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Technology and ethics for robots supporting older people living alone at home

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The proportion of elderly people worldwide increases which seems to result in a future shortage of health care resources. To handle this challenge, it becomes important that people live as long as possible in their own homes which is also what most older people want themselves. Thus, a rising issue is how to incorporate technology to find efficient solutions for health monitoring and care for older people staying at home. Our multimodal elderly care systems (MECS) project aims to create and evaluate a multimodal mobile human supportive robot that can sense, learn and predict future abnormal events of a person. In this keynote, three important aspects of the project will be presented including the control architecture

of the robotic system, the sensing process and devices, and finally design and privacy issues, respectively. The designed control system handles the navigation of the robot in an indoor environment in the presence of static and dynamic known and unknown obstacles. The sensing part of the project deals with utilizing various types of sensing devices for health monitoring and care purposes. Finally, the design part of the project focuses on the design issues of the robotic companion as well as privacy-related matters concerning having a mobile robot moving in a residential environment with a set of sensing and recording devices.

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