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Serious…ly! Just Kidding in Personalised Therapy Through Natural Interactions with Games

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Abstract

Virtual Reality based rehabilitation is much based on sensing devices that capture and quantitatively assess the patients' movements to track their progress more accurately. There are a few commercially available and affordable sensors. Among them, Kinect is an important asset to the concept of Natural User Interfaces, which is gaining a wider space and great importance in gaming for therapy approaches. These solutions can create therapy environments that increase the motivation of patients to achieve successful completion of rehabilitation programs that can be very demanding. However, therapists still demand customisable tools towards particular groups of patients. This paper presents "just Physio kidding", which is a solution based on the use of serious games, natural user interfaces and personalisation to address both physiotherapy and cognitive stimulation therapy. Initially, it was designed for stroke patients and older adults on wheelchairs, then it was adapted to children with special needs. The paper details the game design, its underlying concept and platform, besides presenting the first user study with experts, which points out to the design of a personalised version.

Keywords

Natural user interface   NUI   Physiotherapy   Serious games
Cognitive stimulation   Cerebral palsy   Gamification   Kinect   Leap Motion
User study

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Notes

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