

Generative AI Tools for Researchers

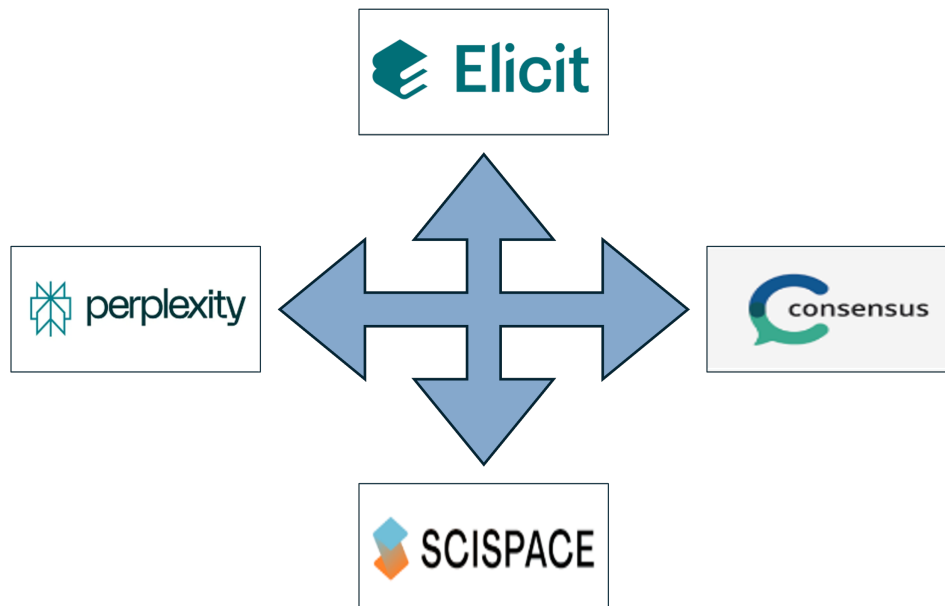
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In this blog, I will delve into four prominent GenAI tools that utilize Retrieval-Augmented Generation (RAG): **Elicit**, **Consensus**, **SciSpace**, and **Perplexity**. We'll explore their features, the databases they employ, and the key differences that set them apart.



0.1 Introduction

Using AI tools like GenAI in our daily tasks these days is inevitable. However, this also raises concerns regarding the accuracy and reliability of their outputs. GenAI tools can produce outputs that are plausible yet factually incorrect or misleading- a phenomenon known as “**Hallucination**”. To address this issue, Retrieval-Augmented Generation (RAG), which combines large language models with external knowledge bases to generate more accurate and context-aware responses has been integrated.

0.2 GenAI Tools for Researchers

0.3 1. Elicit

“Elicit is an AI research assistant that uses generative AI and language models to automate research tasks. Currently, Elicit focused on **finding and analyzing academic papers**”.

Features:

- Elicit acts as an AI research assistant, helping users find relevant academic papers based on queries.
- It streamlines the literature review process by summarizing findings and extracting key information from papers.

Database Used:

- Elicit leverages the **Semantic Scholar** database, which comprises over 200 million academic papers across various disciplines. [Elicit's Source for Papers](#)

0.4 2. Consensus

“Consensus searches through a corpus of 200 million research papers and cover all types of scientific research everything from Astronomy, to Neuroscience, Statistics, Data Science, Archaeology, Nutrition, Electrical Engineering, and much more”.

Features:

- Consensus allows users to query scientific literature and get aggregated answers.
- It summarizes findings from multiple papers to present consensus or differing viewpoints.
- Users can verify scientific claims by checking the supporting evidence from peer-reviewed articles.

Database Used:

- Consensus primarily taps into databases containing peer-reviewed scientific literature to ensure credible sources (**Semantic Scholar**). [What Does Consensus Search Over](#)

0.5 3. SciSpace

“SciSpace is a valuable tool for interacting with PDFs and streamlining the literature review process. It enables users to explore over 200 million papers, upload their own PDFs, highlight specific text, ask questions, and receive detailed explanations and summaries”.

Features:

- SciSpace assists in understanding and interpreting scientific papers.
- It can explain jargon, mathematical equations, and complex concepts within papers.
- Offers features like summarization, annotation, and cross-referencing within documents.

Database Used:

- SciSpace accesses a wide range of academic papers and publications, though specific database partnerships are less publicly detailed.

0.6 4. Perplexity

“Perplexity is an AI powered search engine designed to revolutionize the way you discover information. Ask any question, and it searches the internet to give you an accessible, conversational, and verifiable answer. Think of Perplexity as a research partner, always on the clock, saving you valuable time by providing the precise knowledge you need”.

Features:

- Perplexity provides direct answers to user queries using AI and internet resources.
- It cites sources, allowing users to verify information.
- Accesses up-to-date information, making it suitable for current events and recent data.

Database Used:

- Perplexity crawls the web gathering information from authoritative sources like articles, websites, and journals.

0.7 Comparative Analysis

Commonalities:

- **Utilization of RAG:** All four tools enhance their generative AI capabilities by retrieving relevant information from external databases.
- **AI-Driven Summarization:** They provide concise summaries of complex information, aiding in quick comprehension.

Key Differences:

- **Target Audience:**
 - *Elicit* and *Consensus* are geared towards researchers and academics.
 - *SciSpace* caters to both professionals and learners needing assistance with specific documents.
 - *Perplexity* targets a general audience seeking information on various topics.
- **Database Scope:**
 - *Elicit* and *Consensus* focus on academic and peer-reviewed literature.
 - *SciSpace* provides in-depth analysis within documents.
 - *Perplexity* utilizes broader internet resources.

- **Feature Set:**

- *Elicit* excels in literature review automation.
- *Consensus* emphasizes evidence quality and aggregated viewpoints.
- *SciSpace* offers in-document explanations and educational support.
- *Perplexity* provides real-time answers with source attribution across diverse topics.

0.8 Subscription Costs (As of October 2024)

Tool Name	Free Version Services	Paid Version Services
Perplexity (\$20/Month)	<ul style="list-style-type: none"> - Unlimited Quick searches - 5 Pro Searches per day - Standard Perplexity AI Model optimized for speed and quality - Create a profile to personalize your answers 	<ul style="list-style-type: none"> - Unlimited Quick searches - 300+ Pro searches per day - Select your preferred AI Model. Choose from GPT-4o, Claude-3, Sonar Large (LLama 3.1), and more - Upload and analyze unlimited files - Visualize answers using Playground AI, DALL-E, SDXL, and more - Get \$5/month in API credits
SciSpace (\$12/Month)	<ul style="list-style-type: none"> - Limited AI words in Writer - Limited Chats with papers and PDFs - Limited Literature Review searches - Standard Model Access only - Limited Paraphraser outputs - Limited AI powered notebooks - Limited Paper summaries - Add 5 columns in literature review - Limited Citation Generations - Limited Concept searches 	<ul style="list-style-type: none"> - Unlimited AI words in Writer - Unlimited Chats with papers and PDFs - Unlimited Literature Review searches - High-Quality Model Access - Unlimited Paraphraser outputs - Unlimited AI powered notebooks - Unlimited Paper summaries - Add all 50 columns in Literature Review - Unlimited Citation Generations - Unlimited Concept searches - Export to RIS, CSV, BIB, Excel, XML - Customise Chat settings - Unlimited AI Detections

Tool Name	Free Version Services	Paid Version Services
Consensus (\$8.99/Month)	<ul style="list-style-type: none"> - Unlimited searches - Unlimited research quality indicators - Unlimited AI-powered filters - Limited access to GPT-4 summaries, Consensus meter, Study snapshot, and Copilot 	<ul style="list-style-type: none"> - Unlimited GPT-4 Summaries - Unlimited Consensus Meters - Unlimited Study Snapshots - Unlimited Copilot - Bookmarks and Lists
Elicit (\$12/Month)	<ul style="list-style-type: none"> - Unlimited search across more than 125 million papers - Unlimited summaries of 4 papers at once - Unlimited chat with 4 papers at once - Extract data from 10 uploaded PDFs per month - Add 2 columns to your tables at a time - View sources for answers - Import from Zotero 	<ul style="list-style-type: none"> - Everything in Basic and... - Unlimited summaries of 8 papers at once - Unlimited chat with 8 full-text papers at once - Export to RIS, CSV, BIB - Extract data from 25 uploaded PDFs per month - Add 5 columns to your tables at a time - 1 high-accuracy column per table - Extract data from tables inside research papers

0.9 Recommendations and Limitations of GenAI Tools

- **Risk of Misinformation (Hallucinations):** Generative AI tools can sometimes produce incorrect or fabricated information, which may be difficult to verify, especially within specialized scientific fields.
- **Reproducibility Concerns:** Due to stochastic processes inherent in the models, identical inputs do not always yield consistent outputs.
- **Prompt Sensitivity:** The quality of the generated outputs is highly dependent on the structure of the prompts; minor changes in phrasing can lead to significantly different or inaccurate results.
- **Bias Toward Generalizations:** Generative AI models may oversimplify complex scientific concepts, limiting the depth and nuance of analyses.
- **Quality and Accessibility:** Paid versions of commercial generative AI tools often provide more accurate and detailed results compared to their free versions.
- **Ethical and Privacy Considerations:** The use of generative AI on proprietary or sensitive information must account for data privacy, copyright laws, and ethical usage guidelines.

0.10 Conclusion

The integration of RAG in GenAI tools like Elicit, Consensus, SciSpace, and Perplexity marks a significant step in information accessibility and comprehension. Each tool brings unique features tailored to different user needs—from academic research assistance to general knowledge queries. Understanding their functionalities and databases can help users select the most appropriate tool for their specific requirements. While RAG-enabled GenAI tools provide powerful capabilities, users should remain cautious and critically evaluate the outputs, especially when used for research or decision-making in specialized fields.

0.11 References

- Elicit: [elicit.org](https://www.elicit.org)
- Consensus: [consensus.app](https://www.consensus.app)
- SciSpace: [scispace.com](https://www.scispace.com)
- [SciSpace Rundown](#)
- Perplexity: [perplexity.ai](https://www.perplexity.ai)
- What is Perplexity: [Perplexity](#)
- AI Powered Research Webinar: [AI-Powered Research: Leveraging AI Tools for Searching, Summarizing, and Reviewing Scientific Literature](#)