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Global Robot Manipulation Dataset Market Research Report 2026(Status and Outlook)

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Abstracts

With the development of large-scale models and robotics, embodied AI gives artificial intelligence systems a physical form to interact with and learn from their environment. From action programming to human teleoperation, from robotic arms to dexterous hands, embodied AI is gradually establishing a development paradigm at both the hardware and software levels. Drawing inspiration from the development path of autonomous vehicles, data is equally crucial for embodied AI. Data not only serves as "fuel" driving the agent's perception and understanding of the environment, but also helps build environmental models and predict changes through multimodal sensors (such as vision, hearing, and touch). This enables the agent to perform contextual awareness and predictive maintenance based on historical data, thereby making better decisions. Building high-quality, diverse perception datasets is an indispensable foundation. These datasets not only provide rich material for algorithm training but also serve as benchmarks for evaluating embodied performance. Data is key to driving rapid breakthroughs and practical applications in embodied AI technology. High-quality datasets can drive the agent's perception and understanding of the environment, accelerate the training and deployment of embodied AI models, and help robots effectively complete complex tasks. Unlike large language models that can utilize massive amounts of internet information as training data, embodied intelligence models used by robots lack readily available data. They require significant time and resources for practical robot operation or simulation to collect heterogeneous data from multiple sources, including visual, tactile, force, motion trajectory, and robot body state data. Standardized and validated datasets have become a necessity in the embodied intelligence industry. Currently, embodied intelligence bodies take many forms, with diverse application scenarios, leading to a more varied demand for embodied intelligence training data. Some datasets in the industry still focus primarily on specific robots, scenarios, and skills, lacking overall versatility. Therefore, constructing high-

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quality, diverse perception datasets is an indispensable foundation. These datasets not only provide rich material for algorithm training but also serve as benchmarks for evaluating embodied performance. It is projected that nearly 200 million high-quality, high-dimensional embodied intelligence training datasets will be produced annually by 2024, with the cost of capturing one hour of multi-model robot data for autonomous vehicles reaching $180. The upstream of the embodied intelligence industry chain consists of core components, sensors, batteries, and energy systems; the downstream consists of end-application companies in intelligent manufacturing, autonomous driving, and healthcare. The midstream consists of basic models, cloud platforms and data, and software development. Data needs to collaborate with large models and high computing power.High-quality data is extremely scarce due to the high cost and difficulty of robot data collection. Embodied intelligence also faces the challenge of insufficient training data; high-quality data is a hurdle that embodied intelligence companies worldwide struggle to overcome. Large language models rely on training with vast amounts of existing internet data to achieve intelligent emergence. If embodied intelligence follows a similar logic, it will require an enormous amount of data. Currently, the industry lacks high-quality embodied interaction data. Enabling robots to achieve accurate understanding and decision-making in complex, dynamic, and unstructured real-world scenarios is a major challenge. Embodied intelligence requires high-dimensional, continuous, and dynamic scene data, but real-device data collection is extremely costly, and simulation data cannot fully bridge the gap between 'virtual and reality'. Existing embodied intelligence robot datasets generally still have several problems: limited sensory modalities, insufficient task complexity, and a lack of standardization. Limited sensory modalities: over-reliance on visual modalities and a lack of multimodal fusion; severe shortage of tactile and force feedback data. Tactile feedback is crucial for precise robot manipulation, but existing datasets generally lack this type of information. Insufficient task complexity: Most datasets focus on simple actions in a single scenario, such as basic operations like grasping, placing, and pushing. These tasks typically require only a single decision or short-range operation, lacking coverage of complex logical reasoning, multi-step collaboration, and goal-related tasks. Lack of standardization: This includes inconsistent data formats, inconsistent evaluation metrics, vague task definitions, and differences in annotation methods, severely limiting the algorithm's generalization ability across scenarios, tasks, and robot types.

The global Robot Manipulation Dataset market size was estimated at USD 753.0 million in 2025 and is projected to grow at a compound annual growth rate (CAGR) of 36.80% during the forecast period.

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This report offers a comprehensive and in-depth analysis of the global Robot Manipulation Dataset market, covering all critical facets from a broad macroeconomic overview to detailed micro-level insights. It examines market size, competitive landscape, emerging development trends, niche segments, key drivers and challenges, as well as conducts SWOT and value chain analyses.

The insights provided enable readers to understand the competitive dynamics within the industry and formulate effective strategies to enhance profitability and market positioning. Additionally, the report presents a clear framework for evaluating the current status and future outlook of business organizations operating in this sector.

A significant focus of this report lies in the competitive landscape of the global Robot Manipulation Dataset market. It offers detailed profiles of major players, including their market shares, performance metrics, product portfolios, and operational status. This enables stakeholders to identify leading competitors and gain a nuanced understanding of market rivalry and structure.

In summary, this report serves as an essential resource for industry participants, investors, researchers, consultants, and business strategists, as well as anyone planning to enter or expand their presence in the Robot Manipulation Dataset market.

Global Robot Manipulation Dataset Market: Market Segmentation Analysis

This research report provides a detailed segmentation of the market by region (country), key manufacturers, product type, and application. Market segmentation divides the overall market into distinct subsets based on factors such as product categories, end-user industries, geographic locations, and other relevant criteria.

A clear understanding of these market segments enables decision-makers to tailor their product development, sales, and marketing strategies more effectively to meet the unique needs of each segment. Leveraging market segmentation insights can significantly enhance targeted approaches, optimize resource allocation, and accelerate product innovation cycles by aligning offerings with the specific demands of diverse customer groups.

Key Company

Google?Open X-Embodiment?
Figure AI

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DeepMind
NVIDIA
PaXiniTech
AgiBot
X-humanoid
Dobot Robotics
LEJU?SHENZHEN) ROBOTICS CO.LTD
X Square Robot
Beijing Galbot Co, Ltd.
Fourier
IO-AI
Peng Cheng Laboratory
Unitree Robotics
Appen
GalaXea AI
Beijing Galbot Co.,Ltd.

Market Segmentation (by Type)

Simulation Data
Simulation Data & Real Machine Data
Real Machine Data

Market Segmentation (by Application)

Industrial Manufacturing
Autonomous Driving
Logistics & Transportation
Home Services
Healthcare & Wellness
Others

Geographic Segmentation

North America (USA, Canada, Mexico)

Europe (Germany, UK, France, Russia, Italy, Rest of Europe)

Asia-Pacific (China, Japan, South Korea, India, Southeast Asia, Rest of Asia-

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Pacific)

South America (Brazil, Argentina, Columbia, Rest of South America)

The Middle East and Africa (Saudi Arabia, UAE, Egypt, Nigeria, South Africa, Rest of MEA)

Key Benefits of This Market Research:

Industry drivers, restraints, and opportunities covered in the study
Neutral perspective on the market performance
Recent industry trends and developments
Competitive landscape & strategies of key players
Potential & niche segments and regions exhibiting promising growth covered
Historical, current, and projected market size, in terms of value
In-depth analysis of the Robot Manipulation Dataset Market
Overview of the regional outlook of the Robot Manipulation Dataset Market:

Customization of the Report

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Chapter Outline

Chapter 1 mainly introduces the statistical scope of the report, market division standards, and market research methods.

Chapter 2 is an executive summary of different market segments (by region, product type, application, etc), including the market size of each market segment, future development potential, and so on. It offers a high-level view of the current state of the Robot Manipulation Dataset Market and its likely evolution in the short to mid-term, and long term.

Chapter 3 makes a detailed analysis of the market's competitive landscape of the market and provides the market share, capacity, output, price, latest development plan, merger, and acquisition information of the main manufacturers in the market.

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Chapter 4 is the analysis of the whole market industrial chain, including the upstream and downstream of the industry, as well as Porter's five forces analysis.

Chapter 5 introduces the latest developments of the market, the driving factors and restrictive factors of the market, the challenges and risks faced by manufacturers in the industry, and the analysis of relevant policies in the industry.

Chapter 6 provides the analysis of various market segments according to product types, covering the market size and development potential of each market segment, to help readers find the blue ocean market in different market segments.

Chapter 7 provides the analysis of various market segments according to application, covering the market size and development potential of each market segment, to help readers find the blue ocean market in different downstream markets.

Chapter 8 provides a quantitative analysis of the market size and development potential of each region and its main countries and introduces the market development, future development prospects, market space, and capacity of each country in the world.

Chapter 9 shares the main producing countries of Robot Manipulation Dataset, their output value, profit level, regional supply, production capacity layout, etc. from the supply side.

Chapter 10 introduces the basic situation of the main companies in the market in detail, including product sales revenue, sales volume, price, gross profit margin, market share, product introduction, recent development, etc.

Chapter 11 provides a quantitative analysis of the market size and development potential of each region in the next five years.

Chapter 12 provides a quantitative analysis of the market size and development potential of each market segment in the next five years.

Chapter 13 is the main points and conclusions of the report.

Key Reasons to Buy this Report:

Access to date statistics compiled by our researchers. These provide you with historical and forecast data, which is analyzed to tell you why your market is set

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to change

This enables you to anticipate market changes to remain ahead of your competitors

You will be able to copy data from the Excel spreadsheet straight into your marketing plans, business presentations, or other strategic documents

The concise analysis, clear graph, and table format will enable you to pinpoint the information you require quickly

Provision of market value data for each segment and sub-segment

Indicates the region and segment that is expected to witness the fastest growth as well as to dominate the market

Analysis by geography highlighting the consumption of the product/service in the region as well as indicating the factors that are affecting the market within each region

Competitive landscape which incorporates the market ranking of the major players, along with new service/product launches, partnerships, business expansions, and acquisitions in the past five years of companies profiled

Extensive company profiles comprising of company overview, company insights, product benchmarking, and SWOT analysis for the major market players

The current as well as the future market outlook of the industry concerning recent developments which involve growth opportunities and drivers as well as challenges and restraints of both emerging as well as developed regions

Includes in-depth analysis of the market from various perspectives through Porter?s five forces analysis

Provides insight into the market through Value Chain

Market dynamics scenario, along with growth opportunities of the market in the years to come

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info@marketpublishers.com

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