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AI in Pathology Market Forecasts to 2030 – Global Analysis By Offering (Software, Hardware and Services), Workflow, Deployment Mode, Technology, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global AI in Pathology Market is accounted for $82.8 million in 2024 and is expected to reach $205.9 million by 2030 growing at a CAGR of 16.4% during the forecast period. AI in pathology is the use of artificial intelligence techniques, such as machine learning and deep learning, to analyze digital pathology images. These images are created by scanning traditional glass slides, allowing for computer-aided diagnosis, disease prediction, and treatment planning. AI algorithms can assist pathologists in identifying patterns, quantifying features, and detecting abnormalities in tissue samples, ultimately improving accuracy and efficiency in pathology workflows.

According to the US Department of Health and Human Services, since the pandemic, Medicare beneficiaries have increased their use of telemedicine in the United States. In-person healthcare visits in the US were registered at 1.1 billion in 2019 and 989 million in 2020.

Market Dynamics:

Driver:

Increasing demand for personalized medicine

The growing demand for personalized medicine in pathology is driving the integration of AI technologies. AI enables precise diagnostics, tailored treatments, and predictive

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analytics based on individual genetic profiles. This trend enhances patient outcomes by identifying the most effective therapies and minimizing adverse effects. As precision medicine advances, AI's role in pathology becomes crucial in improving accuracy, efficiency, and overall healthcare delivery, fueling market growth.

Restraint:

Inadequate interoperability issues with legacy systems

Inadequate interoperability with legacy systems in AI pathology can hinder seamless data integration, reducing the effectiveness of advanced AI tools. This incompatibility leads to delays, errors in diagnosis, and fragmented patient records, impairing workflow efficiency. The inability to exchange data across platforms also limits AI's full potential in enhancing personalized treatments and collaboration. As a result, the market faces challenges in fully adopting AI technologies, impacting overall healthcare delivery.

Opportunity:

Growing digitalization of pathology

The digitalization of pathology is transforming the market by enabling faster, more accurate diagnoses. AI-powered tools streamline image analysis, automate workflows, and enhance data management, improving efficiency and precision. Digital pathology platforms facilitate remote consultations, allowing pathologists to collaborate globally. This digital shift is driving innovation in diagnostics, accelerating research, and supporting personalized treatment plans, leading to rapid growth in the market.

Threat:

High cost of digital pathology systems

The high cost of digital pathology systems with the market creates barriers to adoption, particularly for smaller healthcare facilities. These expenses can lead to budget constraints, limiting access to advanced diagnostic tools and technology. As a result, it may contribute to unequal healthcare delivery, slow down innovation, and hinder the widespread use of AI in pathology, potentially delaying improvements in patient care and diagnostic accuracy.

Covid-19 Impact:

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COVID-19 accelerated the adoption of AI in pathology as healthcare systems sought efficient ways to handle increased workload and ensure safety. AI-driven tools helped speed up diagnostics, reduce human contact, and manage resources more effectively. However, the pandemic also highlighted challenges such as limited infrastructure, data privacy concerns, and budget constraints. Despite these, the crisis spurred greater interest and investment in AI technologies for pathology, shaping future growth.

The computer vision segment is expected to be the largest market share during the forecast period

The computer vision segment is expected to account for the largest market share during the forecast period. It automates tasks like detecting abnormalities, classifying diseases, and quantifying tissue changes, improving efficiency and reducing human error. With deep learning algorithms, computer vision accelerates the diagnostic process and supports pathologists in making more precise, consistent decisions. Its integration is transforming pathology by enabling faster, more accurate disease detection and treatment planning.

The disease diagnosis segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the disease diagnosis segment is predicted to witness the highest growth rate. AI systems assist pathologists in identifying abnormalities, detecting diseases early, and predicting patient outcomes with high accuracy. By automating image analysis and pattern recognition, AI enhances diagnostic efficiency, reduces human error, and supports personalized treatment plans. This technology is particularly valuable in areas like cancer detection, enabling faster and more reliable diagnoses.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share due to advanced healthcare infrastructure, increasing demand for precision medicine, and rising adoption of digital pathology. AI technologies are enhancing diagnostic accuracy, particularly in cancer detection and disease management. With strong investments from both public and private sectors, leads in research, development, and integration of AI-driven solutions, shaping the future of pathology through improved efficiency and patient care.

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Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR driven by advancements in healthcare technology and increasing demand for precision medicine. Economic growth in many Asia Pacific countries is leading to increased investments in healthcare technology and infrastructure, facilitating the integration of AI in pathology. Additionally, the increasing need for personalized treatment plans is propelling the adoption of AI in pathology.

Key players in the market

Some of the key players in AI in Pathology market include Siemens Healthineers, Canon Medical Systems, Proscia, Zebra Medical Vision, IBM Watson Health, Philips Healthcare, Visiopharm, Tempus Labs, DeepMind, Medtronic, Konica Minolta, Eizo Corporation, Becton Dickinson (BD), Pathologix and Densitas.

Key Developments:

In November 2024, Siriraj Piyamaharajkarun Hospital (SiPH) announced a successful transformation of its Pathology Information System (PIS) using advanced computational technologies and artificial intelligence. In collaboration with IBM, the system now integrates laboratory workflows, image scanning systems, and centralized data processing, establishing a cohesive approach for pathological cancer diagnosis and laying the foundation for SiPH’s future advancements in cancer diagnostics..

In April 2024, Practice technology leader and EHR pioneer ModMed® announced that it will collaborate with Medtronic, the world’s largest medtech company, to enhance the documentation of polyp detection by utilizing the AI capabilities of the GI Genius system sold by Medtronic.

Offerings Covered:

- Software
- Hardware
- Services

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Workflows Covered:

- Pre-Analytical
- Analytical
- Post-Analytical

Deployment Modes Covered:

- Cloud-Based
- On-Premise

Technologies Covered:

- Machine Learning (ML)
- Deep Learning (DL)
- Natural Language Processing (NLP)
- Computer Vision
- Reinforcement Learning (RL)
- Other Technologies

Applications Covered:

- Digital Pathology
- Disease Diagnosis
- Drug Discovery

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- Personalized Medicine
- Other Applications

End Users Covered:

- Hospitals & Diagnostic Laboratories
- Pharmaceutical and Biotechnology Companies
- Research Institutions
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe

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- Asia Pacific
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  - China
  - India
  - Australia
  - New Zealand
  - South Korea
  - Rest of Asia Pacific
- South America
  - Argentina
  - Brazil
  - Chile
  - Rest of South America
- Middle East & Africa
  - Saudi Arabia
  - UAE
  - Qatar
  - South Africa
  - Rest of Middle East & Africa

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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 2022, 2023, 2024, 2026, and 2030
- 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

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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