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ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN LOGISTICS PROCESSES

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The use of artificial intelligence and machine learning to optimize logistics processes is one of the most promising innovations in logistics. With the help of these technologies, a large amount of data can be collected and analyzed, making it possible to optimize delivery processes, reduce the time for loading and unloading cargo, reduce inaccuracies, and improve service quality.

The use of artificial intelligence and machine learning makes it possible to create demand forecasting models for goods, which helps optimize inventories in warehouses and reduce the cost of goods storage. These technologies can also be used to optimize delivery routes, taking into account various factors such as traffic congestion or weather conditions.

Innovations in artificial intelligence and machine learning also make it possible to create systems for the automatic management of logistics processes, which reduces errors and increases the quality of customer service.

There are many studies and practical examples of the use of artificial intelligence and machine learning in logistics. For example, one of the most promising applications is autonomous delivery of goods using unmanned vehicles. There are also systems for predicting fuel prices and optimizing freight transportation costs.

Another example is the use of artificial intelligence to analyze data on the condition of vehicles, which allows timely identification of malfunctions and prevention of accidents. There are also systems to optimize the time that goods

remain in storage, which take into account the demand for goods and the possibility of rapid delivery.

Computer vision is a field of research that is responsible for developing various methods to help computers see and understand images and video. And it is exactly the kind of tool that can provide warehouse automation and solve a number of problems. For example, computer vision systems can automate the process of reading barcodes, and therefore speed up and simplify it.

They can also monitor the perimeter of the warehouse and keep track of employees, analyze data, and prevent theft and security breaches. And thanks to facial recognition technology, the computer vision system can also detect who is entering and exiting the warehouse [1].

To reduce shipping costs and make the delivery process itself faster, it is possible to use artificial intelligence to make decisions about the best routes. This is important in the case of large e-commerce companies with a large number of customers.

Customers are always happy to receive their orders as soon as possible, without any delays. And artificial intelligence (AI) is what is needed to analyze existing routes, to carry out route optimization. In this way, better results and greater profits can be achieved.

Overall, the use of artificial intelligence and machine learning in logistics can improve operational efficiency and service quality, which in turn contributes to the competitiveness of companies and economic development.

References

1. Machine Learning in Logistics and Supply Chain [Electronic resource]. – Mode of access: https://addepto.com/blog/use-cases-ai-machine-learning-logistics-supply-chain/. – Date of access: 04.04.2023.