

GH-6 'GOSHA' DROWSY-STRUCTURE ROBOT

Moskalyova K. D., student

Andrievich V. N., student

Scientific supervisor – Lapko O. A., senior lecturer

Belarusian National University of Technology

Minsk, Republic of Belarus

Today there is an increasing adoption of robotics-related technologies in the industry. One of the troubles that require solutions in manufacturing is the transportation of goods and construction [1].

Despite significant technological progress, the full automation of all warehouse processes and construction sites does not seem feasible at present. Even the most advanced equipment requires human involvement to extent. Operators are still necessary for performing complex tasks. Typically, only specific areas can be automated in a warehouse setting. However, warehouse automation offers several advantages: reducing personnel costs, increasing the efficiency and speed of tasks and optimizing warehouse space. Partial automation on construction sites can accelerate construction, improve the quality of structures, and enhance safety measures during the construction process.

We would like to dedicate this article to our fellow student Daniil Rusevich who at the age of 18 has already succeeded in the field of constructing robotic systems and designed a robot named Gosha.

The GH-6 "Gosha" robot is a robot with a mechanism for movement designed in the form of spider limbs. The use of a platform equipped with a system of 6 prosomatic drives ensures maximum mobility in uneven and unprepared terrains for movement.

This system comprises a complex of integrated various sensors and robotic devices, whose main task is to enhance the efficiency of cargo storage and transportation, as well as to catalog data on the condition of these goods. Integrating this robotic system can not only achieve more efficient operation of the enterprise but also enhance safety for employees and maintain the integrity of the cargo.

Due to the flexibility of all its 'elements', this swarm system can be integrated into various fields of activity: large-scale manufacturing, small enterprises, various small warehouse spaces, as well as flexible

production, as the system can adapt to different conditions either by user request or automatically. By using a single central control node for the swarm, optimal quality and performance of the system have been achieved.

At present, it can confidently be said that the project may be in demand in various areas within Belarus. For instance, in construction and logistics across different enterprises. The utilization of the GH-6 "Gosha" system will not only enhance the efficiency of the enterprise but also make it safer. Due to the multifunctionality of the system, the devices can be used not only for transporting goods. With the installation of appropriate modules, the devices can perform various tasks involving interaction with the external world: surveillance, security, search operations, communication, surface processing, etc.

In the future, there are plans for modifying the systems to allow for the installation of a computer vision system for the GH-6 "Gosha" and lower-ranked devices. This will expand the capabilities of the system in terms of managing its components. Additionally, there are plans to manufacture attachments for installing tools on the limbs, which will further enhance the capabilities of this robotic system in interacting with the external world.

In conclusion, robot Gosha has proven to be more than just a technical device but a true friend and assistant to its creator. Gosha demonstrates how robotics can make our lives better and more convenient.

Gosha the robot is just one example among many potential robots that can change our lives. It's important to keep track of technological advancements, learn how to use them, and create a world where robots and humans coexist in harmony and understanding. Let your imagination soar, as the future of robotics is incredibly exciting and full of incredible possibilities. Artificial intelligence is our future [2].

References

1. BNUT repository. [Electronic resource] – Mode of access: <https://bntu.by/faculties/fitr>. – Date of access: 29.03.2024.

2. BSUIR repository. [Electronic resource] – Mode of access: <https://abitur.bsuir.by/fakultety-i-spetsialnosti/iskusstvennyy-intellekt>. – Date of access: 29.03.2024.