

AI in Edge Computing Market Forecasts to 2034 – Global Analysis By Component (Hardware, Software and Services), Deployment, Device Type, Connectivity, Application, End User and By Geography

<https://marketpublishers.com/r/A3F021D79058EN.html>

Date: April 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: A3F021D79058EN

Abstracts

According to Statistics MRC, the Global AI in Edge Computing Market is accounted for \$16.8 billion in 2026 and is expected to reach \$68.6 billion by 2034 growing at a CAGR of 19.2% during the forecast period. AI in edge computing refers to the deployment of machine learning models, neural network inference engines, and AI-powered analytics directly on edge computing devices, gateways, and servers located at or near data sources including industrial equipment, autonomous vehicles, smart cameras, retail point-of-sale systems, and mobile devices, enabling real-time AI inference without cloud round-trip latency, continuous operation during connectivity interruptions, and data privacy preservation through local processing of sensitive information within defined geographic or organizational boundaries.

Market Dynamics:

Driver:

Industrial IoT AI Inference Demand

Industrial IoT deployments requiring sub-millisecond AI inference for machine control safety systems, real-time defect detection, and autonomous equipment operation are driving mandatory edge AI adoption as cloud connectivity latency is fundamentally incompatible with real-time industrial automation timing requirements. Manufacturing companies deploying AI-powered quality inspection, predictive maintenance, and

autonomous material handling systems represent high-volume edge AI infrastructure procurement buyers generating consistent hardware and software revenue growth.

Restraint:

Edge Hardware Fragmentation

Extreme hardware architecture fragmentation across edge AI deployment environments spanning ARM, x86, RISC-V, and specialized AI accelerator chip families requires AI model optimization for multiple incompatible hardware targets, creating software development complexity that increases edge AI application deployment costs and timelines. Absence of universal edge AI runtime standards forces AI model developers to maintain parallel optimization pipelines for different edge hardware platforms serving different application verticals.

Opportunity:

Autonomous Vehicle Edge AI

Autonomous vehicle onboard AI compute platforms represent the highest-value edge AI hardware and software market segment as each autonomous vehicle requires sophisticated multi-modal sensor fusion, real-time object detection, path planning, and vehicle control AI inference systems executing simultaneously on powerful edge computing hardware that must process enormous sensor data volumes within strict safety-critical latency constraints incompatible with cloud-dependent AI architectures.

Threat:

5G Latency Reduction Competition

Ultra-low latency 5G network slice deployments enabling cloud AI processing at edge-competitive response times for specific applications create a technological alternative to dedicated edge AI hardware deployment that may reduce total edge hardware investment requirements in connected environments where 5G private network infrastructure provides adequate AI offload latency performance without the device-level AI processing complexity and cost of sophisticated onboard edge AI systems.

Covid-19 Impact:

COVID-19 reduced on-site technical personnel availability that demonstrated the operational resilience advantage of edge AI systems maintaining local intelligent operation without cloud connectivity or remote management dependency during personnel access restrictions. Supply chain disruptions also created interest in edge AI for supply chain visibility and warehouse automation that could operate independently of centralized data center infrastructure. Post-pandemic industrial automation acceleration sustains strong edge AI deployment demand.

The services segment is expected to be the largest during the forecast period

The services segment is expected to account for the largest market share during the forecast period, due to substantial enterprise demand for edge AI system design, deployment, model optimization, and ongoing managed edge infrastructure services that accompany complex industrial and automotive edge AI implementations requiring specialized hardware integration, wireless connectivity configuration, and continuous model update management across geographically distributed device fleets that exceed internal IT team edge deployment expertise.

The on-device edge segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the on-device edge segment is predicted to witness the highest growth rate, driven by rapid AI accelerator chip miniaturization enabling sophisticated neural network inference on resource-constrained endpoint devices including cameras, sensors, wearables, and embedded controllers that can now execute meaningful computer vision and predictive models locally without external processing hardware dependency, dramatically expanding the addressable device population for endpoint-embedded AI edge computing deployments.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to the United States hosting leading edge AI chip and software platform developers including NVIDIA, Intel, and Qualcomm generating the majority of global edge AI technology revenue, combined with strong industrial automation, autonomous vehicle, and smart infrastructure sectors representing the world's highest per-region edge AI investment concentrations and most advanced commercial edge AI deployment programs.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, due to large-scale smart manufacturing, smart city, and 5G infrastructure deployment programs across China, Japan, South Korea, and India creating extensive edge AI system procurement demand, growing domestic edge AI chip development investment in China and South Korea, and rapidly expanding industrial IoT adoption across Asian manufacturing sectors requiring local AI inference capability.

Key players in the market

Some of the key players in AI in Edge Computing Market include Intel Corporation, NVIDIA Corporation, Qualcomm Technologies Inc., IBM Corporation, Microsoft Corporation, Amazon Web Services Inc., Cisco Systems Inc., Hewlett Packard Enterprise, Dell Technologies Inc., Google LLC, Siemens AG, Samsung Electronics, Huawei Technologies, Advantech Co. Ltd., Schneider Electric SE, FogHorn Systems, and Edge Impulse Inc..

Key Developments:

In February 2026, Intel Corporation introduced Edge AI Suite 2.0 providing enterprise customers unified model optimization and deployment management across diverse Intel-powered edge hardware platforms through a single software framework.

In January 2026, FogHorn Systems secured a major industrial edge AI deployment with a global energy company implementing real-time AI analytics across thousands of distributed oil and gas production asset monitoring endpoints.

In October 2025, Edge Impulse Inc. launched a new enterprise TinyML platform enabling companies to deploy optimized AI models on ultra-low-power microcontroller-class edge devices for industrial sensor monitoring and predictive maintenance applications.

Components Covered:

Hardware

Software

Services

Deployments Covered:

On-Device Edge

On-Premise Edge

Cloud Edge

Device Types Covered:

Gateways

Sensors

Edge Servers

Smart Displays & Kiosks

Autonomous Drones

Connectivities Covered:

Cellular

Wi-Fi

Bluetooth/BLE

LPWAN

Ethernet

Applications Covered:

Autonomous Vehicles

Smart Cities

Industrial IoT

Healthcare Monitoring

End Users Covered:

Manufacturing

Healthcare

Automotive

Retail

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL AI IN EDGE COMPUTING MARKET, BY COMPONENT

- 5.1 Hardware
- 5.2 Software
- 5.3 Services

6 GLOBAL AI IN EDGE COMPUTING MARKET, BY DEPLOYMENT

- 6.1 On-Device Edge
- 6.2 On-Premise Edge
- 6.3 Cloud Edge

7 GLOBAL AI IN EDGE COMPUTING MARKET, BY DEVICE TYPE

- 7.1 Gateways
- 7.2 Sensors
- 7.3 Edge Servers
- 7.4 Smart Displays & Kiosks
- 7.5 Autonomous Drones

8 GLOBAL AI IN EDGE COMPUTING MARKET, BY CONNECTIVITY

- 8.1 Cellular
- 8.2 Wi-Fi
- 8.3 Bluetooth/BLE
- 8.4 LPWAN
- 8.5 Ethernet

9 GLOBAL AI IN EDGE COMPUTING MARKET, BY APPLICATION

- 9.1 Autonomous Vehicles
- 9.2 Smart Cities
- 9.3 Industrial IoT
- 9.4 Healthcare Monitoring

10 GLOBAL AI IN EDGE COMPUTING MARKET, BY END USER

- 10.1 Manufacturing
- 10.2 Healthcare
- 10.3 Automotive
- 10.4 Retail

11 GLOBAL AI IN EDGE COMPUTING MARKET, BY GEOGRAPHY

- 11.1 North America
 - 11.1.1 United States
 - 11.1.2 Canada
 - 11.1.3 Mexico
- 11.2 Europe
 - 11.2.1 United Kingdom
 - 11.2.2 Germany
 - 11.2.3 France
 - 11.2.4 Italy
 - 11.2.5 Spain
 - 11.2.6 Netherlands
 - 11.2.7 Belgium
 - 11.2.8 Sweden
 - 11.2.9 Switzerland
 - 11.2.10 Poland
 - 11.2.11 Rest of Europe
- 11.3 Asia Pacific
 - 11.3.1 China
 - 11.3.2 Japan
 - 11.3.3 India
 - 11.3.4 South Korea
 - 11.3.5 Australia
 - 11.3.6 Indonesia
 - 11.3.7 Thailand
 - 11.3.8 Malaysia
 - 11.3.9 Singapore
 - 11.3.10 Vietnam
 - 11.3.11 Rest of Asia Pacific
- 11.4 South America
 - 11.4.1 Brazil

- 11.4.2 Argentina
- 11.4.3 Colombia
- 11.4.4 Chile
- 11.4.5 Peru
- 11.4.6 Rest of South America
- 11.5 Rest of the World (RoW)
 - 11.5.1 Middle East
 - 11.5.1.1 Saudi Arabia
 - 11.5.1.2 United Arab Emirates
 - 11.5.1.3 Qatar
 - 11.5.1.4 Israel
 - 11.5.1.5 Rest of Middle East
 - 11.5.2 Africa
 - 11.5.2.1 South Africa
 - 11.5.2.2 Egypt
 - 11.5.2.3 Morocco
 - 11.5.2.4 Rest of Africa

12 STRATEGIC MARKET INTELLIGENCE

- 12.1 Industry Value Network and Supply Chain Assessment
- 12.2 White-Space and Opportunity Mapping
- 12.3 Product Evolution and Market Life Cycle Analysis
- 12.4 Channel, Distributor, and Go-to-Market Assessment

13 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 13.1 Mergers and Acquisitions
- 13.2 Partnerships, Alliances, and Joint Ventures
- 13.3 New Product Launches and Certifications
- 13.4 Capacity Expansion and Investments
- 13.5 Other Strategic Initiatives

14 COMPANY PROFILES

- 14.1 Intel Corporation
- 14.2 NVIDIA Corporation
- 14.3 Qualcomm Technologies Inc.
- 14.4 IBM Corporation

- 14.5 Microsoft Corporation
- 14.6 Amazon Web Services Inc.
- 14.7 Cisco Systems Inc.
- 14.8 Hewlett Packard Enterprise
- 14.9 Dell Technologies Inc.
- 14.10 Google LLC
- 14.11 Siemens AG
- 14.12 Samsung Electronics
- 14.13 Huawei Technologies
- 14.14 Advantech Co. Ltd.
- 14.15 Schneider Electric SE
- 14.16 FogHorn Systems
- 14.17 Edge Impulse Inc.

List Of Tables

LIST OF TABLES

Table 1 Global AI in Edge Computing Market Outlook, By Region (2023-2034) (\$MN)

Table 2 Global AI in Edge Computing Market Outlook, By Component (2023-2034) (\$MN)

Table 3 Global AI in Edge Computing Market Outlook, By Hardware (2023-2034) (\$MN)

Table 4 Global AI in Edge Computing Market Outlook, By Software (2023-2034) (\$MN)

Table 5 Global AI in Edge Computing Market Outlook, By Services (2023-2034) (\$MN)

Table 6 Global AI in Edge Computing Market Outlook, By Deployment (2023-2034) (\$MN)

Table 7 Global AI in Edge Computing Market Outlook, By On-Device Edge (2023-2034) (\$MN)

Table 8 Global AI in Edge Computing Market Outlook, By On-Premise Edge (2023-2034) (\$MN)

Table 9 Global AI in Edge Computing Market Outlook, By Cloud Edge (2023-2034) (\$MN)

Table 10 Global AI in Edge Computing Market Outlook, By Device Type (2023-2034) (\$MN)

Table 11 Global AI in Edge Computing Market Outlook, By Gateways (2023-2034) (\$MN)

Table 12 Global AI in Edge Computing Market Outlook, By Sensors (2023-2034) (\$MN)

Table 13 Global AI in Edge Computing Market Outlook, By Edge Servers (2023-2034) (\$MN)

Table 14 Global AI in Edge Computing Market Outlook, By Smart Displays & Kiosks (2023-2034) (\$MN)

Table 15 Global AI in Edge Computing Market Outlook, By Autonomous Drones (2023-2034) (\$MN)

Table 16 Global AI in Edge Computing Market Outlook, By Connectivity (2023-2034) (\$MN)

Table 17 Global AI in Edge Computing Market Outlook, By Cellular (2023-2034) (\$MN)

Table 18 Global AI in Edge Computing Market Outlook, By Wi-Fi (2023-2034) (\$MN)

Table 19 Global AI in Edge Computing Market Outlook, By Bluetooth/BLE (2023-2034) (\$MN)

Table 20 Global AI in Edge Computing Market Outlook, By LPWAN (2023-2034) (\$MN)

Table 21 Global AI in Edge Computing Market Outlook, By Ethernet (2023-2034) (\$MN)

Table 22 Global AI in Edge Computing Market Outlook, By Application (2023-2034) (\$MN)

Table 23 Global AI in Edge Computing Market Outlook, By Autonomous Vehicles (2023-2034) (\$MN)

Table 24 Global AI in Edge Computing Market Outlook, By Smart Cities (2023-2034) (\$MN)

Table 25 Global AI in Edge Computing Market Outlook, By Industrial IoT (2023-2034) (\$MN)

Table 26 Global AI in Edge Computing Market Outlook, By Healthcare Monitoring (2023-2034) (\$MN)

Table 27 Global AI in Edge Computing Market Outlook, By End User (2023-2034) (\$MN)

Table 28 Global AI in Edge Computing Market Outlook, By Manufacturing (2023-2034) (\$MN)

Table 29 Global AI in Edge Computing Market Outlook, By Healthcare (2023-2034) (\$MN)

Table 30 Global AI in Edge Computing Market Outlook, By Automotive (2023-2034) (\$MN)

Table 31 Global AI in Edge Computing Market Outlook, By Retail (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

I would like to order

Product name: AI in Edge Computing Market Forecasts to 2034 – Global Analysis By Component (Hardware, Software and Services), Deployment, Device Type, Connectivity, Application, End User and By Geography

Product link: <https://marketpublishers.com/r/A3F021D79058EN.html>

Price: US\$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/A3F021D79058EN.html>