Virtual emotional gestures to assist in the examination of the mental health of the deaf-mutes

Haoming Xu¹, Hui Liang¹, Yi Wang², Junjun Pan³, Jialin Fu¹, and Xiangwen Pang¹

¹Zhengzhou University of Light Industry
²General Hospital Of Pingmei Shenma Group
³Beihang University

April 29, 2023

Abstract

The particular characteristics of deaf-mutes make them more likely to have mental health problems. Due to their particular way of communication, it is more difficult for them to deal with mental health problems than ordinary people. Nowadays, those psychologists who are good at sign language are in short supply, and remote assistance cannot achieve satisfactory results. Therefore, a library of virtual emotional gestures based on electroencephalogram (EEG) was established and a prototype system for mental health examination of deaf-mutes was proposed, which help deaf-mutes identify their psychological problems in time and assist medical staff to examine the psychological problems encountered by deaf-mutes. In addition, the virtual library of emotional gestures is established with the assistance of the chief physician from a 3A hospital in Henan Province. More importantly, the later experiments demonstrate the applicability of this virtual system.

Hosted file

<table>
<thead>
<tr>
<th></th>
<th>Happiness</th>
<th></th>
<th>Anger</th>
<th></th>
<th>Sorrow</th>
<th></th>
<th>Anxiety</th>
<th></th>
<th>Hostility</th>
<th></th>
<th>Tired</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td>(2)</td>
<td></td>
<td>(3)</td>
<td></td>
<td>(4)</td>
<td></td>
<td>(5)</td>
<td></td>
<td>(6)</td>
<td></td>
</tr>
<tr>
<td>(9)</td>
<td></td>
<td>(10)</td>
<td></td>
<td>(11)</td>
<td></td>
<td>(12)</td>
<td></td>
<td>(13)</td>
<td></td>
<td>(14)</td>
<td></td>
</tr>
<tr>
<td>(17)</td>
<td></td>
<td>(18)</td>
<td></td>
<td>(19)</td>
<td></td>
<td>(20)</td>
<td></td>
<td>(21)</td>
<td></td>
<td>(22)</td>
<td></td>
</tr>
<tr>
<td>(22)</td>
<td></td>
<td>(23)</td>
<td></td>
<td>(24)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Experiment

NeuSen W

Create

Gesture library

Input

Depth sensor

Client

Input

Doctor

Feedback

Patient

Feedback

Cloud

Gesture