AI in Robotics - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 120 pages | Mordor Intelligence

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Report description:

The AI in Robotics Market is expected to register a CAGR of 29.21% during the forecast period.

Key Highlights
- Integration of robotics and AI augments and amplifies human potential, increases productivity, and moves from simple reasoning to human-like cognitive abilities. The next stage of artificial intelligence is the era of "augmented intelligence," which seamlessly links humans and machines together.
- Robots are designed to perform repetitive tasks with utmost precision and increased speed. AI in robotics helps the robots learn the processes and perform the functions with complete autonomy, without any human intervention. These benefits are expected to augment market growth.
- Also, higher adoption rates of robots in almost all the end-user verticals, coupled with support from governments worldwide to develop modern technologies, are undoubtedly significant factors augmenting the market's growth. However, a reluctance to adopt technological developments is expected to slow market growth. Also, a lack of a skilled workforce to adopt the integration of AI in robotics is hindering market growth.
- However, the lack of experts with the necessary knowledge and expertise to operate AI robots will prevent their widespread adoption across various industries. In addition, the absence of appropriate regulations in this industry would reduce its demand globally. Companies in sectors with the lowest labor costs are gradually implementing AI robots.

Due to rising automation technology demand as well as the growing use of AI robots in the medical sector to control COVID-19, the market for artificial intelligence (AI) robots has grown dramatically in recent years. Due to its ability to handle the complexity of massive data and provide high accuracy and quick processing solutions, artificial intelligence (AI) is being used to advance

science and technology. Due to the increased demand for automation in the manufacturing, automotive, and industrial sectors in the post-COVID-19 period, businesses are assessing the long-term income potential of AI robots.

Artificial Intelligence in Robotics Market Trends

Industrial Robots Expected to Grow Significantly

- Major technological disruptions, like artificial intelligence and machine learning, are making their way to the industrial robotics industry. Industrial robots are used in factories to do dangerous, repetitive, boring, and/or automated tasks that need to be done quickly and accurately.
- The merging of AI and industrial robotics is providing several benefits to its early adopters. One of the greatest benefits is increased uptime and productivity from predictive maintenance. With AI integrated with industrial robotics technology, robots can monitor their accuracy and performance, signaling when maintenance is required to avoid expensive downtime.
- Furthermore, AI-based industrial robots make fault detection and resolution easier.They are programmed to detect the defects and fed with solutions to overcome the damage.
- Also, industrial robots improve production speed, accuracy, and safety. Robots also enable organizations to adopt modern manufacturing techniques and build a robust manufacturing industry. AI technology can give robots the power to see, identify, and interact with what they see.

Global shipments of industrial robots totaled about 384,000 in 2020, a little up from 2019. Industrial robot shipments are anticipated to rise sharply in the years to come, possibly even exceeding the peak year of 2018, when some 422,000 industrial robots were shipped globally. Global shipments of industrial robots are predicted to reach 518,000 units in 2024.

North America is Expected to Grow Significantly

- The North American region is one of the prominent innovators and pioneers in the adoption of robotics and is one of the largest markets. The factors driving the market growth include the increase in warehouse automation, rising adoption of automated material handling and trends, like lights-out automation, and increasing adoption of these robots across numerous industries.
- Robots in the coming future, with the help of technology, will be able to perceive their nearby environments through every connected sensor in real-time, learn naturally from surroundings and use natural language processing, and maintain their hardware by predicting failures that other robots will fix. These trends in the market are expected to drive the demand for robots during the forecast period.
- The automotive, food and beverage, and pharmaceutical sectors are the region's largest sources of demand for industrial robots. Industrial robots are extensively being deployed in food and beverage manufacturing establishments. Furthermore, the stringent food safety regulations and preference for low human intervention in the production process are expected to increase the demand for the food and beverage industry over the forecast period.
- The major driver for the growth of robots in the region is that all the manufacturing industries in the U.S. are currently under the ongoing trend to automate their production process to strengthen the U.S. industries in both domestic and international markets.
- Although numerous A.I. efforts have surfaced at the state and federal levels, the United States still needs to pass comprehensive A.I. legislation. More federally proposed measures were introduced from 2 in 2012 to 131 last year, including A.I. provisions. Even though the number of legislation presented has dramatically increased, only 2% of those proposals are finally passed into law by the U.S. Congress. But with a foundation law, businesses can use A.I. technologies per the rules and regulations established by the government, making it more straightforward for them to adopt the technology. Thus, this is anticipated to drive the market in the upcoming years.

Artificial Intelligence in Robotics Industry Overview

The competitive landscape of artificial intelligence in robotics is moving towards fragmentation as the market is growing and providing ample opportunities to robot vendors. The vendors are ready to seize the first-mover advantage and seize the opportunities presented by various technologies.Also, the vendors view product innovation and global expansion as paths toward gaining maximum market share.

In August 2022, to establish an artificial intelligence research facility in the United States, Boston Dynamics and Hyundai Motor Group committed USD 424 million. The Boston Dynamics AI Institute will be situated in Cambridge, Massachusetts. Its primary objective will be to offer advancements in robotics and artificial intelligence (AI), which the business considers growth-oriented fields. The Institute is anticipated to work on resolving the most significant and challenging issues regarding the development of advanced robotics.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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