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ABSTRACT

During an online video meeting, receiving poor quality video or audio from other meeting participants can be distracting, frustrating, or disruptive. To address such issues, techniques are presented herein that employ a gamification paradigm through which a user interface is provided that is fun and engaging, which entices a user to look and sound their best by providing visual cues to encourage specific actions that will improve their sound and appearance. Aspects of the presented techniques encompass a first set of checks that evaluate video performance and which comprise the display of a silhouette outline of a person's head and shoulders (to allow a user to correctly position themselves), a detection of background motion (with the overlay of a visual cue on the source of such motion so that a user can remove the item or enable virtual backgrounds), and an assessment of the lighting quality within the video stream (with the display of appropriate visual cues to allow a user to properly adjust lighting sources). Aspects of the presented techniques encompass a second set of checks that evaluate audio performance and which comprise an online video meeting facility listening as a user recites a displayed tongue twister phrase (with, for example, automatic adjustments to volume level) and analyzing the audio for background noise, echo, and feedback.

DETAILED DESCRIPTION

During an online video meeting, receiving poor quality video or audio from other meeting participants can be distracting, frustrating, or disruptive. Examples of such issues may include a participant having poor lighting, having a poor-quality camera, having a suboptimal microphone or speaker source, having the camera placed incorrectly (so that,

for example, only a portion of a person's face is visible or their face is visible at an unusual angle), etc. Oftentimes, meeting participants do not realize how they appear to other participants in a meeting, even when "self-view" previews are displayed to a user. When a participant employs their best quality video and audio, there is an improved human connection between participants.

A mechanism is needed to entice users to take specific, meaningful actions to adjust their environment and meeting settings by providing a fun and engaging interface that will make the user want to make themselves look and sound as good as possible.

When attempting to join a meeting, most video conferencing platforms present a user interface that allows a user to view their video; to select the correct camera, microphone, and speaker; and to test their audio settings. Most users do not pay particular attention to such an interface and rarely do users test their audio settings.

To address the types of challenges that were noted above, techniques are presented herein that provide an interface that is fun and engaging, which entices a user to look and sound their best by providing visual cues to encourage specific actions that will improve their sound and appearance. Under aspects of the techniques presented herein, when a participant attempts to join a meeting, they are presented with an interface through which they can accomplish a variety of tasks in order to try to achieve the highest possible video and audio quality. When such an interface is invoked, a variety of items may be simultaneously checked and displayed to evaluate the experience.

According to aspects of the techniques presented herein, a first set of checks are completed in order to evaluate video performance. For example, in order for a user to improve their experience, they must be well-framed within the camera, have effective lighting, and be using a high-quality camera. These steps may be completed in sequence, one at a time, or the presented interface may allow the participant to quickly check all of these video settings at the same time.

A first element of the video performance checks encompasses the display of a silhouette outline of a person's head and shoulders through which a silhouette outline of a person may be overlaid on the video from the user. Such an outline will show the user how far they are from the screen and whether the camera is properly aimed. Once the user matches the perfect positioning with their head and shoulders, the silhouette outline may

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turn green. Additionally, other visual cues may indicate that the user has successfully positioned themselves. Visual cues may indicate whether the user should move closer, further away, to the left, or to the right. Alternatively, image detection may be used to discover whether the camera is improperly positioned (e.g., too low so that the view is looking up a person's nose) and offer hints to correct the placement.

A second element of the video performance checks encompasses detection of background motion. For example, if there is any background motion detected, a visual cue such as a red exclamation point may be overlaid on the specific background item (e.g., a fan, a person walking behind a user, a dog wagging its tail, etc.) that needs to be removed. The user can either remove the distracting item from their background or select the option to enable virtual backgrounds. Once the object is removed or virtual backgrounds are enabled, the exclamation point may be removed.

It is important to note that the approach that was described above is different from current approaches. Under current approaches, a "pop up" box may be displayed that tells a user something is in the background. Under aspects of the techniques presented herein, a visual cue is overlaid on the video to identify the specific background distraction.

A third element of the video performance checks encompasses assessing the lighting quality within the video stream. For example, if too much back lighting is detected (e.g., a user may be sitting in front of a window) and it cannot be compensated for automatically, a visual cue may indicate the presence of backlight and suggest that the user change positions by adding additional front lighting or reducing the backlighting. If too little light is detected, an indicator such as "Turn on lights for a better experience" may be displayed in the specific area with too little light. Such an approach helps the user to understand that they need to have to have a brighter video quality.

According to aspects of the techniques presented herein, a second set of checks are completed in order to evaluate audio performance. Instead of requiring a user to press a button to test their audio settings, the presented user interface may, by default, present a quick "game" that the user can invoke that has the effect of testing their audio performance.

A first element of the audio performance checks encompasses an online video meeting facility listening for a tongue twister phrase. In one instance, an online video meeting facility may ask a user to recite a phrase while providing visual feedback on the

participant's audio stream. For example, a facility may display a tongue twister phrase such as "Sally sells seashells by the seashore" or "The quick brown fox jumped over the lazy dog." It is important to note that the user does not need to press anything to initiate such a process. Somewhere on a displayed window (e.g., above or below the video preview that was discussed above) the text for the phrase may appear.

Above the first word in the phrase a ball or other icon (e.g., something fun like a rabbit) may be displayed. Such an item will "hop" from word to word as the system detects the user reciting the words of the tongue twister phrase. The height of a "hop" may be determined by the volume and clarity of the words that the user speaks. If the microphone is set too low or if it is incorrectly selected, the interface may provide a message indicating that the user's voice has not been detected. Additionally, an option to select a microphone may be provided. The objective of such a "game," as described above, is to complete the phrase and to have the volume level correctly adjusted.

While the user is reciting the phrase, an automatic gain control may attempt to compensate for the user's settings. However, if the ball goes "too high" because there is distortion due to high gain or "too low" because of a low setting (e.g., a user may be too far away from the microphone, etc.) then the user will be asked to speak closer to the microphone or select a different microphone so as to improve their experience.

While the activity that was described above is occurring, the online video meeting system may also analyze the audio for, among other things, background noise, echo, and feedback. Any of these will lower the experience and the interface may provide direct feedback regarding corrective actions that are needed in order to improve the experience. For example, a message such as "Background Noise Detected - Background Noise Removal has been Automatically Enabled" may be displayed to the user.

Upon the successful completion of the various activities and steps that were described above a celebration video filter may appear. Such an artifact may comprise a video overlay of balloons, confetti, etc. that may be displayed around the user to let the user know that they have finished. Additionally, a phrase such as "Congratulations! You have the best audio and video quality for your meeting" may be displayed. The user may then join their meeting knowing they have the best positioning, video, and audio quality.

Figure 1, below, depicts an exemplary user interface that incorporates elements of the techniques presented herein as described in the narrative presented above.
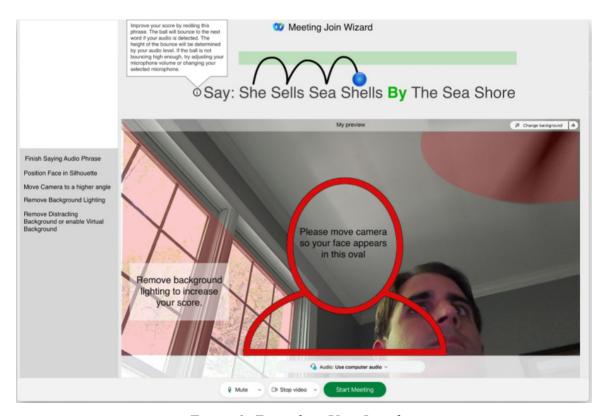

Figure 1: Exemplary User Interface

In summary, techniques have been presented herein that employ a gamification paradigm through which a user interface is provided that is fun and engaging, enticing a user to look and sound their best by providing visual cues to encourage specific actions that will improve their sound and appearance; thereby, ensuring that a user's overall meeting experience is smooth and efficient. Through a series of simple actions, as discussed herein, a user has the opportunity to understand exactly what needs to be followed through to achieve the best meeting experience. Not only does the solution provided herein seek to provide great video and audio quality, but it intends to add the element of enjoyment for users to have a cheerful mindset and to feel confident before they carry out an upcoming meeting.