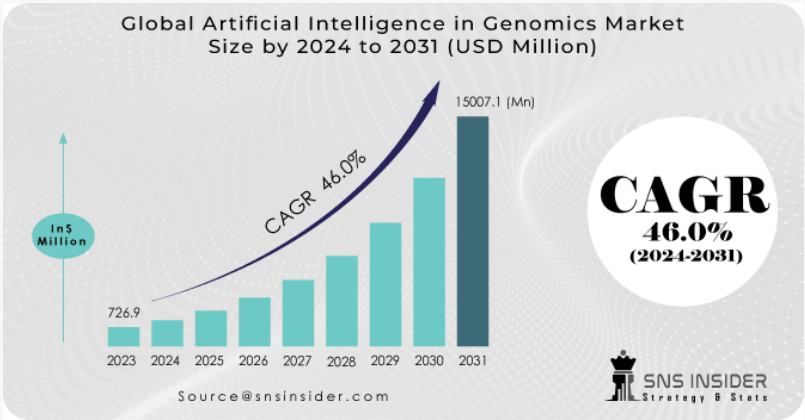
Artificial Intelligence In Genomics Market Will Surge To USD 15007.1 Million By 2031

Artificial Intelligence in Genomics Market Size and Share Analysis, Industry Overview, Report 2024-2031



Artificial Intelligence in Genomics market

AUSTIN, TEXAS, UNITED STATES, June 7, 2024 /EINPresswire.com/ -- The Artificial Intelligence in Genomics market Size, valued at USD 726.9 million in 2023, is anticipated to reach USD 15,007.1 million by 2031. This signifies a projected compound annual growth rate (CAGR) of 46.0% during the forecast period of 2024 to 2031. Driven from Personalized Medicine to Faster Pandemics Response

Ai Revolutionizes Genomics Research: Personalized Medicine Drives Market Growth
The AI in genomics market is experiencing significant growth fueled by two key trends like the demand for personalized medicine and rising R&D spending. This growth is further accelerated by advancements in AI technology itself, making it a more cost-effective solution.

New, sophisticated AI-powered software tools are being developed specifically for genomics. These tools enable researchers to analyze and manage vast amounts of data more efficiently than ever before. Additionally, AI automates many manual tasks, reducing labor costs and streamlining the research process. The COVID-19 pandemic further bolstered the market by highlighting the need for faster computing solutions. This led to collaboration in the healthcare sector to develop AI-powered tools for vaccine and drug development at an unprecedented speed.

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List of Artificial Intelligence in Genomics Market Companies Profiled in Report:
- IBM

- Cambridge Cancer Genomics
- NVIDIA Corporation
- Thermo Fisher Scientific
- MolecularMatch Inc.
- Deep Genomics
- Microsoft
- Freenome Holdings Inc.
- BenevolentAI
- Fabric Genomics Inc.

Impact Of Economic Slowdown And Russia Ukraine War

The Russia Ukraine war has crippled its healthcare system, with attacks on facilities, limited movement, and displacement hindering access to care. Meanwhile, the economic slowdown threatens to worsen existing weaknesses in global health systems, strained by the pandemic and struggling with long-term challenges. However, this economic pressure could also drive innovation in AI-powered genomics, as researchers and industry collaborate to develop cost-effective tools for broader use.

Key Market Segmentation

By Component

- Hardware
- Software
- Services

By Technology

- Machine Learning
  - Deep Learning
  - Supervised Learning
  - Unsupervised Learning
  - Others
- Computer Vision

By Functionality

- Genome Sequencing
- Gene Editing
- Others

By Application

- Drug Discovery & Development
- Precision Medicine
- Diagnostics
- Others

By Components, Software makes up the biggest chunk of the market around 40% in 2023 and is expected to grow the fastest almost 47% annually. This is due to a surge in AI software adoption by hospitals, research centers, and even patients themselves. New software solutions and increasing use of AI in various healthcare applications like virtual assistants and telemedicine are fueling this growth. Government and industry initiatives, like releasing open-source AI software for genetic analysis, are also propelling the market forward.

By Technology, Machine learning currently dominates around 63% in 2023 and is expected to stay ahead. This is because it empowers scientists to analyze genetic data, leading to breakthroughs in understanding diseases and health. Machine learning automates tasks like data annotation, saving researchers valuable time. While smaller now, computer vision, using algorithms to analyze images, is also growing rapidly over 45% CAGR. This technology automates tasks in genomics research and provides more accurate results, making it a key player in future advancements.

By Functionality, Genome sequencing dominating over 44% in 2023 and likely to stay on top. AI has accelerated the process of finding genetic patterns by analyzing vast amounts of sequencing data. Companies in both fields are teaming up to improve efficiency. For example, PacBio (a genome sequencing company) partnered with Google in 2022 to leverage Google's AI and machine learning tools for faster analysis and deeper insights from PacBio's sequencing data.

By Application, drug discovery and development leading the pack over 30% in 2023. This is driven by the need for new treatments for chronic and infectious diseases, along with increased collaboration between pharmaceutical companies and AI in genomics providers. However, the fastest growth is expected in precision medicine over 46% CAGR. AI helps identify genetic mutations and inheritance patterns, making it ideal for personalized medicine. By combining genetic data with disease risk assessment, AI in genomics is accelerating drug development and bringing treatments to market faster.

By End-Use, pharma and biotech hold the bigger share around 35% in 2023. AI helps them manage clinical data, predict diseases, and identify biomarkers for drug development. For instance, AI can predict drug toxicity, saving companies time and resources by weeding out potential failures before clinical trials. However, healthcare providers are expected to grow the fastest over 46% CAGR. Hospitals are investing heavily in personalized medicine research, and the increasing use of digital patient health data will further fuel this segment's growth.

Regional Analysis
North America leads the AI genomics market with a commanding 29% revenue share in 2023. This dominance attributes from a powerhouse combination like the presence of the world's top-funded research institutions and biotech companies heavily invested in AI solutions, and a thriving innovation hub that churns out novel software and analysis tools specifically designed

for genomics. This robust ecosystem fosters continuous growth in the North American AI genomics market.

Key Insights Of The Artificial Intelligence In Genomics Market
• Identify promising investment opportunities in the high-growth AI genomics market.
• Understand how AI can optimize drug discovery, development, and personalized medicine strategies.
• Gain insights into how AI can be leveraged to improve patient care through faster diagnoses, more effective treatments, and personalized medicine approaches.
• Identify areas where AI technology can add the most value in the genomics research and healthcare sectors.
• Understand the latest trends and applications of AI in genomics research to guide their own research efforts.

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