Final Project Option #2

Omaid Mousley

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Final Project Report

Abstract

The objective of this project was to develop a text summarizer capable of processing PDFs and user-inputted text. Using the LangChain API, Gradio interface, and GPT4All LLM, specifically the Llama 3.8 model, I aimed to create a tool that efficiently reads and summarizes text content. The summarizer delivers concise outputs that capture the essence of the input text, improving accessibility and understanding of large documents.

Methods

Initially, the project posed several challenges, especially in terms of defining a clear starting point. However, after reviewing multiple resources and following the instructional videos, I gained a better understanding of how to proceed. The process involved considerable trial and error, particularly with different models and APIs. While I initially experimented with the arXiv dataset, I shifted focus to GPT4All, which showed more promise for meeting the project's requirements. Eventually, I successfully created a working summarizer.

Conclusions

I developed a fully functional chatbot that reads and summarizes PDF files or text input. The summarizer produces a thorough and accurate summary, reflecting the key points of the input. However, a significant limitation of the current implementation is the time required for

summarization. While performance could be improved with more powerful hardware, my system's limitations led to slower processing times. Future work will focus on optimizing the code to enhance efficiency, reduce latency, and improve overall performance.

Statement of Business Value

This summarization tool could greatly benefit businesses dealing with large volumes of text, such as contracts or detailed reports. Having access to concise summaries would allow employees to quickly reference key information without having to read through entire documents. Despite some performance limitations, the tool's user-friendly interface offers valuable utility for document management and streamlining workflows within organizations.