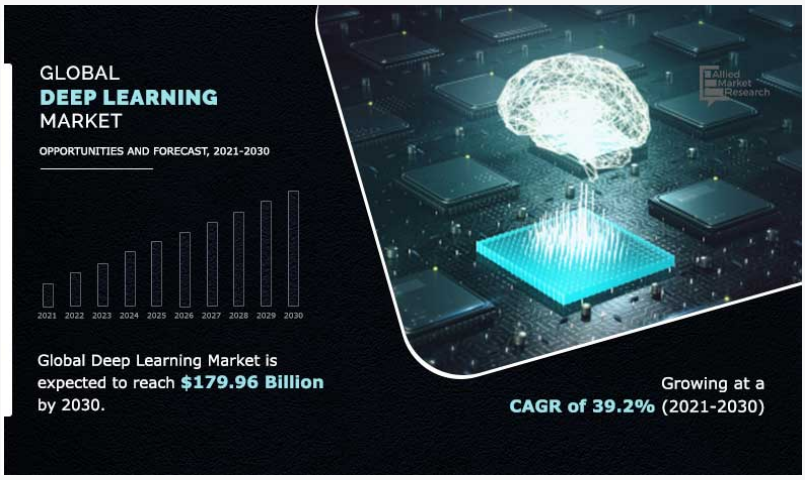
Deep Learning Market is likely to expand USD 406 billion at 37.8% CAGR by 2032

The global deep learning market grows due to rising data availability, hardware advancements, and increased R&D investments in deep learning.



Deep learning market Size

WILMINGTON, DE, UNITED STATES, November 26, 2024 / EINPresswire.com/ -- According to the report, the global deep learning market size generated $16.9 billion in 2022, and is anticipated to generate $406 billion by 2032, witnessing a CAGR of 37.8% from 2023 to 2032.

Deep learning is a technology that directs computers to process data according to the human perspective. The models of deep learning can analyze complex patterns, texts, sounds, and other data to produce accurate insights and predictions. In addition, it is a subset of machine learning and artificial intelligence, that focuses on modeling and stimulating the behavior of human brain neural networks. In deep learning, large datasets are used to train artificial neural networks to carry out tasks without explicit programming. Furthermore, the technology is used in computer vision, speech recognition, natural language processing (NLP), and others.

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Moreover, various trends are associated with deep learning technology such as transfer learning (pre-trained models), generative adversarial networks (GANs), self-supervised learning and others. Using pre-trained models that have been optimized for tasks performed on the base of huge datasets is called transfer learning. With a smaller dataset, this strategy enhances performance while accelerating training. In addition, the self-supervised model of deep learning helps in generating own information and codes from existing data without the requirement of large datasets. Furthermore, generative adversarial networks of deep learning technology are used for image generation, data augmentation, and realistic synthetic data creation for training. Therefore, these trends are driving the growth of the deep learning market.

Deep learning algorithms excel at efficiently handling numerous repetitive and routine tasks, often surpassing human capabilities. Moreover, they assure the quality of work and offer valuable insights. Consequently, integrating deep learning into organizational processes can result in time and cost savings, ultimately allowing employees to focus on creative tasks that demand human input. Consequently, deep learning is regarded as a disruptive technology across various industries, driving its demand in the foreseeable future.

Key factors positively affecting the deep learnings market include improving computing power, declining hardware cost, and increasing adoption of cloud-based technology propel growth of the global deep learning market. In addition, deep learning usage in big data analytics positively impacts growth of the market. However, increasing complexity in hardware due to complex algorithm used in technology and lack of technical expertise & absence of standards and protocols hampers the market growth. On the contrary, cumulative spending in healthcare, travel, tourism, and hospitality industries is expected to offer remunerative opportunities for expansion of the market during the forecast period.

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Covid-19 Scenario

The pandemic had significantly pushed the demand for deep learning technology. This is mainly attributed to the rise in demand for anti-money laundering (AML), fraud detection solutions, and various other solutions. In addition, the COVID-19 pandemic led to changes in model performance in contrast to static validation and testing approaches, which in turn drive the development of deep learning models, resulting in more continuous monitoring and validation required to mitigate various sorts of risk. Overall, the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) have been implemented by various governments in response to the growing digital revolution, which is fueling market expansion. Therefore, COVID-19 had a positive impact on the deep learning market.

Based on application, the image recognition segment held the highest market share in 2022, accounting for more than two-fifths of the global deep learning market revenue. This is attributed to the growing demand for pattern recognition, optical character recognition, code recognition, facial recognition, object recognition, and digital image processing. However, the data mining segment is projected to manifest the highest CAGR of 41.6% from 2023 to 2032. This is due to the fact that deep learning algorithms can identify anomalies and outliers in large datasets, which is crucial for fraud detection, network security, and identifying abnormal behavior.

Based on industry vertical, the security segment held the highest market share in 2022, accounting for more than one-fifth of the global deep learning market revenue. This is because

the security sector is increasingly adopting deep learning and AI-powered solutions to enhance surveillance, threat detection, and response capabilities. However, the healthcare segment is projected to manifest the highest CAGR of 43.8% from 2023 to 2032, this is attributed to the fact that deep learning offers opportunities to improve the accuracy and efficiency of medical image analysis, benefiting radiology and pathology.

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Based on region, North America held the highest market share in terms of revenue in 2022, accounting for more than one-third of the global deep learning market revenue, because North America is investing heavily in research and development, fostering innovation in deep learning techniques and applications. However, the Asia-Pacific region is expected to witness the fastest CAGR of 41.1% from 2023 to 2032, and is likely to dominate the market during the forecast period, this is because manufacturing sectors in countries such as China and Japan are providing opportunities for using deep learning for predictive maintenance, quality control, and automation of production processes.

Leading Market Players: -

Advanced Micro Devices Inc.
Amazon Web Services, Inc.
Google LLC
IBM Corporation
Intel Corporation
Microsoft Corporation
NVIDIA Corporation
Qualcomm Technologies, Inc.
Samsung
Xilinx

The report provides a detailed analysis of these key players of the global deep learning market. These players have adopted different strategies such as partnership, product launch, and expansion to increase their market share and maintain dominant shares in different regions. The report is valuable in highlighting business performance, operating segments, product portfolio, and strategic moves of market players to showcase the competitive scenario.

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Contact:
David Correa
1209 Orange Street,
Corporation Trust Center,
Wilmington, New Castle,
Delaware 19801 USA.
Int'l: +1-503-894-6022
Toll Free: + 1-800-792-5285
UK: +44-845-528-1300
India (Pune): +91-20-66346060
Fax: +1-800-792-5285
help@alliedmarketresearch.com

David Correa
Allied Market Research
+1 800-792-5285
email us here
Visit us on social media:
Facebook
X