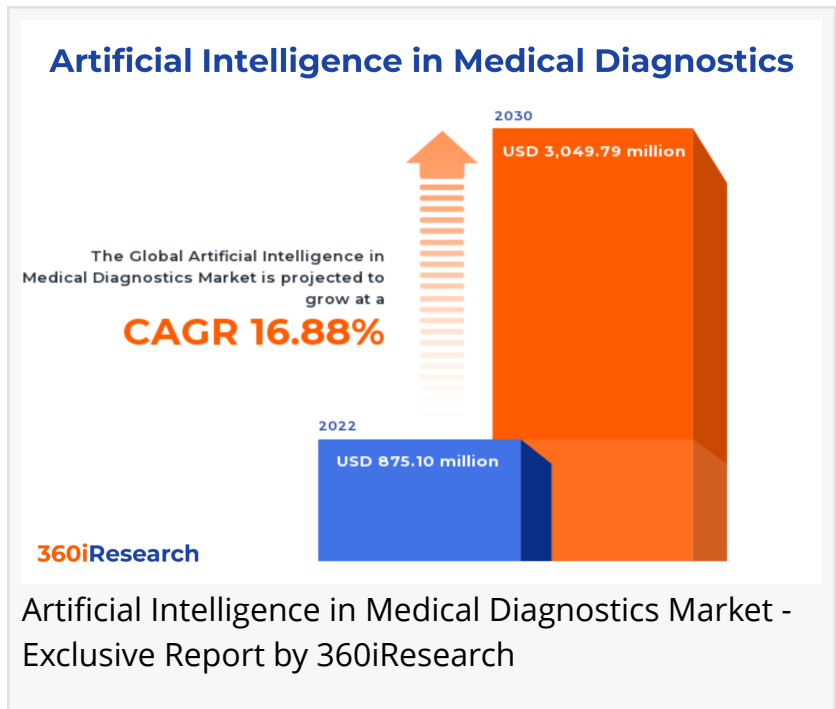


Artificial Intelligence in Medical Diagnostics Market worth \$3,049.79 million by 2030 - Exclusive Report by 360iResearch

The Global Artificial Intelligence in Medical Diagnostics Market to grow from USD 875.10 million in 2022 to USD 3,049.79 million by 2030, at a CAGR of 16.88%.

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-- The "[Artificial Intelligence in Medical Diagnostics Market](#) by Component (Hardware, Services, Software), Technology (Computer Vision, Machine Learning Platforms, Natural Language Processing), Application, End-User - Global Forecast 2023-2030" report has been added to 360iResearch.com's offering.



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Artificial intelligence (AI) in the medical diagnostics market encompasses the development, implementation, and application of AI-based technologies and systems to analyze clinical data, identify patterns, and derive insights for improved diagnostic accuracy and patient care. The increasing prevalence of chronic disease conditions has surged the need for enhanced imaging analysis in diagnostic applications. Rising government initiatives to promote the integration of AI/ML technologies in precision medicine and wearable devices have enhanced product development, significantly contributing to market growth. However, increasing incidences of product failures and the difficulty of AI integration with existing diagnostic systems may limit the

market adoption of AI-enabled diagnostic solutions. Data privacy and security breach issues have emerged as concerning factors for market growth. Moreover, the introduction of diagnostic robotics and advanced AI technologies for medical diagnosis has created attractive opportunities for market growth. The advancing start-up ecosystem and expansion of smart hospitals are expected to leverage AI technology in medical diagnostics to bolster the growth of the market.

Application: Adoption of AI in cardiology segment to enhance diagnostic accuracy

Artificial intelligence has shown promising results in cardiology, including the early detection and treatment of heart diseases. Using AI algorithms, medical professionals can predict a patient's risk of cardiac arrest, strokes, and heart disease based on their health records and cardiac images. It has also been successful in flagging anomalies in electrocardiogram (ECG) data, aiding doctors in diagnosing rhythmic heart disorders more accurately. Neurological disorders, often complex and difficult to diagnose, significantly benefit from AI's capacity to recognize patterns in voluminous data. AI is pivotal in the early detection of conditions such as Alzheimer's, Parkinson's, and multiple sclerosis by analyzing brain imaging scans and identifying minute changes that the human eye may overlook. Using pattern recognition, AI can identify abnormalities in radiology images that can indicate cancer, often catching early-stage tumors before they become more life-threatening. AI models can also be utilized to formulate personalized treatment plans based on individual cancer genetic makeup. AI has revolutionized pathology by speeding up disease diagnostics with the surge of computational pathology, as AI-driven algorithms can instantaneously analyze tissue samples to detect abnormalities, diseases, and infections. Utilizing deep learning techniques, AI can evaluate medical images such as X-rays, CT scans, and MRI scans to detect signs of diseases, including pneumonia, brain tumors, and fractures. In pulmonology, AI is used to predict and manage chronic conditions such as asthma and COPD, and it helps with the early detection of lung cancer via the analysis of CT scans and interpretation of pulmonary function tests. Ophthalmology uses AI algorithms for diagnosing various eye diseases. Deep learning models can analyze retinal photos to detect diabetic retinopathy in its early stages, significantly reducing the risk of blindness.

End-User: Utilization of AI for large data set diagnosis in hospitals and clinics

Within academic institutions and research centers, AI is a focal point of exploration and innovation. Scientists and researchers leverage AI to devise new methodologies for early disease detection, facilitating faster and more efficient diagnosis and, in turn, enabling timely intervention. In diagnostic centers, AI is revolutionizing patient care with machine learning models and image recognition software, enabling enhanced diagnostic imaging. AI algorithms can analyze MRI scans, X-rays, and CT scans to detect and classify anomalies; this includes even minor abnormalities that can often escape unaided human interpretation. These tools facilitate more accurate diagnoses and reduce the scope of manual errors, supporting the timely beginning of an appropriate course of treatment. Hospitals, integral parts of the frontline healthcare system, are witnessing an impactful integration of AI in various capacities. Predominantly, it assists physicians in disease diagnosis by analyzing patient data and presenting key insights to the physician in real-time. By adopting AI-powered tools, hospitals can improve upon traditional patient care models, expedite the diagnosis process, and ultimately deliver

improved treatment outcomes.

Component: Availability of a diverse range of software components to offer enhanced diagnostics decision

Hardware is a key component of AI in medical diagnostics which refers to physical devices such as embedded systems, sensors, and medical imaging devices necessitated for AI computation. Sensors and IoT devices are major hardware used to collect patient data and transmit it to AI systems for analysis. Hardware environments require hardware for data encryption, access control, and compliance with data protection regulations. Services include training, maintenance, installation, and customization of AI medical diagnostics, which offer tele-monitoring and tele-consultation using the technology. Telemonitoring includes remote diagnostics and continuous monitoring of the patient's health, particularly beneficial for chronically ill patients, elderly people, and individuals residing in remote areas. Tele-consultation democratizes access to expert medical consultation irrespective of geographical barriers and is predominantly useful for follow-ups, preliminary diagnoses, and rural healthcare. Software forms an integral part of AI in medical diagnostics, leveraging sophisticated algorithms, machine learning, and deep learning models to analyze complex medical data. It helps to interpret scans, identify anomalies, and predict patient prognosis and treatment responses. This software may include image analysis tools, diagnostics decision support systems, genome analysis software, and pathology & microscopy analysis, among others.

Technology: Extensive advancements in computer vision technologies for improved image analysis

Computer vision involves training artificial intelligence (AI) to interpret and understand the visual world. In medical diagnostics, this technology has revitalized procedures such as image-guided surgeries and automated reading of radiology reports. Computer vision is crucial in radiology and pathology, where large volumes of image data are interpreted. Machine Learning platforms enable computer systems to improve with experience, and they excel in predicting disease progression and diagnosing conditions at early stages. This technology is used in the diagnosis process and management of chronic diseases such as diabetes or heart disease, which require continuous monitoring and timely interventions. Natural language processing (NLP) allows AI to understand and interpret human language. It is effective in streamlining administrative tasks and extracting essential information from medical records for patient care. Robotic process automation (RPA) is leveraging software robots to automate routine tasks and is efficient in automating laboratory results, updating patient records, and booking appointments. RPA can automate the entire laboratory process in large-scale hospitals, eliminating errors and speeding up diagnoses.

Regional Insights:

Significant investments in AI for healthcare in the United States have led to groundbreaking research and advancements in medical diagnostics. Major countries such as the United States and Canada have the strong presence of key players equipped with technological capabilities to revolutionize medical diagnostics services through artificial intelligence integration. Europe has

witnessed the emergence of several startups and established companies producing AI-driven solutions for research & development in medical diagnostics. Ongoing collaboration activities between governments, researchers, and industry players across the EMEA region are playing a crucial role to drive innovation market growth in the medical diagnostics sector. Significant countries in the APAC region, including China, Japan, and India, support regional players to leverage their expertise in robotics and advanced technologies to develop AI-driven diagnostic tools. Artificial Intelligence (AI) in medical diagnostics in the APAC has witnessed significant growth owing to its large population base, evolving healthcare infrastructure, and increasing adoption of advanced technologies.

FPNV Positioning Matrix:

The FPNV Positioning Matrix is essential for assessing the Artificial Intelligence in Medical Diagnostics Market. It provides a comprehensive evaluation of vendors by examining key metrics within Business Strategy and Product Satisfaction, allowing users to make informed decisions based on their specific needs. This advanced analysis then organizes these vendors into four distinct quadrants, which represent varying levels of success: Forefront (F), Pathfinder (P), Niche (N), or Vital(V).

Market Share Analysis:

The Market Share Analysis offers an insightful look at the current state of vendors in the Artificial Intelligence in Medical Diagnostics Market. By comparing vendor contributions to overall revenue, customer base, and other key metrics, we can give companies a greater understanding of their performance and what they are up against when competing for market share. The analysis also sheds light on just how competitive any given sector is about accumulation, fragmentation dominance, and amalgamation traits over the base year period studied.

Key Company Profiles:

The report delves into recent significant developments in the Artificial Intelligence in Medical Diagnostics Market, highlighting leading vendors and their innovative profiles. These include 3M Company, AiCure, LLC, Aidoc Medical Ltd., Butterfly Network, Inc., Cera Care Limited, Cisco Systems, Inc., Corti - AI, Digital Diagnostics Inc., Edifecs, Inc., Enlitic, Inc., Eprexia by PHC Holdings Corporation, Freenome Holdings, Inc., GE HealthCare Technologies, Inc., General Vision, Inc., Google LLC by Alphabet Inc., Hewlett Packard Enterprise Development LP, Imagen Technologies, Inc., Intel Corporation, International Business Machines Corporation, Johnson & Johnson Services, Inc., Kantify, Koninklijke Philips N.V., Medtronic PLC, Microsoft Corporation, Nano-X Imaging Ltd., NEC Corporation, NVIDIA Corporation, Persistent Systems Limited, Qure.ai Technologies Private limited, Siemens Healthineers AG, SigTuple Technologies Private Limited, Stryker Corporation, Tempus Labs, Inc., and VUNO Inc..

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10. Americas Artificial Intelligence in Medical Diagnostics Market
11. Asia-Pacific Artificial Intelligence in Medical Diagnostics Market
12. Europe, Middle East & Africa Artificial Intelligence in Medical Diagnostics Market
13. Competitive Landscape
14. Competitive Portfolio
15. Appendix

The report provides insights on the following pointers:

1. Market Penetration: Provides comprehensive information on the market offered by the key players
2. Market Development: Provides in-depth information about lucrative emerging markets and analyzes penetration across mature segments of the markets
3. Market Diversification: Provides detailed information about new product launches, untapped geographies, recent developments, and investments
4. Competitive Assessment & Intelligence: Provides an exhaustive assessment of market shares, strategies, products, certification, regulatory approvals, patent landscape, and manufacturing capabilities of the leading players
5. Product Development & Innovation: Provides intelligent insights on future technologies, R&D activities, and breakthrough product developments

The report answers questions such as:

1. What is the market size and forecast of the Artificial Intelligence in Medical Diagnostics Market?
2. Which are the products/segments/applications/areas to invest in over the forecast period in the Artificial Intelligence in Medical Diagnostics Market?
3. What is the competitive strategic window for opportunities in the Artificial Intelligence in Medical Diagnostics Market?
4. What are the technology trends and regulatory frameworks in the Artificial Intelligence in Medical Diagnostics Market?
5. What is the market share of the leading vendors in the Artificial Intelligence in Medical Diagnostics Market?
6. What modes and strategic moves are considered suitable for entering the Artificial Intelligence in Medical Diagnostics Market?

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