

Azure Marketplace  
Submission

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# **CogniSights**

Azure Open AI Chatbot for IT Services  
Cost Takeout

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## **CogniSights is an Azure Open AI app that makes database querying easy with NLP to SQL convert, accelerating insights and productivity.**

We make it easy for your IT services to use simple English or any language to automate data insights, ease data analysis and improve productivity. The app automatically retrieves the necessary metadata from any database (RDBM / NoSQL/ Blob) to answer natural language queries about structured data from various sources. The app uses the metadata management to learn the context of the query, automate prompt generation, execute it, and generate an interactive report.

This app is an end-to-end tool that eliminates the need for users to think or have prior knowledge about prompts, translations, or db query execution. The app is designed for non-programmers such as domain experts or customer support personnel to self-serve insights from any enterprise database.

Expert programmers can teach and steward the app for best fit SQL, which will be used as few shot encoding to fit right SQL for the NLP query submitted, thus improving productivity and cutting learning curve of new folks to understand the database structures / model before they start writing SQL.

Once the results are fetched, the app maintain a log of user specific historic queries and results for quick retrieval and reference. The app will need only inputs around database metadata / structures and no data leaves your premise.

We provide you support to deploy the solution on your own premise or cloud. While enabling custom training (if at-all needed) your training data is privacy ensured. And once your model is deployed, we make it easy to continue adding new organization database metadata to enable expanded NLP to SQL insights across enterprise systems, improve accuracy of your trained model and make upgrades as new LLMs are released.

### **Key features**

We provide you with ease of use, **improved productivity** on your enterprise databases for IT services staff by leveraging **plug and play Azure Open AI** service with **pretrained LLM** like GPT and Codex. Enable infrastructure to **custom train** on your own enterprise metadata and deploy your own **privacy ensured** fine tuned LLM models to the cloud and integrate with **enterprise app APIs**. Leverage enterprise metadata databases like **Purview** to automate the **prompt engineering** for LLM. And once your model is deployed, we make it easy to continue **adding new database** metadata to enable expanded self-serve across enterprise databases, **improve accuracy** of your trained model and make **upgrades as new LLMs** are released.

### **App Highlights**

- **Cloud and On-Premise Availability:** The availability of this solution as an app service both on-premise or cloud installation provides flexibility and accommodates different user requirements and preferences.

- **User-Friendly Interface:** The user-friendly interface makes it easy for users to interact with the databases, reducing dependency on learning curve on database models / SQL and improving user adoption and productivity
- **Easy Metadata Integration:** The ability to easily upload enterprise metadata for training means that the system can be customized to specific enterprise database needs and vocabularies.
- **Intuitive Prompt Building:** The intuitive prompt building feature simplifies the query construction process and reduces the potential for errors.
- **Advanced Prompt Generation:** The use of large language models for prompt generation and use of Purview API as Retrieval Model (RM) for metadata search enhances the accuracy and relevance of the prompts.
- **Text-SQL Translation:** The use of a large language model for text-SQL translation ensures that the system can handle a wide range of natural language queries.
- **Results Archival and Auditing:** The archival and auditing of all queries and results provides a reliable audit trail for compliance and analysis purposes.
- **Scalable Orchestration:** The use of Azure durable functions allows for a scalable and reliable execution of queries, ensuring high performance and availability.
- **App Insights:** The use of App Insights provides monitoring and reporting capabilities, allowing for easy identification and resolution of issues.

Overall, this solution provides a user-friendly, accurate, and reliable way for users to interact with SQL databases using natural language queries.

## Key Benefits

- Reduce learning curve of IT services staff to understand data models , instead use NLP to automate SQL tasks
- Domain experts can perform analysis and reporting without any programming knowledge.
- 80% effort reduction for data analysis and reporting tasks and improved productivity
- Uses state of the art Retrieval-augmented in-context learning approaches for LLMs to produce accurate text-to-SQL translations.
- Uses built-in data curation features of Microsoft Purview to improve SQL translation accuracy.
- Wide target area since SQL is supported by almost all data warehouses, databases and even data lakes.
- Azure durable functions allows reliable and efficient execution of long running queries required for large data volumes. Achieve low latency by leveraging Azure durable function parallel programming patterns.
- SQL accuracy and performance tracking using Application Insights
- Pricing leverages Azure subscriptions and OpenAI service bundles based on inferencing volumes and fine tuning / hosting needs

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