HUMAN MACHINE INTERACTION BASED ON HAND TAPPING GESTURES

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There have been a lot of studies on the text input system using the image-based hand gesture recognition. However, hand gesture languages such as sign languages, finger alphabets, and aerial handwriting treated in the previous works have some problems to be commonly used. The aerial handwriting requires much time for writing and recognition. The sign languages and finger alphabets demand quite a knowledge and practice for using it, which results in restricting the number of their users. As a solution to the problems, this paper proposes a new character input system based on hand tapping gestures for Japanese hiragana and English characters that can be used to facilitate human-computer interaction. The hand tapping gestures are motions for tapping keys on aerial virtual keypads by hands, which can be effectively used as a hand alphabet by anyone including hearing impaired individuals.The users can effectively interact with computers by using our non-touch input system where only the Kinect sensor is used without any keyboard, mouse or body-worn device. We expect that our character input system will open a new channel for human-computer interaction.

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