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Using Closed Captioning to create Sign Language with emotional nuance

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ABSTRACT

This invention addresses the use of closed captioning to create sign language with emotional nuance.

BACKGROUND

Sign language can be a preferred method to interpret speech for the hard of hearing and deaf. But if someone is completely deaf, a great deal of information may be lost. The person signing would hopefully be faithful to the verbiage of the speaker, but the intensity, emphasis, pausing, accent, etc., may be lost; especially if the signing originates from an automated character. There are usually human facial expressions or forceful gestures that provide emotional intent in communication.

DESCRIPTION

Closed Captioning is used to create automatically sign language for audiovisual content.

While it closed captioning be used in real-time, it is believed that a multi-pass non-real-time process might be required to do proper signing. Signing is symbolic and a first pass may be required to capture the word constructs rather than perform signing of each and every word. However, this could be done in a single pass. The signing engine could look sufficiently ahead at the incoming closed captioning.

In other publications we have disclosed adding metadata to include emotional nuances and other information about the speech to closed captioning. The engine can do the same in this instance, if it is available. This is one of the key inventive concepts here.

Option 1: The nuance information arriving with the closed captioning information would be displayed below the signing.

Option 2: The automated signing character appearance might change according the available nuance information. The automated character will change facially, and the movement of the gestures can be adjusted to emphasize certain words and phrases according to the available nuance.

Option 3: A combination of both options 1 and 2 with the addition of handling accents. Some information cannot be encoded facially ... e.g. national accent, and might be displayed as an icon below the signer.