

Ai In Bioinformatics Market Outlook 2025-2034: Market Share, and Growth Analysis By Type (Machine Learning, Deep Learning, Other Types), By Offering (Services, Software), By Application

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Abstracts

The Ai In Bioinformatics Market is valued at USD 7.6 billion in 2025 and is projected to grow at a CAGR of 37.4% to reach USD 132.5 billion by 2034.

AI in Bioinformatics Market

In the rapidly evolving landscape of bioinformatics, artificial intelligence has emerged as a game-changer. By integrating machine learning and advanced data analytics into the study of biological data, AI is enabling faster, more accurate insights into genomic sequences, protein structures, and complex biological systems. This transformative shift is empowering pharmaceutical companies, research institutions, and healthcare providers to identify new biomarkers, develop targeted therapies, and accelerate drug discovery. As a result, the global AI in bioinformatics market is witnessing significant growth, driven by increased demand for precision medicine, lower sequencing costs, and continuous technological advancements. Companies that embrace these innovations are positioning themselves at the forefront of a rapidly expanding field, reshaping the way we understand and treat diseases. The year 2024 saw several groundbreaking developments in the AI in bioinformatics market. Key industry players expanded their investments in AI-powered tools that simplify genome analysis, enabling faster interpretation of vast datasets. Collaborations between tech firms and biotech companies led to the launch of new platforms that integrate AI-driven pattern recognition with advanced predictive analytics. These innovations allowed researchers to identify previously undetectable correlations between genetic mutations and diseases. Furthermore, cloud-based AI platforms gained traction, providing smaller

research teams with affordable access to high-performance computational resources. Regulatory agencies also took steps toward standardizing the use of AI in clinical bioinformatics, increasing trust and fostering broader adoption of AI solutions in healthcare. Looking ahead, the AI in bioinformatics market is set to grow even further in 2025 and beyond. Advances in natural language processing will enable better interpretation of scientific literature, while the integration of multimodal data—combining genetic, proteomic, and clinical information—will pave the way for deeper insights into complex diseases. AI-driven tools will increasingly support personalized medicine initiatives, helping clinicians tailor treatments to individual patients' genetic profiles. As algorithms become more transparent and regulatory frameworks mature, industry confidence in AI solutions will continue to strengthen. Additionally, public and private investments in research and development will sustain innovation, positioning AI as a cornerstone of bioinformatics and healthcare transformation for years to come.

Key Insights Ai In Bioinformatics Market

Emerging generative AI models creating synthetic data for improved training and predictive accuracy.

Increased adoption of edge-based AI processing for real-time analytics in resource-limited settings.

Greater emphasis on transparency and explainability in AI algorithms to enhance trust and adoption.

Rapid growth of multimodal AI approaches combining visual, text, and sensor data for comprehensive insights.

Continued expansion of AI-driven decentralized and virtual trials in clinical research.

Cost and time efficiencies achieved through AI-powered automation and data-driven insights.

Growing investment in AI research and development by public and private sectors.

Supportive regulatory frameworks promoting the safe adoption of AI technologies.

Rising demand for personalized solutions and precision medicine facilitated by AI.

Ensuring data privacy and security while maintaining compliance with increasing regulatory standards and ethical guidelines.

Ai In Bioinformatics Market Segmentation

By Type

Machine Learning

Deep Learning

Other Types

By Offering

Services

Software

By Application

Genomics

Chemoinformatics and Drug Design

Proteomics

DNA Sequencing

System Biology

Transcriptomics

Text Mining

Microarrays

Metabolomics

Other Applications

Key Companies Analysed

Thermo Fisher Scientific Inc.

Eurofins Scientific SE

Dassault Systèmes SE

Illumina Inc.

NeoGenomics Laboratories Inc.

QIAGEN N.V.

SomaLogic Operating Co. Inc.

Seven Bridges Genomics Inc.

Genialis Inc.

SOPHiA GENETICS SA

DNAexus Inc.

Insilico Medicine Inc.

Deep Genomics Inc.

Biomax Informatics Inc.

Ardigen SA

Strand Life Sciences Pvt. Ltd.

Genomenon Inc.

SourceBio International Limited

Fios Genomics Limited

CelbridgeScience

BlueBee Holding BV

JADBio

Elucidata Corporation

Gnosis DA

DNASTAR Inc.

iNDX.Ai

Paige AI Inc.

Ai In Bioinformatics Market Analytics

The report employs rigorous tools, including Porter's Five Forces, value chain mapping, and scenario-based modeling, to assess supply–demand dynamics. Cross-sector influences from parent, derived, and substitute markets are evaluated to identify risks and opportunities. Trade and pricing analytics provide an up-to-date view of international flows, including leading exporters, importers, and regional price trends.

Macroeconomic indicators, policy frameworks such as carbon pricing and energy security strategies, and evolving consumer behavior are considered in forecasting scenarios. Recent deal flows, partnerships, and technology innovations are

incorporated to assess their impact on future market performance.

Ai In Bioinformatics Market Competitive Intelligence

The competitive landscape is mapped through OG Analysis' proprietary frameworks, profiling leading companies with details on business models, product portfolios, financial performance, and strategic initiatives. Key developments such as mergers & acquisitions, technology collaborations, investment inflows, and regional expansions are analyzed for their competitive impact. The report also identifies emerging players and innovative startups contributing to market disruption.

Regional insights highlight the most promising investment destinations, regulatory landscapes, and evolving partnerships across energy and industrial corridors.

Countries Covered

North America — Ai In Bioinformatics market data and outlook to 2034

United States

Canada

Mexico

Europe — Ai In Bioinformatics market data and outlook to 2034

Germany

United Kingdom

France

Italy

Spain

BeNeLux

Russia

Sweden

Asia-Pacific — Ai In Bioinformatics market data and outlook to 2034

China

Japan

India

South Korea

Australia

Indonesia

Malaysia

Vietnam

Middle East and Africa — Ai In Bioinformatics market data and outlook to 2034

Saudi Arabia

South Africa

Iran

UAE

Egypt

South and Central America — Ai In Bioinformatics market data and outlook to 2034

Brazil

Argentina

Chile

Peru

** We can include data and analysis of additional countries on demand.*

Research Methodology

This study combines primary inputs from industry experts across the Ai In Bioinformatics value chain with secondary data from associations, government publications, trade databases, and company disclosures. Proprietary modeling techniques, including data triangulation, statistical correlation, and scenario planning, are applied to deliver reliable market sizing and forecasting.

Key Questions Addressed

What is the current and forecast market size of the Ai In Bioinformatics industry at global, regional, and country levels?

Which types, applications, and technologies present the highest growth potential?

How are supply chains adapting to geopolitical and economic shocks?

What role do policy frameworks, trade flows, and sustainability targets play in shaping demand?

Who are the leading players, and how are their strategies evolving in the face of global uncertainty?

Which regional “hotspots” and customer segments will outpace the market, and what go-to-market and partnership models best support entry and expansion?

Where are the most investable opportunities—across technology roadmaps, sustainability-linked innovation, and M&A—and what is the best segment to invest over the next 3–5 years?

Your Key Takeaways from the Ai In Bioinformatics Market Report

Global Ai In Bioinformatics market size and growth projections (CAGR), 2024-2034

Impact of Russia-Ukraine, Israel-Palestine, and Hamas conflicts on Ai In Bioinformatics trade, costs, and supply chains

Ai In Bioinformatics market size, share, and outlook across 5 regions and 27 countries, 2023-2034

Ai In Bioinformatics market size, CAGR, and market share of key products, applications, and end-user verticals, 2023-2034

Short- and long-term Ai In Bioinformatics market trends, drivers, restraints, and opportunities

Porter's Five Forces analysis, technological developments, and Ai In Bioinformatics supply chain analysis

Ai In Bioinformatics trade analysis, Ai In Bioinformatics market price analysis, and Ai In Bioinformatics supply/demand dynamics

Profiles of 5 leading companies—overview, key strategies, financials, and products

Latest Ai In Bioinformatics market news and developments

Additional Support

With the purchase of this report, you will receive

An updated PDF report and an MS Excel data workbook containing all market tables and figures for easy analysis.

7-day post-sale analyst support for clarifications and in-scope supplementary data, ensuring the deliverable aligns precisely with your requirements.

Complimentary report update to incorporate the latest available data and the impact of recent market developments.

** The updated report will be delivered within 3 working days*

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