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Curtis Galloway

David Karam

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Time-delayed casual telepresence interaction

ABSTRACT

This disclosure describes techniques to use a system of audiovisual equipment to aid in facilitating casual interactions between workers of different offices and time zones through time-shifted playback of brief video clips of actions by workers from common spaces of one office on a screen at another office. Live actions to share in video clips are determined based on whether a user interacts with the camera. The video clips are played back in other locations at a different time in the day based on time zone differences between locations.

KEYWORDS

- Telepresence
- Remote interaction
- Distributed team
- Casual interaction
- Video conferencing

BACKGROUND

Workers of organizations with offices in many cities often engage with colleagues on a project team at the same organizations that are based in distant offices. Usually this occurs over video conferencing systems or applications and audio conference calls that are pre-scheduled for mutually convenient days/times, e.g., to ensure that participants from different time zones can join. However, unless an employee travels frequently and meets their coworkers in-person, it is difficult to maintain casual interaction with co-workers based in other offices. These casual in-person interactions often occur serendipitously in common areas, where people tend to pass by or

congregate, offering a natural incentive for people to interact, e.g. where coffee is made; water, beverages, or snacks are available; large open seating areas with couches, ping pong tables, etc.

Although organizations provide video conferencing systems and equipment to facilitate remote meetings, these types of remote video conference meetings require explicit user action, e.g., scheduling in advance or specific invocation. Such meetings are usually not used for casual interaction and it is impossible for a remote meeting to occur accidentally. A worker cannot bump into a colleague at a distant office accidentally in a video conference as they would with co-workers based the same location. For offices in different time zones, there are limited overlapping time periods during the regular work day where remote teams can schedule meetings.

DESCRIPTION

This disclosure describes techniques to use a system of audio/visual equipment and/or software that is configured to allow workers in different locations to feel as if they were present at the same physical location. The techniques facilitate casual unplanned interaction between workers based at different physical offices. With express permission and consent, a camera is deployed in a common space of a first office that captures a video clip of a person in the common space. When the presence of a co-worker, e.g., a team member, is detected in a common space in a second office, a screen at the second office displays the pre-recorded video clip of selected activity captured by the camera in the first office.

With user permission, the camera and displays are placed in common areas where people tend to congregate. The selected activity for the video clip includes live action. The selected video clips are determined based on whether a user is trying to interact with the camera or do something interactive, e.g., wave, reach for a snack, etc. In an example scenario, the video clip is

played back in the second office that may in a different time zone later in the day to account for the time difference.

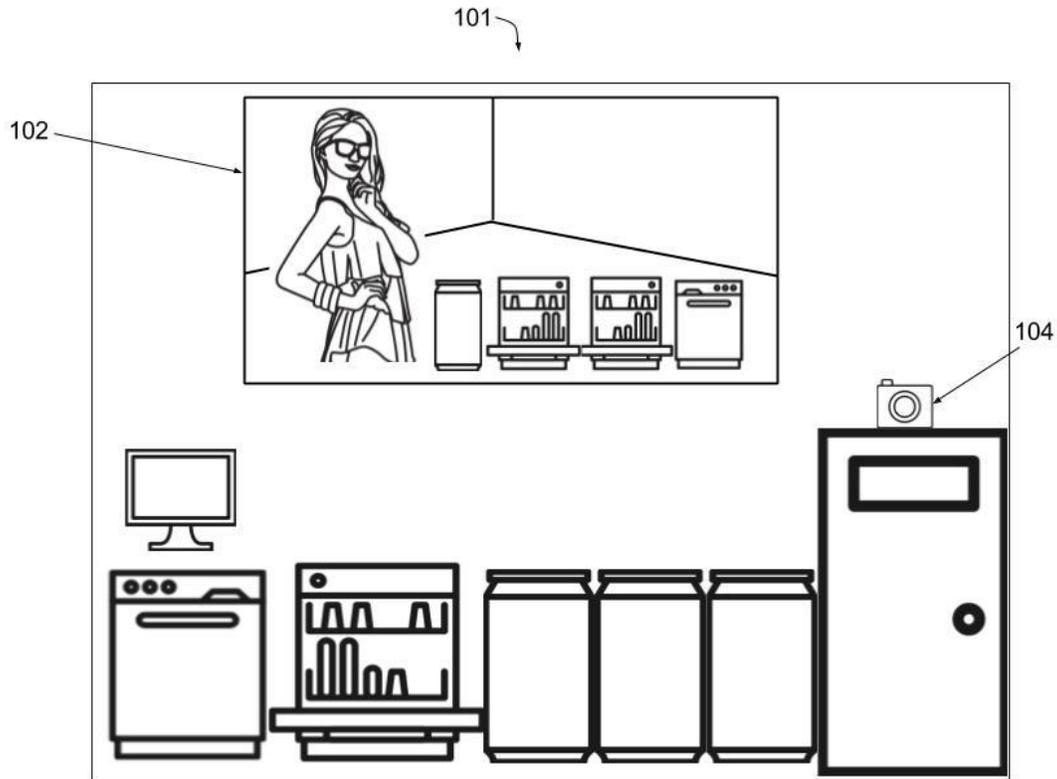


Fig. 1: Casual telepresence system

Fig. 1 illustrates an example configuration (101) for implementing the described techniques. A break room or common space of an office, e.g., office B, is shown. The room includes a display (102), which depicts short video clips that were captured at another office, e.g., office A, at an earlier time. A camera (104) is positioned to capture short clips of office B for display in other offices at a later time.

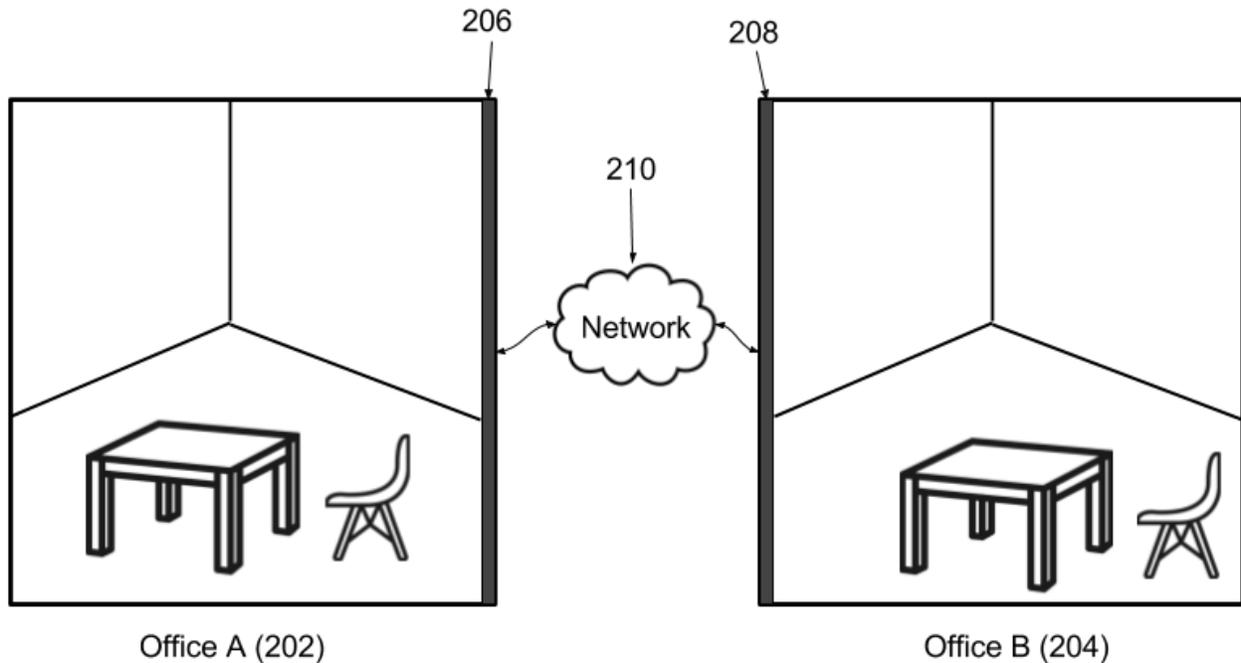


Fig. 2: Time-delayed casual telepresence interaction

Fig. 2 illustrates another example configuration of the described technique. Office A (202) has a display (206) on a wall in a common space or break room. Office B (204) also has a display (208) on a wall in a common space or break room. The displays are connected via a network (210). With express permission and consent of users, the network transmits short video clips captured at Office A to be displayed, e.g., at a later time at Office B on display (208) and vice versa: short video clips captured at Office B (204) are transmitted via network (210) to the display (206) in Office A (202).

The short video clips can be recorded using a single camera or a system of multiple cameras. Short video clips captured are displayed later at Office B to account for a difference in time zones. For example, short video clips may be recorded at an office located in New York at 8 am eastern time and played on a display in a break room at an office located in San Francisco

three hours later, 8 am pacific time. In this example, the workers in the San Francisco office can view the short video clips from the New York office at about the same relative time.

For example, the cameras located in the New York office can provide a video clip of a worker from Team Win preparing a cup of coffee at 8 am eastern time. Later in the day, at 8am Pacific time, it may be detected that a co-worker from the same team is in a common area, e.g., preparing their cup of coffee. Based on this information, the earlier captured clip from the New York office is displayed in the San Francisco office to show the co-worker from Team Win in the New York office preparing their coffee. This provides an informal, casual interaction between the co-workers on the same team, where a worker in the San Francisco office can see a coworker in the New York office and get a morning update.

The cameras are positioned to capture user actions that indicate an intent to interact, in common spaces and break rooms. With user permission, the cameras utilize detect people walking by or attempting to interact with the display, e.g., waving at the camera, reaching for a snack, etc. These user actions indicate user intent to interact. In response, a short clip of a worker waving at a camera is captured and played later at a distant office. Further, when users permit use of techniques such as image recognition, e.g., facial recognition, names and/or teams of the persons depicted in the video clip can be displayed along with the short clip.

With user permission, presence of a particular person in a room is detected and upon detection, a short clip of a team member of the particular person from a different office is played. For example, when a worker in Office A walks into the break room to grab a snack, such movement is detected and short clips of co-workers in distant offices are played. In this example, the camera can also capture a short clip of the worker, e.g., viewing the clip and providing a

response. The cameras can be configured to record clips upon user permission, e.g., upon explicit invocation by the user, at pre-set times, etc.

In an example scenario, if interaction is detected, the display may show a mirrored interaction from another worker from a distant office. For example, when a worker in Office A waves at the camera, the display can show a pre-recorded short clip of a worker in Office B also waving at the camera. This technique encourages interaction by detecting an interaction and playing a short clip that mirrors the interaction, or to provoke new interaction.

In another example scenario, the camera can detect a particular user (with user consent) as they walk by and play a video clip of a given user from another office that the particular user may find interesting to attract that particular user to interact with the camera. When the particular user interacts, the particular user is also provided the option to find out more about the given user from the other office, if the given user has previously expressly consented to share this information. The described techniques can also be used in other public spaces (e.g., museums) to enable casual interaction between people located in different places.

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 use a system of audiovisual equipment to aid in facilitating casual interactions between workers of different offices and time zones through time-shifted playback of brief video clips of actions by workers from common spaces of one office on a screen at another office.