



PDF Search Engine!:

An answer to hallucination

How did we get here?

Chatbot Created.

A Chatbot was created in anticipation for sharing FriYAY.

Further testing was done to ensure it was up to standards and able to be feasible in usage for staff.

Despite best efforts, many different combinations of retrievers (BM25, DPR etc), readers etc, standards were not met.

The screenshot shows a window titled "Procu-Chat App". On the left, there's a sidebar with "About" and "This rocket specs:" followed by a bulleted list: "InMemoryDocumentStore", "BM25Retriever", and "Google Flan T5 Large LLM". Below this is a "Clear Chat History" button. The main area has a message from "You:" asking about actions taken by a Superintending Officer. The bot responds with a message bubble containing text about giving notice within a reasonable time. Below this, another message from "You:" asks about the timeframe for notification of delays. The bot responds with a message bubble stating 60 days. At the bottom, another message from "You:" asks what items should be included in a notice. The bot responds with a message bubble stating the Superintending Officer may require further particulars and information within 14 days. To the right of the messages are three yellow smiley faces with glasses.

You:

What actions does the Superintending Officer take once they have sufficient information to decide on th

he shall, within a reasonable time, make in writing to the Contractor such extension of time, if any, of the whole or any phase or part of the Works (as the case may be) as may in his opinion be fair, reasonable and necessary for completion of the Works.

What actions does the Superintending Officer take once they have sufficient information to decide on the Contractor's application for an extension of time?

60 days of the occurrence of such event.

What is the timeframe within which the Contractor must notify the Superintending Officer of a delay caused by certain events?

The Superintending Officer may require the Contractor to provide within 14 days or such other period as may be required by the Superintending Officer such further particulars concerning any event and the circumstances of the delay, the measures planned and/or taken to prevent or minimise delay and any further information which the Superintending Officer may reasonably require.

What items should be included in the Notice by the Contractor to the Superintending Officer?

Issue:

Search Issues

Vector-based search still has inconsistent effectiveness when it comes to searches.

Question	Haystack Dense Passage Retriever (Whole PSSCOC)	Haystack Correct Answer (BM25 Generated)
What should the Contractor do if they believe there is a delay in the progress or completion of the Works due to certain events?	[The Superintending Officer shall take into account the effect, or extent, of any work omitted under the Contract and shall also take into account whether the event in question is one which will delay completion of the Works.]	[he shall forthwith notify the Superintending Officer in writing of such event and shall in any case do so within 60 days of the occurrence of such event.]

Did not answer "60 days"

Issue (Repeats):

Question	Haystack Dense Passage Retriever (Whole PSSCOC)	Correct Answer
"What items should be included in the Notice by the Contractor to the Superintending Officer under PSSCOC?"	[The Superintending Officer shall take into account the effect, or extent, of any work omitted under the Contract and shall also take into account whether the event in question is one which will delay completion of the Works. The Superintending Officer shall also take into account any delays which may operate concurrently with the delay due to the event or events in question and which are due to acts or default on the part of the Contractor.]	The notice given by the Contractor should include the reasons for the delay, the length of the delay, the extension of time required, and the impact of the event on the accepted program under Clause 9. The notice should also contain the appropriate Contract references.
Can the Superintending Officer request additional information from the Contractor regarding a delay application?	[The Superintending Officer shall take into account the effect, or extent, of any work omitted under the Contract and shall also take into account whether the event in question is one which will delay completion of the Works. The Superintending Officer shall also take into account any delays which may operate concurrently with the delay due to the event or events in question and which are due to acts or default on the part of the Contractor.]	Yes, if the Superintending Officer deems the notice and accompanying information insufficient, they have the authority to request the Contractor to provide further particulars within a specified period. The additional details may include information about the event, the circumstances of the delay, measures planned or taken to mitigate the delay, and any other information reasonably required by the Superintending Officer.

Cause of Issue:

Semantic Search issues

The system is unable to detect/find the relevant passage to "Copy+Paste" into the large language model to generate the "fancy" response.

Example :
(Story of little red riding hood):

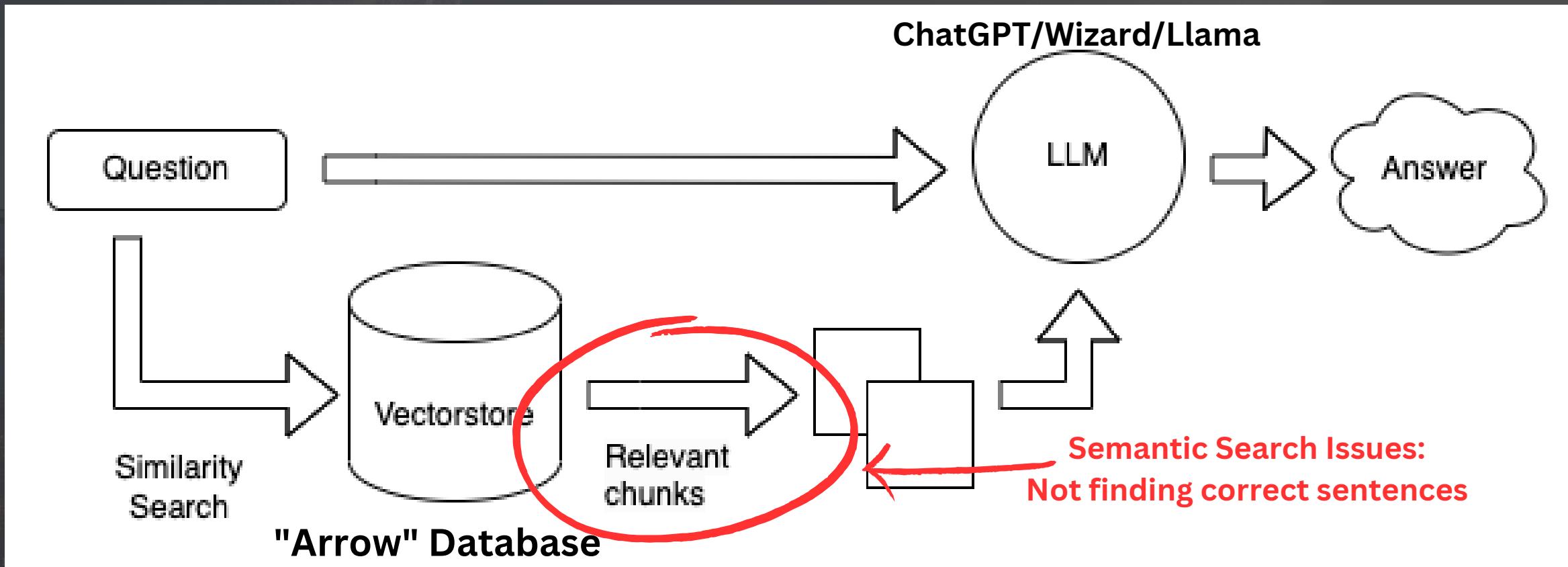
If the search is correct, the LLM will be given:

"The wolf dressed up as little red riding hood's grandmother."

But instead it was given:

"Justin Bieber's song is fantastic."

It will return a response to the user about Justin Bieber because that was all it was given as context from the search.



Issue not isolated:

Main issue plaguing vector store databases

The issue isn't isolated to Langchain/Haystacks, but it is simply the nature of vector searches that are available in the open-source market now.

There are varying degree of solutions, but ultimately it revolves either heavy investment in pre-processing or just cutting down tremendously on the documents fed so there are less items to search.

Document search pipeline #3809

Closed

Chetan-Yeola opened this issue on Jan 5 · 1 comment



Chetan-Yeola commented on Jan 5

...

How can we improve document Search pipeline accuracy?



ZanSara commented on Jan 11

Member ...

Hey @Chetan-Yeola! Given that this is not a bug report or a feature request, I'll move it to GitHub Discussions. We also have a Discord channel which you can join to get

How to improve the index vector search for QA over docs?

I'm learning Langchain and testing a lot with Question and Answering over documents and I am realizing that to make this functionality better i have to improve the index search, that happens before the AI start the chains.

In the search for the embeddings, i feel the search is very poor. If you don't specify a right word to be searched through those indexes, it will not come up with a good answer. So you kind need to know what is in the document to make the search. For example if you want to search for the book "The Great Gatsby" you need to know what you are searching for. But if you type "the great gatsby" in the search bar it will return all the documents having "the great gatsby" in them.

Is there a way to improve the search in the documents? I am using Chroma and storing them local

for example: If i am questioning a novel, if there is the word married. But if in the text there is the word married. But if in the text

not retrieved because is a different word

Retrieval QA with large number of documents

I have around 850 documents and I have been using variety of Retrievers including FAISS, ContextualCompressionRetriever (on top of the FAISS) but none of them are able to fetch the relevant documents correctly. My data resides in a pickle file where each row has the date and the text. When I run temporal queries, the retriever fetches documents from the same year as well as another year and I am starting to worry that it might cause the QA chain on top of it to spit out false answers. Has anybody tried this pipeline on large number of docs and knows of a better solution?

17 Comments

Award

Share ...

Semantic Search Issues:
Too many pages = Poor results

Issue not isolated (2):

r/LangChain · Posted by u/CoffeeAndKnives 13 days ago

How to get better than semantic search?

I've been working with Langchain for a few weeks now. I've managed to upload PDFs to a vector database and get what seems to be an improvement over a typical semantic search results. Curious if anyone has feedback on how to get this to the next level where the LLM understands the uploaded data at a higher level. Maybe there's a way to preprocess the pdf for better information connectivity like a knowledge graph? Or a scheme with multiple agents that perform different tasks?

Hackerjurassicpark · 13 days ago

What's the issue that you face?

↑ 2 ↓ Reply Share ...

CoffeeAndKnives OP · 13 days ago

I'm working with a massive mechanical design pdf that contains almost 2000 pages plus tons of charts and tables. First, I'd love to get the tables and charts to be searchable/referenceable and I think that would require significant preprocessing to extrapolate that data into tabulated / CSV type format. Then I want to get an LLM to really absorb the document and be able to answer referential questions about the information. For now, it seems pretty good about semantic searching where it can locate the information I'm asking about along with some local insights but I want more in-depth understanding.

↑ 2 ↓ Reply Share ...

Semantic Search Issues:
Too many pages = Poor results

[Issue/Question] Too common keywords pollute the search in the vectorized database, any smart solutions ?

Hello guys, I have the following issue. I'm doing a chatbot with data from a website pages of an organisation. But when I ask question of the type "Who is the president of the [organisation]?" Because [organisation] is on every pages of the website, the page relative to who is the actual president does not show up in the documents found by the vectorsearch. When I ask "Who is the president" the result is correct (And the relevant page is actually in the context), so I'm sure it's a problem with [organisation] being everywhere

r/LangChain · Posted by u/nikhil_no_1 1 month ago

Understand why my LangChain-based Semantic PDF Search is working poorly compared to ChatGPT completion?

Hello, I followed this <https://twitter.com/MisbahSy/status/1653105400403890176> to build a LangChain-based Semantic PDF Search app. However, the chatbot is unable to answer even simple questions. OTTH, when I use the code given in "ChatGPT Prompt Engineering for Developers - <https://learn.deeplearning.ai/chatgpt-prompt-eng/lesson/8/chatbot>", it works perfectly.

If I am giving it my cover letter and then asking questions about myself.

For e.g.

LangChain-based Semantic PDF Search App:

Q) How many years of experience does Nikhil have?

A) Nikhil Utane has a lot of professional experience, as evidenced by the long list of skills he has listed.

ChatGPT Completion:

Q) How many years of experience does Nikhil have?

A) Nikhil has 22+ years of experience in diverse product development.

Could someone provide an explanation for this different behavior? Thanks.

3 Comments Award Share ...

nikhil_no_1 OP · 1 mo. ago

I found my mistake. I tried with different PDFs but used the same index. After deleting the index and trying with the single document, I am getting the results that I was looking for.

3 ↓ Reply Share ...

Semantic Search Issues:
Had to reduce pages/document size to get good results

by another arbitrary word and his solution is not really good

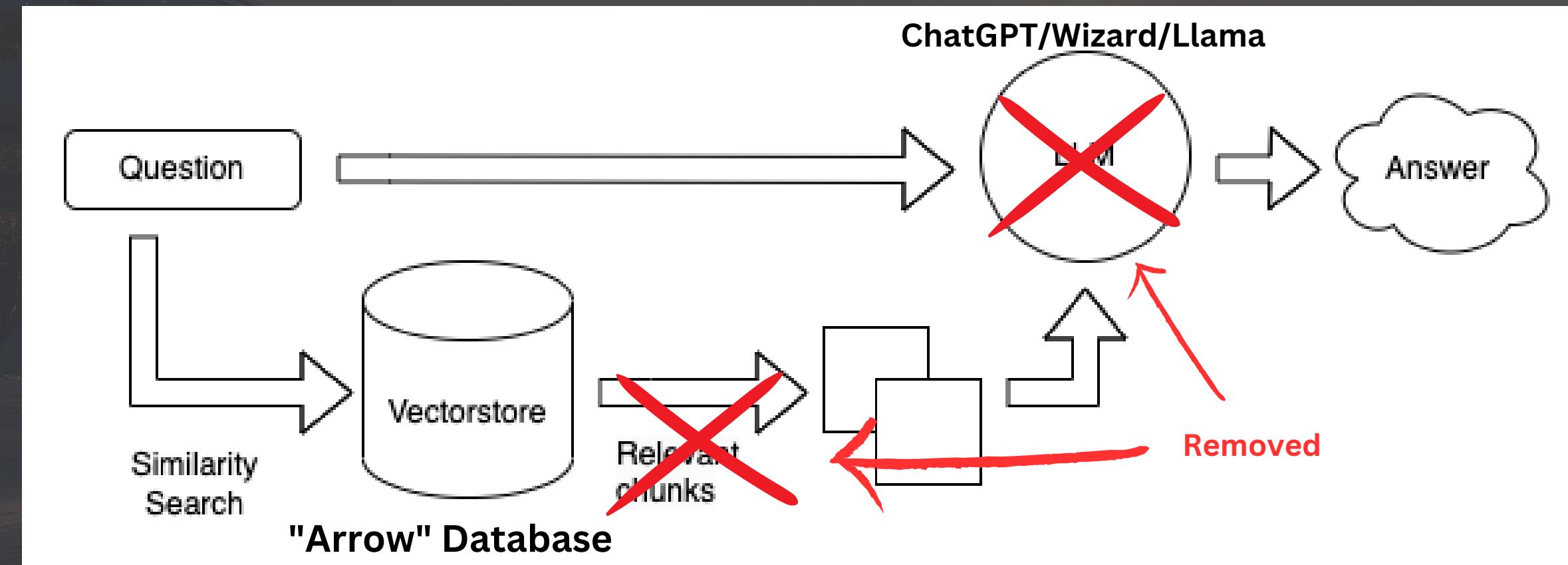
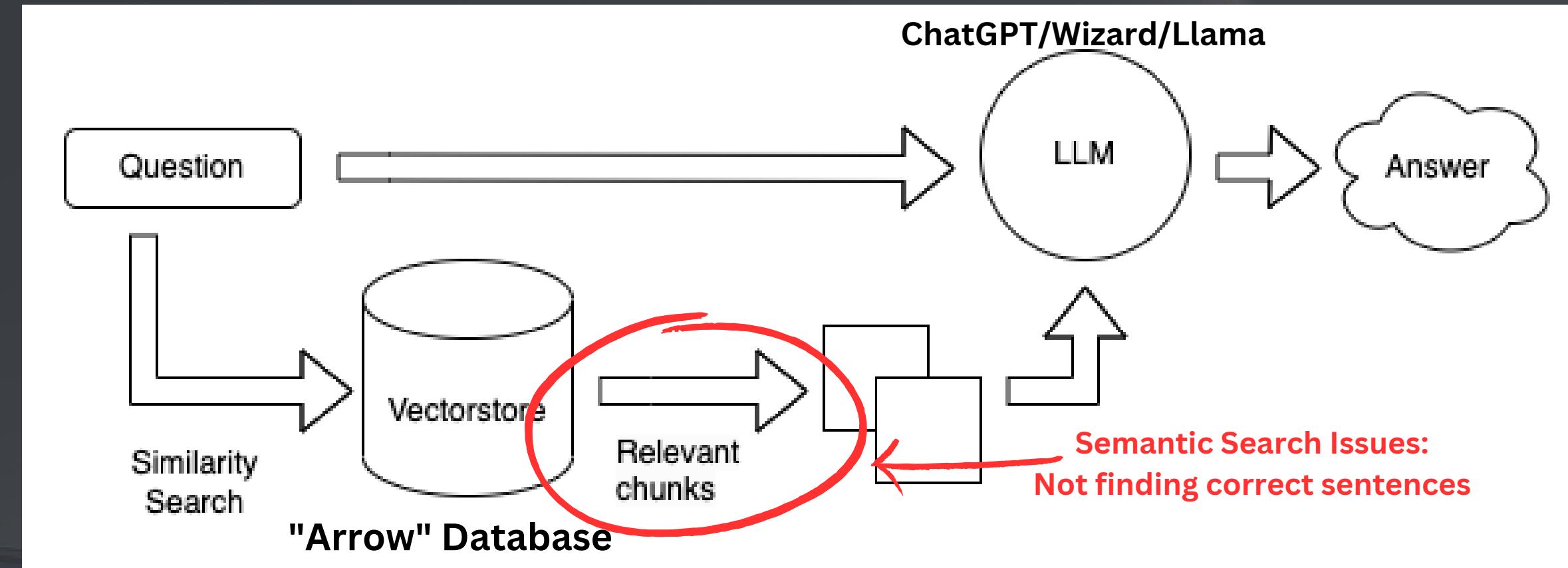
base :
<https://www.deeplearning.ai/website-using-langchain/>

Solution?

Stop the Algo from searching

By removing the part that is unable to find the relevant chunk, and just allow users to query the vectorstore/database directly.

What this simply results in is essentially a search engine.



Result: PDF Search Engine

The screenshot shows a Streamlit application interface titled "PDF Search Engine". On the left, there is a sidebar titled "Search Options" containing a search input field labeled "Enter search query", a "Build Index" button, and a section titled "Select Documents to Search" with three items listed: "Data Engineerin...", "Evaluating mach...", and "psscoc-for-const...". A "Search" button is located at the bottom of the sidebar. The main area of the application displays the title "PDF Search Engine" in large, bold, dark font.

Search Options

Enter search query

Build Index

Select Documents to Search

Data Engineerin... x

Evaluating mach... x

psscoc-for-const... x

Search

PDF Search Engine

Made with Streamlit

Result: PDF Search Engine

The screenshot shows a Streamlit application titled "PDF Search Engine". On the left, there is a sidebar titled "Search Options" containing a search bar labeled "Enter search query" and a button labeled "Build Index". Below this is a section titled "Select Documents to Search" with three items listed: "Data Engineerin...", "Evaluating mach...", and "psscoc-for-const...". A red arrow points from the text "Step 1: Press Button to build index of document pages." to the "Build Index" button. The main area of the app is titled "PDF Search Engine" and contains the text "Step 1: Press Button to build index of document pages." at the top. At the bottom of the main area, it says "Made with Streamlit".

Step 1: Press Button to build index of document pages.

Made with Streamlit

Result: PDF Search Engine

The screenshot shows the PDF Search Engine application interface. On the left, a sidebar titled "Search Options" contains a search query input field with a placeholder "Enter search query" and a "Build Index" button. Below this is a section titled "Select Documents to Search" with three items listed: "Data Engineerin...", "Evaluating mach...", and "psscoc-for-const...". A red arrow points from the text "Step 2: Ask Question" to the search query input field. The main area of the interface is titled "PDF Search Engine" and displays a large, empty white space, indicating no search results are currently displayed.

Step 2: Ask Question

Search Options

Enter search query

Build Index

Select Documents to Search

- Data Engineerin... x
- Evaluating mach... x
- psscoc-for-const... x

PDF Search Engine

Made with Streamlit

Result: PDF Search Engine

Step 3: Results

Filter if needed.

By default, all selected.

_____ Public Sector Standard Conditions of Contract for Construction Works (Eighth Edition July 2020) 36
23 PROCEDURE FOR CLAIMS 23.1 Notice of Claims (1) Whenever the Contractor intends to claim any payment pursuant to the Contract (other than Clause 20), he shall give notice in writing of his intention to do so to the Superintending Officer within 60 days after the event giving rise to his claim has first arisen and shall comply with Clause 23.2 to 23.4. The notice shall specify the event and its consequences, and the giving of such a notice shall be a condition precedent to any entitlement that the Contractor may have. (2) The fact that the Contractor does not or may not know whether the valuation of a variation has been agreed or whether the Superintending Officer has decided to include in any certificate any amount in respect of any claim shall not excuse the Contractor from the requirement to give a notice under Clause 23.1(1). 23.2 Contemporary Records Upon the happening of any event in respect of which the Contractor may intend to make a claim, the Contractor shall keep such contemporary records as may reasonably be necessary to support any claim he may subsequently wish to make. Without necessarily admitting the Employer's liability, the Superintending Officer may, on receipt of a notice under Clause 23.1, inspect such contemporary records and may instruct the Contractor to keep any further contemporary records which he considers to be material to the claim of which notice has been given. The Contractor shall permit the Superintending Officer to inspect all records kept pursuant to this Clause and shall supply him with copies of such records as and when the Superintending Officer so instructs. 23.3 Substantiation of Claims Within 30 days, or such other time as may be agreed by the Superintending Officer, of giving notice under Clause 23.1, the Contractor shall send to the Superintending Officer an account in writing giving detailed particulars of the amount claimed and the grounds upon which the claim is based, together with particulars of any claim for extension of time made pursuant to Clause 14 and for any Loss and Expense associated therewith (where applicable). Where the event giving rise to the claim has a continuing effect, such account shall be considered to be an interim account and the Contractor shall, at such intervals as the Superintending Officer may require, send such further interim accounts giving the accumulated amount of the claims and any further grounds upon which they are based. Within 30 days of the end of the effects resulting from the event, the Contractor shall send to the Superintending Officer a final account of the claims. The obligation to give particulars of any claim for an extension of time under this Clause shall not release the Contractor from his obligations under Clause

The screenshot shows a user interface for a PDF search engine. On the left, a sidebar titled 'Search Options' includes fields for 'Enter search query' (containing 'Notice') and a 'Build Index' button. Below these are sections for 'Select Documents to Search' and a dropdown menu containing 'Evaluating mach...' and 'psscoc-for-const...'. A 'Search' button is located below this section. In the center, the title 'Search Results' is displayed above a paragraph of text. The text discusses the Public Sector Standard Conditions of Contract for Construction Works, specifically detailing the procedure for claims, including the notice period and the contractor's obligations regarding contemporary records and substantiation of claims. At the top right of the main content area, there are small buttons for 'File', 'Page', and 'Paragraph'.

Result: PDF Search Engine

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Paragraph:

_____ Public Sector Standard Conditions of Contract for Construction Works (Eighth Edition July 2020) 7
3.4 Need for Further Drawings etc. The Contractor shall give adequate **notice** in writing to the Superintending Officer: (a) of any further drawing, specification or other information which the Superintending Officer is required to provide under the Contract; (b) of any drawing, specification, instruction or other information which is required by any specific time, whenever the planning or execution of the Works is likely to be delayed or disrupted by its lack, and whether or not the need for it is shown on any programme accepted by the Superintending Officer under Clause 9. The **notice** shall also state the consequences in terms of delay to the progress or completion of the Works or any part of the Works and any financial consequences should the Superintending Officer not comply with any of the requirements of the **notice**. The Superintending Officer shall on receipt of the **notice** comply with its requirements, provided that it is given in sufficient time for the Superintending Officer reasonably to prepare and issue the information required. 3.5 Further Supplementary Drawings etc. and Instructions The Superintending Officer shall issue to the Contractor, from time to time, such further or revised drawings, specifications or instructions as may in his opinion be necessary for the purposes of the execution and completion of the Works. The Contractor shall carry out and be bound by the same. 3.6 Delay and Time If: (a) the Contractor shall have duly given **notice** pursuant to Clause 3.4 and if the Superintending Officer shall not have complied with any of its requirements; or (b) the Superintending Officer shall not have issued any further or revised drawing specification or instruction as required by Clause 3.5, and if thereby the progress or completion of the Works or any part of the Works has been materially affected then, subject to compliance by the Contractor with Clauses 14, 23 and 32, the Superintending Officer may grant an extension of time pursuant to Clause 14 and may certify pursuant to Clause 32 such sum as may be reasonable in respect of any Loss and Expense incurred by the Contractor.

[Download Page 16](#)

File: psscoc-for-construction-works-2020.pdf

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Paragraph:

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THANK YOU!