Chat with Your PDF Using AI – Python + LangChain + Local LLM with Flask UI

This project demonstrates how to create a local AI chatbot that can read and answer questions from PDF files. Using Python, LangChain, a local LLM (GPT4All), and Flask for the web interface, you can upload any PDF and start chatting with it – all offline, without using any third-party APIs.

# 🎯 Features

• Upload and preview PDF files.

• Ask questions about the PDF and get contextual answers.

• All processing is done locally with no internet or API required.

• Real-time typing effect for responses.

• Clear chat functionality.

# 🛠️ Tech Stack

• Python 3.10+

• Flask

• LangChain

• GPT4All (local model)

• FAISS (for vector similarity search)

• HuggingFace Sentence Transformers

• HTML + CSS + JavaScript

# 🚀 Installation Steps

1. Clone or download the project folder.

2. Install dependencies:  
 pip install -r requirements.txt

3. Download the local LLM model (e.g., ggml-gpt4all-j-v1.3-groovy.bin) and place it in the models folder.

4. Run the Flask app:  
 python app.py

5. Open your browser and visit http://127.0.0.1:5000

# 📁 Folder Structure

project/  
├── app.py  
├── uploads/  
├── models/  
│ └── ggml-gpt4all-j-v1.3-groovy.bin  
├── static/  
│ └── styles.css  
├── templates/  
│ └── index.html  
└── requirements.txt

# 📌 Note

This system works completely offline. However, initial model download (GPT4All) and dependencies like HuggingFace models may require one-time internet access.

# 🔗 Credit

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