AI Chatbot for Psychology Website - Documentation ✨🤖💬

Project Overview

📌 This project implements an AI-powered chatbot for the website of Dr. Alejandra Roncancio. The chatbot is designed to provide informative responses based on indexed knowledge from resources such as FAQs, therapy descriptions, and additional documents. It uses LangChain for query handling and retrieval, Pinecone for vector indexing, and Gradio for deployment. 🚀💡

Repository

GitHub Repository: Final-Project-Enrique-ai-chatbot-for-PsychologyWebsite 🔗📁💻

Architecture & Methodology 🏗️🧠⚙️

1. Data Collection & Processing 📊📄📌

- Extract relevant text from faq.txt, about.txt, videos.txt, and conditions.txt.
- Convert text into structured datasets (faq_dataset.csv).

2. Embeddings Generation & Indexing in Pinecone ❎☑️⚡

- Convert text into embeddings using OpenAI's model.
- Store embeddings in Pinecone for fast and efficient retrieval.

3. LangChain Implementation 🔄🛠️🧠

- Uses **LangChain Multi-Query Retriever** to enhance response relevance.
- Handles query expansion and response filtering to optimize accuracy.

4. Chatbot Deployment (Gradio Integration) 🌐💻🎨

- The chatbot is deployed via Gradio with an external link.
- Embedded in the website into a floating chatbox using an html & css
- Styled with custom CSS to match the website's branding.

5. Testing & Optimization 🛠️✅📏

- Ensures query responses are accurate and relevant.
- Refines prompt engineering to improve interaction quality.

Key Files & Components 📁 📝 📌

- **creation_index_embeddings_alejandra-project2.ipynb**: Generates embeddings and indexes them in Pinecone.
- **faq_dataset.csv**: Structured dataset of frequently asked questions.
- **Chatbot_alejandra-project2.ipynb**: Core script for chatbot interactions.
- **gradio**: Deploys chatbot via Gradio.

Installation & Execution 🖥️ 🚀 📌

1. Setup Environment ⚙️ 💾 📁

```
# Clone the repository
git clone https://github.com/eagbdesign/Final-Project-Enrique-ai-chatbot-for-PsychologyWebsite.git
cd Final-Project-Enrique-ai-chatbot-for-PsychologyWebsite

# Install dependencies

pip install -r requirements.txt
```

2. Index Embeddings in Pinecone 📌 📊 🔍

Jupiter notebook: **creation_index_embeddings_alejandra-project2.ipynb**

3. Run the Chatbot 💬 🤖 🚀

Jupiter notebook: **Chatbot_alejandra-project2.ipynb**

LangChain Usage 🧠 ⚙️ 📖

- **Multi-Query Retriever:** Expands user queries into multiple related searches to enhance response accuracy.
- **Retrieval-Augmented Generation (RAG):** Uses indexed knowledge from Pinecone to generate responses based on real content.
- **Memory Management:** Implements session-based conversation memory to improve continuity in interactions.

Future Improvements 🌍 🔍 🚀

- Enhance response personalization using session history.
- Expand chatbot capabilities for multilingual support.
- Implement additional NLP techniques for sentiment-based responses.
- Manually arrange more information in faq_dataset.csv before creating embeddings.

Contact ✉📞💡

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