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A Review Paper on Artificial Intelligence on Document Search Technique

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Abstract: *It is based on generative self train transformer architecture which has been train on a massive amount of data to generate text that is indistinguishable from text written by human. One of the key feature of self train transformer is its ability to understand and respond to natural language input. By using this we can upload our pdf or any material and can ask any type of queries related to that pdf or material. It is a framework designed to streamline the development of applications that utilize language models (LMs) for complex, multistep tasks. Its primary focus is on creating and managing chains, which are sequences of calls to LMs and other computational tools that can . reason over the results. By integrating external APIs, databases, and structured tools, LangChain enables developers to build systems capable of context-aware reasoning, decision making, and dynamic content generation. Its modular design makes it adaptable to various use cases, such as question-answering, document retrieval, automated agents, and conversational agents*

Keywords: Transformer, dyanamic, Langchain, Integrating external, content generation, database, decision making, modular, document retrievals, automated agents, conversational agents

I. INTRODUCTION

It is a framework designed to simplify and accelerate the development of applications that integrate with large language models (LLMs). It's particularly useful for building complex applications that leverage the capabilities of LLMs in a more structured and manageable way. The framework emphasizes modularity and flexibility, allowing for the integration of external tools, APIs, and even databases to enrich the language model's responses. This makes LangChain ideal for creating dynamic applications in areas such as conversational agents, automated research assistants, and intelligent systems capable of retrieving and synthesizing information from multiple sources. By managing context and multi-step logic, LangChain helps unlock the full potential of LLMs, enabling developers to build sophisticated applications with relative ease

II. LITERATURE SURVEY

Automating Information Retrieval

Mutiara Auliya [1] Educational materials, including guides, tutorials, and master plans, are universally presented in e-book formats. This facilitates a comprehensive understanding for academics, encompassing both technical intricacies and broader conceptual frameworks. E-books offer several benefits, such as searchability and the incorporation of links to additional information sources. However, many individuals express concerns that e-books are not particularly comfortable for extended reading periods. In the other hand, a Generative AI approach is employed for the development of an intelligent chatbot.

Conversational AI: Chatbots:

Namit Naik [2] The growth of technologies like Artificial Intelligence (AI), Big Data & Internet of Things(IoT), etc. has marked many advancements in the technological world since the last decade. These technologies have a wide range of applications. One such application is “Chatterbot or “Chatbot”. Chatbots are conversational AIs, which mimics the human while conversing. This technology is a combination of AI & Natural Language Processing (NLP). Chatbots have been a part of technological advancement as it eliminates the need of human & automates boring tasks. Chatbots

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are used in various domains like education, healthcare, business, etc. In the study undertaken, we reviewed several papers & discussed typesof chatbots, their advantages & disadvantages.

AI driven Chatbot and its Evolution

Atharvaa Rane [3] In today's fast-paced world, when humans want everything to be done swiftly and precisely, traditional systems cannot keep up it, and hence the necessity for chatbots arose. When compared to a manual system, a chatbot responds to frequently requested inquiries faster and in less time. A chatbot is a software that interacts with humans. Artificial Intelligence (AI) has enabled human-machine interaction, with Natural Language Processing (NLP) playing a critical role in language learning. NLP facilitates the development of chatbots. It provides us with an answer via pattern matching.

Language Chatbot

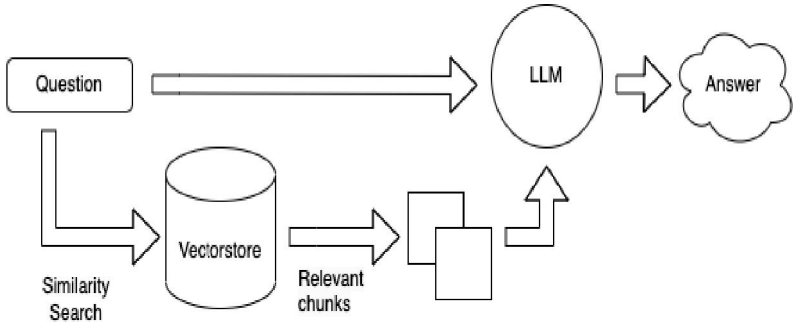
The Design and Implementation of English Language Transfer Learning Agent Apps : Nuobei Shi [4] Language Chatbot has widely used in customer service and personal assistant for task orientated, interactive chats in special domains, knowledge base for question-answer systems, in general, chatbot including automatic speech recognition (ASR), natural language understanding (NLU), dialogue management (DM), natural language generation (NLG), speech synthesis (SS). In our research, we proposed a transfer learning- based English Language learning chatbot with THREE levels learning system in real-world application, which integrate recognition service from Google and GPT-2 from Open AI with dialogue tasks in NLU and NLG at mini program of WeChat

III. EXISTING SYSTEM

You need a large dataset to train a transformer model. Common sources include web data (e.g., Common Crawl), books, Wikipedia, forums, and any other text-rich sources. The data must be preprocessed to remove noise and formatit for training. Convert the text data into tokens, which are the basic units of data the model will process. Tools like Byte-Pair Encoding (BPE) or WordPiece are commonly used. The data is split into training, validation, and test sets. You might also consider creating specialized datasets depending on the application (e.g., conversational datasets for a chatbot). After deployment, monitor the model's interactions and gather feedback. This data can be used to further finetune and improve the model. Deploy the model as a service using APIs, making it accessible for various applications. sources. This system integrates advanced features like memory management, decision-making agents, and retrieval mechanisms to enhance the LLM's performance across a wide range of applications.

IV. PROPOSED SYSTEM

The proposed system for LangChain consists of a modular and extensible architecture designed to build sophisticated applications by leveraging large language models (LLMs) and external tools. The system integrates multiple components, each responsible for handling different aspects of task execution, context management, and decision-making. The design focuses on maximizing the capabilities of LLMs while augmenting them with external data sources, APIs, and logic-based systems.



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The model revolves around creating a modular, extensible architecture that allows large language models (LLMs) to perform complex, multi-step tasks by chaining together different components, including LLMs, external tools, APIs, and data sources. This system integrates advanced features like memory management, decision-making agents, and retrieval mechanisms to enhance the LLM's performance across a wide range of applications.

V. CONCLUSION

Langchain simplifies building application with advanced language models. It occurs as a revolutionary framework that can combine large language model with personalized data sources effectively. As technology expands, it adds smarter elements like chart interfaces, providing better help in various situations. It can assist in extracting, summarizing, and analyzing information from documents, enabling tasks such as content summarization, sentiment analysis, and data extraction.

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