

Study and Implementation of Knowledge Base with Retrieval-Augmented Generation (RAG)

Abstract

Abstract: As organizations face an overwhelming amount of data and information, traditional knowledge bases often struggle with answering complex, context-dependent queries. Traditional systems are limited in their ability to dynamically generate relevant responses and are constrained by static, predefined data. Retrieval-Augmented Generation (RAG) presents a powerful solution by combining information retrieval with generative models, such as GPT and BERT, to dynamically fetch and generate context-aware responses. This project aims to explore and implement a knowledge base system enhanced by RAG, enabling more efficient, accurate, and scalable knowledge retrieval and response generation. The system will retrieve the most relevant documents from large datasets and use generative models to synthesize precise, human-like responses. The study will evaluate the potential of RAG in improving knowledge base systems for handling complex queries in real-time and at scale.

Academic Project Requirements:

- 1) Required No. of student(s) for academic project: 2**
- 2) Name of course with branch/discipline: B.E./B.Tech. Computer Engineering/IT/MCA**
- 3) Academic Project duration:**
 - (a) Total academic project duration: 16 Weeks**
 - (b) Student's presence at IPR for academic project work: 5 Full working Days per week**

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