

NOTE2Q: AN AI-POWERED QUESTION GENERATOR FROM COLLEGE NOTES

AGENTIC AI



By NeuronNet

WHY THIS AGENT?

LACK OF
TARGETED
QUESTIONS

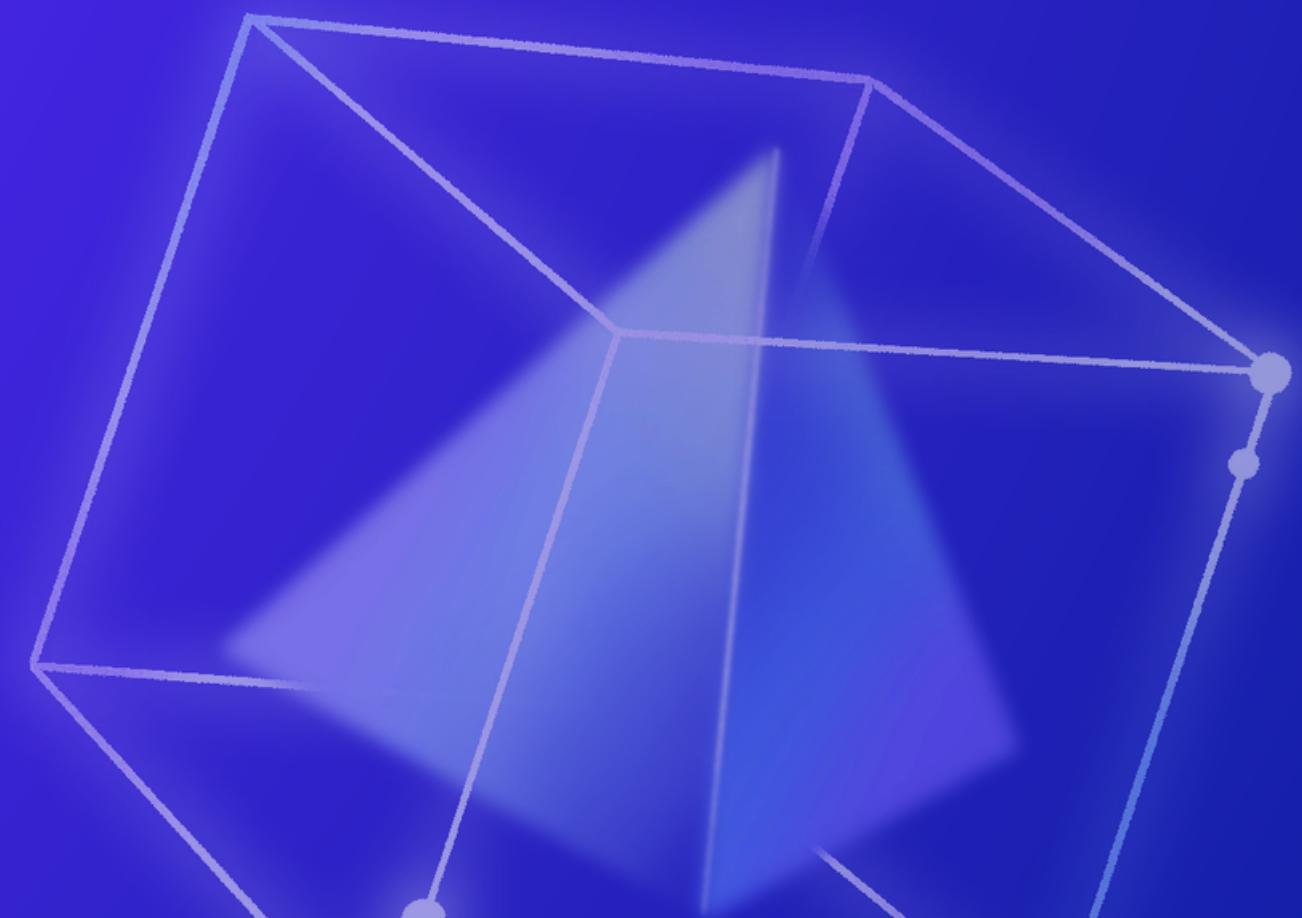
PERSONALIZED
EXPERIENCE
FOR USER

SAVES
TIME &
EFFORT

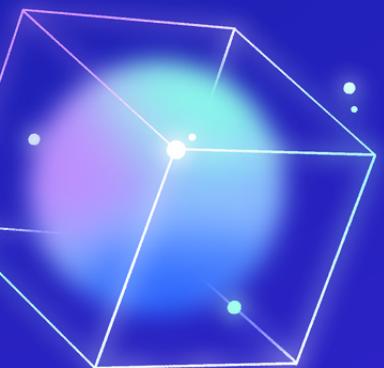
ENHANCES
LEARNING

USECASES

- 1. Self-Assessment & Practice**
- 2. Exam Preparation**
- 3. Personalized Learning**
- 4. Collaborative Learning**
- 5. Teacher Aide**

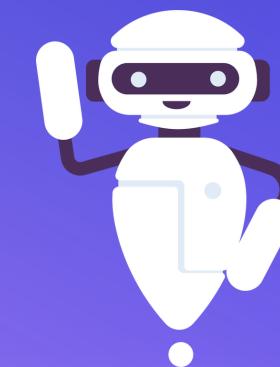


Why not to use traditional LLMs?



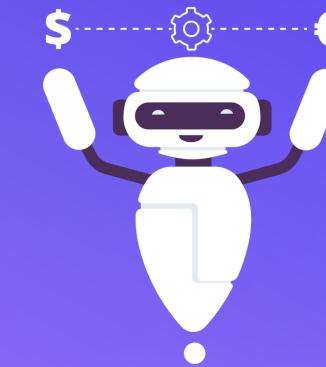
QUERY

RESPONSE



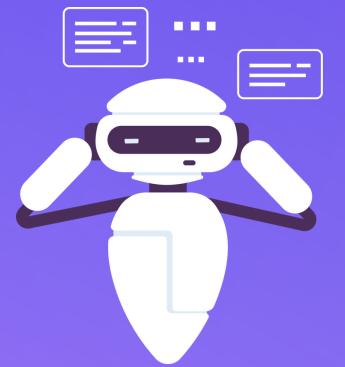
LACK OF DOMAIN-SPECIFIC TUNING

LLMs are general-purpose; they are not fine-tuned for specific industries. Fine-tuning for domain-specific tasks ensures relevant answers and better accuracy.



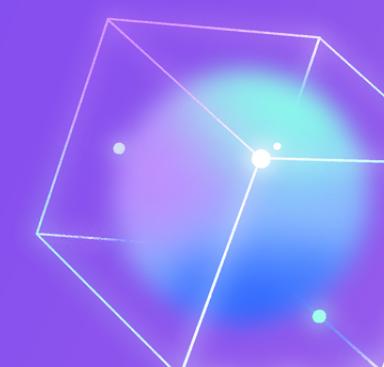
RISK OF HALLUCINATIONS

LLMs can "hallucinate" answers — making up facts that aren't present in the documents. Our custom AI model controls hallucinations by grounding answers only in the data we feed it.

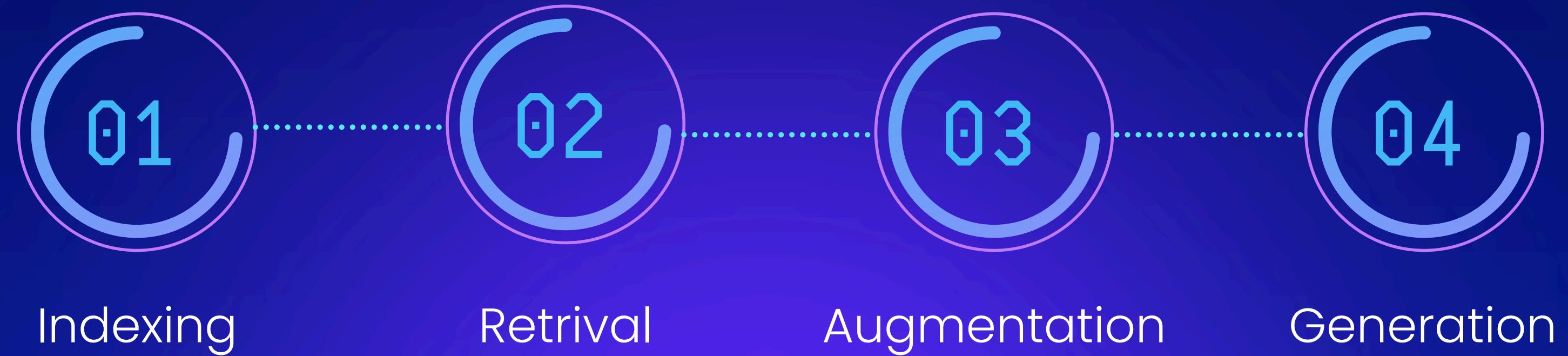


OUTDATED INFORMATION

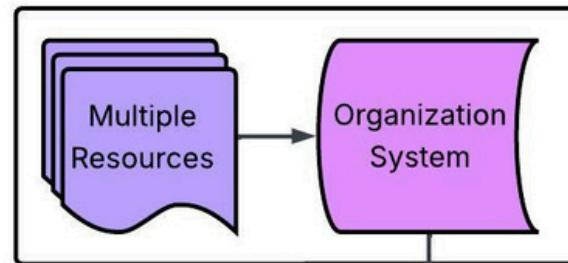
LLMs rely on static training data. They cannot access real-time updates or recent documents. Our AI agent directly processes fresh, uploaded data, ensuring answers are always up-to-date.



AUTOMATION PROCESS

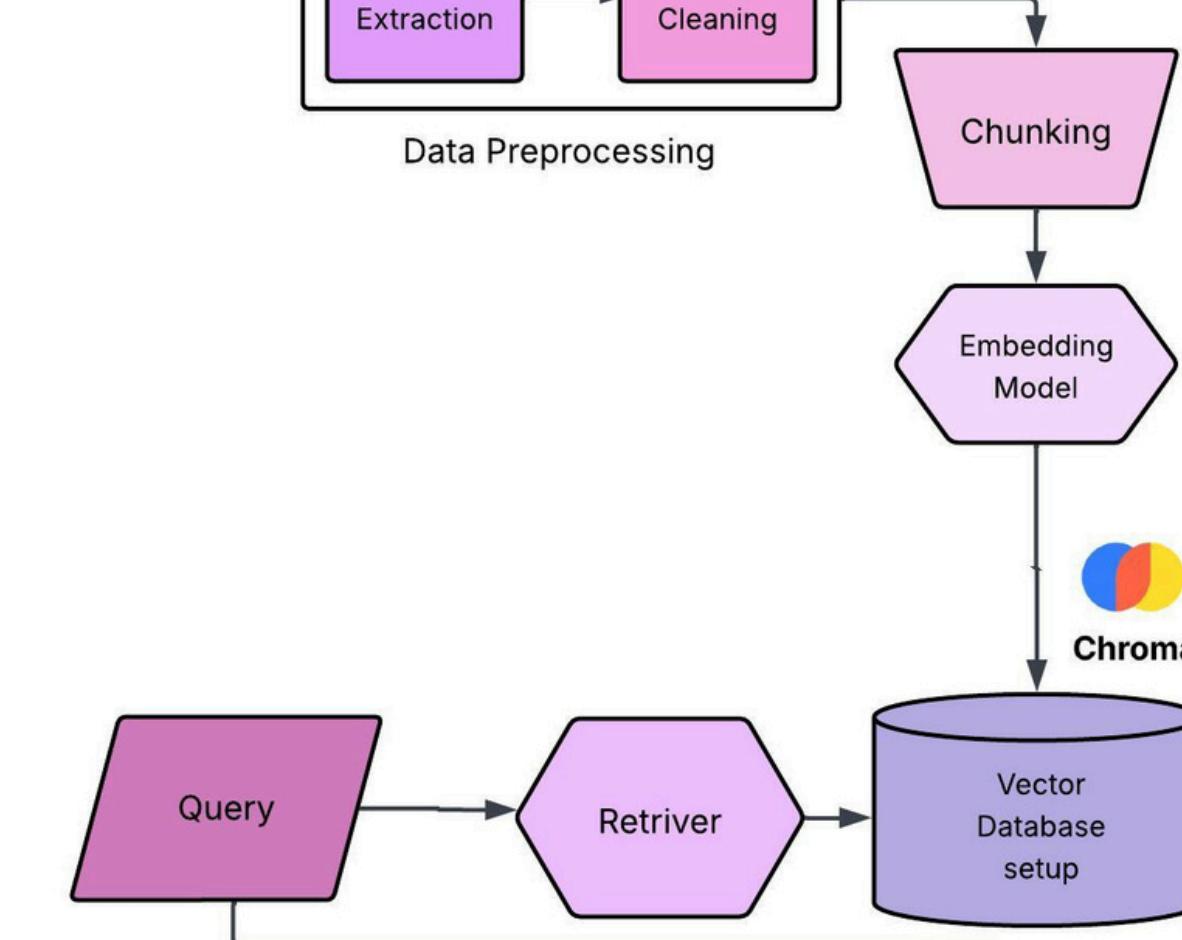


Data Collection Stage

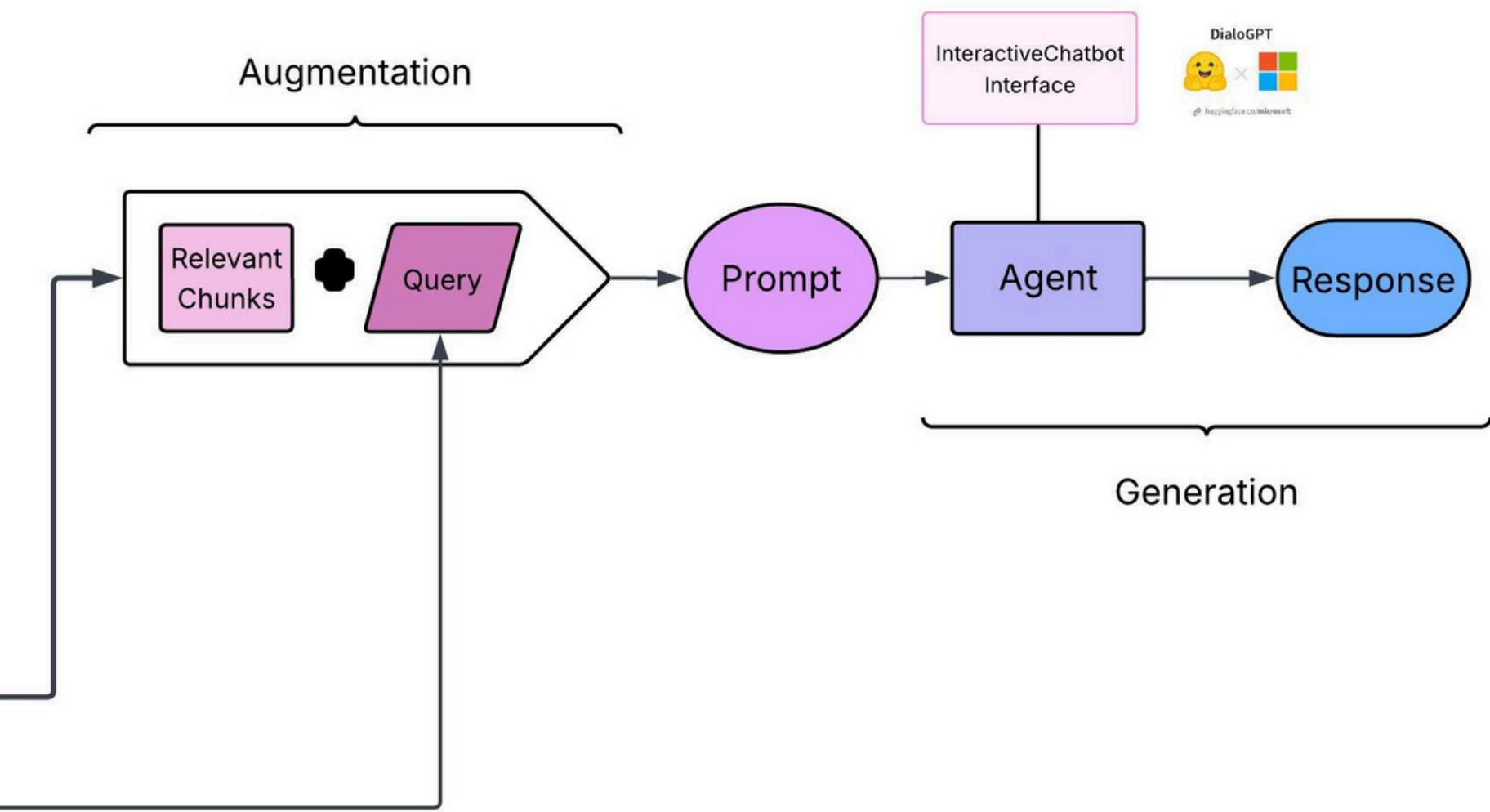


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Indexing



Augmentation



Generation



Retrieval

DATA PREPARATION

Resource Collection:

gathering diverse resources such as:

- Lecture slides (PPTs) , Notes (PDFs/Word), Reference materials.

Text Extraction

Text parsers for different formats:

- PPTX → python-pptx , PDF → PyPDF2, DOCX → python-docx

Cleaning & Normalization

- Lowercasing all text for consistency.
- Removing special characters,punctuations & non-informative words.
- Eliminating extra whitespaces.

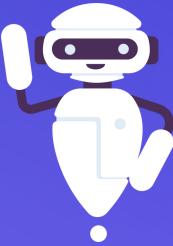
CHUNKING STRATEGY



Why Chapter-wise?

Chapters naturally represent logical divisions in the content, grouping related concepts together. This makes it easier for models to understand context and provide accurate, focused answers.

MODEL CHOICES & RATIONALE



microsoft/DialoGPT-medium (Hugging Face Transformers pipeline)

IT'S DESIGNED FOR CONVERSATIONAL TASKS. IT HELPS PROVIDE NATURAL, HUMAN-LIKE RESPONSES TO STUDENTS' QUERIES BASED ON THE DOCUMENTS.



all-MiniLM-L6-v2 (SentenceTransformer)

IT'S A FAST, MEMORY-FRIENDLY OPTION THAT WORKS WELL FOR SEMANTIC SEARCH TASKS. IT HELPS UNDERSTAND THE MEANING OF DOCUMENT CHUNKS AND USER QUERIES, ENABLING ACCURATE MATCHING IN THE RETRIEVAL SYSTEM.

Scope

- 1 PPT Explanation
- 2 Flashcards for Quick Revision
- 3 Exam Simulation & Mock Tests
- 4 Personalized Learning Assistance
- 5 Textbook Summarization

THANK YOU!

