AI in Medical Imaging Market to Hit $29.8 Billion by 2032 with 32.1% CAGR Growth

AI in medical imaging boosts diagnostic accuracy, speeds workflows, and transforms clinical decision-making through automation and advanced analytics.

WILMINGTON, DE, UNITED STATES, December 9, 2025 /EINPresswire.com/ -- According to a new report published by Allied Market Research, titled AI in Medical Imaging Market Size, Share, Competitive Landscape and Trend Analysis Report, by Modality (CT Scan, MRI, X-rays, Ultrasound Imaging, Molecular Imaging), by Technology (Deep Learning, Natural Language Processing (NLP), Computer Vision, Others), by Application (Breast Imaging, Respiratory and Pulmonary, Neurology, Orthopedics, Others), by Industry Vertical (Hospital and Healthcare Providers, Patients, Pharmaceuticals and Biotechnology Companies, Healthcare Payers, Others): Global Opportunity Analysis and Industry Forecast, 2022 - 2032, The global AI in medical imaging market was valued at USD 1.9 billion in 2022 and is projected to reach USD 29.8 billion by 2032, growing at a CAGR of 32.1% from 2023 to 2032.

The AI in medical imaging market is undergoing rapid transformation as healthcare systems worldwide embrace intelligent technologies for faster, more accurate diagnostics. AI-driven tools are enhancing image acquisition, segmentation, and interpretation across modalities such as CT, MRI, ultrasound, and X-rays. These solutions reduce reading times, assist radiologists in identifying abnormalities, and improve clinical outcomes.

Growing demand for early disease detection, rising imaging volumes, and shortages of skilled radiologists are accelerating the adoption of AI-enabled platforms. Hospitals and diagnostic centers are shifting from traditional imaging workflows to automated, data-driven systems to increase precision, efficiency, and patient safety. As vendors integrate deep learning and cloud-based capabilities, the market is positioned for strong long-term growth.

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One of the major growth drivers is the increasing prevalence of chronic diseases such as cancer, cardiovascular disorders, and neurological conditions, which significantly raise the need for advanced imaging diagnostics. AI tools help detect subtle patterns that may be missed by the human eye, supporting early intervention and personalized treatment plans.

Technological innovation is another key driver. Advancements in deep learning, natural language processing, 3D visualization, and edge computing enable highly sophisticated imaging algorithms. These technologies automate repetitive tasks, assist radiologists in complex cases, and enhance image quality even with lower radiation doses.

The rise of cloud-based imaging solutions is transforming accessibility. Cloud platforms enable real-time data sharing between clinicians, support remote diagnostics, and reduce the burden of on-premise storage. This trend is encouraging healthcare providers to shift toward scalable, AI-powered imaging ecosystems.

However, the market faces challenges related to data privacy, clinical validation, and regulatory complexities. Ensuring algorithm transparency, mitigating bias in datasets, and meeting compliance requirements remain critical concerns for vendors and healthcare institutions. These factors slow down large-scale deployments, especially in emerging economies.

Despite challenges, opportunities are accelerating in areas such as automated triaging, workflow optimization, and AI-enabled precision medicine. Growing investments from technology companies, rising FDA approvals for AI devices, and collaborations between healthcare providers and AI firms are paving the way for robust innovation.

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The AI in medical imaging market is segmented by offering (software, hardware, and services), technology (deep learning, machine learning, NLP), imaging modality (CT, MRI, X-ray, PET, ultrasound), application (oncology, cardiology, neurology, orthopedics, and others), and end user (hospitals, diagnostic centers, research institutes). Among these, software and deep learning technologies dominate due to widespread integration into imaging workflows and scalable deployment across clinical settings.

By modality, the CT scan segment dominated the market in 2022, driven by its widespread use in diagnostic imaging, treatment planning, and monitoring of various medical conditions. The integration of AI into CT imaging represents a major radiological advancement, enabling improved image reconstruction, anomaly detection, and workflow efficiency. Meanwhile, the X-ray segment is expected to register the highest growth rate during the forecast period, owing to increased demand for rapid, low-cost imaging supported by AI-driven analysis tools.

In terms of technology, deep learning led the market in 2022 due to its unmatched ability to enhance diagnostic precision, automate image interpretation, and assist in early disease detection. Its applications span radiology, pathology, ophthalmology, cardiology, and neurology.

However, the computer vision segment is projected to grow faster in the coming years as advancements in image recognition and processing expand clinical use cases.

By application, breast imaging dominated the market in 2022, supported by the growing need for accurate screening and early detection of breast cancer through AI-enabled image analysis. The orthopedics segment, however, is expected to record the highest growth rate, driven by increasing adoption of AI tools for bone fracture detection, joint assessment, and surgical planning.

Based on industry verticals, hospitals and healthcare providers held the largest market share in 2022, leveraging AI to enhance diagnostic precision, optimize workflows, and improve patient outcomes. Conversely, the patients segment is projected to grow at the fastest pace as AI-powered mobile health and remote imaging platforms become more accessible, empowering individuals with faster and more personalized diagnostic insights.

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Regionally, North America dominated the market in 2022, supported by robust healthcare infrastructure, regulatory support, rich datasets, and strong collaboration between technology companies and medical institutions. Asia-Pacific is anticipated to expand at the fastest rate during the forecast period, driven by increasing healthcare modernization, rapid AI adoption, and expanding imaging demand across emerging economies.

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The AI in medical imaging market players profiled in the report include Siemens, NVIDIA Corporation, IBM Corporation, GE Healthcare, Koninklijke Philips N.V., Aidoc, Butterfly Network, Inc., Zebra Technologies Corp., Arterys Inc., and ICAD Inc. Various strategies such as collaborations & partnerships, product launches, and acquisitions have been adopted by market players to expand their foothold in the AI in medical imaging industry.

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- Based on modality, the CT scan segment accounted-for major share of the market in 2022, while the X-rays segment is expected to witness faster growth during the forecast period.
- Based on technology, the deep learning segment accounted-for higher share of the market in 2022, while the computer vision segment is anticipated to increase faster during the forecast period.
- Based on application, the breast imaging segment dominated the market in 2022, while the orthopedics segment is expected to expand at a faster rate during the forecast period.
- Based on industry vertical, the hospital and healthcare providers segment dominated the market in 2022, while the patients' segment is expected to expand at a faster rate during the forecast period.

• Based on region, North America accounted for the largest share of the global lighting control system market in 2022, while Asia-Pacific is anticipated to grow faster during the forecast period.

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Internet of Medical Things (IoMT) Market
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