



# Design and Development of a Prototype of an Interactive Hospital Room with Kinect

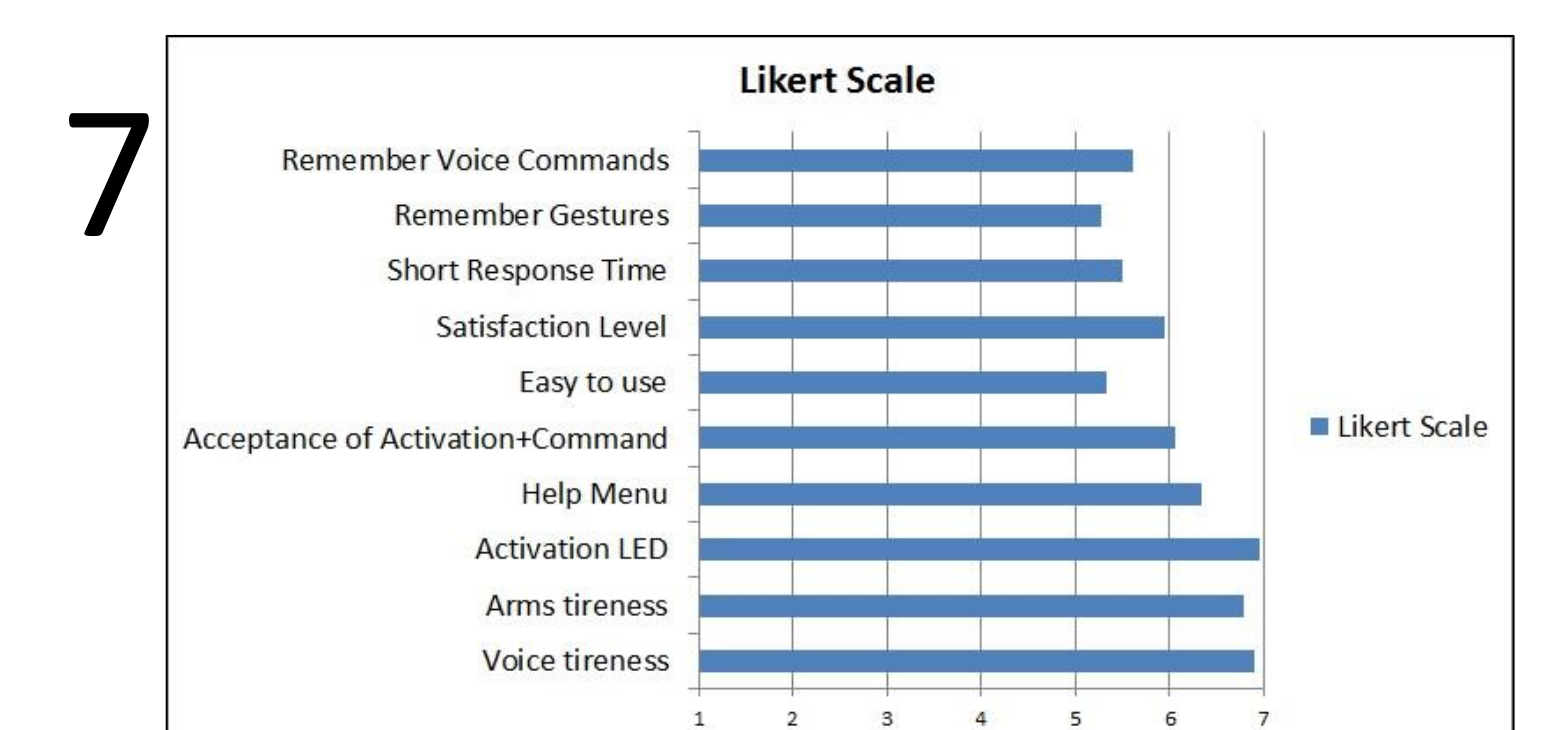
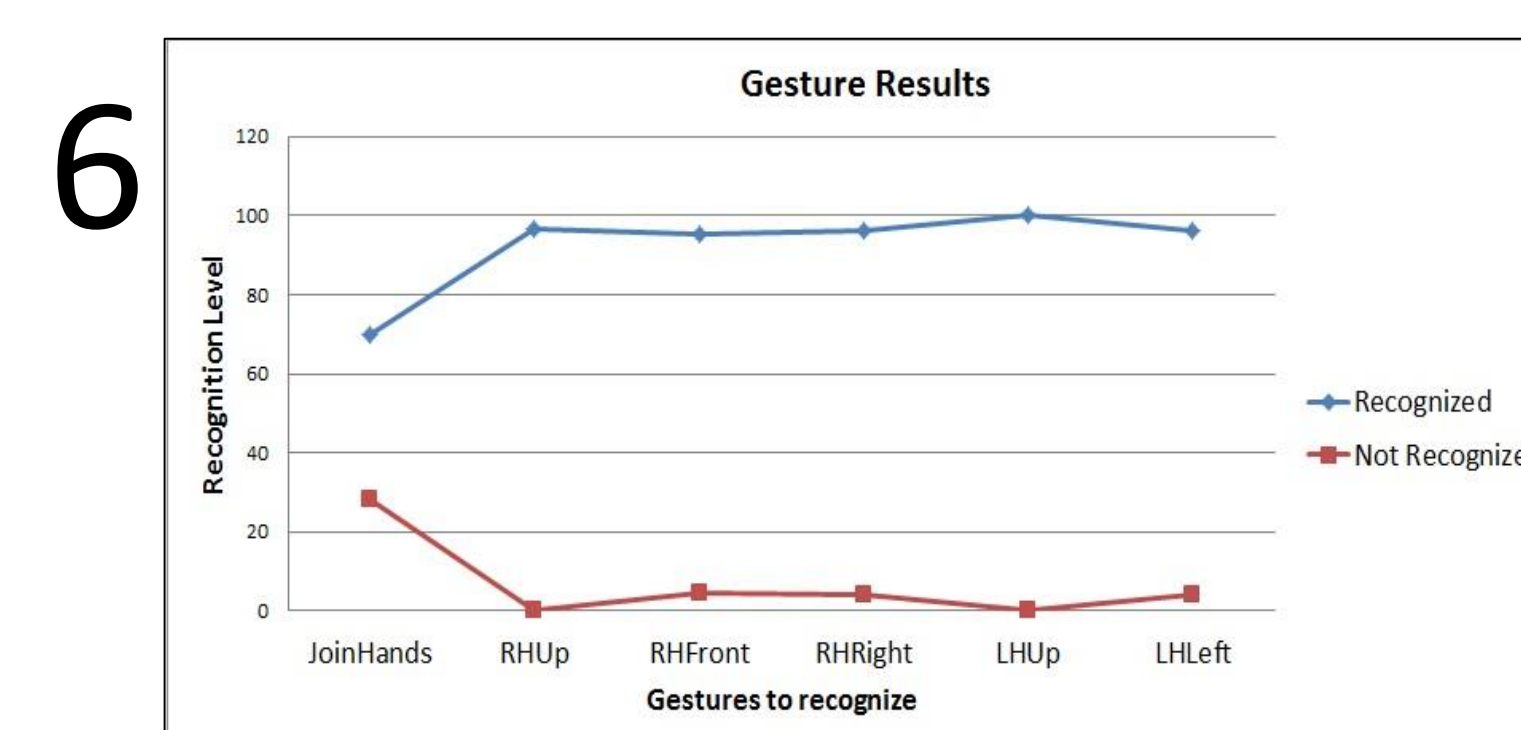
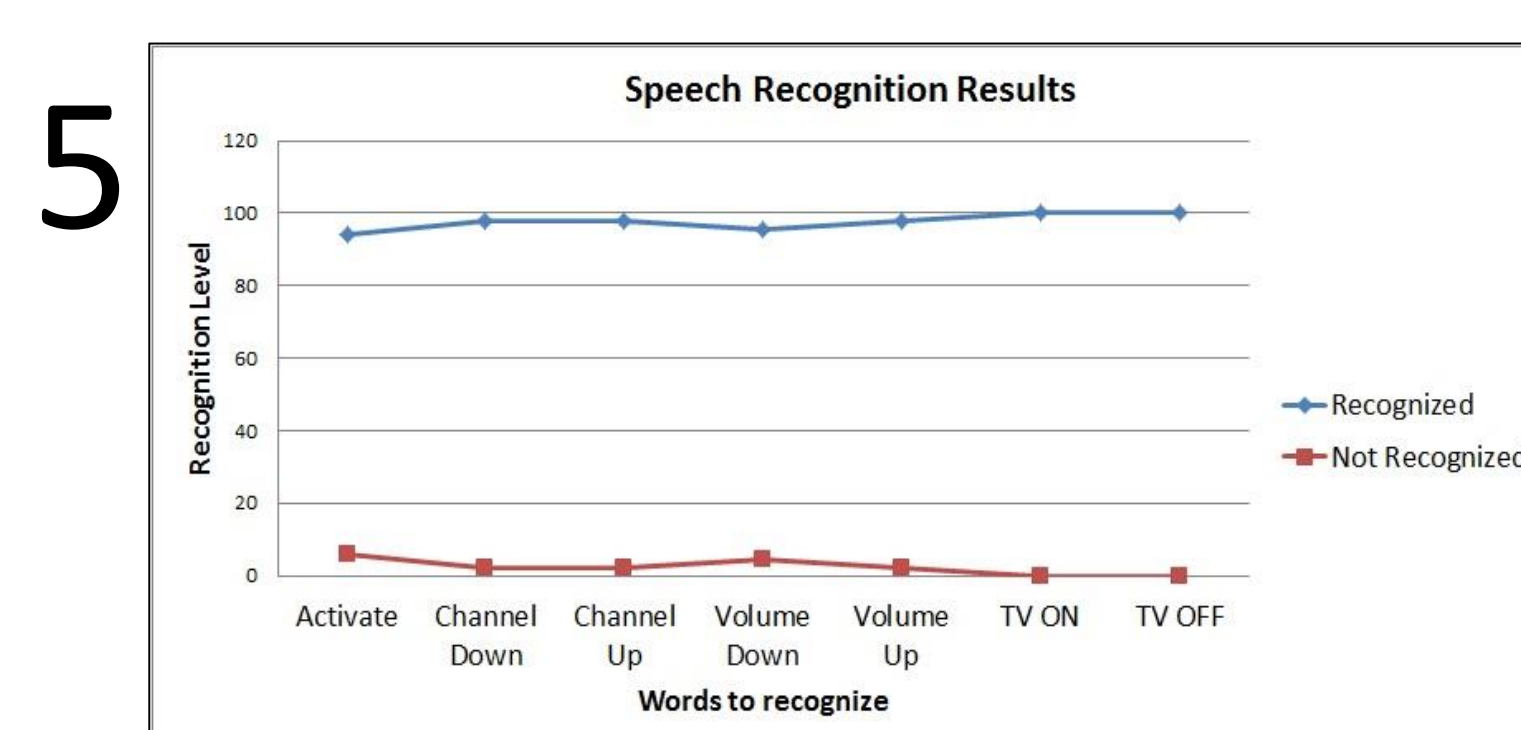
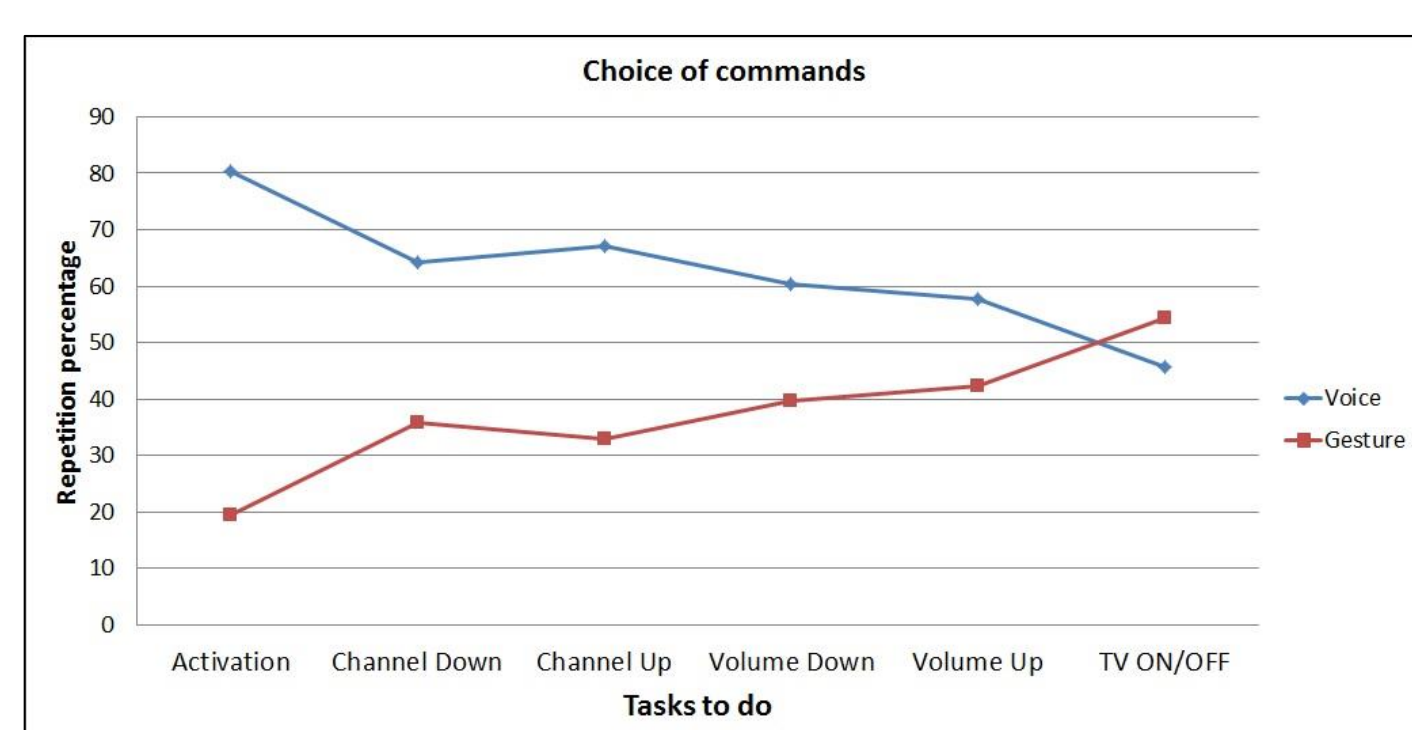
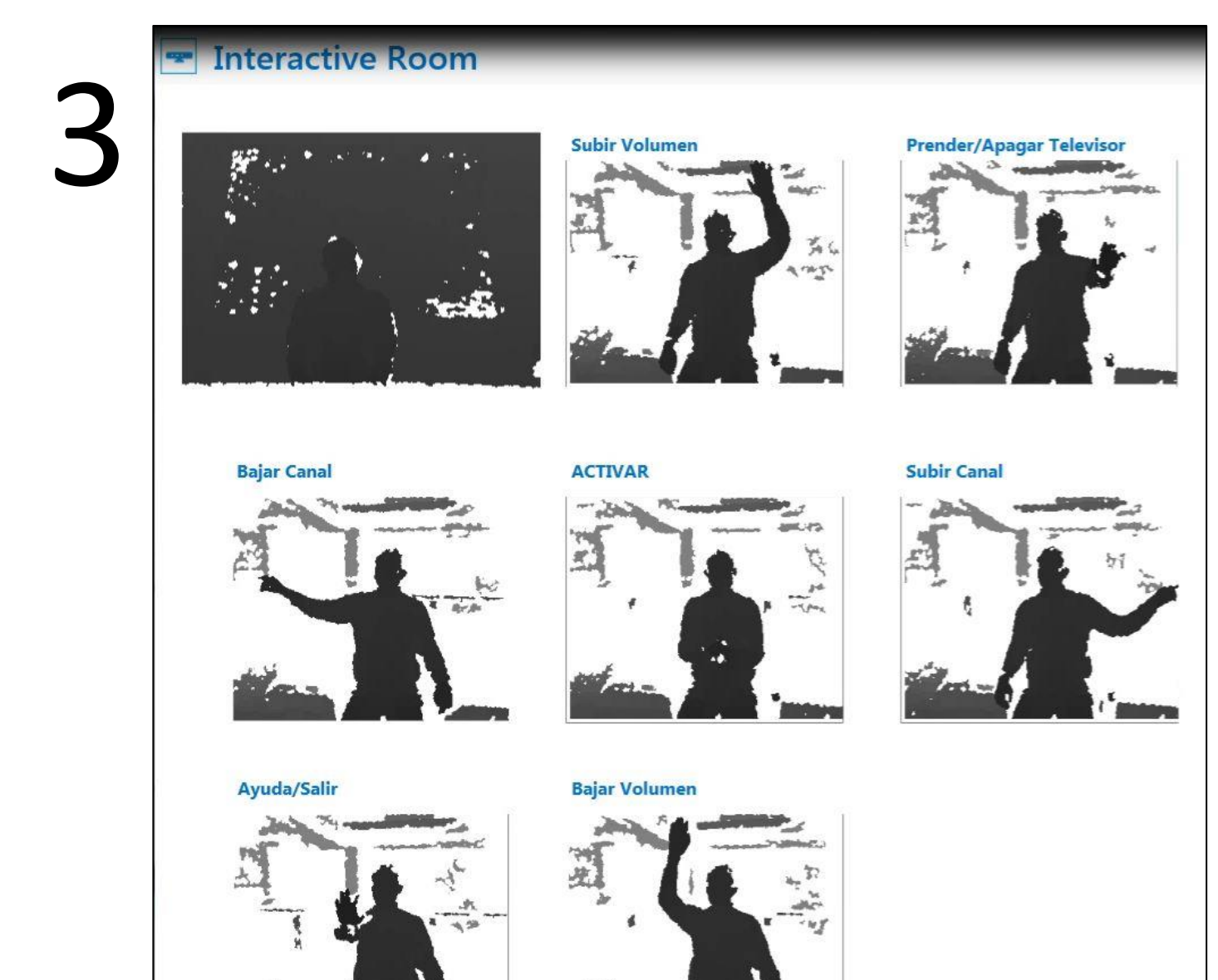
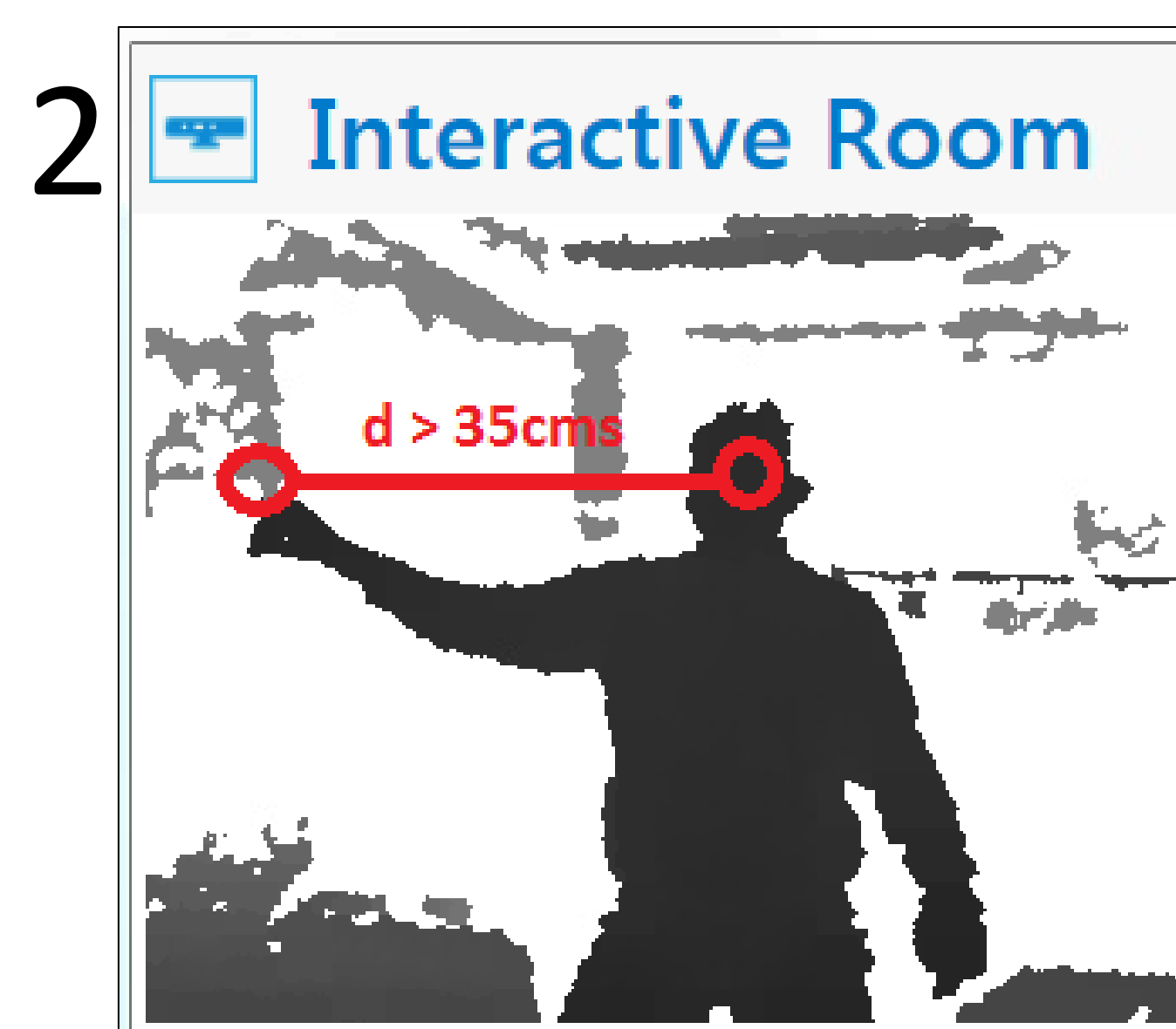
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## Abstract

We used a user-centered design approach in order to develop a prototype of an Interactive Hospital Room with Kinect as input device. Our objective is to make patients more comfortable during their recovery. Our prototype uses both gesture and voice recognition capabilities of a Kinect in order to create a more amicable environment.

## Methodology and Evaluation

We started with a set of interviews to patients so we could identify their needs and make their recovery period more comfortable. Then we developed an application using a TV to control its basic functions with voice and gestures as input commands. A usability and performance evaluation was made in order to confirm its future use in a Hospital.



The system was tested in a hospital's office in order to simulate natural noise of the place (1). The use of gestures were made tracking both hands and calculating distance (2) between each hand and the head in 3 axes, X-Y-Z. The help menu shows gestures and voice commands (3). We asked ourselves which interaction modality was more suitable considering the fact that this application was going to be deployed in a hospital room with recovering patients. Our study suggests that the favorite interaction method is the use of voice commands over gestures (4). Both methods were accurate enough, which is represented with the blue lines in figures (5) and (6). Finally, a usability test was performed using Likert scales to determine user satisfaction and ease of use.