SCOTTS INTERNATIONAL

Global Artificial Intelligence (AI) Hardware Market - Types, Applications and Industry Sectors

Market Report | 2025-05-02 | 364 pages | Industry Experts

AVAILABLE LICENSES:

- Single user licence (PDF) $5490.00
- Enterprise Electronic (PDF) $9090.00

Report description:

Artificial Intelligence (AI) Hardware Market Trends and Outlook

Given the significance AI has garnered over the past few years, a number of trends are shaping its performance in the hardware market. The focus on embedding AI capabilities into edge devices, such as smartphones, IoT sensors and vehicles has been growing, owing to which the demand for low-power, high-performance chips, such as edge-optimized GPUs and ASICs has also been increasing. Several companies have seized the initiative in designing customized chips for specific AI workloads (e.g., Google's TPUs & Microsoft's Maia) for improving efficiency and performance, because of which dependence on general-purpose GPUs has reduced. Neuromorphic chips, inspired by the human brain, are another aspect of AI Hardware gaining potentiality of providing better efficiency in cognitive tasks for applications in robotics and autonomous systems.

Another major trend relates to innovations in chip architecture and cooling systems, which is being prioritized to develop energy-efficient hardware for industries targeting reduction of their carbon footprint in AI operations. However, stymying this progressive scenario is the unprecedented level of tariffs now being imposed by the incumbent United States government under President Trump on a number of countries, including China, Taiwan and Vietnam, all major chip producers and exporters. This will undeniably lead to a steep rise in the cost of AI servers, laptops and GPUs to further impact demand negatively.

Global market size for AI Hardware is estimated at US$25 billion in 2024 and is likely to register a 2024-2030 CAGR of 20.5% in reaching a projected US$76.7 billion by 2030. One of the major factors propelling demand for AI Hardware includes growing demand for AI applications. An increase in the use of AI across industries, such as healthcare (for diagnostics), automotive (for autonomous vehicles) and retail (for personalized suggestions) has been driving the demand for effective hardware that can support complex algorithms and real-time processing. Further expansion is being enabled by innovations in chip design, such as smaller, more energy-efficient transistors and specialized AI accelerators that allow faster and more efficient computation.

AI-optimized solutions have also gained in demand owing to an exponential growth of data from IoT devices, cloud services and digital platforms, requiring hardware that can handle large-scale processing and analytics. High-tech companies, such as Googe, Microsoft, NVIDIA, Intel and Qualcomm have also been investing heavy amounts towards R&D with the goal of developing cutting-edge AI hardware, further accelerating innovation and market growth. Edge computing is a concept that processes data closer to its source, as in the case of smart devices or autonomous systems, for which compact, efficient AI hardware specific for edge environments is needed, making it another fueling demand for AI hardware.

AI Hardware Regional Market Analysis

With an estimated share of 34% in 2024, North America is the largest global market for AI Hardware. The region is home to major tech giants, such as NVIDIA, Intel, AMD, Apple, Google and IBM, which are prominent producers of AI hardware, such as GPUs and TPUs, in addition to investing heavily in research & development, thereby driving market growth. Statistics indicate that NVIDIA controls over 90% of the worldwide market for data center GPUs. In terms of R&D investment, innovations in AI are being substantially funded by private and public investments, with about 25% of US startup investments in 2023 going to companies engaged in AI. Government initiatives, such as the CHIPS Act, have further boosted semiconductor advancements by contributing almost US$100 million for sustainable chip materials. The adoption rate of AI across industries in North America is also quite rapid, with AI hardware being integrated across the IT, telecommunications, healthcare and automotive sectors. Leading among these is the IT & Telecommunications sector that has been adopting AI hardware for sustaining cloud computing and data centers.

AI Hardware Market Analysis by Type

Other than being the largest, with a 2024 share estimated at 55.3%, the global market for Processors in AI Hardware, including GPUs, TPUs, CPUs & ASICs, is also anticipated to be the fastest growing, likely to register a compounded annual rate of 22% between 2024 and 2030. Managing compute-intensive tasks, such as training and inference for machine learning models, has rendered Processors to become the mainstay of AI systems, with GPUs standing a head above other types of Processors. The significance of these devices in the areas of automotive, finance, healthcare and IT is well-recognized. Instances of the same comprise the use of CPUs and GPUs to power data centers for cloud-based AI services and utilizing ASICs and TPUs in specific applications, such as autonomous vehicles and Google's AI services. Another major factor for the dominance of Processors is the range of chips on offer (GPUs, CPUs, ASICs, FPGAs and TPUs) that can fulfil diverse AI requirements, such as training, inference, edge computing and real-time processing, which allows to cover a wide spectrum of the market.

AI Hardware Market Analysis by Application

Machine Learning (ML) constitutes the primary application for AI Hardware on a worldwide basis, estimated to account for a share of 41.8% in 2024. In addition, the market for AI Hardware in this application area will also register the fastest 2024-2030 CAGR of 21.7%. ML is considered to be the heart of AI systems in terms of reinforcing most AI applications, such as deep learning, neural networks and predictive analytics, all of which need massive computing power. This further drives the requirement for AI hardware, such as GPUs, TPUs and ASICs. The adoption of ML across a broad range of industries has also become quite common, including in automotive for autonomous driving, finance for fraud detection, healthcare for diagnostics and retail for recommendation systems. Studies have indicated that in 2023, nearly 70% of global organizations have taken recourse to ML for data analytics, which has further propelled hardware demand for training and inference.

AI Hardware Market Analysis by Industry Sector

With an estimated share of 33.3% in 2024, the global demand for AI Hardware by sector is led by IT & Telecommunications, a key factor for which is high demand for data processing. AI hardware forms a major component of this sector, allowing enormous data volumes generated by cloud computing, 5G networks and IoT devices to be processed efficiently. The major players in the IT & telecom sector, such as AWS, Microsoft Azure and Google Cloud make wide use of AI hardware for AI-as-a-service (AIaaS) platforms, with about 60% of worldwide data center AI hardware spending in 2023 being accounted for by this area, courtesy the deployment of NVIDIA GPUs and Intel AI chips by hyperscale data centers. AI hardware is widely used for real-time network management, predictive maintenance and 5G optimization by telecommunications companies, as in the case of AI processors handling traffic routing and detecting anomalies that further need high-performance chips. The integration of AI by IT & telecom firms into customer service (chatbots), cybersecurity (threat detection) and operational efficiency (automation) are necessitating the demand for diverse AI hardware, ranging from edge processors for IoT to ASICs for specialized tasks, giving credence to the sector's leading market position.

Artificial Intelligence (AI) Hardware Market Report Scope
This global report on Artificial Intelligence (AI) Hardware analyzes the market based on hardware type, application type and industry sector for the period 2021-2030 with projections from 2024 to 2030 in terms of value in USD. In addition to providing profiles of major companies operating in this space, the latest corporate and industrial developments have been covered to offer a clear panorama of how and where the market is progressing.

Key Metrics
Historical Period: 2021-2023
Base Year: 2024
Forecast Period: 2024-2030
Units: Value market in US$
Companies Mentioned: 14

Artificial Intelligence (AI) Hardware Market by Geographic Region
?North America (United States, Canada and Mexico)
?Europe (Germany, United Kingdom, France, Italy, Netherlands, Spain, Russia, Switzerland and Rest of Europe)
?Asia-Pacific (China, Japan, India, Australia, Singapore, South Korea and Rest of Asia-Pacific)
?South America (Brazil, Argentina, Colombia, Chile, Peru and Rest of South America)
?Middle East & Africa (United Arab Emirates, South Africa, Egypt, Saudi Arabia, Morocco, Kuwait, Qatar and Rest of Middle East & Africa)

Artificial Intelligence (AI) Hardware Market by Hardware Type
?Processors
?Network
?Memory
?Storage

Artificial Intelligence (AI) Hardware Market by Application Type
?Machine Learning
?Computer Vision
?Natural Language Processing
?Expert Systems

Artificial Intelligence (AI) Hardware Market by Industry Sector
?IT & Telecommunications
?BFSI
?Healthcare
?Retail
?Automotive

?Others

Table of Contents:

- Next-Generation AI Chip Architectures
3. COMPETITIVE LANDSCAPE
o Market Positioning of Key AI Hardware Companies
o Market Share Analysis of Artificial Intelligence (AI) Hardware
- AI Hardware Market Share Analysis by Product
- AI Hardware Market Share Analysis by Company
- SWOT Analysis for Market Leaders of AI Hardware
o Pricing Analysis of Artificial Intelligence Hardware
- Comparison of Custom AI Chips and ASICs Costs with General-Purpose AI Chips
- AI Hardware-as-a-Service (HaaS) and Subscription-Based Pricing Models
- Pricing of AI Edge Hardware and AI-Embedded Devices
- Production Growth and Competition Causing AI Chip Costs to Decline
- Demand-Supply Imbalance Leading to Cost Increases of High-Performance AI GPUs
- Supply Chain Constraints Increasing AI Hardware Costs
- Pricing Trends for the Near Future
o An Exhaustive Analysis of AI Hardware in Untapped Markets
- Small & Mid-Sized Businesses (SMBs)
- Wearable Devices and Smart IoT Sensors
- Edge Computing in Promising Markets
- Personalized AI Assistants
- Quantum Computing + AI Fusion
- AI Hardware for LegalTech and Financial Auditing
- Smart Cities and Urban Infrastructure
- Ethical and Explainable AI
- Telecom Networks and 5G
- Space and Defense Applications
- LegalTech and Financial Auditing
o Key Market Players
- ADVANCED MICRO DEVICES, INC. (UNITED STATES)
- APPLE, INC. (UNITED STATES)
- BRAINCHIP HOLDINGS LTD. (AUSTRALIA)
- CAMBRICON TECHNOLOGIES CORP LTD (CHINA)
- DELL TECHNOLOGIES, INC. (UNITED STATES)
- GOOGLE LLC (UNITED STATES)
- GRAPHCORE LTD (UNITED KINGDOM)
- HUAWEI TECHNOLOGIES CO LTD (CHINA)
- INTEL CORPORATION (UNITED STATES)
- KALRAY SA (FRANCE)
- LIGHTON SAS (FRANCE)
- NVIDIA CORP (UNITED STATES)
- QUALCOMM TECHNOLOGIES, INC. (UNITED STATES)
- SAMSUNG ELECTRONICS CO LTD (SOUTH KOREA)
4. KEY BUSINESS & PRODUCT TRENDS
o Important Recent Industry Activity
- April 2025
- SNSA Awards Frontgrade Gaisler a Contract to Commercialize SoC Device for Space Applications
- April 2025

- Network Optix Optimizes its Software with Intel Processors
- April 2025
- Siemens Healthineers Demonstrates AI-Rad Companion software powered by Intel Xeon Scalable processors
- April 2025
- Kamiwaza's AI Orchestration Engine Powered by Intel Gaudi 3 AI accelerators and Intel Xeon 6 processors
o More developments included in the main report
o Recent Major Product Launches by the Market Leaders
5. GLOBAL MARKET OVERVIEW
o Global Artificial Intelligence (AI) Hardware Market Overview by Type
- Artificial Intelligence (AI) Hardware Type Market Overview by Global Region
- Processors
- Network
- Memory
- Storage
o Global Artificial Intelligence (AI) Hardware Market Overview by Application
- Artificial Intelligence (AI) Hardware Applications Market Overview by Global Region
- Machine Learning
- Computer Vision
- Natural Language Processing
- Expert Systems
o Global Artificial Intelligence (AI) Hardware Market Overview by Industry Sector
- Artificial Intelligence (AI) Hardware in Industry Sector Market Overview by Global Region
- IT & Telecommunications
- BFSI
- Healthcare
- Retail
- Automotive
- Other Industry Sectors
PART B: REGIONAL MARKET PERSPECTIVE
REGIONAL MARKET OVERVIEW
6. NORTH AMERICA
o North American AI Hardware Market Overview by Geographic Region
o North American AI Hardware Market Overview by Type
o North American AI Hardware Market Overview by Application
o North American AI Hardware Market Overview by Industry Sector
o Country-wise Analysis of North American AI Hardware Market
- THE UNITED STATES
- United States AI Hardware Market Overview by Type
- United States AI Hardware Market Overview by Application
- United States AI Hardware Market Overview by Industry Sector
- CANADA
- Canadian AI Hardware Market Overview by Type
- Canadian AI Hardware Market Overview by Application
- Canadian AI Hardware Market Overview by Industry Sector
- MEXICO
- Mexican AI Hardware Market Overview by Type
- Mexican AI Hardware Market Overview by Application

o Asia-Pacific AI Hardware Market Overview by Industry Sector
o Country-wise Analysis of Asia-Pacific AI Hardware Market
- CHINA
- Chinese AI Hardware Market Overview by Type
- Chinese AI Hardware Market Overview by Application
- Chinese AI Hardware Market Overview by Industry Sector
- JAPAN
- Japanese AI Hardware Market Overview by Type
- Japanese AI Hardware Market Overview by Application
- Japanese AI Hardware Market Overview by Industry Sector
- INDIA
- Indian AI Hardware Market Overview by Type
- Indian AI Hardware Market Overview by Application
- Indian AI Hardware Market Overview by Industry Sector
- AUSTRALIA
- Australia AI Hardware Market Overview by Type
- Australia AI Hardware Market Overview by Application
- Australia AI Hardware Market Overview by Industry Sector
- SINGAPORE
- Singaporean AI Hardware Market Overview by Type
- Singaporean AI Hardware Market Overview by Application
- Singaporean AI Hardware Market Overview by Industry Sector
- SOUTH KOREA
- South Korean AI Hardware Market Overview by Type
- South Korean AI Hardware Market Overview by Application
- South Korean AI Hardware Market Overview by Industry Sector
- REST OF ASIA-PACIFIC
- Rest of Asia-Pacific AI Hardware Market Overview by Type
- Rest of Asia-Pacific AI Hardware Market Overview by Application
- Rest of Asia-Pacific AI Hardware Market Overview by Industry Sector

9. SOUTH AMERICA

o South American AI Hardware Market Overview by Geographic Region
o South American AI Hardware Market Overview by Type
o South American AI Hardware Market Overview by Application
o South American AI Hardware Market Overview by Industry Sector
o Country-wise Analysis of South American AI Hardware Market
- BRAZIL
- Brazilian AI Hardware Market Overview by Type
- Brazilian AI Hardware Market Overview by Application
- Brazilian AI Hardware Market Overview by Industry Sector
- ARGENTINA
- Argentine AI Hardware Market Overview by Type
- Argentine AI Hardware Market Overview by Application
- Argentine AI Hardware Market Overview by Industry Sector
- COLOMBIA
- Colombia AI Hardware Market Overview by Type
- Colombia AI Hardware Market Overview by Application

- Colombia AI Hardware Market Overview by Industry Sector
- CHILE
- Chilean AI Hardware Market Overview by Type
- Chilean AI Hardware Market Overview by Application
- Chilean AI Hardware Market Overview by Industry Sector
- PERU
- Peru AI Hardware Market Overview by Type
- Peru AI Hardware Market Overview by Application
- Peru AI Hardware Market Overview by Industry Sector
- REST OF SOUTH AMERICA
- Rest of South America AI Hardware Market Overview by Type
- Rest of South America AI Hardware Market Overview by Application
- Rest of South America AI Hardware Market Overview by Industry Sector

10. MIDDLE EAST & AFRICA

o Middle East & Africa AI Hardware Market Overview by Geographic Region
o Middle East & Africa AI Hardware Market Overview by Type
o Middle East & Africa AI Hardware Market Overview by Application
o Middle East & Africa AI Hardware Market Overview by Industry Sector
o Country-wise Analysis of Middle East & Africa AI Hardware Market

- UNITED ARAB EMIRATES
- United Arab Emirates AI Hardware Market Overview by Type
- United Arab Emirates AI Hardware Market Overview by Application
- United Arab Emirates AI Hardware Market Overview by Industry Sector
- SOUTH AFRICA
- South African AI Hardware Market Overview by Type
- South African AI Hardware Market Overview by Application
- South African AI Hardware Market Overview by Industry Sector
- EGYPT
- Egypt AI Hardware Market Overview by Type
- Egypt AI Hardware Market Overview by Application
- Egypt AI Hardware Market Overview by Industry Sector
- SAUDI ARABIA
- Saudi Arabian AI Hardware Market Overview by Type
- Saudi Arabian AI Hardware Market Overview by Application
- Saudi Arabian AI Hardware Market Overview by Industry Sector
- MOROCCO
- Morocco AI Hardware Market Overview by Type
- Morocco AI Hardware Market Overview by Application
- Morocco AI Hardware Market Overview by Industry Sector
- KUWAIT
- Kuwait AI Hardware Market Overview by Type
- Kuwait AI Hardware Market Overview by Application
- Kuwait AI Hardware Market Overview by Industry Sector
- QATAR
- Qatar AI Hardware Market Overview by Type
- Qatar AI Hardware Market Overview by Application
- Qatar AI Hardware Market Overview by Industry Sector

SCOTTS INTERNATIONAL

Global Artificial Intelligence (AI) Hardware Market - Types, Applications and Industry Sectors

Market Report | 2025-05-02 | 364 pages | Industry Experts

To place an Order with Scotts International:
- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single user licence (PDF)	$5490.00
	Enterprise Electronic (PDF)	$9090.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2025-06-07
		Signature	

Scotts International. EU Vat number: PL 6772247784
tel. 0048 603 394 346 e-mail: support@scotts-international.com
www.scotts-international.com