

# Global Neuromorphic Chip Market Size Study & Forecast, By Application (Image Recognition, Single Recognition, Data Mining, Other) By Vertical (Aerospace & Defense, Automotive, Consumer Electronics, Healthcare, Industrial, Other) and Regional Analysis, 2023-2030

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## Abstracts

Global Neuromorphic Chip Market is valued at approximately USD 26.78 million in 2022 and is anticipated to grow with a healthy growth rate of more than 67.3% over the forecast period 2023-2030. Neuromorphic chips are a type of microprocessor designed to mimic the structure and function of the human brain's neural networks. These chips are built with architectures that utilize massively parallel processing elements and specialized circuitry to perform tasks such as pattern recognition, sensory processing, and learning, similar to how neurons operate in the brain. The Neuromorphic Chip market is expanding because of factors such as the rising integration of artificial intelligence in the healthcare industry and the growing prevalence of brain nervous system cancer. Neuromorphic chips aim to achieve high efficiency and low power consumption, making them potentially suitable for applications like artificial intelligence, robotics, and sensor systems where real-time processing and low energy consumption are critical. As a result, the demand for Neuromorphic Chip has progressively increased in the global market during the forecast period 2023-2030.

Neuromorphic chips are inherently flexible and can be customized for specific healthcare applications. They can adapt and learn from new data, enabling continuous improvement and optimization of AI algorithms over time. This adaptability is particularly valuable in the dynamic and evolving field of healthcare, where new medical insights and technologies emerge regularly. According to Statista, in 2021, global artificial

intelligence in the healthcare industry was estimated to be valued at approximately USD 11 billion. It was projected that the worldwide healthcare AI business would be worth almost USD 188 billion by 2030. Another important factor that drives the Neuromorphic Chip market is the increasing prevalence of brain nervous system cancer. Neuromorphic chips can also be utilized in the development of personalized treatment plans for cancer patients. By analyzing vast amounts of patient data, including genetic information, imaging results, and treatment responses, these chips can help oncologists tailor treatments to individual patients, leading to more effective outcomes and reduced side effects. In addition, according to the Global Cancer Observatory, the number of brain, and nervous system cancer cases across the world accounted for 308 thousand in 2020 and is projected to reach up to 372 thousand by the year 2030. Moreover, technological advancements associated with neuromorphic devices and the emerging trend of combining the concept of neuroplasticity with electronics are anticipated to create a lucrative growth opportunity for the market over the forecast period. However, challenges associated with complex algorithms and the high cost of neuromorphic technology are going to impede overall market growth throughout the forecast period of 2023-2030.

The key regions considered for the Global Neuromorphic Chip Market study include Asia Pacific, North America, Europe, Latin America, and Middle East & Africa. North America dominated the market in 2022 owing to the increasing adoption of automation and robotics technology in the region. Automation and robotics systems require efficient processing of sensory data, real-time decision-making, and adaptation to changing environments. Neuromorphic chips, inspired by the human brain's architecture, offer parallel processing and low-power consumption, making them well-suited for these tasks. The region's dominant performance is anticipated to propel the overall demand for Neuromorphic Chip. Furthermore, Asia Pacific is expected to grow fastest during the forecast period, owing to factors such as increasing demand for artificial intelligence systems in the region. Neuromorphic chips, inspired by the brain's energy-efficient design, consume significantly less power compared to conventional CPUs and GPUs. This characteristic is particularly valuable in AI applications deployed in resource-constrained environments or battery-powered devices, further driving their adoption in the AI market.

Major market players included in this report are:

Intel Corporation

SK Hynix Inc.

International Business Machine Corporation

Samsung Electronics Co. Ltd.

GrAI Matter Labs

Nepes Corporation

General Vision Inc.

Gyrfalcon Technology Inc.

BrainChip Holdings Ltd.

Vicarious FPC Inc.

Recent Developments in the Market:

In November 2022, SynSense, the premier commercial manufacturer of ultra-low-power neuromorphic hardware and application solutions, launched the Speck Demo Kit. This development module allows users to deploy and evaluate their event-based neuromorphic vision apps rapidly and easily. The kit includes SynSense's Speck dynamic vision module, an ultra-low-power Bluetooth controller chip, and peripherals. The Demo Kit is a reduced embedded hardware platform that allows users to test and verify neuromorphic application models while also creating prototypes.

Global Neuromorphic Chip Market Report Scope:

Historical Data – 2020 - 2021

Base Year for Estimation – 2022

Forecast period - 2023-2030

Report Coverage - Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Segments Covered - Application, Vertical, Region

Regional Scope - North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope - Free report customization (equivalent to up to 8 analysts' working hours) with purchase. Addition or alteration to country, regional & segment scope\*

The objective of the study is to define the market sizes of different segments & countries in recent years and to forecast the values for the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within countries involved in the study.

The report also caters to detailed information about the crucial aspects such as driving factors & challenges that will define the future growth of the market. Additionally, it also incorporates potential opportunities in micro markets for stakeholders to invest along with a detailed analysis of the competitive landscape and product offerings of key players. The detailed segments and sub-segment of the market are explained below:

By Application

Image Recognition

Single Recognition

Data Mining

Other

By Vertical

Aerospace & Defense

Automotive

Consumer Electronics

Healthcare

Industrial

Other

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

ROE

Asia Pacific

China

India

Japan

Australia

South Korea

RoAPAC

Latin America

Brazil

Mexico

Middle East & Africa

Saudi Arabia

South Africa

Rest of Middle East & Africa

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