

Problem Statement

Objective: Develop a chatbot leveraging the RAG framework and Langchain to provide personalized clothing and fashion recommendations using data from Myntra, an online fashion retailer. The chatbot should enhance the shopping experience by offering tailored suggestions based on user preferences and current fashion trends.

Key Requirements:

1. Data Collection:

- Obtain and preprocess the Myntra dataset, ensuring it includes product details, user reviews, fashion trends, and other relevant information.

2. Model Training:

- Train a language model using the Langchain framework. The model should understand fashion terminology and user preferences.
- Implement the RAG framework to enable the chatbot to retrieve relevant information from the dataset and generate coherent responses.

3. Recommendation System:

- Develop a recommendation algorithm that considers user preferences and current fashion trends.

Deliverables:

1. A fully functional chatbot capable of engaging in natural language conversations and providing personalized fashion recommendations.
2. A comprehensive dataset derived from Myntra, preprocessed and ready for use.
3. Documentation detailing the data collection, preprocessing, model training, and recommendation algorithm development processes.
4. A user-friendly interface that allows users to interact with the chatbot and receive fashion recommendations.

By developing this RAG Langchain chatbot, we aim to create an engaging and intelligent shopping assistant that enhances user experience and boosts fashion discovery on the Myntra platform.

Project report

1. Project Goals

The main goals of the project are:

- **Develop a chatbot that provides personalized clothing and fashion recommendations.**
- **Leverage the RAG framework to enhance the chatbot's capability by combining information retrieval with generation.**
- **Utilize the Langchain for efficient and effective model training.**
- **Improve user experience on the Myntra platform by offering tailored suggestions based on user preferences and current fashion trends.**

2. Data Sources

The data for the project comes primarily from Myntra, an online fashion retailer. Key data sources include:

- **Product Details:** Information about apparel including descriptions and prices.
- **Fashion Trends:** Data on current fashion trends, seasonal collections, and style guides.

3. Design Choices

a. Model Selection:

- **Language Model:** Use the Langchain for training the language model, as it is well-suited for understanding fashion terminology and user preferences.
- **RAG Framework:** Implement the Retrieval-Augmented Generation (RAG) framework to enable the chatbot to retrieve relevant information from the dataset and generate coherent responses.

c. User Interaction:

- **Conversational Flow:** Design intuitive and smooth interactions, ensuring the chatbot understands and responds appropriately to user queries.

4. Challenges Faced

a. Data Quality: Ensuring data completeness and consistency was a significant challenge. Handling missing values and duplicates required careful attention.

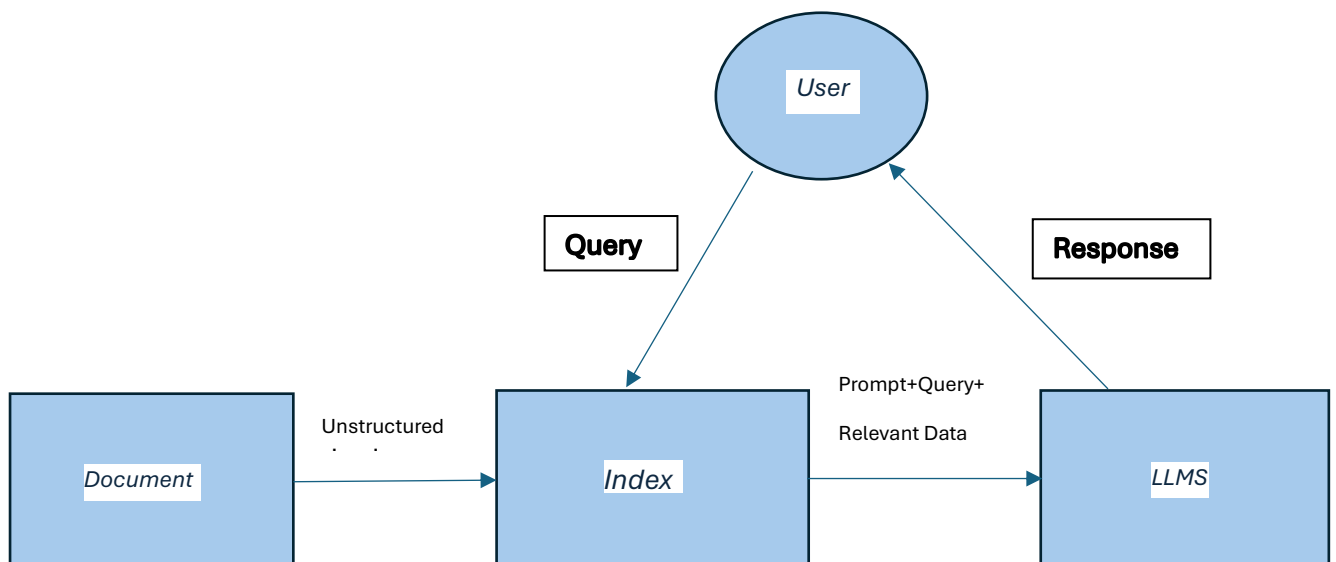
b. Recommendation Accuracy: Developing a recommendation algorithm that accurately captures user preferences and provides relevant suggestions was challenging.

c. User Interaction: Designing an intuitive conversational flow and ensuring the chatbot accurately understands and responds to user queries involved a lot of trial and error.

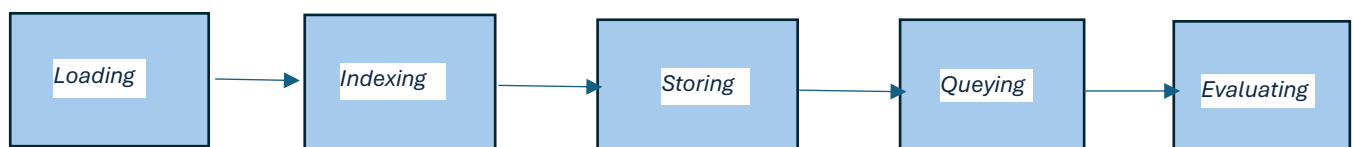
4. Conclusion

By developing this RAG Langchain chatbot, we aim to create an engaging and intelligent shopping assistant that enhances user experience and boosts fashion discovery on the Myntr platform. Despite the challenges faced, the project goals were achieved through careful design choices, efficient data preprocessing, and robust model training.

Flowchart giving overview of Langchain



Flowchart illustrating different stages in a RAG System



README File

RAG LangChain Chatbot for Fashion Recommendations

- This project involves developing a Retrieval-Augmented Generation (RAG) chatbot using the Langchain framework to provide personalized clothing and fashion recommendations using data from Myntra.
- Requirements:
 - To run this project, you need the following :
 - OpenAI Api key
 - Python 3.8 or higher
 - Python Package Installer
 - Myntra dataset