

## Generative AI Search Engine

Python code

```
import streamlit as st
import openai
import pytesseract
from PIL import Image
import pdfplumber
import requests
from bs4 import BeautifulSoup
import urllib.parse
import io
from wordcloud import WordCloud
import matplotlib.pyplot as plt

# Keys
openai.api_key = "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"

pytesseract.pytesseract.tesseract_cmd = r"C:\\Program Files\\Tesseract-OCR\\tesseract.exe"

st.set_page_config(page_title="GenAI Search", layout="wide")

# App Title
st.title("🌐 GenAI Search — Smart Info Finder from Text, Links, Images & PDFs")
st.markdown("Get intelligent summaries and related links from any kind of input.")

# Session state
for key in ["history", "favorites"]:
    if key not in st.session_state:
        st.session_state[key] = []
```

```

# Sidebar Controls

with st.sidebar:

    st.header("🔍 Input Settings")

    input_type = st.selectbox("Input Type", ["Text", "Link", "Image", "PDF"])

    search_engine = st.selectbox("Search Engine", ["DuckDuckGo", "Google (Mock)"])

    temperature = st.slider("AI Creativity (Temperature)", 0.0, 1.0, 0.7)

    show_summary = st.checkbox("Summarize Response", value=True)

    st.markdown("### 🌐 Translation")

    translate = st.checkbox("Translate Output")

    if translate:

        target_language = st.selectbox("Select Language", ["Hindi", "French", "Tamil", "Spanish",
        "German"])

        st.markdown("---")

        if st.button("Clear Session"):

            st.session_state.history.clear()

            st.session_state.favorites.clear()

            st.experimental_rerun()

# Text Extraction

def extract_text_from_image(img):

    return pytesseract.image_to_string(img)

def extract_text_from_pdf(file):

    text = ""

    with pdfplumber.open(file) as pdf:

        for page in pdf.pages:

            page_text = page.extract_text()

            if page_text:

                text += page_text + "\n"

    return text

```

```
# Search Results

def get_search_links(query, max_results=3):

    if search_engine == "DuckDuckGo":

        headers = {"User-Agent": "Mozilla/5.0"}

        url = f"https://duckduckgo.com/html/?q={urllib.parse.quote_plus(query)}"

        soup = BeautifulSoup(requests.get(url, headers=headers).text, "html.parser")

        return [(a.text.strip(), a.get("href")) for a in soup.find_all("a", class_="result__a",
limit=max_results)]

    else:

        # Mock Google-style results

        return [

            (f"Google Result 1 for {query}", "https://example.com/1"),
            (f"Google Result 2 for {query}", "https://example.com/2"),
            (f"Google Result 3 for {query}", "https://example.com/3"),
        ]
```

```
# Summarize
```

```
def summarize_output(text):

    prompt = f"Summarize the following in bullet points:\n\n{text}"

    summary = openai.ChatCompletion.create(
        model="gpt-3.5-turbo",
        messages=[{"role": "user", "content": prompt}],
        temperature=0.3
    )

    return summary.choices[0].message.content
```

```
# Translate Output
```

```
def translate_output(text, language):
```

```
prompt = f"Translate the following into {language}:\n\n{text}"  
translation = openai.ChatCompletion.create(  
    model="gpt-3.5-turbo",  
    messages=[{"role": "user", "content": prompt}],  
    temperature=0.3  
)  
return translation.choices[0].message.content  
  
# Word Cloud  
  
def display_wordcloud(text):  
    wordcloud = WordCloud(width=800, height=400, background_color="white").generate(text)  
    fig, ax = plt.subplots(figsize=(10, 5))  
    ax.imshow(wordcloud, interpolation="bilinear")  
    ax.axis("off")  
    st.pyplot(fig)  
  
# Input Handling  
user_input = ""  
if input_type == "Text":  
    user_input = st.text_area("Enter your query")  
elif input_type == "Link":  
    user_input = st.text_input("Paste a link")  
elif input_type == "Image":  
    img_file = st.file_uploader("Upload an image", type=["png", "jpg", "jpeg"])  
    if img_file:  
        img = Image.open(img_file)  
        st.image(img, width=300)  
        user_input = extract_text_from_image(img)  
elif input_type == "PDF":  
    pdf_file = st.file_uploader("Upload PDF", type="pdf")
```

```
if pdf_file:
    user_input = extract_text_from_pdf(pdf_file)

# Run GenAI

if st.button("🚀 Run GenAI") and user_input.strip():
    with st.spinner("Thinking..."):
        prompt = f"Act as an intelligent search engine. Provide helpful and organized info about: {user_input}"
        try:
            response = openai.ChatCompletion.create(
                model="gpt-3.5-turbo",
                messages=[{"role": "user", "content": prompt}],
                temperature=temperature
            )
            output = response.choices[0].message.content
            st.subheader("🧠 GenAI Output")
            st.write(output)

# Summary (optional)

if show_summary:
    st.markdown("### 📄 Summary")
    summary_text = summarize_output(output)
    st.write(summary_text)

# Word Cloud

st.markdown("### 📊 Visual Summary (Word Cloud)")
display_wordcloud(summary_text)

# Translation

if translate:
    st.markdown(f"### 🌎 Translated Summary ({target_language})")
```

```
translated_summary = translate_output(summary_text,target_language)
st.write(translated_summary)

# Save to history
st.session_state.history.append(("Search", user_input, output))

# Related Links
st.markdown("### 🔗 Related Links")
for title, link in get_search_links(user_input):
    st.markdown(f"- [{title}](#{link})")

# Download
buffer = io.StringIO()
buffer.write(output)
st.download_button("📥 Download Result", buffer.getvalue(), file_name="genai_output.txt")

# Favorite
if st.button("⭐ Save to Favorites"):
    st.session_state.favorites.append(("Search", user_input, output))
    st.success("Saved to favorites!")

except Exception as e:
    st.error(f"Error: {e}")

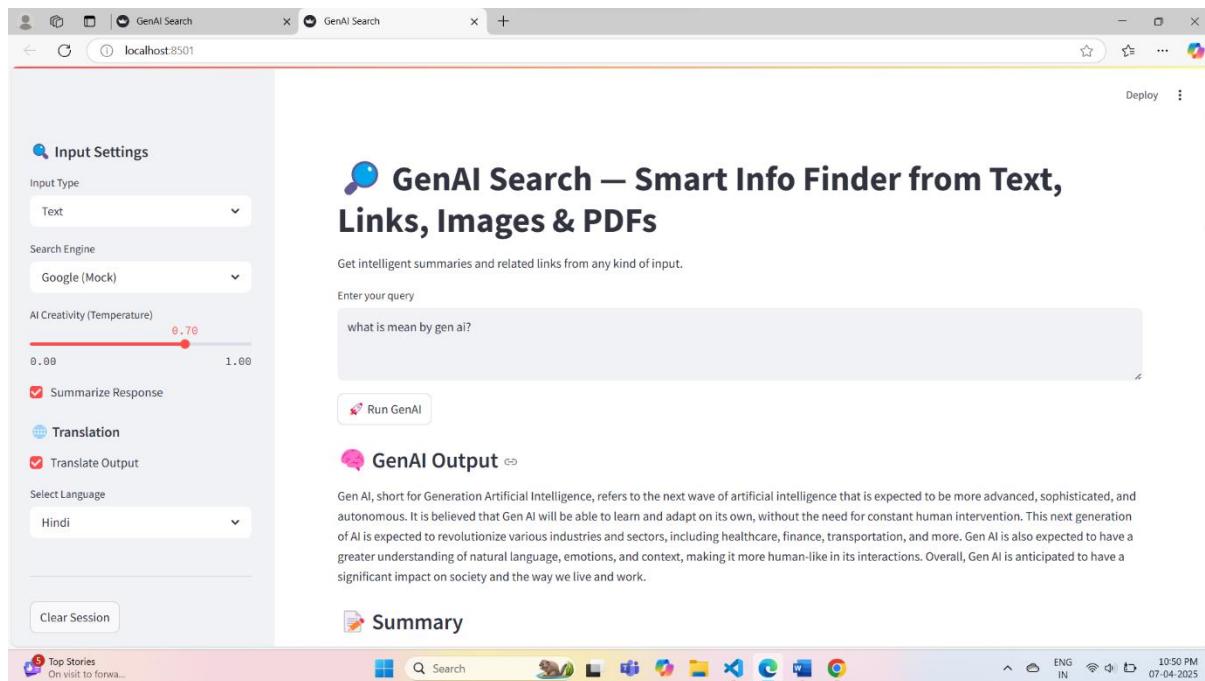
# Show History
if st.session_state.history:
    st.markdown("---")
    st.subheader("📋 Search History")
    for m, q, o in reversed(st.session_state.history[-5:]):
        with st.expander(f"{m}: {q[:40]}..."):
            st.write(o)
```

```
# Favorites
```

```
if st.session_state.favorites:  
    st.markdown("---")  
    st.subheader("⭐ Favorites")  
    for i, (m, q, o) in enumerate(st.session_state.favorites):  
        with st.expander(f"{i+1}. {m}: {q[:40]}..."):  
            st.write(o)
```

output:

when we upload a text:



GenAI Search GenAI Search localhost:8501 Deploy

### Input Settings

Input Type: Text  
Search Engine: Google (Mock)  
AI Creativity (Temperature): 0.70  
 Summarize Response  
 Translation  
 Translate Output  
Select Language: Hindi  
Clear Session

### GenAI Output

Gen AI, short for Generation Artificial Intelligence, refers to the next wave of artificial intelligence that is expected to be more advanced, sophisticated, and autonomous. It is believed that Gen AI will be able to learn and adapt on its own, without the need for constant human intervention. This next generation of AI is expected to revolutionize various industries and sectors, including healthcare, finance, transportation, and more. Gen AI is also expected to have a greater understanding of natural language, emotions, and context, making it more human-like in its interactions. Overall, Gen AI is anticipated to have a significant impact on society and the way we live and work.

### Summary

- Gen AI refers to the next wave of artificial intelligence
- Expected to be more advanced, sophisticated, and autonomous
- Able to learn and adapt on its own without constant human intervention
- Expected to revolutionize industries such as healthcare, finance, transportation, etc.
- Greater understanding of natural language, emotions, and context
- More human-like interactions
- Anticipated to have a significant impact on society and the way we live and work

### Visual Summary (Word Cloud)



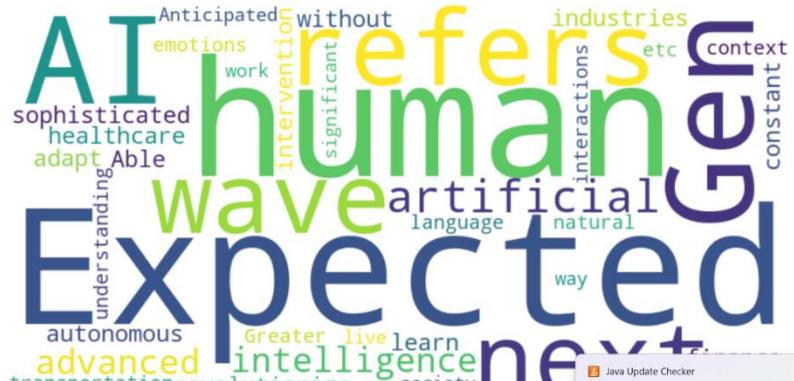
Top Stories On visit to forward... 10:50 PM 07-04-2025 ENG IN

GenAI Search GenAI Search localhost:8501 Deploy

### Input Settings

Input Type: Text  
Search Engine: Google (Mock)  
AI Creativity (Temperature): 0.70  
 Summarize Response  
 Translation  
 Translate Output  
Select Language: Hindi  
Clear Session

### Visual Summary (Word Cloud)



### Translated Summary (Hindi)

Java Update Checker Java Update Available A new version of Java is ready to be installed. Click here to continue.

31°C Mostly clear 10:51 PM 07-04-2025 ENG IN

The screenshot shows the GenAI Search application running locally at [localhost:8501](http://localhost:8501). On the left, the **Input Settings** panel is open, showing "Text" selected as the input type, "Google (Mock)" as the search engine, and an AI Creativity (Temperature) slider set to 0.70. Other options like "Summarize Response" and "Translation" are checked. The main area displays the **Translated Summary (Hindi)** for the query "what is mean by gen ai?". It lists several bullet points in Hindi, such as "जेन एआई अर्थात् आगामी कृतिम बुद्धिमता की अगली लहर को संदर्भित करता है" and "अधिक उन्नत, विविध और स्वतंत्र होने की उम्मीद है". Below the summary is a **Related Links** section with three links to Google search results for the same query, and buttons for "Download Result" and "Save to Favorites". The system status bar at the bottom indicates it's "RUNNING...".

When we upload a url:

The screenshot shows the GenAI Search application running locally at [localhost:8501](http://localhost:8501). The **Input Settings** panel is open with "Link" selected as the input type, "Google (Mock)" as the search engine, and an AI Creativity (Temperature) slider set to 0.70. The main area features a large **GenAI Search – Smart Info Finder from Text, Links, Images & PDFs** header. Below it, a sub-header reads "Get intelligent summaries and related links from any kind of input." A text input field contains the URL <https://vtucircle.com/>, and a "Run GenAI" button is visible. A progress indicator shows "Thinking...". The **GenAI Output** section provides information about VTU Circle, stating it is a website for students of Visvesvaraya Technological University (VTU) in Karnataka, India, offering exam updates, syllabus information, study materials, placement updates, and news. It highlights key features like exam updates, syllabus information, and study materials. The system status bar at the bottom indicates it's "RUNNING...".

Some of the key features of VTU Circle include:

1. Exam updates: The website provides timely updates on exam schedules, results, and revaluation procedures for VTU students.
2. Syllabus information: Students can find detailed information about the syllabus for various courses offered by VTU on the website.
3. Study materials: VTU Circle offers study materials, notes, and question papers to help students prepare for their exams.
4. Placement updates: The website provides information about job opportunities, internships, and campus recruitment drives for VTU students.
5. News and updates: VTU Circle keeps students informed about the latest news and events happening in and around VTU.

Overall, VTU Circle serves as a valuable resource for VTU students by providing them with important information and resources to help them succeed in their academic and professional endeavors.

## Summary

- VTU Circle provides information and resources for students studying in Visvesvaraya Technological University in Karnataka, India
- Services offered include exam updates, syllabus information, study materials, placement updates, and news related to VTU
- Key features include exam updates, syllabus information, study materials, placement updates, and news and updates
- Provides timely updates on exam schedules, results, and revaluation procedures
- Offers detailed information about the syllabus for various courses
- Provides study materials, notes, and question papers to help students prepare for exams
- Offers information about job opportunities, internships, and campus recruitment drives
- Keeps students informed about the latest news and events happening in and around VTU
- Serves as a valuable resource for VTU students to succeed in academic and professional endeavors

The screenshot shows the GenAI Search application running on a Windows desktop. The left sidebar contains input settings for 'Link' type, search engine 'Google (Mock)', AI Creativity (Temperature at 0.70), and language selection for 'Hindi'. The main content area displays a 'Translated Summary (Hindi)' for a query about Indian Prime Minister Narendra Modi. Below the summary are 'Related Links' to Google search results for the query. The taskbar at the bottom shows the weather (31°C, Mostly clear), system icons, and the date/time (10:57 PM, 07-04-2025).

**Input Settings**

- Input Type: Link
- Search Engine: Google (Mock)
- AI Creativity (Temperature): 0.70
- Summarize Response:
- Translation:
- Translate Output:
- Select Language: Hindi

**Translated Summary (Hindi)**

- वीरीय संस्कृत विश्वविद्यालय में अध्ययनरत छात्रों के लिए सुरक्षा और संसाधन प्रदान करता है, जो कनटक, भारत में स्थित है।
- प्रदान की जाने वाली सेवाएं परीक्षा अपडेट, पाठ्यक्रम सूचना, अध्ययन सामग्री, लेसर्चेट अपडेट, और वीटोडू से संबंधित समाचार शामिल हैं।
- मुख्य विशेषताएं परीक्षा अपडेट, पाठ्यक्रम सूचना, अध्ययन सामग्री, लेसर्चेट अपडेट, और समाचार और अपडेट शामिल हैं।
- परीक्षा कार्यक्रम, परीक्षण, और पुस्तकालयकर्ता के बारे में विस्तृत जानकारी प्रदान करता है।
- परीक्षा की तीयारी में छात्रों की मदद के लिए अध्ययन सामग्री, नोट्स, और प्रश्न पत्र प्रदान करता है।
- जानकारी के अवलोकन, इंटर्नेशन, और कैप्पस भर्ती अभियान के बारे में जानकारी प्रदान करता है।
- वीटोडू में हो रही नवीनतम समाचार और घटनाओं के बारे में छात्रों को सुचित रखता है।
- वीटोडू के छात्रों के लिए एक मुख्यवान संसाधन के रूप में काम करता है, जिससे वे शैक्षिक और पैशेवर प्रयासों में सफल हो सकें।

**Related Links**

- [Google Result 1 for https://vtucircle.com/](#)
- [Google Result 2 for https://vtucircle.com/](#)
- [Google Result 3 for https://vtucircle.com/](#)

[Download Result](#) [Save to Favorites](#)

31°C Mostly clear Search Deploy ENG IN 10:57 PM 07-04-2025

When we upload a pdfs

The screenshot shows the GenAI Search application running on a Windows desktop. The left sidebar contains input settings for 'PDF' type, search engine 'Google (Mock)', AI Creativity (Temperature at 0.70), and language selection for 'Hindi'. The main content area displays a 'GenAI Search — Smart Info Finder from Text, Links, Images & PDFs' header, followed by a summary of a research article titled "AI-Driven Personalized Learning Systems: Enhancing Educational Effectiveness". The summary highlights how AI techniques like machine learning, natural language processing, and knowledge representation can create adaptive learning experiences. Below the summary is a section for 'Key points covered in the article include:'. The taskbar at the bottom shows the weather (31°C, Mostly clear), system icons, and the date/time (10:58 PM, 07-04-2025).

**Input Settings**

- Input Type: PDF
- Search Engine: Google (Mock)
- AI Creativity (Temperature): 0.70
- Summarize Response:
- Translation:
- Translate Output:
- Select Language: Hindi

**GenAI Search — Smart Info Finder from Text, Links, Images & PDFs**

Get intelligent summaries and related links from any kind of input.

Upload PDF

Drag and drop file here Limit 200MB per file • PDF [Browse files](#)

paper1 (1).pdf 239.3KB [X](#)

[Run GenAI](#)

**GenAI Output**

This research article titled "AI-Driven Personalized Learning Systems: Enhancing Educational Effectiveness" explores the current state and future potential of AI-driven personalized learning systems in education. It discusses how AI techniques such as machine learning, natural language processing, and knowledge representation can be used to create adaptive learning experiences that optimize educational outcomes. The paper reviews existing research on AI in education, discusses key technologies and architectures for personalized learning systems, and presents case studies of successful implementations.

Key points covered in the article include:

31°C Mostly clear Search Deploy ENG IN 10:58 PM 07-04-2025

The article concludes by emphasizing the need for multidisciplinary collaboration, ethical and responsible AI practices, and ongoing research and development to fully realize the potential of AI-driven personalized learning in education.

### Summary

- AI-driven personalized learning systems can optimize educational outcomes by tailoring instruction to individual students' needs
- AI applications in education include intelligent tutoring systems, adaptive learning platforms, automatic grading, and personalized content recommendation
- AI technologies such as machine learning, natural language processing, and knowledge representation are used for personalized learning
- Pedagogical and psychological foundations inform the design of personalized learning
- Case studies show successful implementations of AI-driven personalized learning in math, language learning, and adaptive learning platforms
- Challenges include data privacy, algorithmic bias, human-AI collaboration, and oversight
- Future directions include research priorities for advancing AI-driven personalized learning in education, emphasizing multidisciplinary collaboration and ethical AI practices.

### Visual Summary (Word Cloud)

### Translated Summary (Hindi)

- एआई-संचालित व्यक्तिगत शिक्षा प्रणालियों शिक्षा परिणामों को अनुकूलित कर सकती है जिससे व्यक्तिगत छात्रों की आवश्यकताओं के अनुसार शिक्षा को अनुकूलित किया जा सकता है।
- शिक्षा में एआई प्रारंभिक भौतिक लूटरिंग प्रणालियों, अनुकूलित शिक्षा लेटरफॉर्म, स्वचालित ग्रेडिंग, और व्यक्तिगत समझी सिफारिश शामिल हैं।
- मध्यम लाइन, प्रारंभिक भौतिक प्रसंस्करण, और ज्ञान प्रारंभिक जैसे एआई प्रोग्रामों व्यक्तिगत शिक्षा के लिए प्रयोग की जाती हैं।
- शिक्षा में व्यक्तिगत शिक्षा के डिज़ाइन को सुचित करने के लिए शोधिक और मानसिक आधार होते हैं।
- मानव अभ्यन्तर में गणित, भाषा सीखने, और अनुकूलित शिक्षा लेटरफॉर्म में एआई-संचालित व्यक्तिगत शिक्षा के सफल अमल का प्रदर्शन करते हैं।
- कृतीयों द्वारा डेटा गणनीयता, एटोमिक व्यवहार, मानव-एआई सहयोग, और नियंत्रणी शामिल हैं।
- भविष्य की दिशाएं शिक्षा में एआई-संचालित व्यक्तिगत शिक्षा को आगे बढ़ाने के लिए अनुरोधन प्राप्ति करती हैं, जिसमें बहुविज्ञानिक सहयोग और नेतृत्व एआई अभ्यास की महत्व दिया गया है।

### Related Links

- [Google Result 1 for Educational Administration: Theory and Practice 2024, 30(5), 11514-11524 ISSN: 2148-2403 <https://kuey.net/>] Research Article Ai-Driven Personalized Learning Systems: Enhancing Educational Effectiveness Prof. Dr. Nirvikar Katiyar1\*, Mr. Vimal Kumar Awasthi2, Dr. Ram Pratap3, Mr. Kuldeep Mishra4, Mr. Nikhil Shukla5, Mr. Raju singh6, Dr. Manita Tiwari7 Director Prabhat engineering college Kanpur (D), [nirvikkarkatiyar@gmail.com](mailto:nirvikkarkatiyar@gmail.com) Asst. Prof. Axis Institute of Technology & Management Kanpur Nagar, [vimalawasthi@axiscolleges.in](mailto:vimalawasthi@axiscolleges.in) Asso. Prof. BBDNIT Akhilesh Das Nagar Faizabad road Lucknow, [rampatapmc11@gmail.com](mailto:rampatapmc11@gmail.com) Asst. Prof. Maharan Pratap Engineering College Kothi Mandhana Kanpur Nagar, [kuldeepmishra120bit@gmail.com](mailto:kuldeepmishra120bit@gmail.com) Research Scholar, Computer Application CSJM University Kanpur Nagar, [nikhil.shukla700@gmail.com](mailto:nikhil.shukla700@gmail.com) Asst. Prof. , Maharan Pratap Engineering College Kothi Mandhana Kanpur Nagar, [rajkushwaha36@gmail.com](mailto:rajkushwaha36@gmail.com) Asst. Prof. Computer Application Deptt, School of Engg. & Tech. (UIET), CSJM University Kanpur Nagar, [manitatiwari@csjm.ac.in](mailto:manitatiwari@csjm.ac.in) Citation: Prof. Dr. Nirvikar Katiyar (2024), Ai-Driven Personalized Learning Systems: Enhancing Educational Effectiveness Educational Administration: Theory And Practice, 30(5), 11514-11524 DOI: 10.53555/kuey.v30i5.4961 ARTICLE INFO ABSTRACT Personalized learning, powered by artificial intelligence (AI), is revolutionizing education by tailoring instruction to individual students' needs, abilities, and learning styles. This paper explores the current state and future potential of AI-driven personalized learning systems. It examines how AI techniques such as machine learning, natural language processing, and knowledge representation.

To see the previous history

GenAI Search    GenAI Search

localhost:8501

Deploy

**Input Settings**

Input Type: Link

Search Engine: Google (Mock)

AI Creativity (Temperature): 0.70

Summarize Response

Translation

Translate Output

Select Language: Hindi

Clear Session

**Search History**

Search: Educational Administration: Theory and P...

Search: [https://vtucircle.com/...](https://vtucircle.com/)

Search: [https://pdit.ac.in/...](https://pdit.ac.in/)

Search: what is mean by gen ai? ...

Search: what is mean by gen ai? ...

31°C Mostly clear

Search

11:00 PM  
07-04-2025

