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Edge Artificial Intelligence Chips Market: Segmented By Processor (CPU, GPU, ASIC and Others): By Device Type (Consumer Devices and Enterprise Devices): By Function (Training and Inference): Global Analysis by Market size, share & trends for 2020-2021 and forecasts to 2031

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Abstracts

[176+ Pages Research Report] Edge Artificial Intelligence Chips Market to surpass USD 15.2 billion by 2031 from USD 2.5 billion in 2021 at a CAGR of 19.56% within the coming years, i.e., 2021-31.

Product overview
Edge Artificial Intelligence Chips defines styles in which AI models are processed locally, on devices at the edge of the network. Most AI processes are carried out with cloud-based data centers that need extensive compute capacity. These expenses can add up quickly. On the other hand, Edge Artificial Intelligence needs little to no cloud set-up beyond the early growth phase. A model might be trained in the cloud but deployed on an edge device, where it runs without server structure.

Market Highlights
Edge Artificial Intelligence Chips Market is predicted to project a notable CAGR of 19.56% in 2031

Growing usage of social media and e-commerce platforms leads to a huge growth in data volume, which further generates the need for more effective workstations for quicker implementation of machine learning tasks. The artificial intelligence chips report the requirement for faster processing due to empowered machine learning.

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Implementation of edge-based AI is one of the key trends in chip technology, as running AI processes on a device itself instead of a remote server offers assistance of higher speed and better privacy.

Edge Artificial Intelligence Chips Market: Segments
Consumer Device segment to grow with the highest CAGR during 2021-2031

Based on Device Type, the market is segmented into Consumer Devices, Enterprise Devices. The consumer devices segment holds the highest market share of Edge Artificial Intelligence Chips owing to the growing number of Artificial Intelligence chip placements in smartphones and other consumer devices. Evolving technologies, such as 5G networks provide further opportunities for the growth of the section.

Inference Segment to grow with the highest CAGR during 2021-2031

Edge Artificial Intelligence Chips Market by Function is segmented into Training and Inference. The market size of the Inference segment is anticipated to grow at the highest CAGR during the forecast period. This is due to edge computing is adopted mostly for inference purposes owing to lesser data to be handled while acting inference.

Edge Artificial Intelligence Chips Market: Market Dynamics
Drivers
Rise in request for low latency and real-time processing on edge devices

In edge AI, machine learning algorithms use device-generated data and procedure the data in the device. This lessens inactivity and leads to real-time, automated decision-making. Applications that involve real-time data processing will benefit from the fact that edge AI enables real-time operations such as data generation, learning, and inference. Autonomous vehicles have very little time between sensing a possible collision and making an adjustment regarding steering and braking. A large amount of data gathered from an IoT device is transmitted to the cloud, where machine learning (ML) models run and convey the managed data back to the device, which can lead to a postponement in reply. On-device AI reduces the distribution of data subsequent in a faster response.

Loyal AI processors for on-device image analytics

AI mobile processors care about computational imaging applications in drones, wearable electronics, robots, scrutiny cameras, and autonomous vehicles. The application of AI-based vision processing units (VPU) can benefit drones make better

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decisions and reducing the risk of accidents, which will enhance to the rising demand for drones for industrial and personal use. Computational imaging and visual awareness applications are enhancing mobile devices by replacing complex optics with basic lens assemblies and multiple apertures; combining images captured by diverse. These factors empower the use of VPUs for a broad range of new application zones and use cases in mobile handsets, tablets, wearable devices, and personal robots.

Restraints
Limited on-device training

Presently, machine learning models available for edge AI are pre-trained and used for interpretation. Pre-trained models are offered to operators, and the model fine-tunes itself based on the users' data. Training a model consumes a lot of computational energy, and edge AI is more expected to suffer from doubt, uncertainty, and randomness as it has limited access to training data.

Impact of the COVID-19 on the Edge Artificial Intelligence Chips Market

Since the COVID-19 virus outbreak in December 2019, the disease has spread to almost every country around the world with the WHO declaring it a public health emergency. The global impacts of the coronavirus disease 2019 are already starting to be felt, and will significantly affect the Edge Artificial Intelligence Chips market in 2021. The outbreak of COVID-19 has brought effects on many features, like aircraft terminations; travel bans and quarantines; restaurants, cafes closed; all outdoor events restricted; over forty countries state of emergency declared; massive slowing of the supply chain; stock market instability; dropping business confidence, building panic among the population, and doubt about future.

Edge Artificial Intelligence Chips Market: Key Players
Advanced Micro Devices, Inc.

Company Overview, Business Strategy, Key Product Offerings, Financial Performance, Key Performance Indicators, Risk Analysis, Recent Development, Regional Presence, SWOT Analysis

Alphabet Inc.
Intel Corporation
Qualcomm Technologies, Inc.
Apple Inc.

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Mythic Ltd.
Arm Limited
Samsung Electronics Co., Ltd.
NVIDIA Corporation
HiSilicon(Shanghai) Technologies CO., LIMITED
Xilinx Inc.
Other prominent players
Edge Artificial Intelligence Chips Market: Regions
Edge Artificial Intelligence Chips Market is segmented based on regional analysis into five major regions. These include North America, Latin America, Europe, Asia Pacific and the Middle East, and Africa. North America is estimated to contribute the largest share of the Edge Artificial Intelligence Chips Market during the forecast period due to governments' growing focus on having in-house AI applications production and constant investments in artificial intelligence-related technologies Moreover, large number of players functioning in this region also influence to drive growth of the market in North America. Asia Pacific also holds a major share of the global market. The market in the region is also projected to register the highest CAGR during the forecast period.

Edge Artificial Intelligence Chips Market is further segmented by region into:

North America Market Size, Share Trends, Opportunities, Y-o-Y Growth, CAGR-United States and Canada
Latin America Market Size, Share Trends, Opportunities, Y-o-Y Growth, CAGR-Mexico, Argentina, Brazil, and Rest of Latin America
Europe Market Size, Share Trends, Opportunities, Y-o-Y Growth, CAGR- United Kingdom, France, Germany, Italy, Spain, Belgium, Hungary Luxembourg, Netherlands, Poland, NORDIC, Russia, Turkey and Rest of Europe
Asia Pacific Market Size, Share Trends, Opportunities, Y-o-Y Growth, CAGR-India, China, South Korea, Japan, Malaysia, Indonesia, New Zealand, Australia, and Rest of APAC
Middle East and Africa Market Size, Share Trends, Opportunities, Y-o-Y Growth, CAGR – North Africa, Israel, GCC, South Africa, and Rest of MENA
Edge Artificial Intelligence Chips Market report also contains analysis on:
Edge Artificial Intelligence Chips Market Segments:

By Processor
CPU
GPU

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Report Attribute Details
Market size value in 2021 USD 2.5 billion
Revenue forecast in 2031 USD 15.2 billion
Growth Rate CAGR of 19.56% from 2021 to 2031
Base year for estimation 2021
Quantitative units Revenue in USD billion and CAGR from 2021 to 2031
Report coverage Revenue forecast, company ranking, competitive landscape, growth factors, and trends
Segments covered Processor, device type, function and region
Region scope North America; Europe; Asia Pacific; Latin America; Middle East & Africa (MEA)
Key companies profiled Advanced Micro Devices, Inc.; Alphabet Inc.; Intel Corporation; Qualcomm Technologies, Inc.; Apple Inc.; Mythic Ltd.; Arm Limited; Samsung Electronics Co., Ltd.; NVIDIA Corporation; HiSilicon(Shanghai) Technologies CO., LIMITED; and Xilinx Inc.

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**The above given segmentations and companies could be subjected to further modification based on in-depth feasibility studies conducted for the final deliverable.

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