# TITLE

Robot Companions as Home Assistants and Therapeutic Tools

# ABSTRACT

The talk will provide an overview of some of my research activities during

the past 15 years in the area of human-robot interaction. One aspect of

this research concerns the design, implementation and study of robot

companions for a home environment. We have done a series of trials in our

Robot House, a smart environment at University of Hertfordshire, which

provides a more natural environment for such studies.

Recent EU projects supporting this work are LIREC and ACCOMPANY- the

latter focusses on assistance for elderly people in order to support

independent living at home. Scenarios developed so far include

fetch-and-carry tasks as well as using the robot as a cognitive

prosthetic. Another area of my research, currently funded e.g. by the EU

project Roboskin, investigates the use of a small humanoid robot called

KASPAR (designed by my research team) as a therapeutic tool for children

with autism. We have carried out case-study evaluations with children with

autism since 2005 and results are very promising.

A fund-raising campaign at UH is currently trying to set up a 5-year

project including long-term evaluations with large numbers of children in

order to proof the effectiveness of the robot for some children with

autism in terms of supporting their social and communicative abilities. A

key element of this work is to view the robot as a social mediator,

mediating between the child and other children or adults (carers, parents,

teachers etc.).

Both research projects are strongly interdisciplinary and use state of

the art robotics technology (in terms of hardware and software), combined

with innovative solutions e.g. to scenario development, robot learning and

adaptation, and evaluation of human-robot interaction.