

Global AI in Precision Medicine Market (By Technology, Component, Application and Geography), Key Company Profiles, Recent Developments, and Market Dynamics – Forecast to 2032

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Abstracts

The global AI in precision medicine market was valued at USD 2.4 Billion in 2025, and is projected to reach USD 20.2 Billion by 2032. This growth reflects a structural shift in healthcare toward data-driven, individualized care delivery models.

Artificial intelligence in precision medicine leverages advanced analytics, including machine learning and complex algorithmic models, to process large-scale biological, clinical, and genomic datasets. These capabilities enable a step-change in how diseases are diagnosed, stratified, and treated, moving from standardized protocols to highly personalized interventions. AI-driven insights allow clinicians to identify disease patterns earlier, predict patient-specific treatment responses, and optimize therapeutic pathways, ultimately improving both clinical outcomes and system efficiency.

Market momentum is underpinned by the rising global burden of chronic and genetic diseases. Conditions such as cancer, diabetes, cardiovascular disorders, Alzheimer's disease, Parkinson's disease, and hemophilia are increasing in both prevalence and complexity, necessitating more tailored approaches to care. For instance, global cancer incidence is expected to grow significantly, reaching around 21.3 million new cases in 2025 and exceeding 35 million by 2050. This trend reinforces the need for precision diagnostics and targeted therapies.

AI is particularly transformative in oncology, where it enables the integration and analysis of genomic and clinical data to identify mutation profiles, predict tumor evolution, and guide targeted treatment selection. Similarly, in diabetes care, AI

facilitates dynamic disease management by combining genetic, metabolic, and behavioral data to personalize interventions and improve long-term outcomes.

In neurodegenerative diseases such as Alzheimer's, AI is unlocking new frontiers in early detection and risk stratification. By synthesizing insights from genetic markers, neuroimaging, and patient histories, AI supports more proactive and individualized care strategies, addressing a critical unmet need in precision neurology.

Looking ahead, the convergence of increasing disease burden, expanding healthcare datasets, and advances in AI capabilities will continue to accelerate adoption. Organizations that effectively integrate AI into clinical decision-making and care pathways will be best positioned to capture value in this high-growth, innovation-driven market.

Recent Developments

January 2026: OncoLens, in collaboration with The Jackson Laboratory, launched a program to expand Molecular Tumor Boards in community oncology centers to improve treatment recommendations and clinical trial access, using digital workflows and genomic expertise.

October 2025: Foundation Medicine partnered with Manifold to bring enhanced AI capabilities to FoundationInsights, a cloud-based data analytics and visualization platform.

May 2025: Illumina, Inc., in collaboration with PromoterAI, designed an AI algorithm to help identify disease-causing regulatory variants in noncoding promoter regions, aiming to accelerate insights that support rare disease diagnosis.

By Technology: Global AI in Precision Medicine Market – Key Takeaways

The technology landscape of the global AI in precision medicine market is led by deep learning, which holds the dominant share due to its advanced capabilities, including high processing power and automation of complex analytical tasks. Meanwhile, Natural Language Processing (NLP) is emerging as the fastest-growing segment, driven by its effectiveness in extracting actionable insights from unstructured clinical data, which makes up a significant portion of healthcare information. In addition, querying methods

and context-aware processing are steadily gaining traction, as they enhance data mining efficiency and support more adaptive, patient-centric clinical decision-making.

By Component: Global AI in Precision Medicine Market – Key Takeaways

The component segmentation of the AI in precision medicine market is led by software solutions, which dominate due to their ability to deliver precise diagnostics, advanced data analysis, predictive modeling, and real-time clinical decision support. These AI-based software platforms play a central role in enhancing the effectiveness of precision medicine applications. At the same time, the services segment is experiencing strong growth, fueled by the rising demand for system integration, maintenance, consulting, and training to help healthcare professionals effectively adopt and utilize AI technologies. Meanwhile, the hardware segment remains a critical foundation, supporting the high computational requirements of AI systems; its growth is driven by the need to process large biomedical datasets efficiently, enable real-time diagnostics, and power complex algorithms used in personalized treatment approaches.

By Application: Global AI in Precision Medicine Market – Key Takeaways

The application landscape of the AI in precision medicine market is dominated by oncology, where AI is extensively used across the entire cancer care continuum, from improving diagnostic accuracy through advanced imaging and data analysis to enabling predictive modeling and personalized treatment strategies. Cardiology also holds a significant share, driven by the growing prevalence of cardiovascular diseases and increased adoption of AI-powered imaging and monitoring solutions. Meanwhile, the neurology segment is emerging as the fastest-growing area, supported by advancements in AI that facilitate early diagnosis and tailored treatment approaches for complex neurological disorders. Additionally, the respiratory segment is gaining momentum due to the rising global burden of respiratory diseases, with AI playing a key role in enhancing diagnostics, remote monitoring, early detection, and personalized care for conditions such as chronic obstructive pulmonary disease, asthma, and lung infections.

By Region: Global AI in Precision Medicine Market – Key Takeaways

North America leads the AI in precision medicine market, driven by its advanced healthcare infrastructure, strong research and development ecosystem, and early adoption of innovative digital technologies. Europe holds the second-largest share, supported by rising investments in healthcare technology, favorable government

initiatives, and an increasing focus on personalized medicine approaches. Meanwhile, the Asia-Pacific region is emerging as the fastest-growing market, fueled by rapid technological advancements, expansion of the pharmaceutical and biotechnology sectors, and growing investments in healthcare infrastructure. Additionally, the rising prevalence of chronic diseases, supportive government policies, and a large and expanding patient population across key countries in the region are creating significant opportunities for the adoption of AI-driven precision medicine solutions.

iGATE RESEARCH report titled “Global AI in Precision Medicine Market (By Technology, Component, Application and Geography), Key Company Profiles, Recent Developments, and Market Dynamics – Forecast to 2032” provides a comprehensive assessment of the fast-evolving, high-growth Global AI in Precision Medicine Market.

This 143 Pages report with 80 Figures and 8 Tables has been analyzed from 9 viewpoints:

- 1) Global – AI in Precision Medicine Market and Forecast (2021 – 2032)
- 2) Global – AI in Precision Medicine Market Share and Forecast (2021 – 2032)
- 3) By Technology – Global AI in Precision Medicine Market and Forecast (2021 – 2032)
- 4) By Component – Global AI in Precision Medicine Market and Forecast (2021 – 2032)
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- 7) Global AI in Precision Medicine Market – Recent Developments
- 8) Global AI in Precision Medicine Market – Company Profiles
- 9) Global AI in Precision Medicine – Market Dynamics

By Technology - Global AI in Precision Medicine Market

Deep Learning

Natural Language Processing

Querying Method

Context-Aware Processing

By Component - Global AI in Precision Medicine Market

1. Software
2. Hardware
3. Services

By Application - Global AI in Precision Medicine Market

1. Oncology
2. Cardiology
3. Neurology
4. Respiratory
5. Others

By Geography - Global AI in Precision Medicine Market

1. North America

United States

Canada

2. Europe

United Kingdom

Germany

France

Italy

Spain

Russia

3. Asia-Pacific

Japan

China

India

Australia

South Korea

Singapore

4. Latin America

Brazil

Mexico

Argentina

Colombia

5. Middle East & Africa

South Africa

Saudi Arabia

UAE

Israel

Global AI in Precision Medicine Market – Company Profiles

1. Intel Corporation
2. GE HealthCare Technologies Inc.
3. Sanofi
4. NVIDIA Corporation

5. Microsoft Corporation
6. IBM Corporation
7. Alphabet Inc.
8. Siemens Healthineers AG
9. Tempus AI
10. Illumina, Inc.

Data Sources

iGATE RESEARCH employs rigorous primary and secondary research techniques in developing distinctive data sets and research material for business reports. This report is built by using data and information sourced from Proprietary Information Database, Primary and Secondary Research Methodologies, and In house analysis by iGATE Research dedicated team of qualified professionals with deep industry experience and expertise.

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