RAG-based Chatbot for Mobica Factories Catalog

This presentation explores a RAG-based chatbot for the Mobica Factories catalog, demonstrating how advanced retrieval techniques enhance sales support and streamline information access.

Agenda

1 Project Overview

2 Problem Statement & Motivation

3 Technical Architecture & Key Technologies

4 System Workflow & Demo Walkthrough

5 Business Impact & Future Enhancements

6 Q&A / Conclusion

Problem Statement & Motivation

Challenges

Customers and sales teams need quick, detailed product information. Manual lookups in large catalogs are time-consuming and error-prone. Language barriers can hinder communication in a diverse market.

Motivation

To build a system that instantly retrieves and delivers precise product details. To support both English and Arabic, ensuring accessibility for a broader audience.

Project Overview

What It Does

Acts as a sales assistant chatbot for Mobica Factories. Uses RAG to extract contextually relevant information from a PDF catalog. Supports bilingual interactions (English and Arabic).

Key Benefits

Instant access to detailed product specifications. Enhances sales team efficiency and customer satisfaction. Streamlines the decision-making process during sales interactions.

Technology Stack & Innovations

LangChain & FAISS

Conversational retrieval orchestration and efficient vector search.

Ollama Embeddings & LLM

Natural language understanding and precise answer generation.
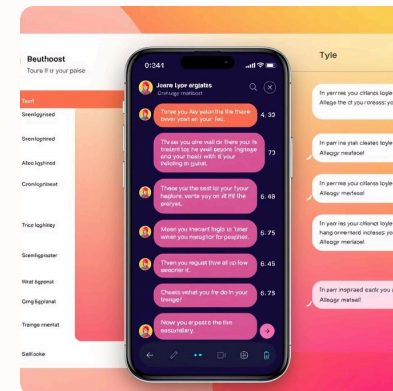

Caching Mechanisms

Enhanced performance through pre-processed documents and vector stores.

Semantic Chunking

Improved retrieval accuracy via meaningful PDF catalog segments.

Streamlit

Responsive, interactive chatbot interface.

Made with Gamma

System Architecture & Workflow

Document Processing

Load the Mobica catalog PDF using PDFPlumber. Apply Semantic Chunking to create context-rich segments.

Conversational Chain

Use a custom prompt template to guide the LLM for context-based responses.

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Vector Store Creation

Generate embeddings and store them in FAISS for rapid retrieval.

Multilingual Support

Automatically detect query language and respond in English or Arabic.

Made with Gamma

Demo Walkthrough

Interface Overview

Interactive Streamlit-based chat interface.

Use Cases

Querying product details (e.g., specifications of the REGAL desk). Demonstrating multilingual support with both English and Arabic queries.

Highlights

Speed and accuracy of data retrieval. Seamless transition between languages based on user input.

Business Impact & Future Enhancements

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Current Impact

Accelerates the sales process by providing instant, accurate product information. Enhances customer satisfaction and supports informed decision-making.

Future Enhancements

Integrate real-time inventory and pricing data. Expand the system to cover additional product lines. Further refine the UI for an even more engaging user experience.