

Description:

Deepscan is an AI agent that automates data gathering, analysis, and synthesis from multiple sources. Some similar apps that are similar to Deepscan are OpenAI's ChatGPT Deep Research, Perplexity, and Google's Gemini Deep Research. The agent receives a query from the user, in which the agent interprets the question and asks clarifying questions, then starts researching using a web search tool and scraping of webpages. These scraped contents are analyzed, and a recursive search is performed in which the agent researches followup topics that it generates to gain a depth of understanding. This recursive approach ensures that the analysis is thorough, not only answering the initial query but also addressing potential gaps or additional nuances the user might not have initially considered. The system maintains coherence across multiple searches by utilizing a structured knowledge base that tracks research progression and findings. Finally, after all the results have been aggregated, the agent puts together a final report from all the learnings, and presents it to the user in a professional and readable format. The resulting report aims to balance technical depth with accessibility, ensuring that the information is valuable to users with varying levels of expertise on the topic. The only hardware/software that will be required is a computer that is able to connect to the internet and use a web browser, as I intend to make this a web application. Given the lightweight nature of the application's interface, it will also be optimized for performance on a variety of devices, including tablets and smartphones, making deep analytical insights accessible on the go. This app is aimed towards anyone who is seeking a deep analysis of any topic. Maintenance of this project will include prompt engineering, and analyzing how users interact with the product and watching for any improvements to be made.

Justification:

This project is appropriate for this class because I am able to make a useful application by combining my expertise in web development, backend development in python, and my experience interacting with LLMs and learning their capabilities. By connecting an LLM to external sources of data and different tools, the end app becomes much more useful, and I am able to reduce the rate of hallucinations significantly, because the information it gathers is synthesized by many human written pages out there on the internet.

This approach allows for continuous improvement of the application's research capabilities, as new web sources and databases can be integrated over time, making the app increasingly robust and accurate. In terms of technical difficulty, this is definitely a project that is within the scope of the semester for a solo developer, and will test my abilities to develop and iterate on a full stack application. Most importantly, this is a tool that I would use, as I have used apps like Perplexity extensively in the past and have found it to be very useful. This firsthand experience with similar applications provides valuable insight into the user perspective, enabling me to create a product tailored closely to actual user needs.