

Smolensk Academy of Profession Education

Autonomous robot assistants for the elderly

Prepared by

Ivanov Bogdan

Gr. 013-Programmers

Teacher Volodina E. K.

Mark *5/5/5*

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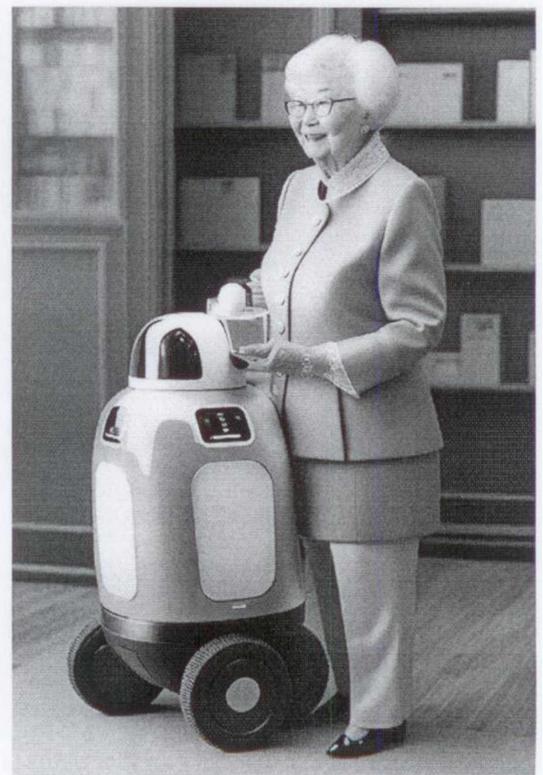
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Autonomous robot assistants for the elderly

Artificial intelligence (AI) and robots are fields that are rapidly advancing and changing the world. AI allows computers to perform tasks that normally require human intelligence. Robots are physical machines that interact with the environment. AI and robots are often combined to create intelligent machines that can learn and adapt. While these technologies have benefits, there are also concerns about their impact on employment and privacy. It's important to consider the ethical and societal implications of their use.

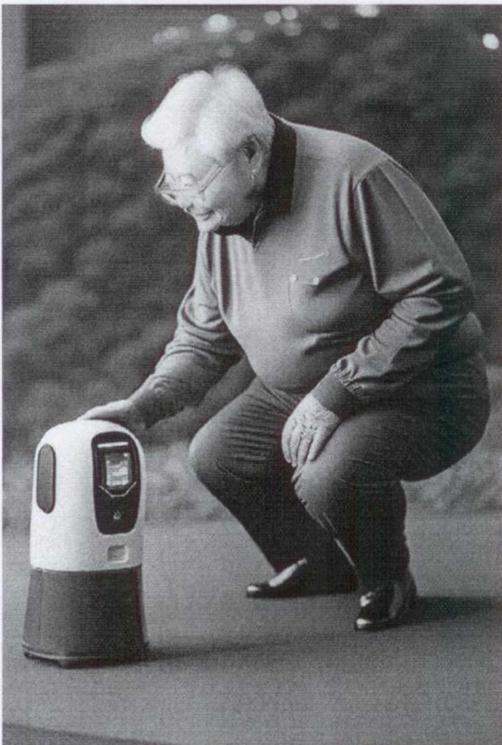
Today, the problem that affects millions of people around the world is more urgent than ever: the problem of aging. As we get older, we often encounter physical limitations that can make it difficult to perform everyday tasks. For example, limited mobility, reduced dexterity, as well as impaired vision or hearing can make it difficult to take care of yourself and your homes. In addition, many older people experience social isolation, which can lead to feelings of loneliness and depression.

Fortunately, there is a solution that can help older people overcome these problems: an autonomous robot assistant designed to provide assistance and friendly communication. This robot has been specially designed to help elderly people live independently and comfortably in their own homes.



Autonomous assistant robots for the elderly are robots equipped with artificial intelligence technology that will help the elderly in performing everyday tasks such as shopping, housework, cooking and more. The robot is programmed to understand different languages and dialects, which will facilitate communication with older people from different cultures.

The robot assistant is mobile and can move around the house or apartment even in a limited space. It is also equipped with sensors to detect obstacles and prevent collisions, making it safe to use at home.



The artificial intelligence system controlling the robot is trained to recognize the needs and preferences of the elderly person it helps. For example, it can recognize and cook favorite dishes and recipes. He can also find out the patient's schedule and remind him of appointments or medication.

In addition, the robot is connected to a remote monitoring system that allows family members or caregivers to monitor the activities and health status of an elderly person. This can provide peace of mind to both the elderly and their loved ones, knowing that help is always available when needed.

The robot can be designed with a friendly and an accessible appearance to help older people feel at ease. It can also be equipped with a touch screen or voice-controlled interface to make it easy for users to interact with it and request help.



In conclusion, we can say that an autonomous robot - an assistant for the elderly can significantly improve the quality of life of the elderly by providing them with assistance and friendly communication. In general, this type of robots can help older people stay independent and keep in touch with their loved ones.

Literature

1. Mihailidis, A., & Boger, J. (2017). Assistive technology for aging populations. In *Handbook of geriatric care management* (pp. 455-468). Jones & Bartlett Learning.
2. Sánchez, F. G., & Arredondo, M. T. (2019). Towards robotic cognitive companions for older people: a review. *Robotics and Autonomous Systems*, 119, 44-62.
3. Chang, W. L., & Chen, C. L. (2016). A survey on service robots for the elderly. *Journal of Intelligent & Robotic Systems*, 81(1), 125-140.
4. Trujillo-Pino, M., Sánchez-González, M., & Fernández-Caballero, A. (2019). Care and rehabilitation of older adults: design and validation of a home robot assistant. *International Journal of Medical Informatics*, 126, 44-54.
5. Wada, K., & Shibata, T. (2007). Living with seal robots—its sociopsychological and physiological influences on the elderly at a care house. *IEEE Transactions on Robotics*, 23(5), 972-980.
6. Heerink, M., Kröse, B., Evers, V., & Wielinga, B. (2009). Assessing acceptance of assistive social agent technology by older adults: the Almere model. *International Journal of Social Robot*