Edge Artificial Intelligence Accelerator Market to Reach USD $35.38 Billion by 2029 at 33.6% CAGR

The Business Research Company's Edge Artificial Intelligence Accelerator Global Market Report 2025 – Market Size, Trends, And Global Forecast 2025-2034

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What Is The Estimated Industry Size Of Edge Artificial Intelligence Accelerator Market?
The accelerated growth of the edge artificial intelligence market has been astronomical in the last few years, forecasting an escalation from $8.28 billion in 2024 to approximately $11.10 billion in 2025. The compound annual growth rate (CAGR) is estimated to be 34.0%. The historical growth can be credited to the escalating adoption of Internet of Things (IoT) devices, the surge in necessity for instantaneous decision-making, an increasing focus on data privacy and security, more frequent usage of artificial intelligence in automobile-based applications, and the increasing campaign of 5G networks.

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The market size for edge artificial intelligence accelerators is anticipated to experience significant expansion in the forthcoming years. It is projected to reach $35.38 billion by 2029, with a compound annual growth rate (CAGR) of 33.6%. This growth during the prediction period can be credited to the expanding ecosystem of edge artificial intelligence hardware and software platforms, the increasing presence of AI-powered robotics and autonomous systems, the heightened usage of edge artificial intelligence in agriculture and drone operations, the escalating implementation of smart city initiatives, and the upsurge in government and defense spending on edge artificial intelligence. Key trends during this forecast period encompass

advancements in low-power AI chip technology, the application of technology in intelligent cameras and sensors, the innovation in AI model compression methods, development in managing the heat of edge chips, and the merging of AI tasks in smart devices.

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What Are The Major Factors Driving The Edge Artificial Intelligence Accelerator Global Market Growth?
The rapid surge in internet of things (IoT) devices is set to fuel the expansion of the edge artificial intelligence accelerator market in the future. Internet of things devices, which form an interlinked network of gadgets like smartphones, sensors, smart home devices, and security cameras, enable communication and data exchange over the web without necessitating human intervention. There is a burgeoning demand for IoT devices due to the requirement for real-time data. IoT devices enhance operational efficiency, facilitate remote monitoring, and aid intelligent decision-making across various industry sectors. Edge AI accelerators enrich IoT devices by facilitating real-time data processing right at the device level, thereby curbing latency and reliance on cloud services. This results in enhanced efficiency, quick insights, and smarter automation, which bolsters the performance of connected systems. As per IoT Analytics, a research firm in Germany specializing in IoT market insights, the number of active IoT devices touched 16.6 billion in 2023, marking a 15% surge from the 14.4 billion in 2022. Thus, the escalating adoption of IoT devices is propelling the growth of the edge artificial intelligence accelerator market.

Who Are The Leading Companies In The Edge Artificial Intelligence Accelerator Market?
Major players in the Edge Artificial Intelligence Accelerator Global Market Report 2025 include:
• Apple Inc.
• Tencent Corporation
• Intel Corporation
• IBM Corporation
• Qualcomm Incorporated
• NVIDIA Corporation
• Advanced Micro Devices Inc.
• Infineon Technologies AG
• Arm Holdings plc
• Synaptics Incorporated

What Are The Key Trends Shaping The Edge Artificial Intelligence Accelerator Industry?
Leading firms in the edge artificial intelligence accelerator market are concentrating their efforts on crafting innovative products like discrete AI accelerators, to amplify on-device AI processing and diminish latency. Contrary to the central processing unit (CPU) or graphics processing unit (GPU), discrete AI accelerators function as independent hardware components or chips specifically designed to speed up AI and machine learning tasks. For instance, in July 2025, an AI

technology firm from Israel, Hailo Technologies Ltd., introduced Hailo-10H. This is a superior discrete artificial intelligence accelerator designed to augment generative artificial intelligence abilities on edge devices for improved efficiency and lower latency. The device empowers edge devices to execute complex generative AI applications such as producing images, processing videos, and facilitating natural language interactions directly on-device, thereby reducing dependency on cloud connectivity. Offering 40 tera operations per second (TOPS) of computing potential, the accelerator paves the way for increased energy efficiency, quicker response times, better data privacy, and dependable performance for upcoming artificial intelligence-driven applications in the consumer electronics, automotive, and industrial sectors.

What Are The Primary [Segments Covered In The Global Edge Artificial Intelligence Accelerator](#) Market Report?
The edge artificial intelligence accelerator market covered in this report is segmented
1) By Component: Central Processing Unit (CPU), Graphics Processing Unit (GPU), Application-Specific Integrated Circuit (ASIC), Field-Programmable Gate Arrays (FPGAs)
2) By Device: Smartphones, Internet of Things (IoT) Devices, Robots, Cameras
3) By Function Outlook: Training, Interference
4) By End-User: Healthcare, Automotive, Retail, Manufacturing, Security and Surveillance, Other End-Users

Subsegments:
1) By Central Processing Unit (CPU): Multi-Core Central Processing Units, Single-Core Central Processing Units, Low-Power Central Processing Units, High-Performance Central Processing Units
2) By Graphics Processing Unit (GPU): Integrated Graphics Processing Units, Discrete Graphics Processing Units, Mobile Graphics Processing Units, Data Center Or Server Graphics Processing Units
3) By Application-Specific Integrated Circuit (ASIC): Artificial Intelligence Inference Application-Specific Integrated Circuits, Artificial Intelligence Training Application-Specific Integrated Circuits, Vision Processing Application-Specific Integrated Circuits, Neural Network Accelerator Application-Specific Integrated Circuits
4) By Field-Programmable Gate Arrays (FPGAs): High-End Field-Programmable Gate Arrays, Mid-Range Field-Programmable Gate Arrays, Low-Power Field-Programmable Gate Arrays, Embedded Field-Programmable Gate Arrays

View the full edge artificial intelligence accelerator market report:
https://www.thebusinessresearchcompany.com/report/edge-artificial-intelligence-accelerator-global-market-report

Which Region Is Forecasted To Grow The Fastest In The Edge Artificial Intelligence Accelerator Industry?
In the Edge Artificial Intelligence Accelerator Global Market Report 2025, North America emerged as the leading region in the given year of 2024. The rapid growth, however, is projected to be

witnessed by the Asia-Pacific region in the forecasted period. The report's geographical coverage encapsulates regions like Asia-Pacific, Western Europe, Eastern Europe, North America, South America, the Middle East, and Africa.

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