DocChatAI: Intelligent Document Assistant for Efficient Information Retrieval

By Maira Rubab

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HOST INSTITUTIONS

FUNDED BY

Objective: Provide Solutions

Time Consumption- Slow Process

Unstructured & Large Documents

Fragmented & Scattered Information

Issues!

Demand for User-Friendly, AI-Powered Tools

Less Productivity & Frustration

DocChatAI

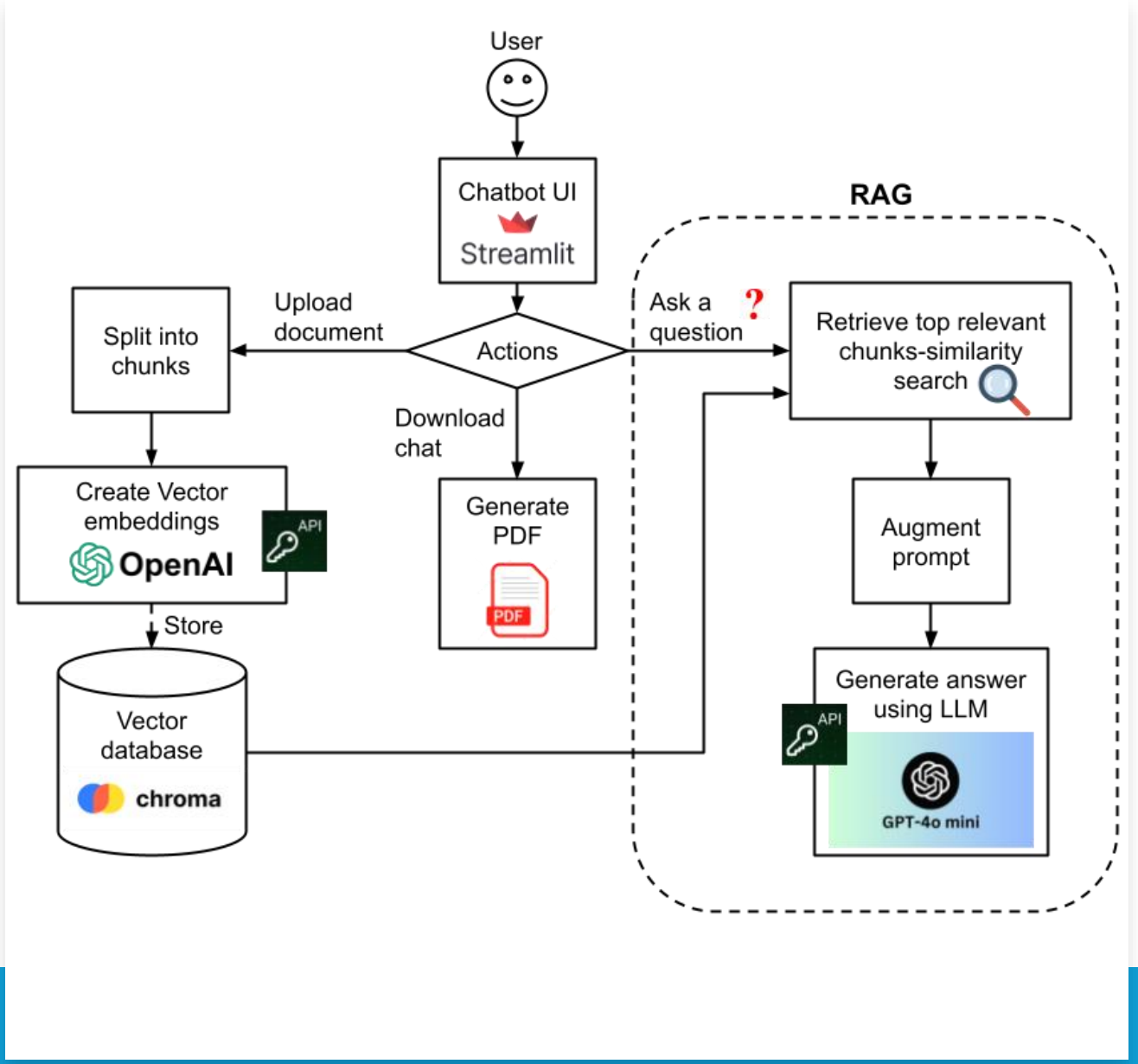
Technology Stack Used

- Frontend Technology → Streamlit
- Backend Technologies → OpenAI Embeddings, Chroma Database, RAG, & GPT Model

Retrieval Augmented Generation (RAG)

It is an AI development technique where a large language model (LLM) is connected to an external knowledge base to improve the accuracy & quality of its responses.

Application Architecture



Demo...

Deploy

Upload the Documents

Drag and drop files here

Limit 200MB per file • PDF

Browse files

DocChatAI

Please upload the documents to start the conversation!

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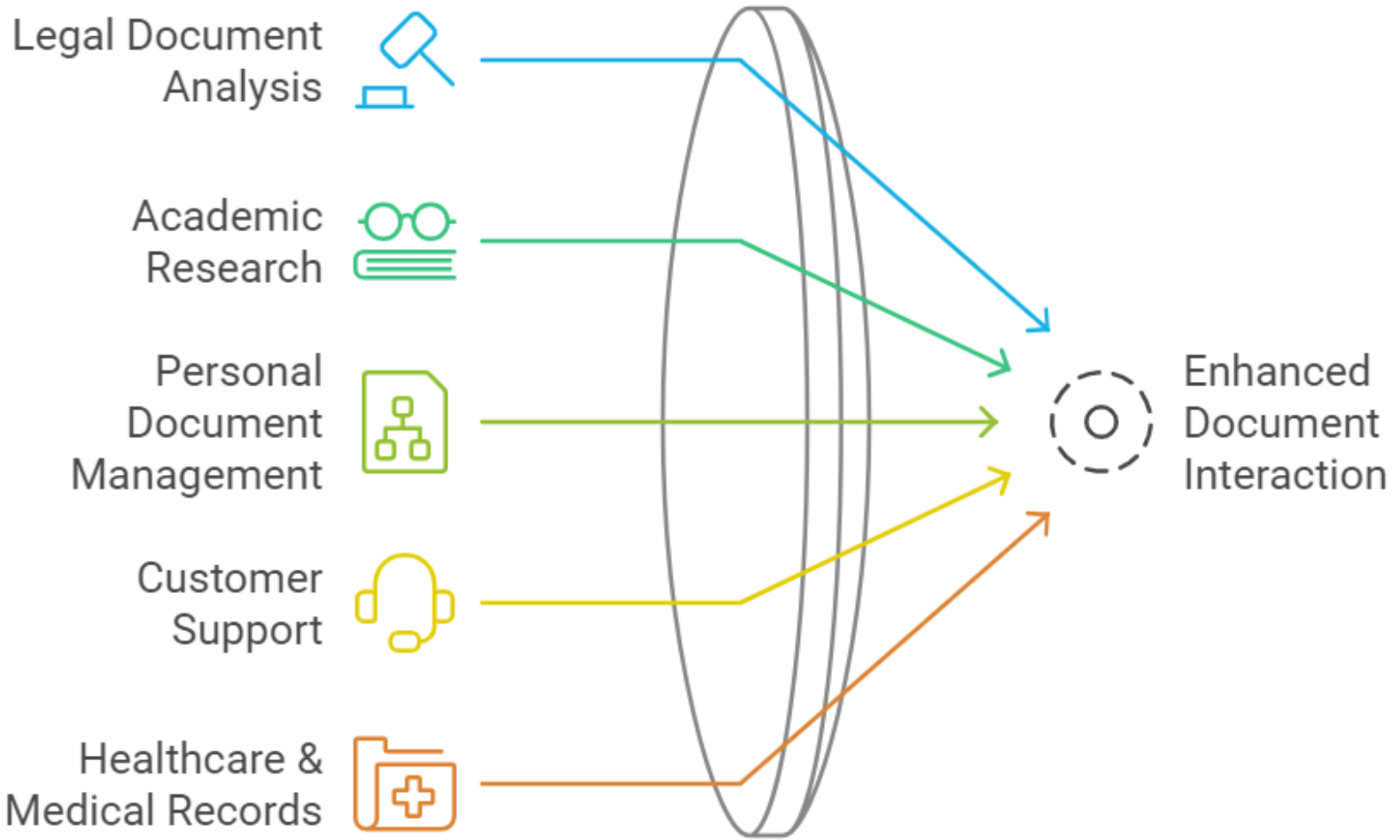
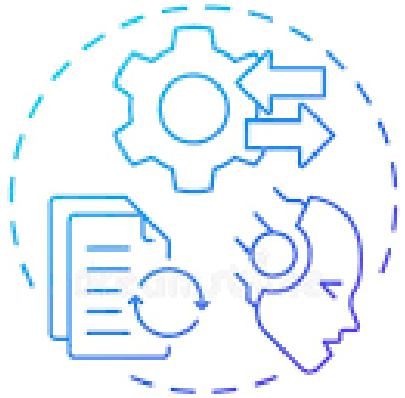
Use cases


Legal Document Analysis
Academic Research
Personal Document Management
Customer Support
Healthcare & Medical Records
Enhanced Document Interaction



Challenges & Limitations

- ❑ Prompt Engineering
- ❑ Response Completeness
- ❑ Scalability with document volume
- ❑ Dependency on external API’s

Future Considerations

Improved and specialised prompts for better responses

Scaled Support for Larger Files (in GBs)

Voice input and output for advanced & natural conversational interaction

Session handling to allow users to store and access conversations and files seamlessly across devices

Accessible technical settings like text splitting configuration, embedding model, LLM model, & size of the stored files

Capability to modify and retry a query within the conversation for improved interaction

TCS Internship Experience (Overall Learnings)

- Learnt Generative AI, LLMs, & Prompt Engineering
- Learned different technologies including docker, REST API's, OpenAI API, AWS services like EC2 instance, ECR, S3, Amazon Sagemaker, & IAM, and setting virtual environments, directories, and configurations
- Improved project management in GitHub, & in Agile frameworks like Miroboard
- Developed product-oriented mindset
- Gained a sense of accomplishment
- Enhanced multi-tasking capability
- Improved work organization & communication
- Developed more consistency & efficiency
- Trained to meet timelines/deadlines for given tasks
- Boosted up confidence

Thank You

For Your Attention!

Any Questions