

# Virtual Reality

## VR for Stroke Patients

### The Goal

is to help stroke patients with problems moving or using their arms and fingers.

Patients should do the training of their arms and fingers without the help of medically skilled people. The training hardware equipment should be cost-effective. The frequency of the arm and finger movement is most important.

### Solution

The stroke patient is a player in a virtual reality game. In different game scenes an adaptive algorithm presents virtual objects which the player must touch or move.

The algorithm adapts to the current skills of the stroke patient and invites him to carry on and on. The algorithm varies different parameters such as frequency to touch or move an object as well as speed, distance and size.

### Technology

Virtual reality glasses like the Oculus Rift or Google Cardboard are used to present a 360° game scene to the player.

Sensor devices like the Leap Motion support hand and finger motions as input, but require no hand contact or touching. The Leap Motion is used to detect arm and finger movements in the virtual game scene. For stroke patients who live alone, we also explore substituting VR glasses by hologram technology.



Score 15

