

Global Artificial Intelligence Chipset Market Size Study, by Chipset (CPU, GPU, FPGA, ASIC, Others), Workload Domain, Computing Technology, and Regional Forecasts 2022-2032

<https://marketpublishers.com/r/G692066F582AEN.html>

Date: February 2025

Pages: 285

Price: US\$ 4,950.00 (Single User License)

ID: G692066F582AEN

Abstracts

The Global Artificial Intelligence Chipset Market, valued at approximately USD 56.82 billion in 2023, is set to witness unprecedented growth, with an estimated compound annual growth rate (CAGR) of 28.9% during the forecast period from 2024 to 2032. AI chipsets are at the forefront of technological evolution, underpinning critical advancements in automation, data processing, and intelligent systems. These chipsets facilitate machine learning, neural network processing, and high-speed data analytics, enabling devices and systems to emulate human cognitive functions. As industries continue to adopt AI-driven solutions, the demand for high-performance AI chipsets is surging across various sectors, including healthcare, automotive, and IT.

The meteoric rise of AI chipset adoption is largely attributed to the increasing prevalence of AI-enabled applications across diverse industries. With businesses striving to harness the power of big data, advanced AI chipsets have become indispensable for achieving faster processing speeds and enhanced computational efficiency. The integration of graphics processing units (GPUs) and field-programmable gate arrays (FPGAs) into AI infrastructure has enabled unparalleled scalability and flexibility. Furthermore, innovations in application-specific integrated circuits (ASICs) are accelerating the development of tailored solutions to meet specific AI workload demands, driving market growth.

Despite its promising trajectory, the AI chipset market faces notable challenges. The high costs associated with R&D and initial implementation often hinder widespread adoption among smaller enterprises. Additionally, the increasing complexity of AI

workloads necessitates continuous innovation, which requires substantial investments. Concerns around data security and ethical considerations further underscore the need for robust regulations. However, ongoing advancements in cloud computing and edge AI, coupled with growing investments in AI infrastructure, are expected to mitigate these challenges, paving the way for sustained market expansion.

The AI chipset market demonstrates distinct regional trends. In 2023, North America emerged as the dominant player, driven by a well-established tech ecosystem and significant investments in AI research and development. The region's leadership in innovation, coupled with the presence of major industry players, provides a competitive edge. Meanwhile, the Asia-Pacific region is poised to record the fastest growth, underpinned by rising digitalization, government initiatives to promote AI adoption, and the expansion of smart city projects. Europe also holds a substantial market share, with advancements in AI-driven automotive technologies and healthcare solutions.

Major market players included in this report are:

NVIDIA Corporation

Intel Corporation

Advanced Micro Devices, Inc. (AMD)

Qualcomm Incorporated

Alphabet Inc. (Google)

IBM Corporation

Broadcom Inc.

Samsung Electronics Co., Ltd.

Graphcore

MediaTek Inc.

Xilinx, Inc.

Huawei Technologies Co., Ltd.

Micron Technology, Inc.

Amazon Web Services (AWS)

Baidu, Inc.

The detailed segments and sub-segments of the market are explained below:

By Chipset:

CPU

GPU

FPGA

ASIC

Others

By Workload Domain:

Training

Inference

By Computing Technology:

Cloud AI

Edge AI

By Region:

North America:

U.S.

Canada

Europe:

UK

Germany

France

Spain

Italy

Rest of Europe

Asia-Pacific:

China

India

Japan

Australia

South Korea

Rest of Asia-Pacific

Latin America:

Brazil

Mexico

Middle East & Africa:

Saudi Arabia

South Africa

Rest of Middle East & Africa

Key Takeaways:

Comprehensive market forecasts and trends from 2022 to 2032.

Detailed regional analysis with country-specific insights.

Assessment of competitive dynamics and profiles of major players.

Evaluation of growth drivers, challenges, and emerging opportunities.

Actionable recommendations for stakeholders to leverage market potential effectively.

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