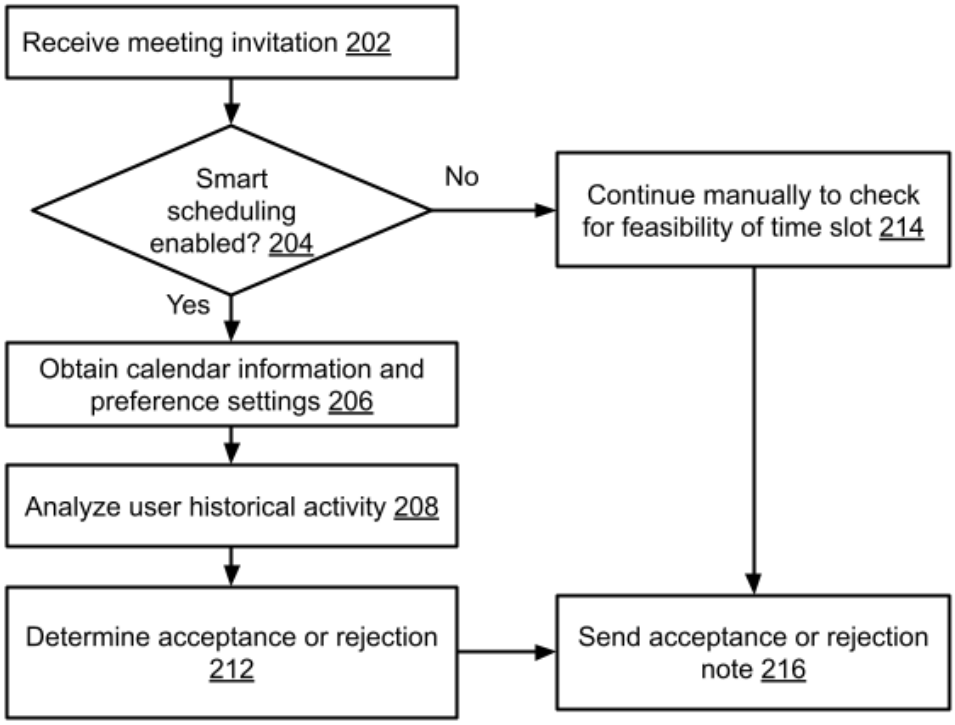

Fig. 2: Smart meeting scheduler for event invitees

Fig. 2 illustrates the use of a smart meeting scheduler while accepting or rejecting the calendar invitation. Once a meeting invitation is received (202), the recipient invitee's preferences are accessed to determine whether smart scheduling is enabled (204). If smart scheduling is not enabled, the invitation is displayed to the user for manual review (214) and the user's acceptance/ rejection is sent to the meeting host (216).

If smart scheduling is enabled, with user permission, the user's calendar and preference settings are obtained (206). The presence of conflicting events and user's preference for certain events (e.g., recurring meetings, meeting scheduled by superiors/teammates, company-wide meetings, customer meetings, etc.) over other types of meetings (e.g., meetings with other teams, meetings without an agenda, etc.) is determined. Further, if the user permits, the user's historical activity is analyzed (208), e.g., to automatically determine whether the user prefers a certain meeting, type of meeting, over others; whether the user is likely to be unavailable even though their calendar indicates an open slot; etc. The decision of whether to accept or reject the meeting (or to suggest an alternate time slot) is made (212) and is conveyed to the meeting host (216). If the decision is to not accept the invitation, an automated note for rejection along with a suggested alternative time is sent to the host. If acceptance of a new higher priority meeting leads to rejection of a prior accepted meeting, a note is sent to the host of the prior meeting. Further, if meetings have certain attributes, e.g., company-wide meetings, more than a threshold number of participants, presence of specific participants, etc., such information can be utilized in automatically determining the acceptance or rejection.

The described analyses of user's schedule, preferences, historical activity, etc. can be performed using any suitable techniques, e.g., machine learning models. The techniques are implemented locally on the user device and/or with user permission, on a server. Historical activity can be utilized to train models to determine patterns that can be leveraged to efficiently schedule and accept/ reject calendar invitations. Advanced reporting and summary generation can also be performed. The described techniques can be implemented in a calendar application, a collaboration suite, or any other application that supports meeting scheduling. The described

techniques can reduce the manual effort required to schedule meetings and can also schedule meetings faster by reducing back-and-forth correspondence to find suitable time slots.

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 schedule and calendar, 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 the use of machine learning techniques to automate and simplify meeting scheduling. The techniques are implemented with specific user permission to access the user's calendar and other data. User data are accessed specifically for the purposes of meeting scheduling and in accordance with user preferences. Trained machine learning models can automatically determine suitable time slots and can take actions on behalf of the user to set up meetings, to accept/reject invitations, propose alternate time slots, and prioritize important meetings.

REFERENCES

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