Infosys
Responsible AI Office

Infosys Responsible AI Toolkit

Retrieval Augmented Generation (RAG) – Information Retrieval and Hallucination Detection

API usage Instructions

Contents

Introduction

Following Set of endpoints primarily focused on information retrieval from uploaded files leveraging LLM capabilities and detecting hallucinations through various methods.

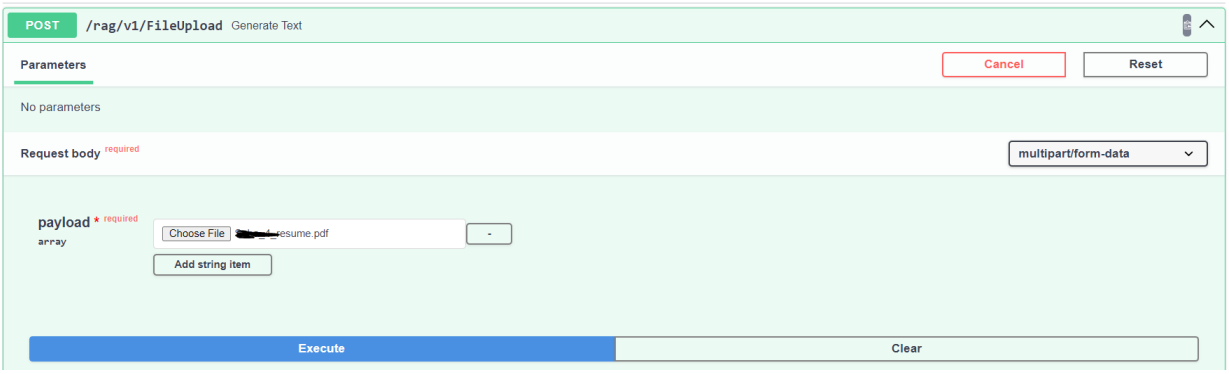
Once API swagger page is populated as per instructions given in the github repository Readme file, click on 'try it out' to use required endpoints. Details of endpoints associated with hallucination repository are outlined below.

FileUpload

Endpoint: /rag/v1/FileUpload

It is used to upload document with pdf format and return vectorestoreid of vectorestore and blobname for the pdf.

Input Payload:

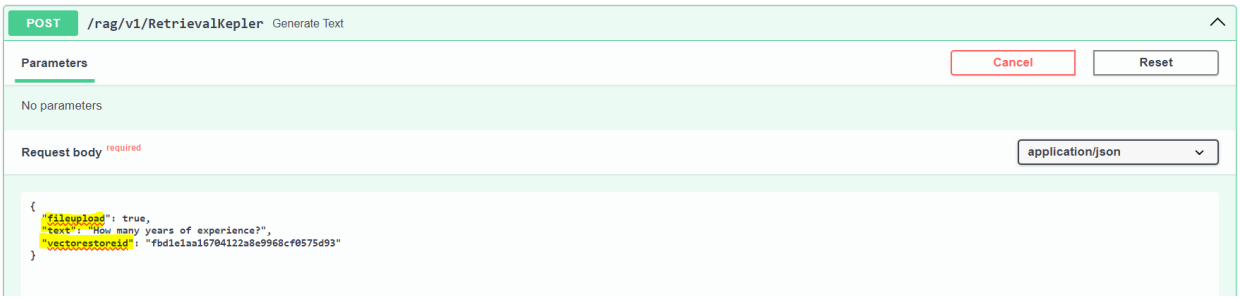


RetrievalKepler

Endpoint: /rag/v1/RetrievalKepler

This will take keys FileUpload(True if using File Upload else False when using Vectorestore Caching), text, vectorestoreid as Input and will return a rag response along with the score.

Input Payload:

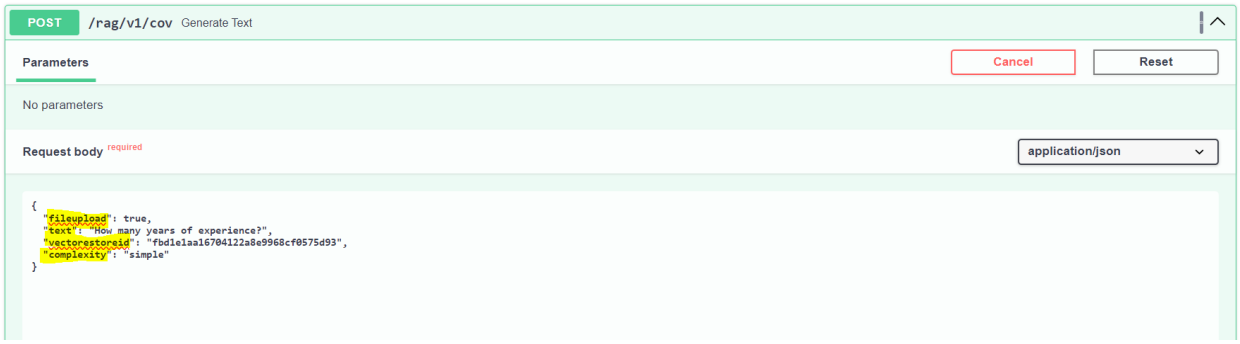


Chain of Verification (CoVe)

Endpoint: /rag/v1/cov

This will take keys FileUpload(True if using File Upload else False when using Vectorestore Caching), text, and vectorestoreid as Input and will return the response with 5 more variants of questions generated by LLM to verify the answer and a refined final response.

Input Payload :

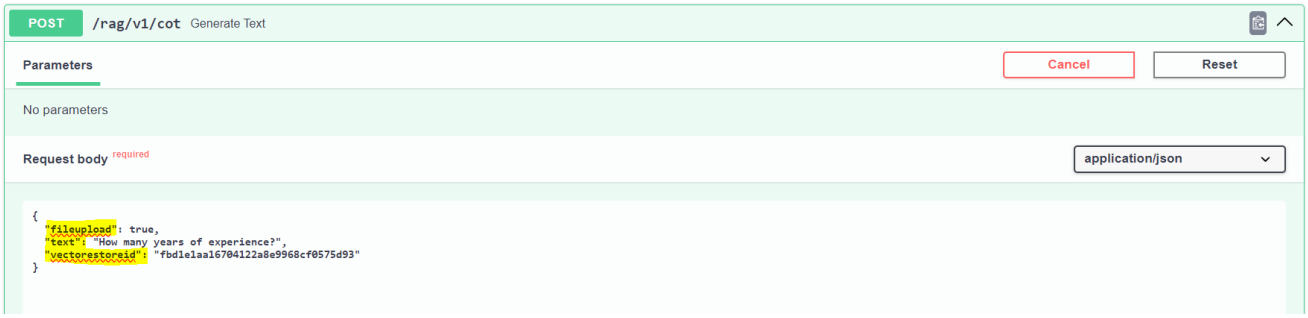


Chain of thought (CoT)

Endpoint: /rag/v1/cot

This will take keys FileUpload(True if using File Upload else False when using Vectorestore Caching), text, vectorestoreid as Input and will return the response.
Chain of Thought response provides you explanation steps and reasoning behind and from where (source referred which document)

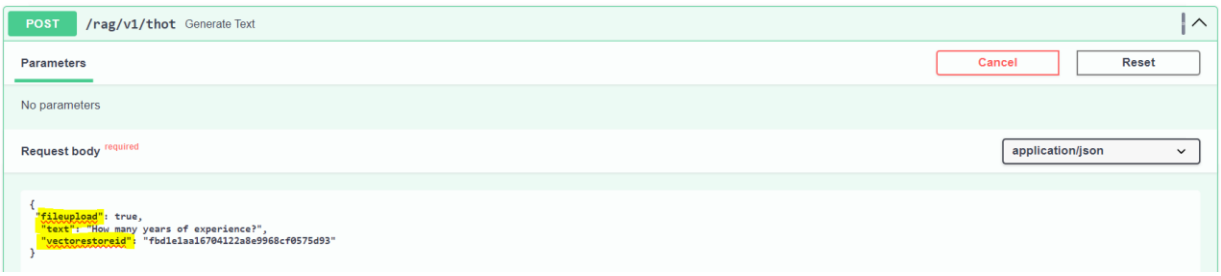
Input Payload:



Thread of Thought(ThoT)

Endpoint: /rag/v1/thot

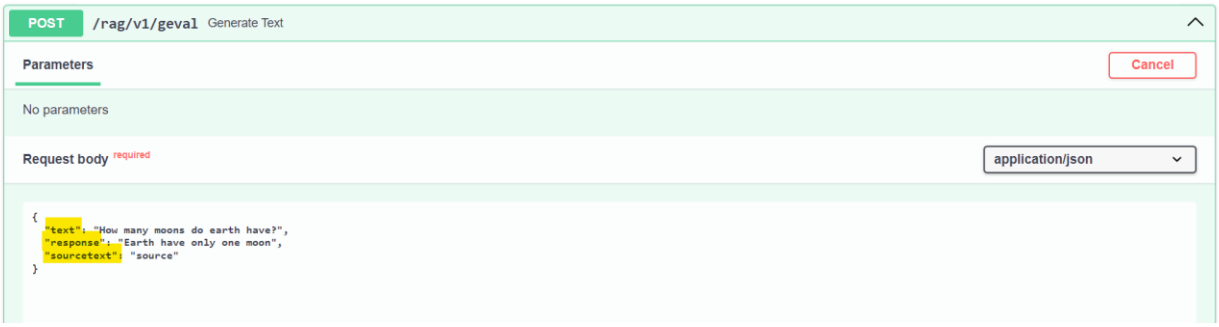
This will take keys FileUpload(True if using File Upload else False when using Vectorestore Caching), text, vectorestoreid as Input and will return Chain of verification response.
Thot is efficient in more descriptive and complex information spread over the file.
Input Payload :



G-Eval

Endpoint: /rag/v1/geval

This will take the take keys FileUpload(True if using File Upload else False when using Vectorestore Caching), text, vectorestoreid as Input and will return the response. G-Evaluation specifically metrics(faithfulness, Correctness, relevance and adherence) focused on factual grounding. These metrics assess the alignment of the generated text with real-world information and can help detect hallucinations



Caching

Endpoint: /rag/v1/caching

This will take blobname which is generated while uploading file and return a array of length 2. First element will be the Cache id, Second element will be the Cache id which is removed from the cache if cache is full else 0.

Input Payload:

POST /rag/v1/caching Generate Text

Parameters Cancel Reset

No parameters

Request body required application/json

```
{
  "blobname": [
    "Saba_4_resume_091c46bc-3d04-4dba-8a34-1f7505914c3d.pdf"
  ]
}
```

RemoveCache

Endpoint: /rag/v1/removeCache

It will take input as cache id and will remove the cached Vectorestore from the Cache.

Input Payload:

POST /rag/v1/removeCache Generate Text

Parameters Cancel Reset

No parameters

Request body required application/json

```
{
  "id": 2596641739136
}
```

Show_Score

Endpoint: /rag/v1/Show_Score

This will take input as Prompt, response which RetrivalKepler gave, SourceArr which is nothing but page content from RetrievalKepler as Input and Will return Hallucination Score.

Input Payload:

POST /rag/v1/Show_Score Generate Text

Parameters

Cancel Reset

No parameters

Request body required

application/json


```
{
  "prompt": "year of experience",
  "response": "4 years of experience in relevant fields",
  "sourcearr": [
    "Summary  ▯ 4 years  of experience in analysis, python , Machine Learning, Predictive Analysis, NLP and Deep  Learning, Devops, AWS -EKS/S3, CI/CD .    ▯ Experience in identifying and fixing
application security vulnerabilities  like application service  container vulnerabilities, SAST, SonarQube .   ▯ Created web API's  using python in Django framework . Dockerized application micro
services .  ▯ Developed document extraction POCs using our AI Application    ▯ Created Swagger for application in Django  for consumption by external clients  to know API  details .  ▯ Experience in
working with multiple vendors and multiple  teams .    Key Domain and Technical Knowledge   ▯ Domain   : Data Science, AI, Cloud, DEVOPS , Automation   ▯ Technical  :  Python, Machine Learning, NLP,
Deep Learning,  Database - MySQL,  MongoDB,  Docker, AWS – S3, EKS , Textract, RPA -Assist Edge, GENAI (learning)    Total Work Experience: ▯ Technical  :  Python, Machine Learning, NLP, Deep
Learning,  Database - MySQL,  MongoDB,  Docker, AWS – S3, EKS , Textract, RPA -Assist Edge, GENAI (learning)    Total Work Experience:    Company: Infosys                    Period : April  2022  to
Present     Project Title: IECP Homegrown AI Product     Description : IECP (Infosys Enterprise Cognitive Platform), this platform provides API based services for  multiple use case(s) including
image, voice, video, OCR, digital automation, text analytics  by combining  application of ML, Cognitive, NLP, and AI principles and technique.    Role and Responsibilities :   ▯ Collaborated with a
prestigious investment management company to implement advance  document extraction capabilities using AI product .  ▯ Developed document extraction POCs using IECP AI product using frameworks Django,
PyTorch, TensorFlow, Keras .  ▯ Employed cutting -edge technologies including OCR (Optical Character Recognition) to atleast of 80% as per SONAR policies.   ▯ Creation Low level design documents which
include  class and sequence diagram.  Also,  use-case based PDD & SDD   ▯ Participated in code and design reviews for code quality impr ovements  ensuring a  smooth transition between development,
testing, deployment phases.  Munshi Saba Farheen                Contact Number: 9347754957                    Email id :  saba.munshi97@gmailcom
Current Location:   Hyderabad                LinkedIn  : linkedin.com/in/saba -farheen -munshi -a85a98149       Role Designation:   Associate Consultant relationships.   ▯ Gathered Data from RDS and
Redshift, applied Data Cleaning and Feature Engineering  over data.  ▯ Implemented various time series forecasting techniques to predict alerts caused by  refrigeration failure.   ▯ Develop action
plans to mitigate risks in decision making while increasing profitability by  Leveraging Data Science.    Company: Pantech Solutions Pvt L td.              Period : Jan 2020  to Aug 2021    Role and
Responsibilities :   ▯ Developed 35+ engineering projects in the Machine Learning domain.   ▯ Performed system analysis, documentation, testing, implementation.      Academic Qualification  : Master's
```


Execute Clear