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Artificial Intelligence (chipsets) Market by Technology (Machine Learning, Natural Language Processing, Computer Vision), Function (Training, Inference), Hardware (Processor, Memory, Network), End-user Industry and Region - Global Forecast to 2028

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Abstracts

The global AI (chipsets) market is expected to be valued at USD 18.6 billion in 2023 and is projected to reach USD 64.5 billion by 2028 and grow at a CAGR of 28.1% from 2023 to 2028. AI (chipsets) are optimized to handle the computational requirements of AI algorithms, which involve tasks such as data preprocessing, training, and inference. AI (chipsets) have witnessed significant advancements in terms of computational power. Traditional CPUs (Central Processing Units) have been supplemented or replaced with specialized accelerators such as GPUs (Graphics Processing Units), TPUs (Tensor Processing Units), and NPUs (Neural Processing Units). These accelerators are designed to handle the parallel computations required for AI algorithms, delivering faster processing and improved performance.

“Machine Learning to account for the second largest technology segment for Artificial Intelligence (chipsets) market”

With the rise of edge computing and the increasing demand for real-time decision-making, there is a need for AI (chipsets) that can enable machine learning inference at the edge. Edge devices such as smartphones, IoT devices, and autonomous systems require on-device machine learning capabilities to perform tasks locally without relying on cloud connectivity. AI (chipsets) designed for machine learning enable efficient and low-latency processing, facilitating real-time decision-making and reducing reliance on cloud resources.

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“Automotive industry to grow at the second highest CAGR for Artificial Intelligence (chipsets) market.”

The automotive industry is rapidly progressing towards autonomous driving capabilities. AI (chipsets) are essential for powering the complex algorithms and sensor fusion required for autonomous vehicles to perceive their environment, make decisions, and control their movements. These chipsets enable real-time data processing from sensors like cameras, radar, lidar, and ultrasonic sensors, ensuring accurate perception and safe navigation. Additionally, AI (chipsets) play a vital role in driver assistance systems, enhancing safety features such as collision avoidance, lane keeping, and adaptive cruise control.

“China to grow at the highest CAGR for Asia Pacific Artificial Intelligence (chipsets) market.”

The Chinese government has recognized the strategic importance of AI and has made it a priority in its national development plans. The government has launched initiatives such as the 'New Generation Artificial Intelligence Development Plan' and the 'AI 2.0 Development Plan' to foster AI research, innovation, and industrial development. These initiatives provide funding, incentives, and policy support to AI chipset companies, encouraging their growth and driving the overall market.

The study contains various industry experts’ insights, from component suppliers to Tier 1 companies and OEMs. The break-up of the primaries is as follows:

By Company Type: Tier 1 – 45%, Tier 2 – 32%, and Tier 3 – 23%

By Designation: C-level Executives – 30%, Directors – 45%, and Others – 25%

By Region: North America – 26%, Europe – 40%, Asia Pacific – 22%, RoW – 12%

The key players operating in the Artificial Intelligence (chipsets) market are Intel Corporation (US), Nvidia Corporation (US), Qualcomm Technologies Inc. (US), Micron Technology, Inc. (US), and Advanced Micro Devices, Inc. (US).

Research Coverage:

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The research report categorizes the Artificial Intelligence (chipsets) market by technology (Machine Learning, Natural Language Processing, Context-Aware, Computer Vision, and Predictive Analysis), by function (Inference, Training), by hardware (Processor, Memory, and Network), by end-user industry (Healthcare, Manufacturing, Automotive, Agriculture, Retail, Cybersecurity, Human Resources, Marketing, Law, Fintech and Government), and by region (North America, Europe, Asia Pacific, and RoW). The scope of the report covers detailed information regarding the major factors, such as drivers, restraints, challenges, and opportunities, influencing the growth of the Artificial Intelligence (chipsets) market. A detailed analysis of the key industry players has been done to provide insights into their business overviews, products, key strategies, Contracts, partnerships, and agreements. New product & service launches, mergers and acquisitions, and recent developments associated with the Artificial Intelligence (chipsets) market. This report covers the competitive analysis of upcoming startups in the Artificial Intelligence (chipsets) market ecosystem.

Key Benefits of Buying the Report

Analysis of critical drivers (increasing data traffic and need for high computing power, the emerging trend of autonomous vehicles, increasing adoption of industrial robots, and rising focus on parallel computing in AI data centers), restraints (Lack of AI hardware experts and skilled workforce), opportunities (surging demand for AI-based FPGA, growing adoption of AI-based solutions for defense systems, and the growing potential of AI-based tools for healthcare systems), and challenges (data privacy concerns in AI platforms, unreliability of AI algorithms, and availability of limited structured data to train and develop efficient AI systems) influencing the growth of the Artificial Intelligence (chipsets) market.

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product launches in the Artificial Intelligence (chipsets) market

Market Development: Comprehensive information about lucrative markets – the report analyses the Artificial Intelligence (chipsets) market across varied regions.

Market Diversification: Exhaustive information about new products, untapped geographies, recent developments, and investments in the Artificial Intelligence (chipsets) market

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Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players like Intel Corporation (US), Nvidia Corporation (US), Qualcomm Technologies Inc. (US), Micron Technology, Inc. (US), Advanced Micro Devices, Inc. (US), among others in the Artificial Intelligence (chipsets) market.

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*Details on Business Overview, Products/Solutions/Services Offered, Recent Developments, and MnM View (Key strengths/Right to Win, Strategic Choices Made, and Weaknesses and Competitive Threats) might not be captured in case of unlisted companies.

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About

According to the latest market research report "Artificial Intelligence (Chipsets) Market by Technology (Machine Learning, Natural Language Processing, Context-Aware Computing, Computer Vision), Hardware (Processor, Memory, Network), End-User Industry, and Geography - Global Forecast to 2025", the overall artificial intelligence (chipsets) market is estimated to be valued at USD 7.06 Billion in 2018 and is expected to be worth USD 59.26 Billion by 2025, growing at a CAGR of 35.5% from 2018 to 2025. The availability of big data, coupled with AI algorithms for an extensive range of application areas, is fueling the growth of the AI (chipsets) market. Increased productivity and improved customer satisfaction are the other key factors driving this market.

Companies that are profiled in this report are

NVIDIA (US)

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Samsung Electronics (South Korea)

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Mythic (US)

Adapteva (US)

Koniku (US)

Machine learning to hold largest market share from 2018 to 2025

Machine learning is expected to hold the largest share of the AI (chipsets) market from 2018 to 2025. Machine learning enables systems to automatically improve their performance with experience. ML aims to develop a computer program/algorithm that can access data and use it to train itself with no human intervention. Machine learning's ability to collect and handle big data, and its applications in real-time speech translation, autonomous robots, and facial analysis are fueling its growth.

AI (chipsets) market for memory to grow at highest CAGR from 2018 to 2025

The AI (chipsets) market for memory is expected to grow at the highest CAGR during the forecast period. Increasing demand for memory to run large and complex AI algorithms based on AI technologies such as machine learning, computer vision, and predictive analytics is driving the growth of memory devices. In addition, high-bandwidth memory is being developed and deployed for AI applications, independent of its computing architecture.

Marketing to account for largest market size among other end-user industries between 2018 and 2025

The AI (chipsets) market is currently led by the marketing end-user industry. This is attributed to the increasing use of AI for performance improvement of marketing campaigns through better decision-making and offering personalized content to the target markets. Search advertising, social media advertising, and sales and marketing automation are the major applications of AI in marketing.

North America to lead AI (chipsets) market in terms of market size

North America held the largest share of the AI (chipsets) market in 2017. The increasing adoption of AI technology in various end-user industries, such as healthcare,

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manufacturing, automotive, agriculture, retail, marketing, law, and fintech, and strong presence of industry giants and emerging AI companies in the region are the key factors supporting the growth of the AI (chipsets) market in North America.

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