

ROBOTIZATION AND ITS APPLICATIONS

Agievich A.Y., student
Scientific supervisor – Beznis Y.V., senior lecturer
English language department №1
Belarusian National University of Technology
Minsk, Republic of Belarus

The history of robots begins long before the 20th century. The first robots were the so-called “automata”. The name comes from a Greek word that means “self-propelled” [1].

Automatons were dolls that, thanks to a mechanical drive, were capable of performing various actions: moving their arms and legs, turning their heads, opening and closing their eyes, archery, and they could even write texts on a list of paper with a pen.

The development of technology leads to the fact that robots are becoming an integral part of our lives. Robots are used in various fields, from practical medicine to high precision engineering. For instance, in spite of all their imperfections, applied robotic devices can diagnose diseases, create personalized treatment plans, follow the prescribed instructions and move without human intervention.

Robotization is the displacement of people from the production process, replacing them with automated and robotic machines and production lines, which frees up resources for the development of the service sector.

Robotization is often used and especially highly valued in engineering manufacturing, but this does not exclude it from participating in other areas.

However, despite the fact that robots are now enjoying great success, they, like any other technology, have their pros and cons. The main advantage of robotization is that specialized equipment can be easily reconfigured and reprogrammed to work with completely different scope of products or parts. To do this, you just need to change the control program and this can be done as many times as necessary. Other benefits include: productivity, accuracy and precision, improved product quality, reduced health risks, and so on [2].

Cons are also an integral part. Probably one of the most significant disadvantages is the emergence of technological unemployment. Most people are wary of robots in production, as there is a fear that they will displace humans and become the main workforce, thereby leaving people without jobs and livelihoods.

The main disadvantages are as following: the mandatory implementation of a strict computer system and direct dependence on it, the complexity of control, and training of personnel for new working conditions.

The practical applications of robotics are vast and varied. Robots have the potential to demonstrate meaningful solutions and benefits in a large number of areas. These include areas such as industry, medicine, logistics and housing and communal services, agriculture and social services.

Autonomous robots are robots that perform scheduled actions or tasks with a high degree of autonomy. Autonomous robots have broad potential in many areas. They are able to make decisions and act independently of the constant control of a person. Autonomous robots have broad potential in many areas. They are able to make decisions and act independently of constant human control. Here are a few areas where autonomous robots could be used: research missions; autonomous cars and transport; logistics and warehouses; medicine and healthcare; industry and production.

With the development of Industry 4.0, it is likely that robots will soon manage larger facilities or even entire production will be controlled using autonomous systems. But at the moment, autonomous work using robots without human intervention is not entirely realistic, so it should be stressed that in many cases human intervention is absolutely necessary. Unlike robots, people have thinking and awareness, which helps them avoid large losses in stressful situations that were not at all planned.

References

1. Роботизированная история с древних времён до наших дней. [Electronic resource] – Mode of access: <https://habr.com/ru/amp/publications/761622/>. – Date of access: 18.02.2024.

2. Лучшие достижения робототехники. [Electronic resource] – Mode of access: <https://billycrews.com/ru/luchshie-dostizheniya-robototehniki/>. – Date of access: 24.02.2024.