

Cognitive Modeling and Support for Ambient Assistance

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Abstract. The aim of the Human Behavior Monitoring and Support (HBMS)¹ project is to learn about the individual skills and behavioral knowledge of a person in order to support that person when needed. It is intended as a contribution to enable elderly people to live autonomously in their domestic environment as long as possible. The basic idea is to build a cognitive model of the behavior of a person while she/he is of sound mind and memory. In case of mental incapacitation this model will be used as a knowledge base for generating support information. The paper outlines the first results of the HBMS project with a focus on the investigative survey and the overall architecture of the chosen approach.

Keywords. Cognitive Modeling, Ambient Assistance, Model Integration

1 Introduction

We are facing unprecedented demographic changes in recent years. The European population aged 60 and above is rising by more than 2 million per year [1]. Life expectancy is increasing sharply, and so is the number of people who will need care—which will lead to exploding healthcare costs [2]. The working population is decreasing, and so we have to find solutions to the problem of how care for the elderly will be handled without enough human resources available.

Ambient Assisted Living (AAL) is a research area that seeks to develop methods to support elderly people in their everyday life. Steg’s definition is instructive [3]:

“AAL aims to prolongate the time people can live in a decent way in their own home by increasing their autonomy and self-confidence, the discharge of monotonously everyday activities, to monitor and care for the elderly or ill person, to enhance the security and to save resources.”
(p. 28)

The main aim of AAL is to enable the elderly to live longer and as autonomously as possible in their domestic environment, thus decreasing healthcare costs and helping them to reach higher satisfaction with their quality of life.

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