+44 20 8123 2220
info@marketpublishers.com

AI in Drug Discovery Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 Segmented By Component Type (Software and Services), By Drug Type (Small Molecule and Large Molecule), By Application Type (Preclinical Testing, Drug Optimization, and Repurposing, Target Identification, Candidate Screening, and Others), By Therapeutic Area (Oncology, Neurodegenerative Diseases, Cardiovascular Diseases, Rare Diseases, and Others), By Region and Competition By Type (Bladder, Piston, Diaphragm, and Spring), By Application (Blow Out Preventers (BOP), Mud Pumps, Offshore Rigs, and Others), By Deployment (Onshore, Offshore), By Region and Competition

https://marketpublishers.com/r/AA02F6CDC8A1EN.html
Date: October 2023
Pages: 183
Price: US$ 4,900.00 (Single User License)
ID: AA02F6CDC8A1EN

Abstracts

The Global AI in Drug Discovery Market was valued at USD 750.04 Million in 2022 and is expected to experience substantial growth throughout the forecast period, projecting a Compound Annual Growth Rate (CAGR) of 10.18% and expected to reach USD 1327.65 Million through 2028. Artificial intelligence (AI), a discipline within computer science, is focused on emulating intelligent behavior. It empowers computers to simulate human and animal-like thinking and task execution, while learning from mistakes. AI predominantly employs algorithms designed for efficient task completion with minimal errors. By harnessing deep learning and machine learning algorithms, AI

applies personalized knowledge to perform a wide array of tasks. The application of AI in drug discovery holds immense significance, contributing to disease tracking, facilitating the development of treatments, and even predicting the emergence of mutated animal viruses. AI has revolutionized research and development in drug discovery, leading to breakthroughs in treating chronic diseases.

Key Market Drivers

Reduced Time in Medication Research

The drive to accelerate the drug discovery process has spurred demand for artificial intelligence (AI) in pharmaceutical research, consequently propelling market growth. Traditional methods often take years to optimize compounds for human evaluation, while AI-powered startups could potentially accomplish the same in a matter of days or months. Increased healthcare budgets and advancements in healthcare infrastructure further contribute to market expansion. The integration of AI for efficient drug activity exploration is also driving demand in the drug development sector. AI-driven approaches streamline drug discovery stages, minimizing costs and time-consuming failures. AI algorithms enable rapid analysis of compound libraries, precise candidate prioritization, and accurate property predictions, ultimately expediting effective drug development.

Collaboration between Tech Giants and Pharma

Strategic agreements between technology giants like Microsoft and pharmaceutical companies like Novartis have paved the way for AI algorithm integration into the pharmaceutical landscape. Partnerships such as Nvidia's collaboration with Schr?dinger to enhance predictive capabilities in molecular forecasting have significantly influenced the AI in Drug Discovery Market. Emerging enterprises like Exscientia focus on AI-based methodologies, attracting substantial investments. Companies such as Recursion Pharmaceuticals are developing tools to accelerate the identification of potential drug candidates using AI. Moreover, IT firms like IBM, Microsoft, and Google are investing and partnering with pharmaceutical companies to propel the advancement of AI in Drug Discovery Market.

Rise in Chronic Diseases

The prevalence of chronic diseases like diabetes, COPD, coronary artery disease, arthritis, asthma, hepatitis, and cancer has surged globally. This is attributed to the

+44 20 8123 2220
info@marketpublishers.com

growing geriatric population, evolving lifestyles, and urbanization. The International Diabetes Federation reports that diabetes affected 537 million individuals globally in 2021. Predictions estimate around 643 million new cancer cases annually by 2030. China, for instance, accounts for over 50% of all lung cancer cases in the Asia Pacific region. AI is transforming personalized medicine through patient data integration, enabling precision healthcare, and enhancing treatment outcomes. It revolutionizes disease diagnosis, monitoring, and treatment, leading to more effective and tailored therapeutic interventions.

Technological Advancements

Advancements in AI technologies such as machine learning, deep learning, and natural language processing have significantly enhanced AI's capabilities in analyzing complex biological data. These advancements enable the integration of diverse data sources, including genomics, proteomics, and clinical data, leading to comprehensive insights and rapid decision-making in drug discovery. The exponential growth of biological data, including genomic sequences, protein structures, and drug-target interactions, offers ample opportunities for AI-driven analysis and modeling. Large-scale datasets empower AI algorithms to identify patterns, predict compound properties, and generate innovative hypotheses, enabling informed and data-driven decisions in drug discovery.

Key Market Challenges

Data Quality and Availability

AI relies heavily on high-quality, diverse, and comprehensive data for model development. In drug discovery, data privacy, intellectual property, and regulatory considerations are significant challenges. Obtaining reliable, well-curated datasets, especially those representing diverse patient populations and disease types, poses obstacles for AI-driven drug discovery. Addressing transparency concerns due to the opacity of AI models, especially deep learning models, is crucial. Regulators, clinicians, and patients seek transparent decision-making, making interpretability essential. Validating AI models and ensuring regulatory compliance present challenges. AI models must meet stringent standards and demonstrate robust performance to gain regulatory approval. Developing a regulatory framework catering to AI's unique considerations in drug discovery is vital for widespread adoption.

Technical Challenges

+44 20 8123 2220
info@marketpublishers.com

Although AI has made significant progress, data quality remains a substantial obstacle in using AI methods for drug development. Addressing challenges related to data ownership and confidentiality is imperative. Ongoing efforts aim to optimize current AI technologies in drug discovery.

Key Market Trends

R&D Expansion

Increased research and development activities, coupled with the use of cloud-based services, fuel growth in the AI in Drug Discovery Market. Emerging economies and advancements in biotechnology further accelerate the market's development. The COVID-19 pandemic significantly boosted the use of AI in drug development, especially in identifying and screening existing drugs for COVID-19 treatment. AI's effectiveness in identifying active substances for various diseases contributed to its growth during the pandemic.

Personalized Medicine and Precision Healthcare

AI's integration of patient data, including genetic and clinical information, has the potential to revolutionize personalized medicine. It predicts individual responses to therapies and optimizes treatment strategies, leading to more effective disease diagnosis, monitoring, and treatment.

Segmental Insights

Component Types

In terms of component types, Services are expected to dominate the AI in Drug Discovery Market in 2022, exhibiting the highest CAGR until 2028. The growth of services is driven by their advantages and strong demand among end users. Software also plays a significant role, with emerging companies focusing on deep learning solutions and generative models, facilitating innovative molecule design.

Therapeutic Area

The oncology segment is projected to experience the highest CAGR during the forecast period due to AI's adoption in discovering cancer drugs and collaborations between pharmaceutical companies and AI providers.

+44 20 8123 2220
info@marketpublishers.com

Regional Insights

North America

North America is set to lead the market due to high AI adoption, advanced healthcare infrastructure, and active clinical research in AI and drug discovery. Noteworthy research institutions and key developments further contribute to the region's dominance in AI-driven drug discovery.

Key Market Players

- GNS Healthcare
- BioSymetrics
- BPGbio, Inc.
- Atomwise Inc.
- Owkin Inc.
- NVIDIA Corporation
- IBM Corporation
- Microsoft Corporation
- Aria Pharmaceuticals, Inc.
- Insilico Medicine Inc.

Report Scope:

In this report, the Global AI in Drug Discovery Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

+44 20 8123 2220
info@marketpublishers.com

AI in Drug Discovery Market, By Component Type:

Software

Services

AI in Drug Discovery Market, By Drug Type:

Small Molecule

Large Molecule

AI in Drug Discovery Market, By Application Type:

Preclinical Testing

Drug Optimization

Repurposing

Target Identification

Candidate Screening

Others

AI in Drug Discovery Market, By Therapeutic Area:

Oncology

Neurodegenerative Diseases

Cardiovascular Diseases

Rare Diseases

Others

AI in Drug Discovery Market, By Region:

+44 20 8123 2220
info@marketpublishers.com

North America

- United States
- Canada
- Mexico

Europe

- France
- United Kingdom
- Italy
- Germany
- Spain

Asia-Pacific

- China
- India
- Japan
- Australia
- South Korea

South America

- Brazil
- Argentina

+44 20 8123 2220
info@marketpublishers.com

- Colombia
- Middle East & Africa
  - South Africa
  - Saudi Arabia
  - UAE
  - Kuwait
  - Turkey
  - Egypt

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global AI in Drug Discovery Market.

Available Customizations:

Global AI in Drug Discovery market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

- Detailed analysis and profiling of additional market players (up to five).

+44 20 8123 2220
info@marketpublishers.com

Contents

1. SERVICE TYPE OVERVIEW

2. RESEARCH METHODOLOGY

3. EXECUTIVE SUMMARY

4. VOICE OF CUSTOMER

5. GLOBAL AI IN DRUG DISCOVERY MARKET OUTLOOK

5.1. Market Size & Forecast
  5.1.1. By Value
5.2. Market Share & Forecast
  5.2.1. By Component Type (Software and Services)
  5.2.2. By Drug Type (Small Molecule and Large Molecule)
  5.2.3. By Application Type (Preclinical Testing, Drug Optimization, and Repurposing, Target Identification, Candidate Screening, and Others)
  5.2.4. By Therapeutic Area (Oncology, Neurodegenerative Diseases, Cardiovascular Diseases, Rare Diseases, and Others)
  5.2.5. By Region
  5.2.6. By Company (2022)
5.3. Market Map

6. NORTH AMERICA AI IN DRUG DISCOVERY MARKET OUTLOOK

6.1. Market Size & Forecast
  6.1.1. By Value
6.2. Market Share & Forecast
  6.2.1. By Component Type
  6.2.2. By Drug Type
  6.2.3. By Application Type
  6.2.4. By Therapeutic Area
  6.2.5. By Country

+44 20 8123 2220
info@marketpublishers.com

6.3. North America: Country Analysis
6.3.1. United States AI in Drug Discovery Market Outlook
6.3.1.1. Market Size & Forecast
6.3.1.1.1. By Value
6.3.1.2. Market Share & Forecast
6.3.1.2.1. By Component Type
6.3.1.2.2. By Drug Type
6.3.1.2.3. By Application Type
6.3.1.2.4. By Therapeutic Area
6.3.2. Canada AI in Drug Discovery Market Outlook
6.3.2.1. Market Size & Forecast
6.3.2.1.1. By Value
6.3.2.2. Market Share & Forecast
6.3.2.2.1. By Component Type
6.3.2.2.2. By Drug Type
6.3.2.2.3. By Application Type
6.3.2.2.4. By Therapeutic Area
6.3.3. Mexico AI in Drug Discovery Market Outlook
6.3.3.1. Market Size & Forecast
6.3.3.1.1. By Value
6.3.3.2. Market Share & Forecast
6.3.3.2.1. By Component Type
6.3.3.2.2. By Drug Type
6.3.3.2.3. By Application Type
6.3.3.2.4. By Therapeutic Area

7. EUROPE AI IN DRUG DISCOVERY MARKET OUTLOOK

7.1. Market Size & Forecast
7.1.1. By Value
7.2. Market Share & Forecast
7.2.1. By Component Type
7.2.2. By Drug Type
7.2.3. By Application Type
7.2.4. By Therapeutic Area
7.3. Europe: Country Analysis
7.3.1. Germany AI in Drug Discovery Market Outlook
7.3.1.1. Market Size & Forecast
7.3.1.1.1. By Value

+44 20 8123 2220
info@marketpublishers.com

7.3.1.2. Market Share & Forecast
7.3.1.2.1. By Component Type
7.3.1.2.2. By Drug Type
7.3.1.2.3. By Application Type
7.3.1.2.4. By Therapeutic Area
7.3.2. United Kingdom AI in Drug Discovery Market Outlook
7.3.2.1. Market Size & Forecast
7.3.2.1.1. By Value
7.3.2.2. Market Share & Forecast
7.3.2.2.1. By Component Type
7.3.2.2.2. By Drug Type
7.3.2.2.3. By Application Type
7.3.2.2.4. By Therapeutic Area
7.3.3. Italy AI in Drug Discovery Market Outlook
7.3.3.1. Market Size & Forecast
7.3.3.1.1. By Value
7.3.3.2. Market Share & Forecasty
7.3.3.2.1. By Component Type
7.3.3.2.2. By Drug Type
7.3.3.2.3. By Application Type
7.3.3.2.4. By Therapeutic Area
7.3.4. France AI in Drug Discovery Market Outlook
7.3.4.1. Market Size & Forecast
7.3.4.1.1. By Value
7.3.4.2. Market Share & Forecast
7.3.4.2.1. By Component Type
7.3.4.2.2. By Drug Type
7.3.4.2.3. By Application Type
7.3.4.2.4. By Therapeutic Area
7.3.5. Spain AI in Drug Discovery Market Outlook
7.3.5.1. Market Size & Forecast
7.3.5.1.1. By Value
7.3.5.2. Market Share & Forecast
7.3.5.2.1. By Component Type
7.3.5.2.2. By Drug Type
7.3.5.2.3. By Application Type
7.3.5.2.4. By Therapeutic Area

8. ASIA-PACIFIC AI IN DRUG DISCOVERY MARKET OUTLOOK

+44 20 8123 2220
info@marketpublishers.com

8.1. Market Size & Forecast
8.1.1. By Value
8.2. Market Share & Forecast
8.2.1. By Component Type
8.2.2. By Drug Type
8.2.3. By Application Type
8.2.4. By Therapeutic Area
8.3. Asia-Pacific: Country Analysis
8.3.1. China AI in Drug Discovery Market Outlook
8.3.1.1. Market Size & Forecast
8.3.1.1.1. By Value
8.3.1.2. Market Share & Forecast
8.3.1.2.1. By Component Type
8.3.1.2.2. By Drug Type
8.3.1.2.3. By Application Type
8.3.1.2.4. By Therapeutic Area
8.3.2. India AI in Drug Discovery Market Outlook
8.3.2.1. Market Size & Forecast
8.3.2.1.1. By Value
8.3.2.2. Market Share & Forecast
8.3.2.2.1. By Component Type
8.3.2.2.2. By Drug Type
8.3.2.2.3. By Application Type
8.3.2.2.4. By Therapeutic Area
8.3.3. Japan AI in Drug Discovery Market Outlook
8.3.3.1. Market Size & Forecast
8.3.3.1.1. By Value
8.3.3.2. Market Share & Forecast
8.3.3.2.1. By Component Type
8.3.3.2.2. By Drug Type
8.3.3.2.3. By Application Type
8.3.3.2.4. By Therapeutic Area
8.3.4. South Korea AI in Drug Discovery Market Outlook
8.3.4.1. Market Size & Forecast
8.3.4.1.1. By Value
8.3.4.2. Market Share & Forecast
8.3.4.2.1. By Component Type
8.3.4.2.2. By Drug Type

+44 20 8123 2220
info@marketpublishers.com

8.3.4.2.3. By Application Type
8.3.4.2.4. By Therapeutic Area
8.3.5. Australia AI in Drug Discovery Market Outlook
8.3.5.1. Market Size & Forecast
8.3.5.1.1. By Value
8.3.5.2. Market Share & Forecast
8.3.5.2.1. By Component Type
8.3.5.2.2. By Drug Type
8.3.5.2.3. By Application Type
8.3.5.2.4. By Therapeutic Area

9. SOUTH AMERICA AI IN DRUG DISCOVERY MARKET OUTLOOK

9.1. Market Size & Forecast
9.1.1. By Value
9.2. Market Share & Forecast
9.2.1. By Component Type
9.2.2. By Drug Type
9.2.3. By Application Type
9.2.4. By Therapeutic Area
9.3. South America: Country Analysis
9.3.1. Brazil AI in Drug Discovery Market Outlook
9.3.1.1. Market Size & Forecast
9.3.1.1.1. By Value
9.3.1.2. Market Share & Forecast
9.3.1.2.1. By Component Type
9.3.1.2.2. By Drug Type
9.3.1.2.3. By Application Type
9.3.1.2.4. By Therapeutic Area
9.3.2. Argentina AI in Drug Discovery Market Outlook
9.3.2.1. Market Size & Forecast
9.3.2.1.1. By Value
9.3.2.2. Market Share & Forecast
9.3.2.2.1. By Component Type
9.3.2.2.2. By Drug Type
9.3.2.2.3. By Application Type
9.3.2.2.4. By Therapeutic Area
9.3.3. Colombia AI in Drug Discovery Market Outlook
9.3.3.1. Market Size & Forecast

+44 20 8123 2220
info@marketpublishers.com

9.3.3.1.1. By Value
9.3.3.2. Market Share & Forecast
9.3.3.2.1. By Component Type
9.3.3.2.2. By Drug Type
9.3.3.2.3. By Application Type
9.3.3.2.4. By Therapeutic Area

10. MIDDLE EAST AND AFRICA AI IN DRUG DISCOVERY MARKET OUTLOOK

10.1. Market Size & Forecast
10.1.1. By Value
10.2. Market Share & Forecast
10.2.1. By Component Type
10.2.2. By Drug Type
10.2.3. By Application Type
10.2.4. By Therapeutic Area
10.3. MEA: Country Analysis
10.3.1. South Africa AI in Drug Discovery Market Outlook
10.3.1.1. Market Size & Forecast
10.3.1.1.1. By Value
10.3.1.2. Market Share & Forecast
10.3.1.2.1. By Component Type
10.3.1.2.2. By Drug Type
10.3.1.2.3. By Application Type
10.3.1.2.4. By Therapeutic Area
10.3.2. Saudi Arabia AI in Drug Discovery Market Outlook
10.3.2.1. Market Size & Forecast
10.3.2.1.1. By Value
10.3.2.2. Market Share & Forecast
10.3.2.2.1. By Component Type
10.3.2.2.2. By Drug Type
10.3.2.2.3. By Application Type
10.3.2.2.4. By Therapeutic Area
10.3.3. UAE AI in Drug Discovery Market Outlook
10.3.3.1. Market Size & Forecast
10.3.3.1.1. By Value
10.3.3.2. Market Share & Forecast
10.3.3.2.1. By Component Type
10.3.3.2.2. By Drug Type

+44 20 8123 2220
info@marketpublishers.com

10.3.3.2.3. By Application Type
10.3.3.2.4. By Therapeutic Area

11. MARKET DYNAMICS

12. MARKET TRENDS & DEVELOPMENTS

13. GLOBAL AI IN DRUG DISCOVERY MARKET: SWOT ANALYSIS

14. COMPETITIVE LANDSCAPE

14.1. Business Overview
14.2. Services Offerings
14.3. Recent Developments
14.4. Key Personnel
14.5. SWOT Analysis
14.5.1. GNS Healthcare
14.5.2. BioSymetrics
14.5.3. BPGbio, Inc.
14.5.4. Atomwise Inc.
14.5.5. Owkin Inc.
14.5.6. NVIDIA Corporation
14.5.7. IBM Corporation
14.5.8. Microsoft Corporation
14.5.9. Aria Pharmaceuticals, Inc.
14.5.10. Insilico Medicine Inc.

15. STRATEGIC RECOMMENDATIONS

16. ABOUT US & DISCLAIMER

+44 20 8123 2220
info@marketpublishers.com

I would like to order

Product name: AI in Drug Discovery Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 Segmented By Component Type (Software and Services), By Drug Type (Small Molecule and Large Molecule), By Application Type (Preclinical Testing, Drug Optimization, and Repurposing, Target Identification, Candidate Screening, and Others), By Therapeutic Area (Oncology, Neurodegenerative Diseases, Cardiovascular Diseases, Rare Diseases, and Others), By Region and Competition By Type (Bladder, Piston, Diaphragm, and Spring), By Application (Blow Out Preventers (BOP), Mud Pumps, Offshore Rigs, and Others), By Deployment (Onshore, Offshore), By Region and Competition

Product link: https://marketpublishers.com/r/AA02F6CDC8A1EN.html

Price: US$ 4,900.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/AA02F6CDC8A1EN.html

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

**All fields are required

Custumer signature _____

+44 20 8123 2220
info@marketpublishers.com

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at https://marketpublishers.com/docs/terms.html

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970