

Development and Evaluation for Human-care Scenario using Social Robots

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Introduction

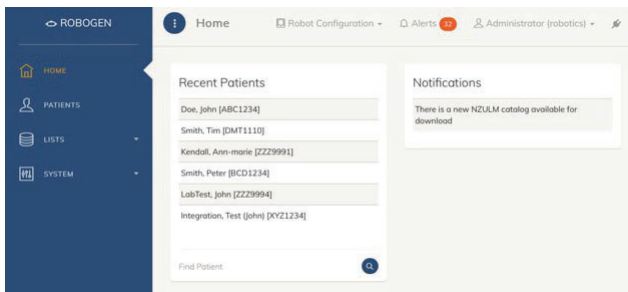
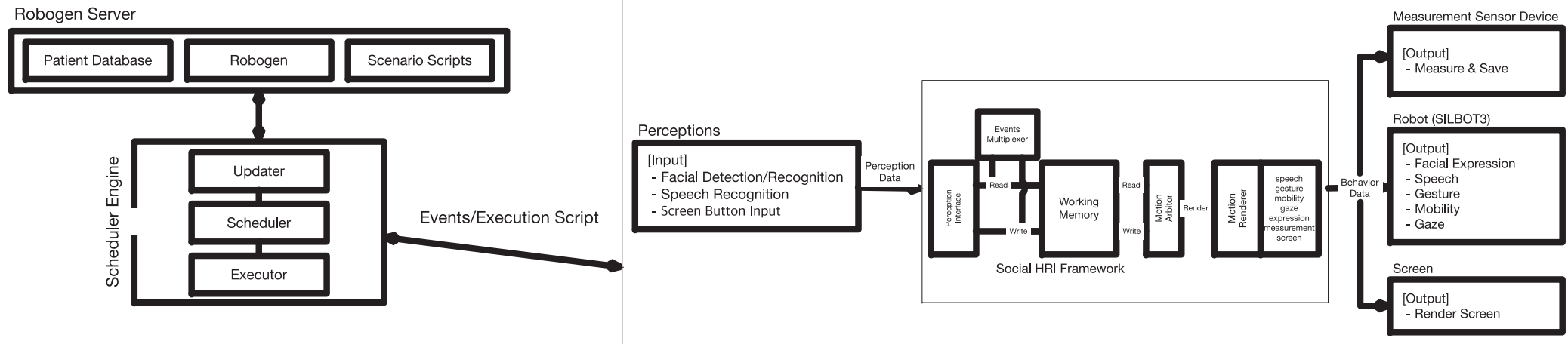
- The method for development and evaluation the care-giver scenario by using social robots to elderly people and mild dementia patients
- evaluate the suitability and effectiveness of the scenario by survey for the implemented results to normal users and experts

Design the Scenario

- 6 services to assist daily activities in daily life by discussing with psychologist, robotics experts and nursing professionals
 - Wake-up
 - Mood and Depression Scales
 - Appointments and Safety Checks
 - Medication Reminder
 - Exercise Reminder
 - Main Menu and Emergency
- We design the detailed scenario for implementation to social robots by consideration the perception, expressions and performance of task planning

Implementation

Behavior Generation



Experiments

- Implement 6 scenarios and take the video for each scenario.
- Interview with the video for 3 patients with MCI or MD, 1 carer and 7 experts

Algorithm 1 Interview Protocol

- 1: **Task:** Welcome participant
 - 2: **Check:** Show participant information sheet and answer any questions the participant has.
 - 3: **Task:** Ensure Consent Form is completed.
 - 4: **Check:** Explain that to the participant that audio recording is going to start
 - 5: **Task:** Start audio-recording device
 - 6: **for** $n \leftarrow 1, 6$ **do**
 - 7: Explain scenario # n
 - 8: Play scenario # n
 - 9: Scenario questions for # n
 - 10: **Task:** Introduce end of interview questions
 - 11: **Task:** Final end of interview questions
 - 12: **Task:** Thank the participant for their time
 - 13: **Task:** Conclude the interview
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Experiments



Wake-up



Mood and Depression Scales



Appointments
Checks and Safety



Medication Reminder



Exercise Reminder



Emergency

Results

- The interviews were conducted with **11 participants**.
(3 patients with MCI or MD, 1 carer and 7 experts) from 2017/10/5 to 2017/10/13
- Qualitative analysis of the interviews revealed six themes as shown below.
 - Parts that were liked
 - Issues
 - Suggested Improvements
 - Customization
 - Purpose
 - Examples

