GESTURE DETECTION FOR GAINING FOCUS IN A VIDEO CONFERENCE

Alexander Faaborg
Aaron Whyte

Follow this and additional works at: http://www.tdcommons.org/dpubs_series

Recommended Citation
Faaborg, Alexander and Whyte, Aaron, "GESTURE DETECTION FOR GAINING FOCUS IN A VIDEO CONFERENCE", Technical Disclosure Commons, (January 06, 2016)
http://www.tdcommons.org/dpubs_series/103

This work is licensed under a Creative Commons Attribution 4.0 License.
This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.
GESTURE DETECTION FOR GAINING FOCUS IN A VIDEO CONFERENCE

ABSTRACT

A gesture recognition system based on an accelerometer/gyro or other sensor present on a wearable communication device is disclosed. The communication device is connected to a video conferencing system detects the user’s desire to join the conversation through the user’s physical gestures. Upon detection of the gesture, the system places additional focus on the user in a video conference (VC). In some cases, the system may nonverbally indicate the user’s intention to join the conversation before the user begins to speak.

BACKGROUND

In conversation, people often draw attention to themselves indicating that they have something to say prior to jumping into the conversation. This is done nonverbally, and is a natural part of turn taking in conversation. Unfortunately, it is extremely difficult to do so over a video conference (VC) because often the person who has something to say is considerably less present as they are relegated to a small window in a corner of the VC system display. In most systems they only gain focus and become large on the screen after they have spoken and the system recognizes that there is audio coming from them. At this point, their speaking becomes a surprise to everyone else in the meeting. This creates a perception of them being rude, even though it is the only way for them to effectively join in on the conversation. The existing gesture recognition systems use image analysis of the video feed for carrying out the above task. However the recognition is far from being accurate or subtle, and only happens after the user starts to speak.

DESCRIPTION
A gesture recognition system based on an accelerometer/gyro or other sensor present on a wearable communication device is presented. The communication device could be a watch, cuff, ring, glasses or other article, which when worn by a user and connected to a video conferencing system detects the user’s urge to join the conversation with a gesture made by the user’s body. In one example using a smartwatch or smartring, the gesture may be a momentary raising of a hand or a finger. In another example using electronic glasses, the gesture may be rapid blinking and the sensor may be an optical sensor. Upon detection of the gesture, the system places additional focus on the user in the VC, for example, by displaying the user’s video feed in a larger presenter display window. In some cases, the system may nonverbally indicate the user’s intention to join the conversation even before they begin to speak.

The system nonverbally indicates to all of the other people in the VC that the person who just did the gesture is about to take the floor to add to the conversation. This system is potentially better than the existing gesture recognition systems in that it works by recognizing a gesture of the user in real time rather than by image analysis done later. Thus the system is considerably faster, more accurate and subtle in its working than existing systems.