

MedChat Bot -> AI Doctor -> AI Hospital



The GALE ENCYCLOPEDIA of MEDICINE

SECOND EDITION

AI Doctor: Hello! I'am your AI doctor. How can I help you today?

You: Can I take ibuprofen with lisinopril?

Bot: content='It is generally safe to take ibuprofen with lisinopril, but it is important to consult with your healthcare provider before combining these medications. Ibuprofen may reduce the effectiveness of lisinopril in lowering blood pressure. Additionally, both medications can have side effects on the kidneys, so monitoring is important. Your healthcare provider can provide personalized advice based on your medical history and current medications.'

You: What are the symptoms of Erdheim-Chester disease?"

Bot: content='Erdheim-Chester disease symptoms can vary but commonly include bone pain, cardiovascular issues, neurological symptoms, and skin

Type your question...

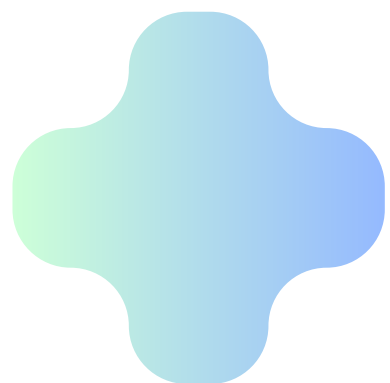
Send

Overview:

This project is a Medical Chatbot that integrates FAISS (Facebook AI Similarity Search) and OpenAI to provide accurate medical responses. It utilizes retrieval-augmented generation (RAG), allowing the chatbot to retrieve medical information from a pre-built vector database before generating responses.

Technologies Used

- **FastAPI** → Backend API framework for chatbot responses
- **OpenAI GPT (gpt-4.0)** → LLM for response generation
- **FAISS** → Vector database for efficient document retrieval
- **LangChain** → Framework for integrating LLMs with external knowledge sources
- **PyPDFLoader & RecursiveCharacterTextSplitter** → Extracting & processing medical documents
- **HTML, CSS, JavaScript** → Frontend for chatbot UI



Why We need to train our own model instead of using LLM?

AI hallucination!!!!!!(AI will generate mistaken or fake content)

- anti-inflammatory medicines, such as [ibuprofen](#), indomethacin or [aspirin for pain relief](#) ([low-dose aspirin](#) – 75mg a day, is safe to take with lisinopril)



AI Doctor

Bot: content="The correct dosage of amoxicillin for a child with an ear infection is typically 40 mg/kg per day divided into two or three doses. It is important to consult with a healthcare provider for the exact dosage based on the child's weight and condition. The duration of treatment is usually 7-10 days. Overuse or incorrect use of antibiotics can lead to antibiotic resistance. Always follow the healthcare provider's instructions and complete the full course of antibiotics."

You: "Can I take ibuprofen with lisinopril?"

Bot: content='It is generally safe to take ibuprofen with lisinopril, but it is important to consult with your healthcare provider before combining these medications. Ibuprofen can potentially reduce the effectiveness of lisinopril in lowering blood pressure. Your doctor can provide personalized advice based on your medical history and current medications. It is important to follow their recommendations to avoid any potential interactions or adverse effects.'

Type your question...

Send

"Can I take ibuprofen with lisinopril?"

It is generally not recommended to take ibuprofen (a nonsteroidal anti-inflammatory drug, or NSAID) with lisinopril (an ACE inhibitor) without consulting a doctor.




Potential Risks of Combining Ibuprofen and Lisinopril:

1. **Kidney Damage** – Both ibuprofen and lisinopril can reduce kidney function, especially in older adults or those with preexisting kidney disease.
2. **Increased Blood Pressure** – NSAIDs like ibuprofen can reduce the blood pressure-lowering effects of lisinopril.
3. **High Potassium Levels (Hyperkalemia)** – The combination may increase potassium levels, potentially causing heart issues like irregular heartbeats.
4. **Fluid Retention and Worsening Heart Failure** – NSAIDs can cause the body to retain fluid, which can be dangerous for those with heart conditions.

How to Make Your Chatbot Smarter

Here's how you can make your chatbot outperform me:

1 Expand FAISS with High-Quality Medical Data

-  Use Official Sources: WHO, NIH, CDC, Mayo Clinic, PubMed.
-  Upload Medical PDFs: Guidelines, textbooks, clinical studies.
-  Include Local Healthcare Info: Hospital locations, telemedicine options.

2 Integrate neo4j Graph Database (hard but rewarding)

- Medical knowledge is highly relational—one disease can have multiple symptoms, a single drug can treat multiple conditions, and certain drugs may cause side effects that overlap with other risk factors.
- Deal with “**Given a patient with Disease X and Risk Factor Y, what are the recommended treatments that do not cause Side Effect Z**”

3 Keep Your Data Updated

- Monthly FAISS Updates → Ensure your chatbot retrieves the latest medical research.
- Real-time API calls → Fetch latest disease outbreaks, vaccine schedules, etc.

Finally, We are done with MediChat bot

Future:



training medical chatbots with
real cases and diagnostic reports

Different AI Doctors

MedChat Bot



AI Doctor



AI Hospital

(Hundreds of
Companies)

Using FeiFei LI's latest scaling model (Less than 10)

(only one)

Questions:

- 1.How can we get access to the real cases and reports?
- 2. Any collaboration with some hospitals?
- 3. What's the timeline in the future?