

We have finetuned a model to chat offline where chatbot doesnot require internet for finetuning and chat.

Why we developed this:

Mainly due to sensitive information that can't be shared over network or finetuned over different servers.

1. PDF Upload: You start by uploading a PDF document to the system. This PDF contains information that you want to analyze or interact with.

2. Text Extraction: The system then extracts the text content from the uploaded PDF document. This is done to convert the information into a format that the system can work with.

3. Chunking: The extracted text is divided into smaller, manageable pieces or chunks. This step makes it easier to process and analyze the text efficiently.

4. Embedding: Each chunk of text is transformed into a numerical representation called a vector. This is done using a model called "sentence-transformers/all-MiniLM-L6-v2" from Hugging Face. Think of it as converting the text into a language that the computer can understand and work with effectively.

5. Vector Storage: These vectors are then stored in a database called Chroma dB. This database is specialized for efficiently storing and searching through these numerical representations, making it easier to find similar chunks of text later on.

6. Text Generation: When a user interacts with the system, it uses a model called "LaMini-T5-738M" also from Hugging Face to generate responses. This model is configured with a specific parameter called "temperature" which we have set at 0.3(can be changed), which affects the creativity or randomness of the generated text.

7. Chat History: Throughout this process, the system keeps track of the conversation history. It records both the queries made by the user and the responses generated by the system, storing them in a text file for reference or future analysis.

Overall, this process allows for the offline analysis and interaction with PDF documents without relying on internet connections or external APIs, making it suitable for handling sensitive information that cannot be shared over networks.

Dependencies we have used:

- Hugging Face Transformers Library (the models "sentence-transformers/all-MiniLM-L6-v2" and "LaMini-T5-738M")
- Chroma dB
- Python 3.x
- PDF Parser(PyPDF2)

** Change ISO pdf (Use any other PDF)

** Don't share any credentials/oath on git commit.