

ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN THE CONSTRUCTION OF LOGISTICS SYSTEMS

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In the modern world, artificial intelligence has spread to almost all areas of human activity. The economic sector in general and the logistics sector in particular were no exception and also came under the influence of AI.

The application of artificial intelligence in logistics revolves around advanced computer systems and algorithms designed for various critical tasks, including planning, decision-making, optimization and automation in supply chains.

There are some directions of transformation of logistics by artificial intelligence:

- optimizing transportation operations;
- automating delivery processes;
- smart warehousing;
- forecasting possible risks.

Artificial intelligence has the property of predictive analytics, which allows to forecast delivery times, anticipate demand, and mitigate risks by proactively optimizing routes, resources, and inventory. Conveyor systems based on artificial intelligence efficiently sort goods using scanners. This reduces the number of sorting errors. Warehouse management systems analyze data on storage patterns, inventory turnover, and order volumes to optimize storage density and placement. By automating repetitive tasks using artificial intelligence and robotics, warehouses increase throughput, accuracy, and inventory control. AI uses real-time traffic, weather, and demand data to dynamically optimize delivery routes and load factors, minimizing fuel costs and reducing downtime.

Large logistics companies are massively investing huge amounts of money in the development of autonomous vehicles. In the long run, driv-

erless trucks significantly simplify the delivery process and minimize labor costs. Artificial intelligence techniques such as machine learning and computer vision are increasingly being used to improve efficiency, transparency, quality and responsiveness of delivery.

Through continuous monitoring of equipment and analysis of performance data, artificial intelligence systems can predict when machines may fail. This capability enables AI to detect subtle patterns and anomalies in data that traditional service methods might miss.. This allows you to identify and fix problems in advance and to prevent unnecessary costs.

AI integration in logistics increases efficiency by streamlining operations and automating repetitive tasks. It reduces costs through optimized resource allocation and predictive maintenance, minimizing downtime and unnecessary expenditures. Additionally, AI improves decision-making by providing data-driven insights, allowing for better responses to dynamic market conditions and enhancing overall supply chain management. This combination leads to a more agile logistics network. In the future artificial intelligence in logistics will adapt to changing logistics requirements and efficiently scale operations, supporting business growth without compromising quality of services. The further development of the industry will take leaps and bounds along with the development of innovative computer technologies. Thus, artificial intelligence is a storehouse of benefits and tools for optimizing the process of building a supply chain. Nowadays it is getting obvious that's why logistics specialists need to be able to use AI technologies in the most advantageous and efficient way and do everything possible to ensure that artificial intelligence becomes a perfect assistant in the economic field.

References

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