Politecnico di Milano
School of Industrial and Information Engineering
Computer Science Master Degree
Advanced User Interfaces Course

Teo 2 (Emotional Teo)

Professor: Franca GARZOTTO
Tutor: Francesco CLASADONTE

Students:
Riccardo CAMPO
Moreno SARDELLA
Rafael RODRIGUEZ SANCHEZ

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Abstract

Robotic companions have been proved effective to promote social skills. It is thought that this capability is enhanced when the robot exhibits some "emotional" behavior.

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Introduction

The goal is to re-engineer and extend the existing version of Teo 2 with a Cognitive Module (enabling emotional sensing, expression features, adaptive Human-Robot Spatial Behavior and adaptive polite/intimate Behavior) and possibly evaluating the results against Teo 1.
The document is structured in this way:

- Chapter 1: it describes some possible scenarios

Chapter 1

First chapter

1.1 Games

1.2 Interactions

1.2.1 Idle state

1.2.1.1 Input

The therapist selects «Idle state».

1.2.1.2 Goal

Talking to the user showing empathetic behaviours.

1.2.1.3 Activities

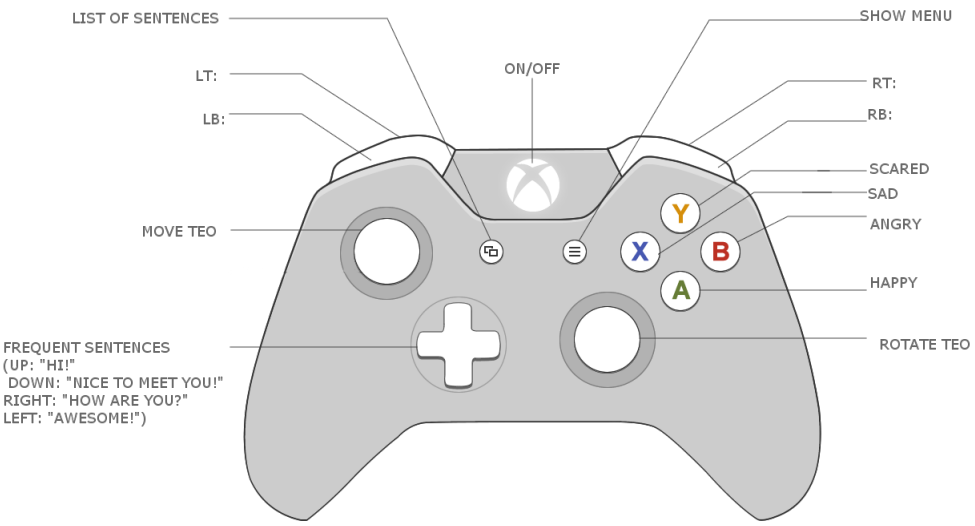
During the idle state, Teo can talk to the user through automatic and manual behaviours.
The therapist/teacher controls the manual ones using the joypad.
Manual bahaviours have higher priority on the automatic ones.

1.2.1.4 Superability Manual Mappings

Area: Socialization

- shows different emotional states based on the context
- greets verbally on demand
- responds verbally to greetings

Manual behaviours:



Automatic behaviours:

- User calls Teo => Teo says «Here I am!» and reacts happily
- User makes a long pause => Teo says «Hey, are you ok?» and reacts sadly
- User is talking => Backchanneling («yeah», «ok», «uh huh», «mhmm») and react happily
- User laughs => Teo reacts happily
- User exits from social space => Teo says «Where are you? Are you leaving?» and reacts sadly.

Table 1.1: idleState behaviours

1.2.1.5 HW required

Led matrix, speaker, microphones, motion/distance sensors, remote pc.

1.2.1.6 SW required

Face simulator, voice recognizer, voice simulator, remote control software.

Conclusions

Bibliography

Appendix A

First appendix