

Ai Chipsets Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The AI chipsets market is anticipated to register a CAGR of 39% during the forecast period. Various factors, such as a rise in demand for edge analytics, autonomous driving, and smart appliances in the consumer electronics industry, are anticipated to support the market growth.?

Key Highlights

The rapidly growing demand for machine learning in multiple sectors, such as automotive, finance, and retail, boosts the adoption of AI technology. The most famous application of AI chipsets in the automotive industry includes manufacturing a driverless car to achieve the L5 level of autonomous technology.?

Artificial intelligence (AI) is entering nearly every aspect of consumer electronics. Its uses are growing beyond cell phones to include the automotive industry. This growth is bringing a slew of new prospects to the semiconductor industry. The requirement to process a constantly rising volume of data is a major element influencing the AI chipset market's growth.

Moreover, as AI enables machines to perform various activities like those operated by human beings, numerous opportunities are expected to open in the future. Additionally, the growing focus on developing human-aware AI systems is boosting the growth of the market. However, the lack of a skilled workforce and the absence of standards and protocols are restraining the market growth.?

The need for a large number of ASICs is anticipated to rise as artificial intelligence gains more ground in global technology.

Companies, such as Amazon and Google, are already in the process of fortifying their server silicon endeavors. ?

Companies are using new technologies, such as artificial intelligence, to design new AI chips. For instance, as per a paper published in the journal Nature in June 2021, Google is using AI and machine learning to help design its next generation of AI chips. According to the company, work that takes months for humans can be completed by AI in under six hours.

Furthermore, the increasing neuromorphic research is an emerging field within the areas of AI hardware anticipated to boost the demand for AI chips. The intuition here is to develop techniques inspired by the real neurons in the brain function; hence, the name neuromorphic was used. The low energy and high-quality output of neurons have enthused researchers to develop Spiking Neural Networks (SNNs). However, these SNNs require hardware of their own. ?

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The outbreak of COVID-19 has negatively impacted the AI chipsets market's supply chain and production. The impact on semiconductor producers was severe. The acceptance of AI for improving consumer services and reducing operational costs, the expanding number of AI applications, improving processing power, and the growing adoption of deep learning and neural networks are major market drivers. Many companies in the semiconductor supply chain worldwide restricted or even stopped operations due to workforce constraints, causing a bottleneck for semiconductor-dependent end-product companies.

AI Chipsets Market Trends

Consumer Electronics Is Expected to Witness Significant Growth

Semiconductor chip shortage halted the production of consumer electronics worldwide due to the COVID-19 pandemic. However, the pandemic created a huge demand for consumer electronics, such as laptops, desktops, and gaming consoles, causing chaos for product companies, manufacturers, and end consumers. Equipment manufacturers focused on meeting this demand from the volatile consumer technology market. The chip shortage and high demand scenario are expected to continue until the next 2 to 3 years, driving the demand for AI chips for consumer electronics.

The market will benefit from the increased use of quantum computing technologies to tackle complicated issues and perform analytical computations. For example, Google LLC's Sycamore quantum computer is the fastest computer, capable of completing work in roughly 200 seconds. Artificial intelligence, machine learning, computer vision, Big Data, AR/VR, and other technologies enable quantum computers. The expanding understanding of quantum computing will boost the demand for AI chipsets, thus boosting the industry's growth.

AI technologies have been deployed in various industries, including automotive and manufacturing, to streamline processes. The industry may benefit from manufacturers' focus on enhanced AI-based solutions during the pandemic. For example, in May 2020, Nvidia Corporation updated its EGX Edge AI platform by launching new devices, namely, the EGX Jetson Xavier NX and EGX A100. The consumer electronics category is likely to occupy a major proportion of the AI chipset market during the forecast period. Various electronic devices, such as tablets and smartphones, are in high demand in the market with high-end specifications. Numerous manufacturers are continuously introducing novel AI chipsets to cater to the rising demand. For instance, in May 2022, MediaTek, a Taiwanese chipmaker, announced the Genio architecture for artificial intelligence of things (AIoT) devices, as well as the Genio 1200 chip. Premium AIoT solutions based on the Genio 1200 chip will be widely accessible in the latter half of 2022, according to MediaTek.

The AI chipsets market is being driven by the increasing need for high-speed computer processors and increasing demand for better customer services and lower operating costs. The industry is being restrained by a shortage of experienced labor and a lack of standards and protocols.

Asia-Pacific Is Anticipated to Witness Significant Growth

The Asia-Pacific market is projected to grow significantly due to emerging economies like South Korea, India, and China. The increased acceptance of AI-based solutions will support the market's healthy expansion in the region. The growing application of AI chipsets in consumer electronics, such as smartphones, tablets, and laptops, involves integrating voice commands, among others, which has resulted in the high adoption of AI chipsets in the region.

Japan was one of the first nations to adopt a national AI policy. Japan's approach, primarily focused on making AI helpful to both society and the economy, intends to expand AI R&D skills, build AI systems with industrial applications, and prepare workers for labor market transformations. In June 2019, Prime Minister Shinzo Abe unveiled a plan to train 250,000 people in AI skills annually by 2025.

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The integration of voice commands, enhancement of photography experience, gathering and sorting relevant data based on previous searches, and other applications of AI chipsets in consumer electronics, such as smartphones, tablets, and laptops, resulted in the high adoption of AI chipsets.

The region is home to the world's largest smartphone manufacturers and semiconductor companies. China, Japan, Taiwan, and South Korea account for roughly 80% of smartphone manufacturers worldwide. The greatest population has led to increased smartphone usage, which is likely to drive market growth.

Several market players in the region are at the forefront of developing and producing AI chips. For instance, in August 2021, Baidu, a Chinese tech giant, started mass-producing second-generation Kunlun AI chips to become a major player in the chip industry. According to Baidu, the new generation of Kunlun AI chips is produced using 7 nm process technology, with computational capability 2-3 times better than the previous generation.

AI Chipsets Market Competitor Analysis

Though some small and large global companies have influenced the market, the AI chipsets market is expected to be moderately consolidated. The market is still in its early stages of development. Some of the prominent participants in the current industry include Intel Corporation, Samsung Electronics, NVIDIA Corp., Xilinx Inc., and Micron Technology. To obtain leading positions in the AI chipsets market, these players are engaged in competitive strategic advancements, such as collaborations, new product innovations, and market expansions.

August 2021 - IBM announced a new chip, Telum, which is expected to allow IBM clients to leverage deep learning inference at scale. This chip features a centralized design enabling clients to leverage the full power of the AI processor for AI-specific workloads, making it suitable for financial services workloads, such as loan processing, clearing and settlement of trades, fraud detection, anti-money laundering, and risk analysis.

Additional Benefits:

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

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