1. System Architecture Diagram
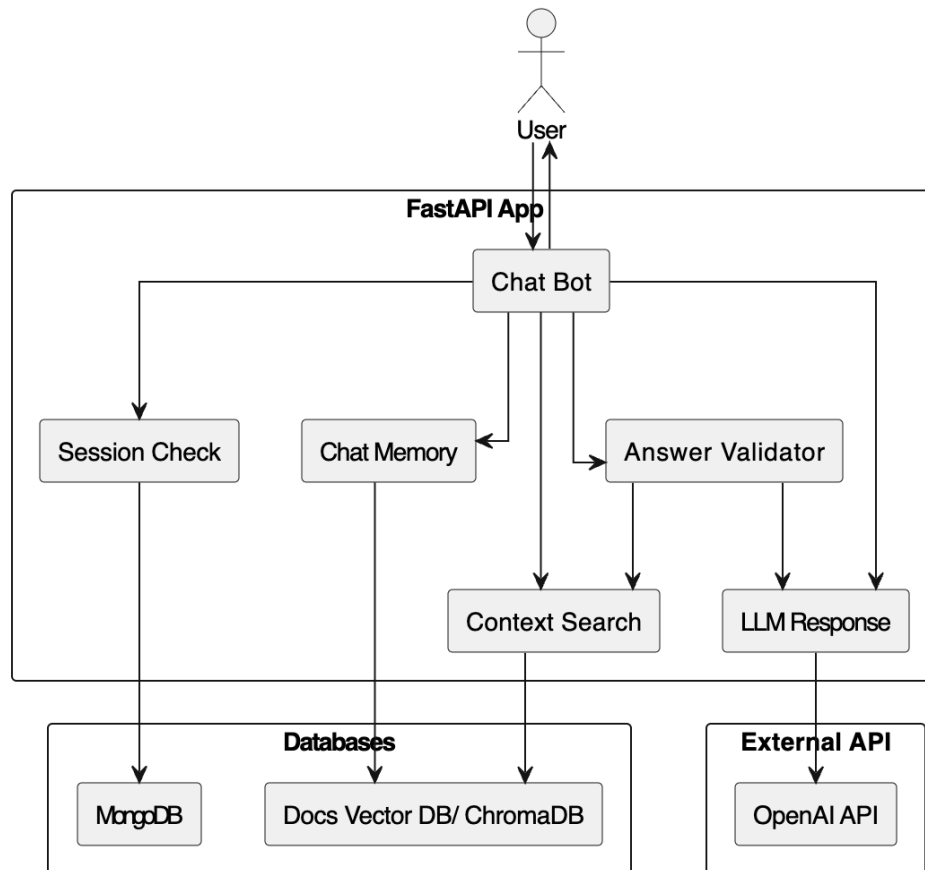

Figure 1.1: Overall Architecture Model
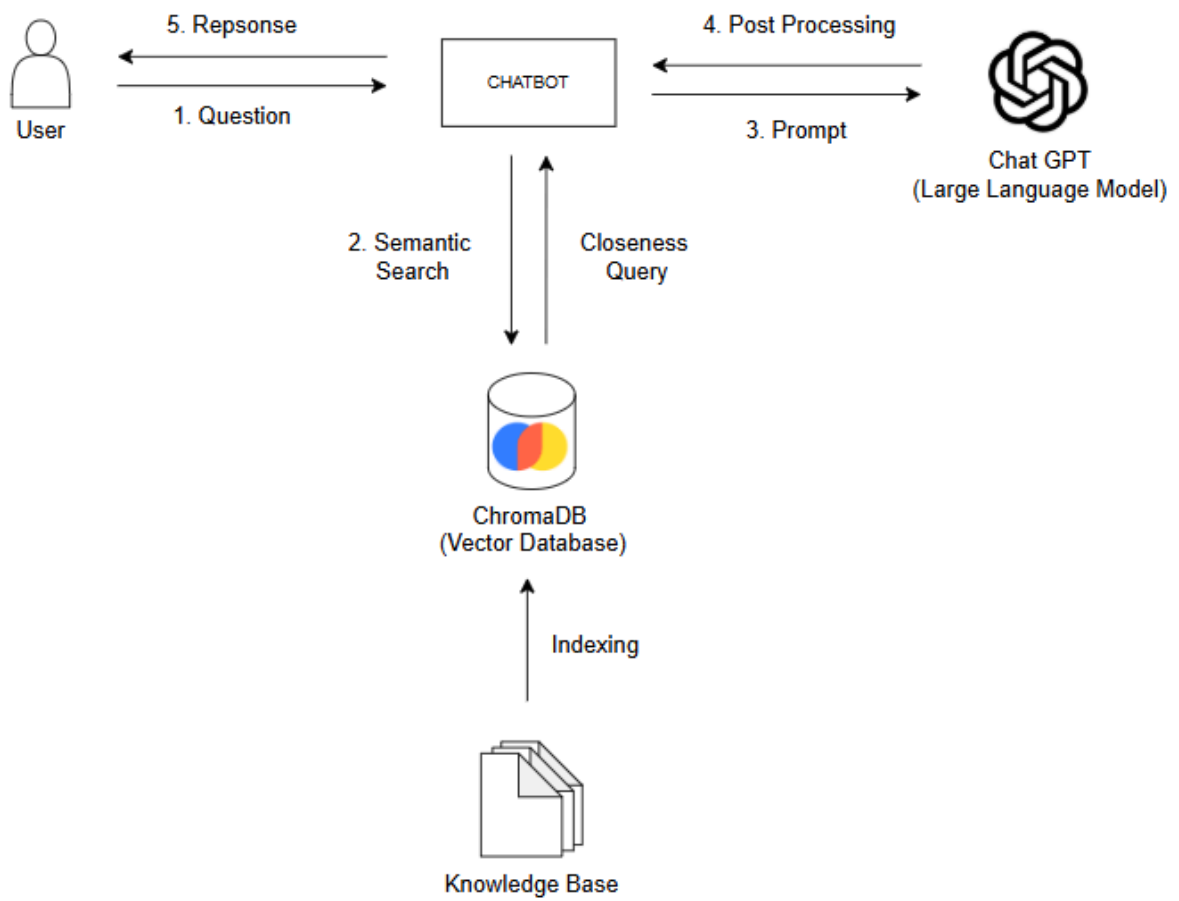
Figure 1.2: Retrieval-Augmented Generation (RAG) Architecture Model

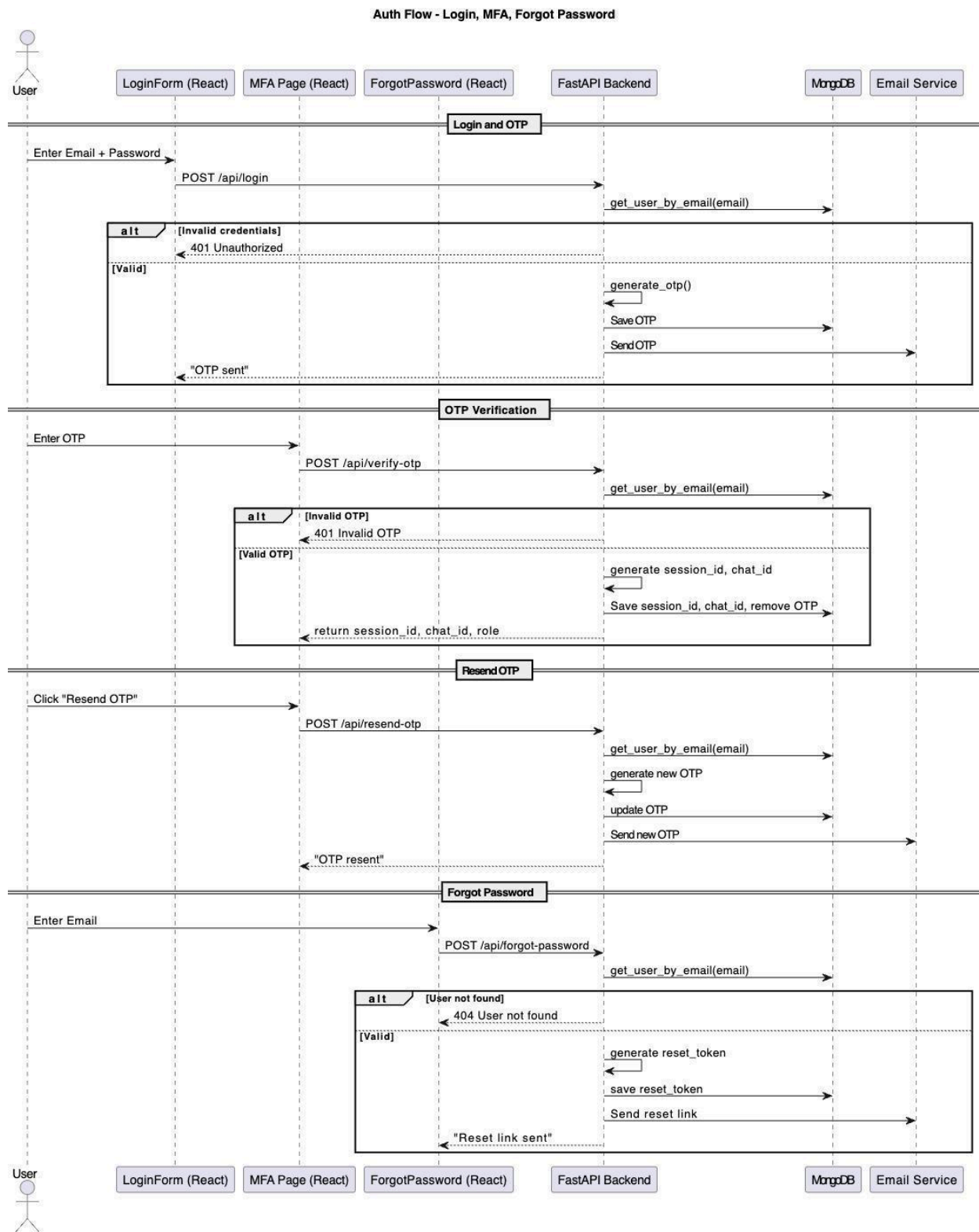## 2. System Interaction Diagram

Auth Flow - Login, MFA, Forgot Password

Figure 2.1: Login system interaction diagram
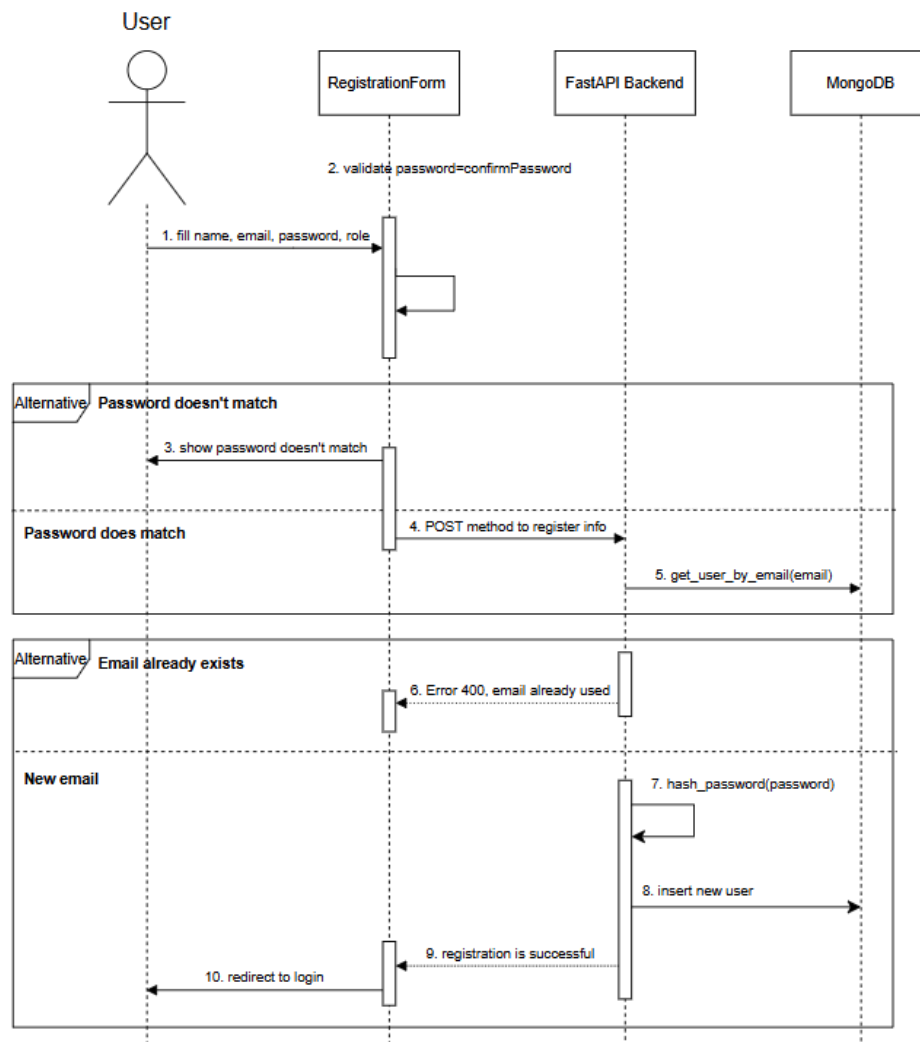
Figure 2.2: Registration system interaction diagram

Blog Submission Flow to Vector DB

User	BlogForm (React)		FastAPI Backend	Chroma Vector DB

Blog Submission

User → BlogForm: Fill blog fields

User → BlogForm: Click "Submit"

BlogForm → FastAPI Backend: POST /api/blogs {title, date, summary, intro, explanation, sessions[], takeaways[]}

Blog Processing

FastAPI Backend → Chroma Vector DB: get() → fetch all docs

Chroma Vector DB ⇢ FastAPI Backend: return metadata list

FastAPI Backend: Calculate next_id

FastAPI Backend: Format blog content

FastAPI Backend: Convert sessions[] and takeaways[] to JSON

Store in Vector DB

FastAPI Backend → Chroma Vector DB: add_texts(content, metadata)

alt [Storage success]

FastAPI Backend ⇢ BlogForm: Blog stored successfully with ID

[Error]

FastAPI Backend ⇢ BlogForm: 500 Failed to store blog

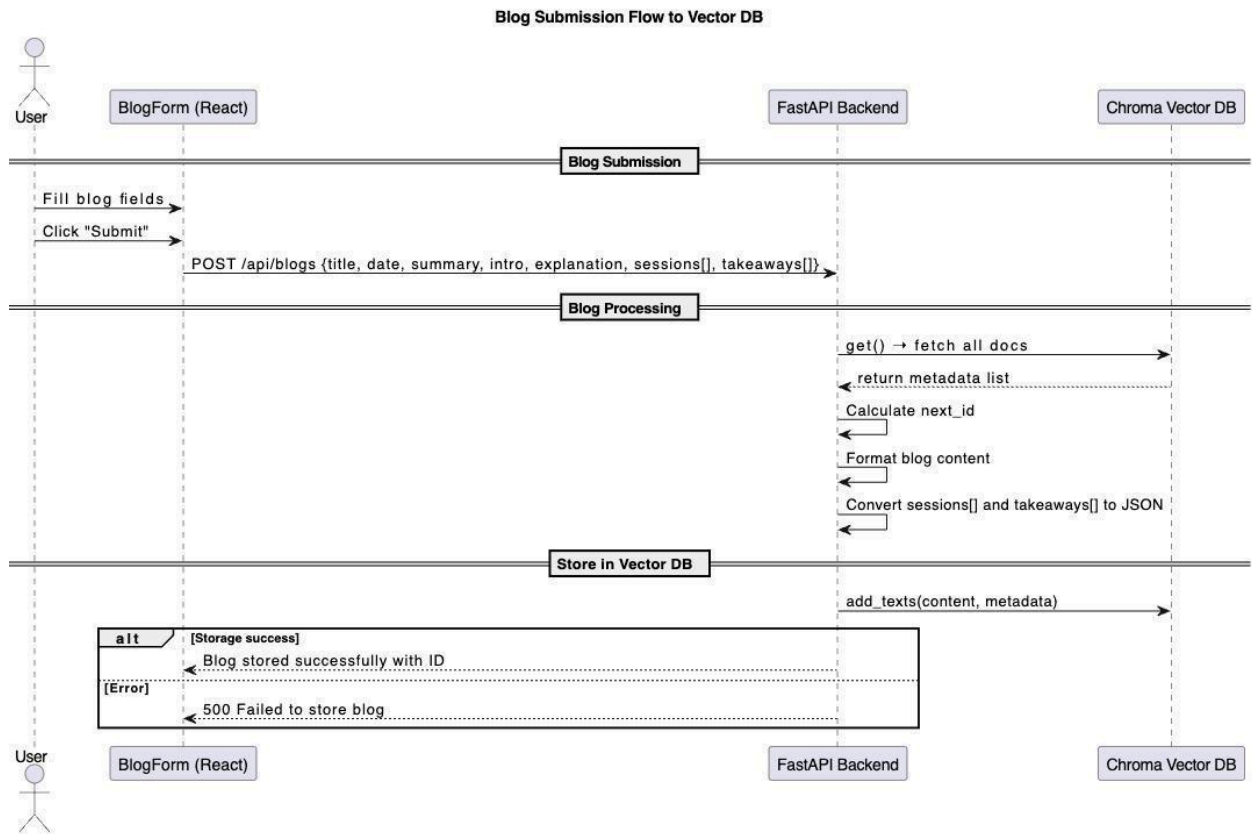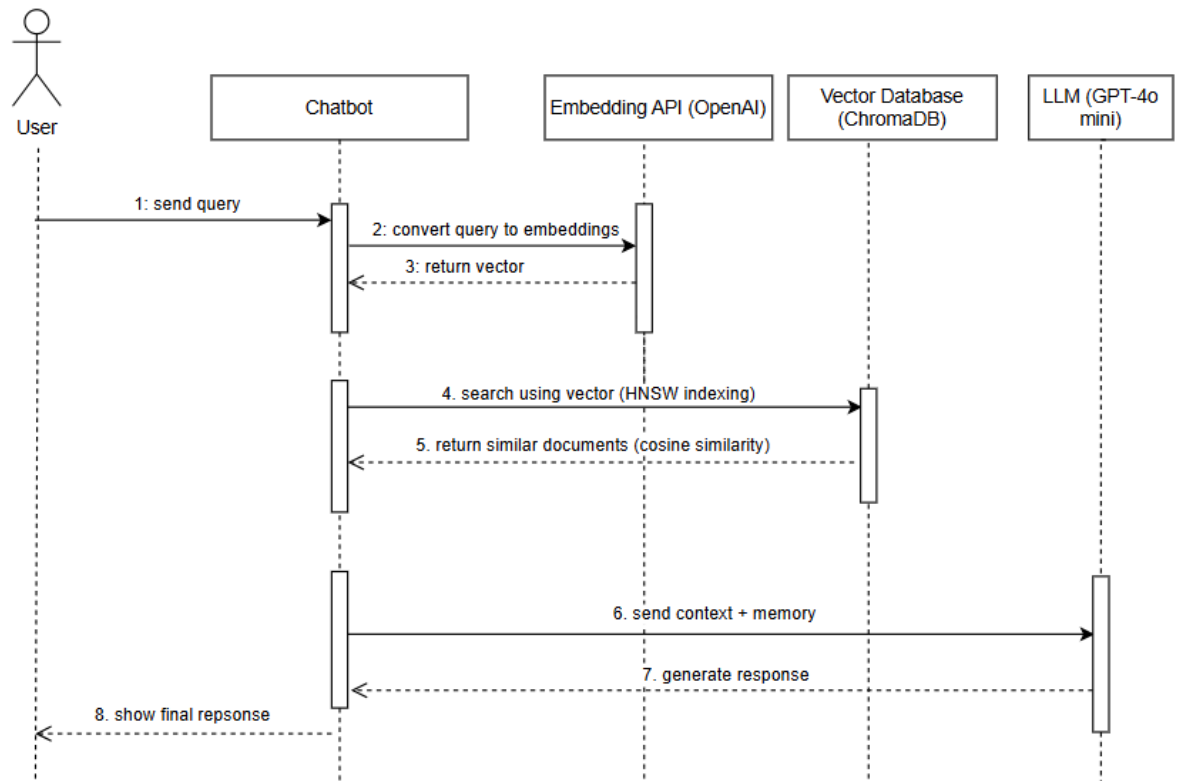| User	BlogForm (React)	FastAPI Backend	Chroma Vector DB

Figure 2.3: Create a new blog post system interaction diagram

Figure 2.4: Query with chatbot system interaction diagram