

AI-Assisted Data Querying with Dynamic Data Dictionary

Abstract:

The present invention relates to a cloud-based AI system that integrates a dynamic data dictionary with artificial intelligence (AI) to enable natural language data querying and automated report generation. The system interprets natural language inputs from users and, through the dynamic data dictionary, translates them into structured data queries (e.g., SQL or Python) tailored to a company's specific data environment. The dynamic data dictionary stores and continuously updates metadata about the company's data architecture, including tables, columns, relationships, department affiliations, custom logic, and specific use cases.

Each company is provided with its own isolated AI instance within the cloud, ensuring strict data privacy by preventing any cross-company sharing or learning. This isolation guarantees that the AI's operations and learning are confined to the company's own data environment, offering a highly secure and company-specific solution. The dynamic nature of the data dictionary allows the AI to adapt to changes in data structure over time, ensuring flexibility and accuracy in querying complex datasets. The system empowers non-technical users to access and interact with their data easily while maintaining a high level of data security and privacy.