Autonomy and Dignity for Elderly using Socially Assistive Technologies

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Introduction

Objective:The essence of this project is to delve into the technological landscape of Socially Assistive Robots (SARs) that seek to mitigate isolation and enhance engagement. It is essential to carefully consider ways to incorporate ethical design considerations to avoid neglect and loss of agency. The use of socially assistive robots introduces potential issues in privacy, deception, the development of emotional attachment, and autonomy.

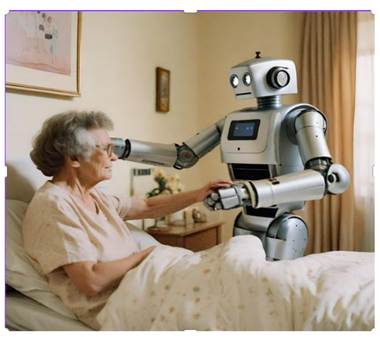
Purpose: To support four primary roles:

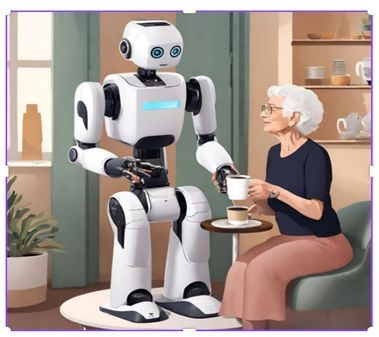
1. companionship,
2. health monitoring,
3. cognitive stimulation, and
4. clinical therapy

Functionality: Encompasses a wide range of interactive modalities, including facial expressions, speech, gestures, and behavior

Examples (specifically conversational agents):

Google Actions, Amazon Alexa





Ethical Implications of Human-Machine Interaction

Considerations:

1) Full transparency regarding robot limitations *(minimizing deception)*
2) Minimizing opportunities to robots to communicate false or inaccurate information
3) Encouraging trust through opportunities for open communication

Example:

"Envision a care facility with a humanoid robot to aid residents in their daily routines. Among these residents, Mary stands out due to moderate cognitive impairment and frequent bouts of loneliness. her bond with the robot has grown remarkable strong,, and she fondly refers to it as 'Robbie'."

The resulting consequences have the potential of giving rise to misunderstandings and a sense of being deceived.

Public Perception and Awareness

Common Concerns (*in assistive care settings*):

1) Alienation and loss of autonomy (over reliance on others)
2) Physical and mental roadblocks to adoption
3) General skepticism

Necessary Considerations:

1) Clear communication channel availability
2) User-friendly documentation
3) Safeguards in place to ensure that additional human assistance can be employed
4) Efforts to reduce user feelings of inadequacy

In general, barriers can be combated using "empowering design", where social robots support patient autonomy and socialization through accessible and inclusive design. They can retain decision-making autonomy and provide clearer instructions, education, and knowledge regarding medications.

Ethical Design Principles

To mitigate user apprehensions, design principles should focus on ways in which functionalities can augment, rather than completely replace a user's capacity to decide and exercise optimal authority. This requires a profound grasp of the diverse limitations individual users may face, while also integrating elements aimed at addressing common physical or mental handicaps.

We advocate for application of user interface design principles tailored to older adults, with specific emphasis on simplicity and intuitiveness. To alleviate the cogntive burden, the complexity of interfaces has to facilitate information updates through techniques such as visualization, repetition, and a cohesive design language, with greater emphasis on personalization of support and services.