Introducing Pi-OmniKG

Revolutionizing Biomedical Data Integration with Google Cloud

Decreasing the time spent in big data mining during preclinical research and drug development are crucial for the life sciences industry.

GenAI-enabled interactive knowledge graphs enhance the data mining process with a significant time and cost advantage.

Improved accuracy of mined data and its inter-relationships allow life scientists to generate novel actionable insights.

Enhanced data insights augment quality and speed of scientific hypothesis generation improving success probability in R&D.

Pi-OmniKG can expedite scientific decision-making while enabling cost savings during biomedical data mining.

Facilitate accurate data-driven decision-making via knowledge synthesis from multiple data sources.	Modernize data integration processes to support multiple type of data types, files and sources.	Unlock novel data insights and enhanced intellectual property to enhance data monetization models.

Pi-OmniKG can accelerate evidence-based life sciences R&D by unravelling novel data relationships for actionable insights.

A reknowned biopharma industry leveraged Pi-OmniKG to represent **large volume biomedical data** into knowledge graph.

Data sources included structured data related to cellular biochemistry, population genetics, and pharmacogenomics.

Pi-OmniKG framework was used to generate **disease-centric knowledge graph** integrating preclinical and clinical data. It expedited hypothesis generation through GenAI-based scientific evidence mapping with quality control metrics.

Traditional methods of biomedical data mining are lengthy and labor-intensive.

Manual workflows
Expensive and time-consuming data preparation and curation processes.

Legacy data mining infrastructure
Limited resources for integrating and analyzing diverse biomedical data sources.

Accuracy of actionable insights
Challenges in evidence-based literature mining and data insights .

Pi-OmniKG works in three phases

Phase 1: Knowledge Base
Integrate complex and large biomedical databases

Data Sources
Public or proprietary scientific data retrieved from authentic sources

Data Storage and Type
Structured & unstructured files (.csv, .pdf) stored in vectors and graphs

Data Integration
Polling (periodic check) and event-driven

Phase 2: Knowledge Graphs
Design rational schema for Neo4j generated knowledge graph

KG Schema
ETL-based ingress followed by Neo4j schema guided by use case

KG Management
Stored in Neo4j KG and Postgres VectorDB

Cypher Generation
Use of NLP technique, specifically leveraging LLMs and VectorDB

Phase 3: Actionable Insights
Determine evidence-based medicine using knowledge graph

GenAI Leverage
RAG-controlled virtual scientific assistant for enterprise search

Comparative Analysis
NLP-based comparative analysis of structured or unstructured documents

Interactive Visualization
Graph and responses using ReactJS with quality control metrics

Why Pi-OmniKG?

Efficient Data Mining for Complex Datasets

Pi-OmniKG simplifies handling complex biomedical datasets, speeding up data mining processes by 60%, significantly reducing the time for generating evidence based actional insights.

Reducing Costs through Automation and Customization

Pi-OmniKG is designed as a smart decision support system with reusable components and in-built flexibility, allowing for customization according to the specific needs of the client.

Holistic Integration of Multimodal Datasets

Pi-OmniKG integrates disparate datasets, data types, data files from public and private sources to create a knowledge base for deciphering relationships.

High-Quality Actionable Insights

Pi-OmniKG delivers evidence-supported biomedical insights complemented with authentic citations and interactive querying functions.

Start your Pi-OmniKG journey today. Reach out to a specialist to identify next steps.

Contact Us

About Persistent

Persistent Systems (BSE & NSE: PERSISTENT) is a global services and solutions company delivering Digital Engineering and Enterprise Modernization to businesses across industries. With over 23,200 employees located in 19 countries, the Company is committed to innovation and client success. Persistent offers a comprehensive suite of services, including AI-enabled software engineering, product development, data and analytics, CX transformation, cloud computing, and intelligent automation. The Company has been recognized as the "Most Promising Company" of the Year by CNBC-TV18 at the 2023 India Business Leader Awards. Persistent has achieved carbon neutrality, reinforcing its commitment to sustainability and responsible business practices. As a participant of the United Nations Global Compact, the Company is committed to aligning strategies and operations with universal principles on human rights, labor, environment, and anti-corruption, as well as take actions that advance societal goals. With 327% growth in brand value since 2020, Persistent is the fastest-growing IT services brand in the 2024 Brand Finance India 100 Report.

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