

Yarnit Case Study Round - Submission

Case study 1) Webpage Question Answering

The Webpage Question Answering API is built using FastAPI. FastAPI provides automatic generation of interactive API documentation, making it easy to understand and use.

Input Parameters

To use the Webpage Question Answering API, clients need to send a POST request to the /url endpoint with the following parameters:

- url (str): The URL of the webpage from which the answer will be extracted.
- question (str): The question to be answered based on the webpage content.

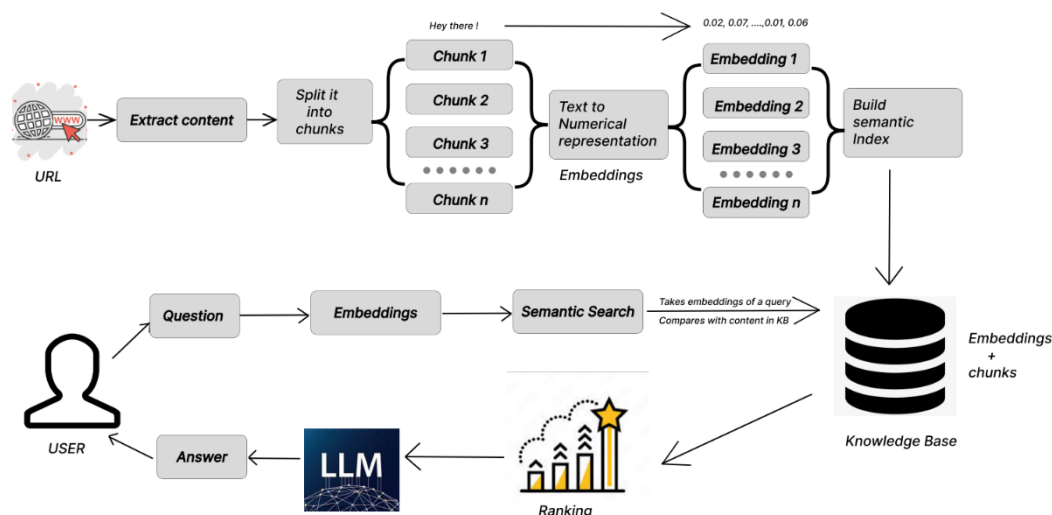
Response Generation:

Upon receiving the request parameters, the API leverages *Language model by OpenAI (GPT)* model to process the input and generate an answer to the provided question based on the content of the specified webpage. The model uses advanced natural language processing techniques to analyse the webpage content and extract relevant information to formulate an accurate response.

Deployment Instructions (Local)

1. Install the required dependencies by running
`pip install -r requirements.txt`
2. Set the OPENAI_API_KEY environment variable with your OpenAI API key.
3. Run the FastAPI application using
`uvicorn url-bot:app --reload`

Model Workflow: The below is the model diagram to get an idea of how each function is working and what each technique is doing.



Sample Input:

FastAPI 0.1.0 OAS 3.1
/openapi.json

default

POST /url AI Message Url

Parameters

No parameters

Request body required

application/json

```
{
  "url": "https://en.wikipedia.org/wiki/Generative_artificial_intelligence",
  "question": "What are the concerns around Generative AI?"
}
```

Execute

Sample Output:

Code	Details
200	<p>Response body</p> <pre>{ "Output": " Concerns around generative AI include potential misuse for cybercrime, the creation of fake news and deepfakes, and the replacement of human jobs. Bias in training data and resulting models is also a concern, as well as the potential for existential risks from artificial general intelligence. Guidelines and regulations are being developed to address these concerns." }</pre> <p>Response headers</p> <pre>content-length: 381 content-type: application/json date: Mon, 06 May 2024 11:26:05 GMT server: uvicorn</pre>

Case study 2) Generate Marketing Content

This API enables users to generate content for various platforms based on specified topics and tones. It leverages “*gpt-3.5 turbo*” model provided by OpenAI to generate well-structured, informative, and engaging content tailored to the target platform and topic.

Input Parameters

To use the API, send a POST request to the `/generate_content` endpoint with the following parameters:

- **platform name (str):** The name of the platform for which the content is being generated (e.g., Twitter, Instagram, LinkedIn, Snapchat, etc.)
- **topic (str):** The topic or subject matter for the content.
- **tone (str):** The desired tone or style for the content.
Available options: "Funny", "Informative", "Inspirational", "Personal ", "Conversational", "Formal", "Engaging ", "Visual ", "Storytelling", "Thought-provoking", "Other".
If the tone parameter is set to "Other", the user can provide a custom tone string through this parameter.
- **length (str):** The desired length of the content. Available options: "short", "medium", "long".

Response Generation

- The API leverages GPT model by OpenAI. The prompt for the language model is constructed using the `ChatPromptTemplate` class, which takes the input parameters and generates a prompt instructing the model to generate content based on the specified platform, topic, tone, and length.
- The `LLMChain` class is used to combine the prompt template and the language model, and the `StrOutputParser` is used to parse the generated output into a string format.

Deployment Instructions (Local)

1. Install the required dependencies by running
`pip install -r requirements.txt`
2. Set the `OPENAI_API_KEY` environment variable with your OpenAI API key.
3. Run the FastAPI application using
`uvicorn content-generator:app --reload`

Sample Input:

POST

/generate_content

Generate Content Api

^

Parameters

Cancel

Name	Description
<div>platform_name * required</div> <div>string</div> <div>(query)</div>	<div>Linkedin</div>
<div>topic * required</div> <div>string</div> <div>(query)</div>	<div>GenerativeAI</div>
<div>tone * required</div> <div>string</div> <div>(query)</div>	<div>Informative posts</div>
<div>length * required</div> <div>string</div> <div>(query)</div>	<div>short</div>

Sample Output:


Code

Details

200

Response body

```
{
  "content": "Exciting developments in the field of Generative AI are revolutionizing industries across the board! From creating realistic images and videos to generating human-like text, the possibilities are endless. As a content writer, I am fascinated by the potential of Generative AI to enhance creativity and streamline workflows.\n\nIf you're curious about how Generative AI can benefit your business or creative projects, I highly recommend diving into this cutting-edge technology. Stay tuned for more updates on the latest trends and applications in Generative AI!\n\n#GenerativeAI #AI #Innovation #Technology #Creativity"
}
```



Download

Response headers

content-length: 632

content-type: application/json

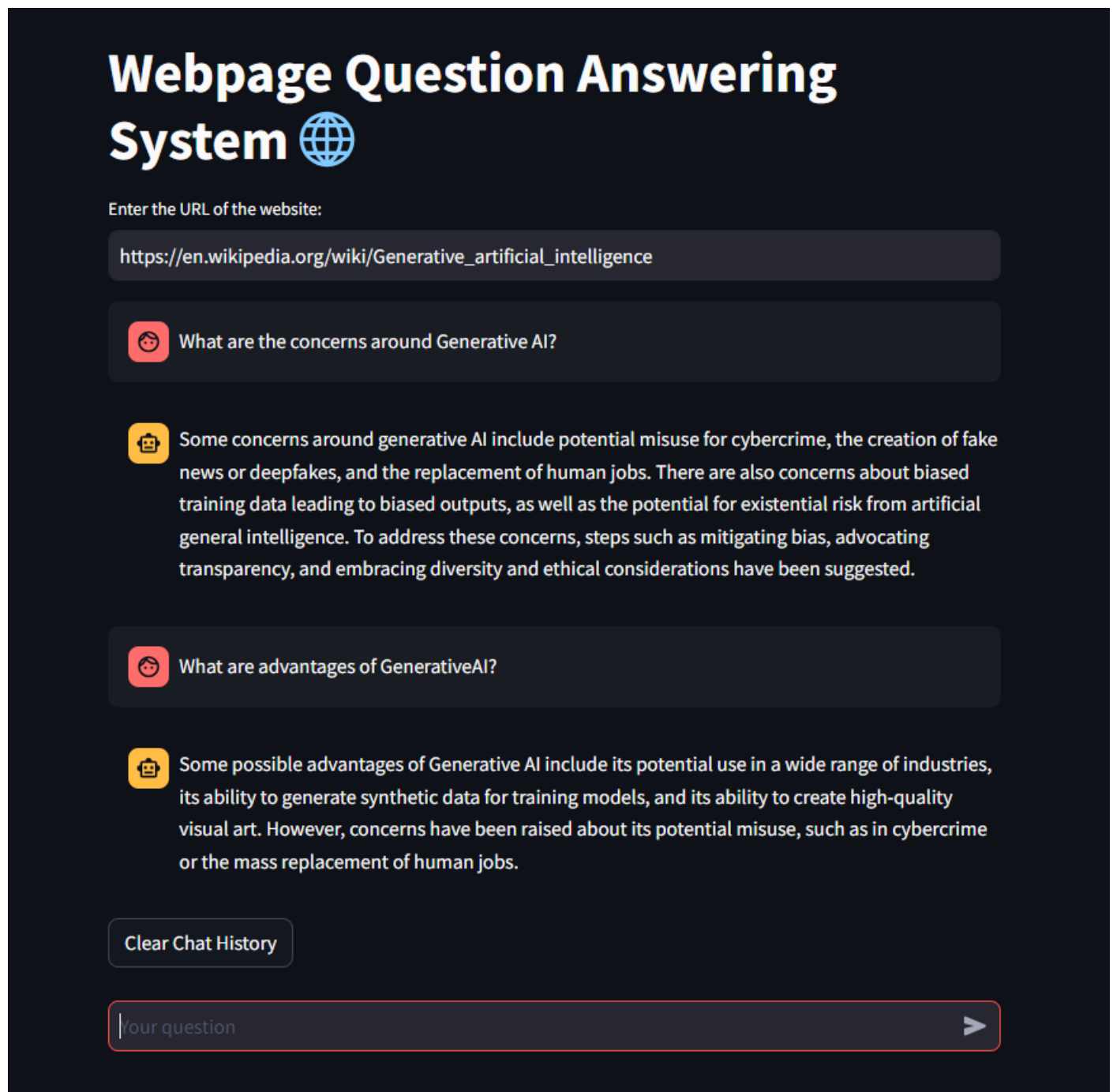
date: Mon, 06 May 2024 11:32:35 GMT

server: uvicorn

For both the case studies a sample UI is done using *Streamlit*. These are the screenshots of it.

If you want to check out the code, please visit the following Colab notebook links.

Link: [Webpage Question Answering](#)





The screenshot displays a web application titled "Webpage Question Answering System" with a globe icon. It features a dark theme. At the top, there is a text input field labeled "Enter the URL of the website:" containing the URL "https://en.wikipedia.org/wiki/Generative_artificial_intelligence". Below this is a chat interface. The first message is a user query: "What are the concerns around Generative AI?". The second message is a system response, preceded by a yellow robot icon, providing a detailed answer about concerns like misuse for cybercrime, fake news, and job replacement. The third message is another user query: "What are advantages of GenerativeAI?". The fourth message is a system response, also preceded by a yellow robot icon, listing advantages such as use in various industries, synthetic data generation, and high-quality visual art creation. At the bottom left, there is a "Clear Chat History" button. At the bottom right, there is a text input field with the placeholder "Your question" and a right-pointing arrow button.


Webpage Question Answering System


Enter the URL of the website:

https://en.wikipedia.org/wiki/Generative_artificial_intelligence


 What are the concerns around Generative AI?

 Some concerns around generative AI include potential misuse for cybercrime, the creation of fake news or deepfakes, and the replacement of human jobs. There are also concerns about biased training data leading to biased outputs, as well as the potential for existential risk from artificial general intelligence. To address these concerns, steps such as mitigating bias, advocating transparency, and embracing diversity and ethical considerations have been suggested.

 What are advantages of GenerativeAI?

 Some possible advantages of Generative AI include its potential use in a wide range of industries, its ability to generate synthetic data for training models, and its ability to create high-quality visual art. However, concerns have been raised about its potential misuse, such as in cybercrime or the mass replacement of human jobs.

[Clear Chat History](#)




Link: Generate Marketing Content


Content Generator

Enter the platform name

Select the tone of your post



Informative posts 

Select the length of your post

short 

Enter the topic




Generate Content

 Excited to dive into the world of Generative AI!  ✨

Did you know that Generative AI is revolutionizing industries by creating art, music, and even generating realistic human faces? The possibilities are endless with this cutting-edge technology! 💡 ☀️

Whether you're a tech enthusiast, a creative mind, or simply curious about the future, Generative AI is reshaping the way we interact with technology. Let's explore together and unlock the potential of AI creativity! 🎨 🎵

#GenerativeAI #ArtificialIntelligence #Innovation #TechTrends #LinkedInLearning

Join me on this exciting journey of discovery and let's embrace the power of Generative AI!   

***Please make sure to replace the OpenAI API key**