

Gen Al-powered Drug Discovery

Business Impact Scientific Information **Prediction of Molecular** Research: Phenotype: Challenges Utilize advanced algorithms Leverage Generative AI to like Large Language Models predict disease-related (LLM) and Natural Language Drug Design Optimization: changes in gene and protein Processing (NLP) to expression, facilitating Identify modifications that streamline data analysis, informed decisions in drug enhance drug effectiveness, reveal insights, and build development and precision High Costs and Time-Consuming Workloads: safety, and precision, knowledge graphs. medicine. streamlining the design process for greater efficiency. The drug discovery process is costly and **H**io time-consuming, taking 12 to 18 years and costing an average of \$2.6 billion. Faster Time to Market: **Solutions** Predict biological activities for Low Success Rate: Siii ode generated structures, reducing the need for extensive Only 10% of potential compounds progress experimental testing and to clinical trials, indicating a low success accelerating the drug In Silico Drug rate. development timeline. Molecule Generation: Design: **Employ recurrent neural** networks (RNNs) and Use AI to expedite the generative adversarial discovery of novel compounds, **Accelerated Research Complex Protocols:** networks (GANs) to generate optimize lead identification, and Insights: novel molecular structures. and predict clinical trial The process involves intricate and complex Identify modifications that

protocols, making it challenging to identify promising drug candidates efficiently.

outcomes, reducing costs and increasing success rates.

offering new avenues for identifying potential drug candidates.

for greater efficiency.

enhance drug effectiveness,

streamlining the design process

safety, and precision,

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