



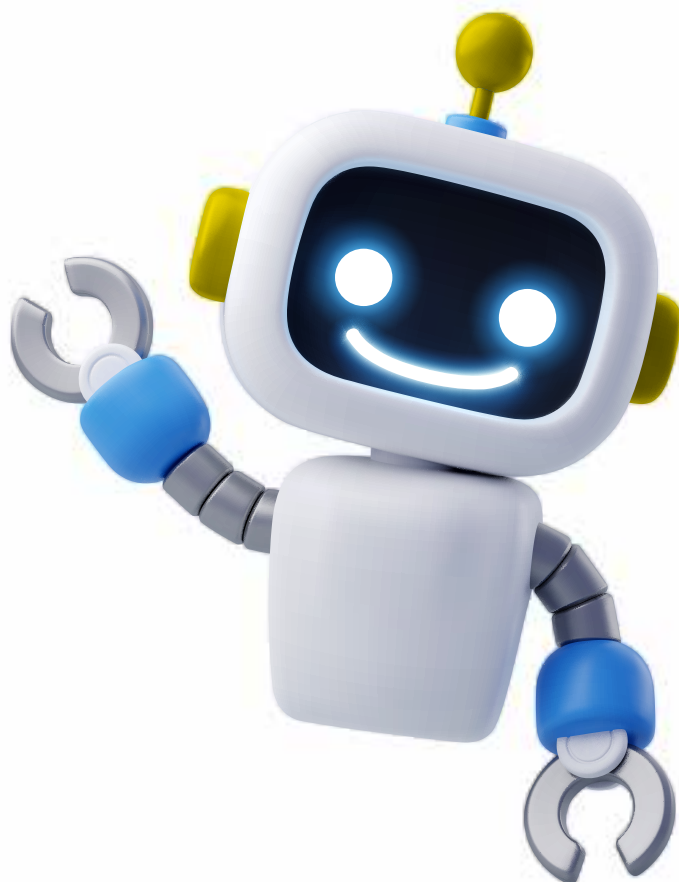
**Enhancing User Experience** for a Prominent  
Healthcare Knowledge Enterprise with a  
**Personalized Generative AI chatbot**

## Customer Scenario and Problem

The specific customer scenario addressed by our solution revolves around the challenge faced by our client, a leading healthcare information portal in India. Despite hosting a vast repository of health-related content, the portal struggled with an outdated search engine incapable of delivering nuanced responses to user queries. Additionally, the absence of interactive elements hampered user engagement, hindering the platform's ability to provide satisfactory experiences to visitors. Before the implementation of our solution, users often encountered difficulties in finding precise information tailored to their inquiries. The static search engine relied heavily on keyword matching, failing to grasp the contextual nuances of user queries. Consequently, users frequently experienced frustration and dissatisfaction due to the inability to obtain relevant and comprehensive answers to their health-related questions.

We developed a first-of-its-kind Generative AI healthcare chatbot in India that can answer user queries on the website's thousands of articles and help promote user clicks and revenue generation.

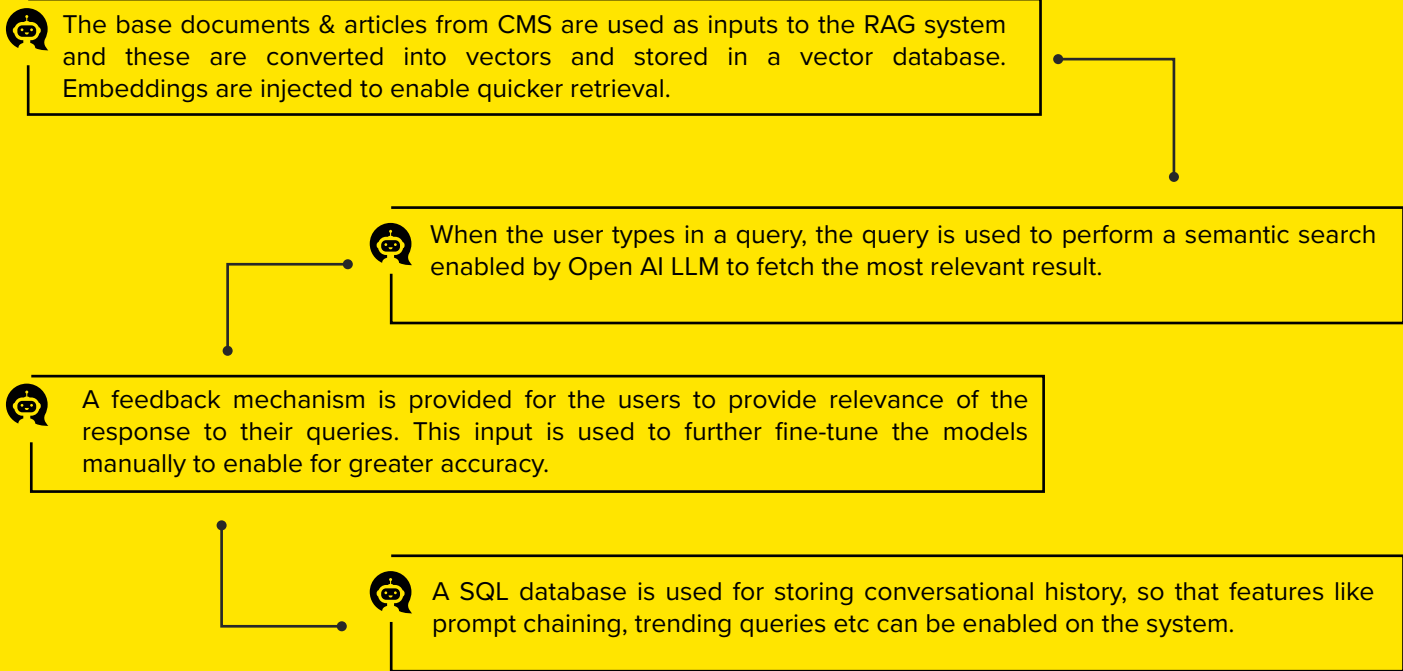
After collaborating with us to integrate a generative AI chatbot into their website, our client witnessed a transformative shift in user experience and engagement. Leveraging cutting-edge Generative AI technology, our solution revolutionized information retrieval by understanding the context of user queries and generating human-like responses tailored to individual needs.



## Solution

The challenge with traditional information retrieval systems is that they are static and cannot adapt to the end user's needs. Typically, these are keyword search-based systems and do not provide the flexibility of understanding the context of the query. The solution we provided leverages generative AI technology, which helps overcome the limitations of traditional retrieval systems by building context and learning from user queries. This helps provide better responses to the user, increasing customer satisfaction. The chatbot incorporates Generative AI technology in tandem with Retrieval Augmented Generation (RAG) to create a question-and-answer system using the portal's repository of information. Generative AI provides foundational artificial intelligence capabilities, while RAG is utilized to execute advanced text generation and retrieval tasks. By employing semantic search algorithms, the chatbot can proficiently navigate through the client's expansive article database to pinpoint content that is most relevant to the visitor's inquiry. This curated content is then used as the contextual foundation upon which the RAG model generates responses that are not only accurate but also conversational and human-like.





## Technologies (Resource and Purpose)

Azure Static Web Apps – UI/Frontend

Azure Functions – Data Ingestion, File Processing, Schedule Jobs

Azure Application Insights – Monitoring

Azure Key Vault – Secret Store

Azure Open AI – LLM, Inference Model

Azure AI Search – Vector Database

Python - Coding Language for Backend

Microsoft Semantic Kernel - AI Orchestrations

Azure App Service – API/Backend

Azure APIM – Load Balancing, Security

Azure Cosmos DB – Conversation Logs

Azure Storage Account – File Storage

Hugging Face Open - Source Sentence Transformers – Embedding Model

Azure Document Intelligence – Document Processing

React with Typescript - Coding Language for Backend



# Responsible AI Principles

In our solution, responsible AI principles are integral to our approach, ensuring compliance with relevant data privacy and security regulations. We conduct rigorous testing to guarantee adherence to these standards. During the initial training phase, our models undergo thorough evaluation to ensure accuracy and mitigate potential biases or inaccuracies. Additionally, we implement continuous monitoring mechanisms where users have the option to flag any errors in responses. These flagged instances are then carefully analyzed and used as valuable input for further refinement of the model, thereby fostering an ongoing cycle of improvement and fine-tuning to enhance performance and reliability.

## Solution Impact and Benefits:



**Enhanced Efficiency:** With its advanced functionality, the newly deployed Generative AI solution effectively directs 60% of searches to the interactive chatbot, resulting in customers finding relevant information 50% faster and boosting overall satisfaction.



**Improved User Engagement:** The dynamic and interactive nature of the chatbot encourages users to spend more time exploring the platform, strengthening user engagement and attracting new visitors seeking reliable healthcare insights.



**Increased Customer Satisfaction:** Through Generative AI and semantic search algorithms, the chatbot delivers accurate and relevant responses, enabling users to find information quickly. The conversational style of responses further enhances satisfaction.



**Cost Reduction:** Automating the process of answering queries reduces reliance on manual search mechanisms, optimizing operational costs for the client.



**Enhanced User Experience:** The integration of a Generative AI chatbot transforms the user experience, offering intuitive responses tailored to individual needs. This enhancement is crucial for retaining and attracting users, thus improving competitiveness in the market.

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