



Service robots

The 6th issue is devoted to service robots. The main reason for the selection of this particular theme is the various possibilities in performing practical tasks for people and equipment, except for industrial automation work.

Today there are many types of such robots. Their classification corresponds to the scope of their application. It means that there are two separate categories: consumer robots and professional service ones.

1. For personal use. These are the robots that we acquire for use in our daily lives. These include:

- Robots for household tasks
- Entertainment robots
- Assistive robots (for the elderly)
- Other (personal/home) robots



2. For professional use. These robots are purchased to be implemented into various services and make a benefit. These include:

- Field robotics
- Professional cleaning
- Monitoring and operation
- Construction and demolition
- Logistics systems
- Medical robotics
- Rescue and safety
- Military use
- Underwater systems (general/civil purpose)
- Power exoskeletons
- Mobile platforms (general purpose)
- Works for the promotion of services (PR) and entertainment
- Other professional works for various purposes

The volume of the global service robot market is growing every year. Among the main reasons:

- The high cost of labor
- Lack of highly qualified specialists
- Increased investment in research and development
- Growing awareness of the benefits of service robots
- Increasing demand for automation tools for industrial and personal tasks

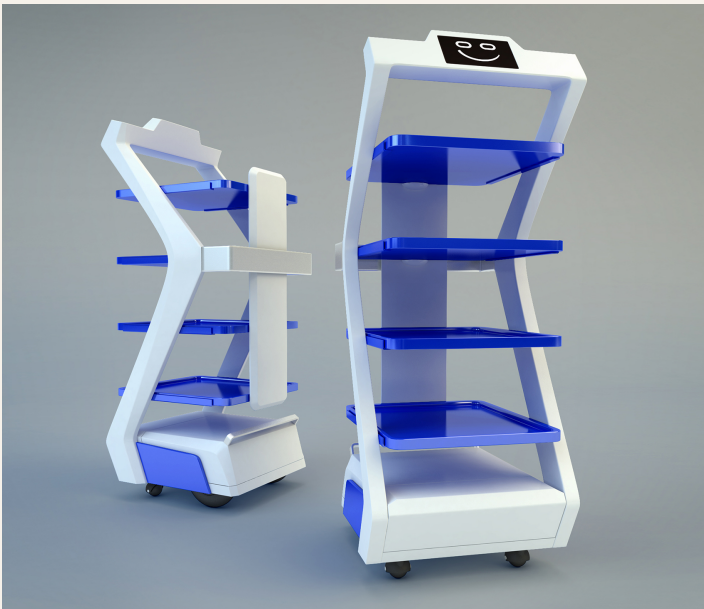
Robots for logistics purposes are more popular, which is primarily facilitated by the development of the e-commerce market. The second-largest segment is medical robots, mainly used in surgery, diagnostics, physiotherapy, and psychotherapy.



Multifunctional autonomous service robot LeoHelper from LeoTronics

The company's latest development **LeoHelper**, an autonomous mobile robot, is designed to automate the movement of raw materials, finished products, and other goods indoors and create specialized mobile robots on this platform, such as robotic waiters, disinfectors, etc.

The robot meets the parameters of safe interaction and adapts to the premises' complex geometry. Doorways, narrow aisles, and elevators do not hinder its movement.



Setting tasks and control is done by entering direct programming code through a web interface. The maneuverable AMR has a payload capacity of up to 100 kg and can be equipped with additional modules to perform valuable functions. Capable of working around the clock with occasional recharging of the battery.

The robot is equipped with an advanced artificial intelligence system based on the Nvidia Jetson platform. The Jetson family uses the NVIDIA CUDA-X™ software and supports cloud-native technologies like containerization and orchestration to build, deploy, and manage AI at the edge.

We use all modern AI technologies with Jetson, easily roll out new features, and leverage the same software for different products and applications. The brushless motors provide good maneuverability. With the help of motion sensors, lidar, video camera, and software, provide high precision control of the robot - up to 5 cm.

In contrast to the AGVs commonly used in warehouses, this robot does not require particular infrastructure to build a route.

Forget about magnetic strips and other similar solutions. The flexible route guidance system lets you set the road via a web interface or have the robot create the course itself.

Usage possibilities: specific areas where LeoHelper can be applied

- Production logistics. Transport robots perform the function of loading, moving, and delivering raw materials, goods, and finished products in industrial plants
- Robots are tasked with delivering food, assembling laundry, and assisting patients in the medical field
- The sphere of public catering - robots-waiters, food delivery to the tables, and dirty dishes to the sink
- Robots for cleaning - a robot can constantly keep large areas clean
- The domestic sphere. Thanks to the "Follow me" function, the robot can transport personal belongings and pets over short distances
- Promorobots work in the sphere of services and trade

Don't forget to subscribe to our YouTube channel **LeoTronics EU**, and you will always be aware of our news.

