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Edge AI Hardware Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028F Segmented By Device (Smartphones, Robots, Surveillance Cameras, Wearables, Smart Speakers, Automotive, Smart Mirrors, Others), By Power Consumption (Less Than 1W, 1-3W, 3-5W, 3-5W and More Than 10W), By Function (Training, Inference), By Processor (CPU, GPU, ASIC, and Others), By Vertical (Healthcare & Life Science, Retail & Consumer Electronics, Automotive & Transportation, Aerospace & Defense, Government, Construction and Others), By Region, Competition

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Abstracts

The global Edge AI Hardware market is predicted to grow during the forecast period owing to the requirement for low latency and real-time data transmission processing on edge devices. Edge AI is the implementation of artificial intelligence (AI) in an edge computing environment. This implies that rather than at a centralised cloud computing facility or off-site data centre, AI computations are performed at the edge of a particular network, typically on the device where the data is created. In addition, edge AI hardware is a term used for artificial intelligence (AI) based robotics and gadgets that are processed and powered by a collection of tools and machinery. Companies are progressively using enabling edge AI hardware's in their devices to manage the efficiency and enables customers to deploy solutions quickly with high processing capability and low-power consumption. Numerous innovations carried out in artificial

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intelligence, and machine learning technologies are expected to enhance the features of Edge AI Hardware. This, in turn, is expected to drive market growth during the forecast period.

The Edge AI Hardware market has witnessed significant growth in the last few years as the demand for adoption of edge AI in end-use industries such as telecommunication, aerospace & defense, information & technology and automobiles is increasing. Additionally, Edge AI hardware is offering the advantages of increasing accuracy and reduces latency by processing data locally, improving efficiency, real-time analytics and reducing the operational cost by integrating to the Edge AI Hardware system. The growth in consumer demand for self-service operations has led to increase in product demand. This can be attributed to the growing preference of individuals for computational speed and reduced latency in the organization and business as the number of smart devices has grown higher in the recent years. Moreover, growing collaboration between the advanced technology-based enterprises are also expected to witness significant demand in the future. Furthermore, edge AI hardware are gaining popularity as increase in usage of smartphones, surveillance cameras and smart speakers by the consumers are showing a lucrative growth in the global market, it also provides dependability and durability in challenging situations. The use of Edge AI Hardware enables organizations to deliver timely services at reduced costs.

Increasing Demand for Smart Homes and Smart Cities

The increasing demand for smart homes and smart cities is driving the growth of global edge AI hardware market during the forecast period. Many industrialists and builders across the countries are adopting advanced technologies to make their homes and the cities infrastructure smarter with the integration of artificial intelligence (AI). Smart cities all around the world are progressively using these AI technologies as they become increasingly widespread across several sectors. As smart cities spread, more individuals are getting interested in the concept of a smart house. As more people choose to live in cities, there will likely be a greater need for automated services in everyday life. The demand for smart homes is turning them from a luxury to an essential need. Edgehardware devices on behalf of Artificial Intelligence (AI) is helping the smart devices with additional benefits such as adaptation to user behavior using machine learning algorithms, low latency with real-time responses. Moreover, many developing nations have started implementing smart cities initiatives as a definition of future with the growth in urbanization. Incorporating AI into smart home products and smart cities can make devices more efficient, convenient, and personalised, leading to a better overall user experience. For instance, countries such as Singapore, Finland,

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Switzerland, and Norway and many more are among the top smart cities in the world in 2022. Furthermore, the government all around the world are leveraging cutting-edge technology to address the fundamental issues involved in assuring the security and safety of individuals. Thus, the increasing demand for smart homes and smart cities are driving the growth of global edge AI hardware market during the forecast period.

Requirement for Low Latency and Real-Time Data Transmission Processing on Edge Devices

The inference process for data-intensive deep learning on edge devices is accelerated by specialized hardware called AI accelerators. Specialized edge AI hardware enables the quick deep learning on-device that has become more and more significant due to the increasing need for real-time deep learning workloads. To get beyond the issues of high latency and security gaps, edge AI processes IoT-generated data at close range. The cloud receives a significant amount of data from an IoT device, which is then processed by machine learning (ML) models before being sent back to the IoT device. This procedure may cause a response time delay. Yet on-device AI limits data exchange, enabling a quicker reaction. The ability to store a significant amount of data on the cloud may also not be possible. Sending this data to the cloud is not necessary with edge AI since the devices themselves have the processing capability. Therefore, increasing Edge AI Hardware demands for low latency and real-time data transmission processing on edge devices are expected to grow the adoption of Edge AI Hardware in the global market.

Digitalization and Increasing Adoption of Advanced Technologies Driving the Market Growth

The rising adoption of advanced technologies such as edge computing and artificial intelligence (AI) and growing digitalization are driving the growth of Edge AI Hardware market globally. As the technology is in developing stage with explicit future growth, more and more enterprises are integrating and adopting edge, AI enabled devices and solutions into their manufacturing and operation services. Edge AI hardware is helping businesses that are consistently using robots and other consumer electronics to process data in real-time and provide a seamless user experience. Moreover, artificial intelligence (AI) is becoming a key enabler to help automate and speed up the process by increasing efficiency and optimizing the performance and improving decision making. Therefore, increasing adoption of advanced technologies and growing digitalization is driving the demand of global edge AI hardware market.

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Increase Usage of Smartphones to Propel Growth of Market

The increase in usage of smartphones in driving the demand of global edge AI hardware market. The lives of everyone are governed by smartphones and mobile gadgets. According to data on smartphone usage, two-thirds of the globe is now linked via smartphones and more than 7.33 billion people own mobile devices by 2023. Children begin receiving mobile devices at the age of 10. Nearly all children of generation Z owns a smartphone. The number of individuals utilizing the internet has increased as a result. The demand for cloud-based services and smart device users rises as a result. The edge AI hardware sector has greater options because of the usage of cloud-based services, which also leads to quicker installation times, easy and secure data transfers, rapid scaling demand increases, and cheaper infrastructure, energy, and facility costs.

Market Segmentation

Based on device, the market is segmented into smartphones, robots, surveillance cameras, wearables, smart speakers, automotive, smart mirrors, and others. Based on power consumption, the market is segmented into less than 1W, 1-3W, 3-5W, 3-5W and more than 10W. Based on function, the market is segmented into training and inference. Based on processor, the market is segmented into CPU, GPU, ASIC, and others. On the basis of vertical, the market is further split into healthcare & life science, retail & consumer electronics, automotive & transportation, aerospace & defense, government, construction, and others. The market analysis also studies the regional segmentation to devise regional market segmentation, divided among North America, Europe, Asia-Pacific, South America, and Middle East & Africa.

Company Profiles

Qualcomm Technologies, Inc., Huawei Technologies Co. Ltd., Samsung Electronics Co. Ltd., MediaTek Inc., International Business Machines Corporation (IBM), Microsoft Corporation, NVIDIA Corporation, Google LLC (Alphabet Inc.), Apple Inc., Intel Corporation are among the major players that are driving the growth of the Global Edge AI Hardware Market.

Report Scope:

In this report, the global Edge AI Hardware market has been segmented into the following categories, in addition to the industry trends which have also been detailed

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below:

Edge AI Hardware Market, By Device:

Smartphones

Robots

Surveillance Cameras

Wearables

Smart Speakers

Automotive

Smart Mirrors

Others

Edge AI Hardware Market, By Power Consumption:

Less Than 1W

1-3W

3-5W

5-10W

More Than 10W

Edge AI Hardware Market, By Function:

Training

Inference

Edge AI Hardware Market, By Processor:

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- CPU
- GPU
- ASIC
- Others

Edge AI Hardware Market, By Vertical:

- Healthcare & Life Science
- Retail & Consumer Electronics
- Automotive & Transportation
- Aerospace & Defense
- Government
- Construction
- Others

Edge AI Hardware Market, By Region:

- Asia-Pacific
  - China
  - Japan
  - India
  - Australia
  - South Korea

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North America

- United States
- Canada
- Mexico

Europe

- United Kingdom
- Germany
- France
- Spain
- Italy

Middle East & Africa

- Israel
- Turkey
- Saudi Arabia
- UAE

South America

- Brazil
- Argentina
- Colombia

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Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the global Edge AI Hardware market.

Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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