

# AI-Powered Pathology Analysis System Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

<https://marketpublishers.com/r/AD742329E24EEN.html>

Date: November 2025

Pages: 150

Price: US\$ 4,850.00 (Single User License)

ID: AD742329E24EEN

## Abstracts

The Global AI-Powered Pathology Analysis System Market was valued at USD 107.5 million in 2024 and is estimated to grow at a CAGR of 17.2% to reach USD 527.8 million by 2034.

The market expansion is driven by the rising adoption of digital pathology and telepathology, the growing need for faster and more accurate diagnostic results, the increasing prevalence of chronic diseases, and continuous advancements in AI algorithms. Shortages of skilled pathologists are encouraging the adoption of automated solutions, while integration of AI with genomic and multi-omics data is creating advanced diagnostic capabilities. Digital pathology enables remote access to high-resolution slide images, facilitating collaboration across geographies, and telepathology allows specialists to consult on cases from distant locations. AI-powered platforms enhance image analysis, support decision-making, and offer real-time quality control prior to expert review. These systems utilize artificial intelligence to analyze medical images, detect disease patterns, and assist pathologists in achieving faster, more consistent, and highly accurate diagnoses.

The software segment held a 52.7% share in 2024, driven by rising adoption in drug discovery and clinical trials. Hospitals and laboratories are increasingly deploying software solutions to automate workflows and integrate with electronic health record (EHR) systems, enhancing efficiency and productivity.

The machine learning segment was valued at USD 45.2 million in 2024, as machine learning algorithms, including convolutional neural networks (CNNs) and generative adversarial networks (GANs), enable analysis of complex histopathological patterns,

supporting early disease detection.

North America AI-Powered Pathology Analysis System Market held a 47.7% share in 2024. The region benefits from advanced healthcare infrastructure, high adoption of digital pathology, and substantial investments in AI research. Key US companies, including TEMPUS, PHILIPS, and PROSCIA, are collaborating with hospitals and pharmaceutical firms to deploy AI solutions in diagnostics, biomarker development, and clinical trials. Regulatory clarity and integration with EHR systems further support adoption and deployment in the region.

Leading companies in the AI-Powered Pathology Analysis System Market include IBEX, HOLOGIC, QRITIVE, Tribune Health, aiforia, Aiosyn, Mindpeak, VISIOPHARM, PathAI, Roche, Quest Diagnostics, PHILIPS, TEMPUS, Deep Bio, KFBIO, and Indica Labs. Market players are strengthening their position by investing in R&D to enhance algorithm accuracy and expand diagnostic capabilities. They are forming strategic partnerships with hospitals, laboratories, and pharmaceutical firms, while scaling software deployment and AI integration across clinical workflows. Geographic expansion, acquisitions, and collaborations are also central strategies, along with integrating platforms with EHR systems to improve interoperability. Companies focus on launching advanced analytics tools, machine learning-based solutions, and AI-powered workflow automation to solidify their market presence and accelerate adoption in diagnostics, drug development, and clinical research.

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