**MANUFACTURING AND SUPPLY CHAIN CHATBOT**

**Development Approach:**

* Initially started with scraping the given website in such a way to read all the articles which include reading articles from load more button as well.
* After that extracted the related information from those articles and stored in fields like title, synopsis, link and description and inserted them into the SQLite database in a structured manner.
* Created a virtual table for performing full text search(FTS)
* Read the articles from SQLite database and performed chunking, embedding and indexed into the Pinecone vector database.
* Based on user query extracting the relevant chunks from FTS and vector db.
* Combined the resultant chunks and passing it through the prompt as per the prompt type.
* Finally with the help of LLM generating the response.

**Challenges Faced:**

* Performing different operations on text data like reading it from the website and storing into the SQLite database, chunking and embedding into the pinecone vector database taken more time due to the memory constraints of the machine that I am having.

**Potential Improvements:**

Within the given timeframe I am unable to complete the potential improvements. Please find the below:

* Perform chunking on the articles data present in SQLite database like the chunks that I have indexed into vector database helps to get the similar chunks based on the query. So that I can follow the approach of Reciprocal Rag Fusion (RRF) to rank the results and pass it to LLM.
* Prompt fine tuning is pending just started with initial prompt.
* Code can organized in a much more modular way.
* Development of Chabot application that includes chat memory history.
* Storing the relevant key information in a structured database is pending.