RESEARCH SPEAKER SERIES

Harnessing Artificial Intelligence to Supercharge Research Insights

March 12, 11 a.m. - 12 p.m.

BCcampus Research

Nellie Deutsch

BCcampus

Hosted by Britt Dzioba, Learning & Teaching Advisor, BCcampus, bdzioba@bccampus.ca

BCcampus offices are situated on the unceded territories of the səl̓ilwətaʔɬ təməxʷ (Tsleil-Waututh), Skwxwú7mesh-ulh Temíx̱w (Squamish), xʷməθkʷəy̓əm (Musqueam), W̱SÁNEĆ (Saanich), and the Esquimalt and Songhees Nations of the Lək̓ʷəŋən (Lekwungen) Peoples. As both individuals and an organization, we continue to learn and build relationships as we actively respond to the Truth and Reconciliation Commission's Calls to Action.

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Harnessing AI to Supercharge Research Insights

Research on AI or **research with AI**? (Gatrell et al., 2023)

Harnessing AI to Supercharge Research Insights

Overview

- Background: KWHL on AI Research Assistants
- Introduction to AI Research Assistants
- Unveiling Hidden Connections and Generating Hypotheses
- Experiment Simulation and Insight Extraction
- Case Studies: AI-Powered Research Breakthroughs - Practice
- Enhancing Research Workflows with AI Research Assistants
- Additional AI Research Assistants
- Concluding Remarks and Future Directions

Harnessing AI to Supercharge Research Insights

Ideaboardz

Presentation Slides

Stages of Research

Stages of Research

Research Stage	Description
Identifying the Research Problem	Define the study focus, including research questions or hypotheses.
Literature Review	Review existing materials to understand the field and identify gaps.
Designing the Study	Plan the research methodology, including design, data collection, and analysis methods.
Data Collection	Gather necessary data through various means depending on the research design.

Stages of Research

Research Stage	Description
Data Analysis	Process and analyze the data to draw preliminary conclusions.
Interpreting Results	Understand the results in context, relating them to research questions or hypotheses.
Drawing Conclusions and Recommendations	Finalize conclusions and suggest recommendations based on findings.
Writing and Presentation	Compile findings into a structured document or presentation.

Stages of Research

Research Stage	Description
Peer Review and Revision	Submit work for peer review and revise based on feedback (if applicable).
Publication or Dissemination	Share findings with the community through journals, conferences, or other media.
Reflection and Future Work	Reflect on the process and outcomes, considering directions for future research.

Research with Keenious - Elicit - Semantic Scholar - Consensus - SciSpace

Stages of Research and AI Research Tools

Research Stage	SciSpace	Keenious	Consensus	Elicit	Semantic Scholar
Identifying the Research Problem		✓		✓	✓
Literature Review		✓		✓	✓
Designing the Study					
Data Collection					

Stages of Research and AI Research Tools

Research Stage	SciSpace	Keenious	Consensus	Elicit	Semantic Scholar
Data Analysis				✓	
Interpreting Results					
Drawing Conclusions and Recommendations					
Writing and Presentation	✓				

Stages of Research and AI Research Tools

Research Stage	SciSpace	Keenious	Consensus	Elicit	Semantic Scholar
Peer Review and Revision	✓				
Publication or Dissemination	✓				
Reflection and Future Work					

Comparison of Literature Review Tool Features

Comparison of Literature Review Tool Features

Feature	SciSpace	Keenious	Consensus	Elicit	Semantic Scholar
Reference Management	✓	✓	✓		✓
Search and Discovery	✓	✓	✓	✓	✓
Research Gap Identification		✓	✓	✓	✓

Comparison of Literature Review Tool Features

Feature	SciSpace	Keenious	Consensus	Elicit	Semantic Scholar
Synthesis and Analysis	✓	✓	✓	✓	✓
Collaboration	✓		✓		✓
Additional Unique Features	✓	✓	✓	✓	✓

Keenious - Elicit - Semantic Scholar - Consensus - SciSpace

SciSpace on ChatGPT

Scientific Collaboration Workspace

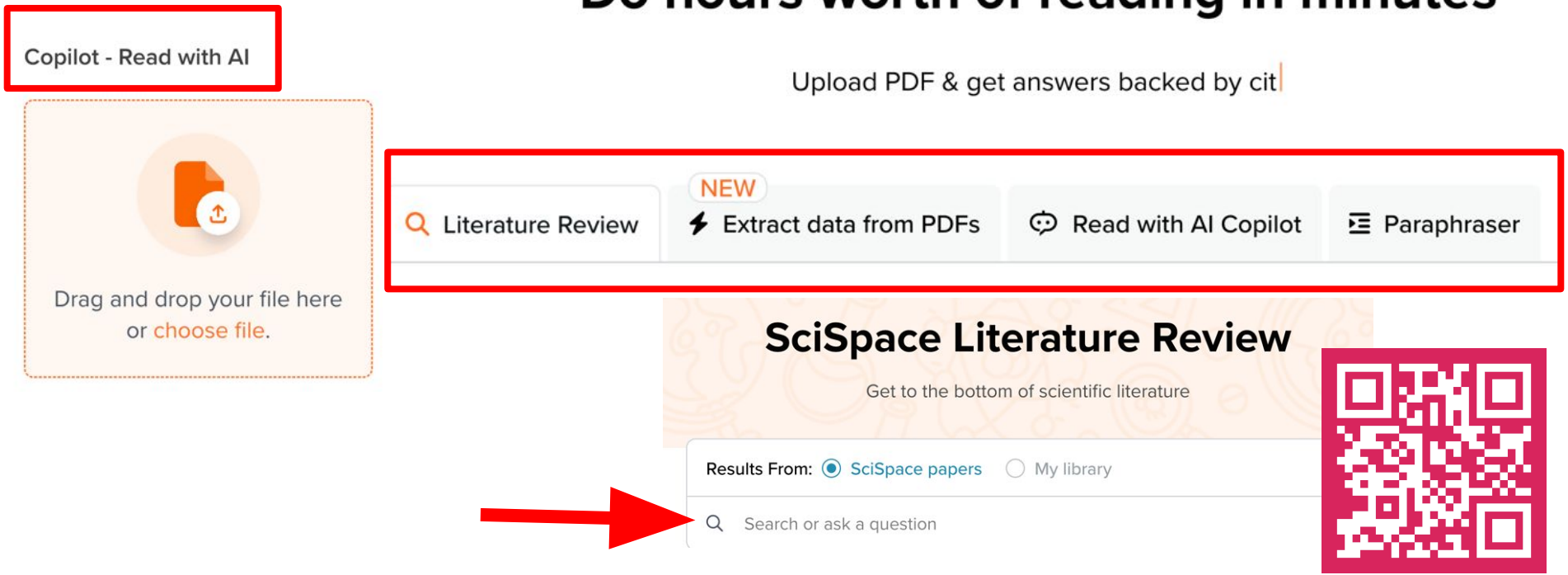
SciSpace

SciSpace

By Scispace.com

Do hours worth of research in minutes. Instantly access 200M+ papers, analyze papers at lightning speed, and effortlessly draft content with accurate citations.

SciSpace on ChatGPT



Keenious

Our addon integrates into both Google Docs and Microsoft Word as a convenient sidebar ready to go at a moment's notice. Download Keenious for your word processor of choice by clicking one of the links below.

Keenious

Microsoft Word

Microsoft Word (2016, 2019, Online)

Get for Microsoft Word

*Then click the **GET IT NOW** button*

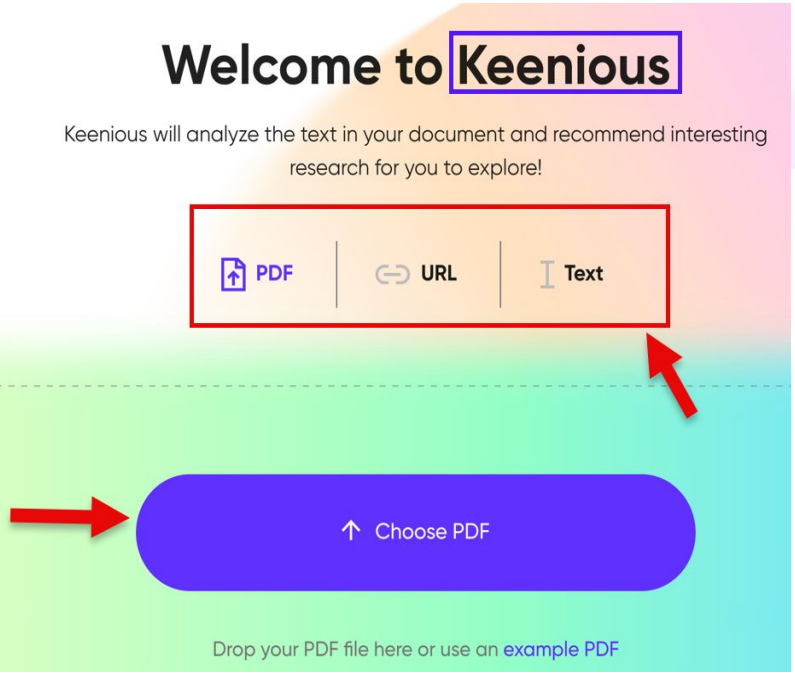
Google Docs

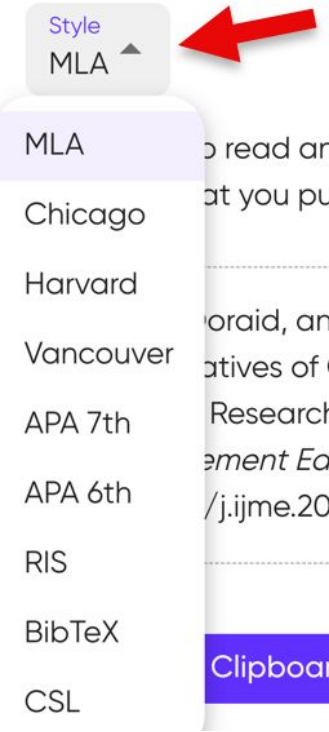
Requires a Google Account

Get for Google Docs

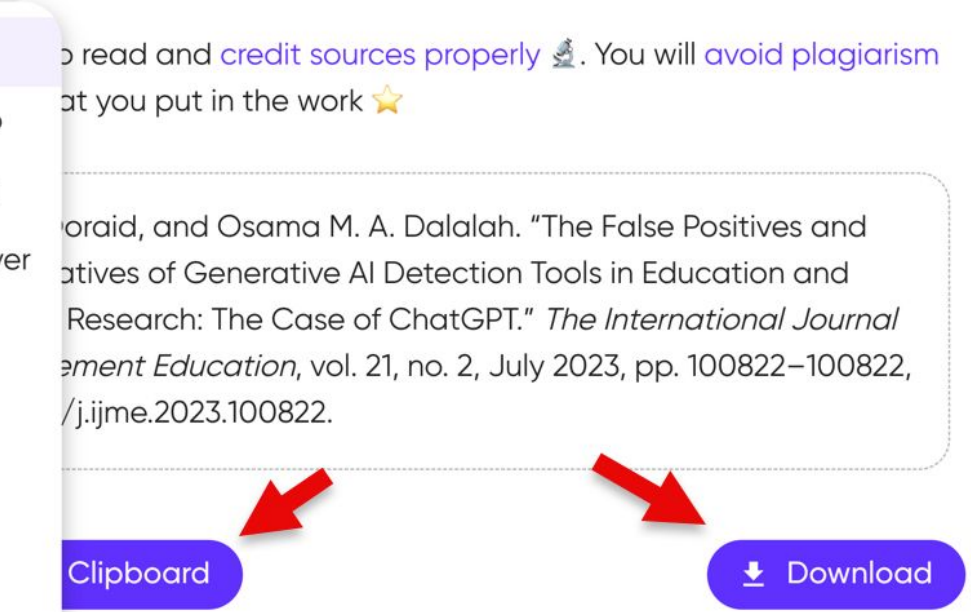
*Then click the **Install** button*

Keenious

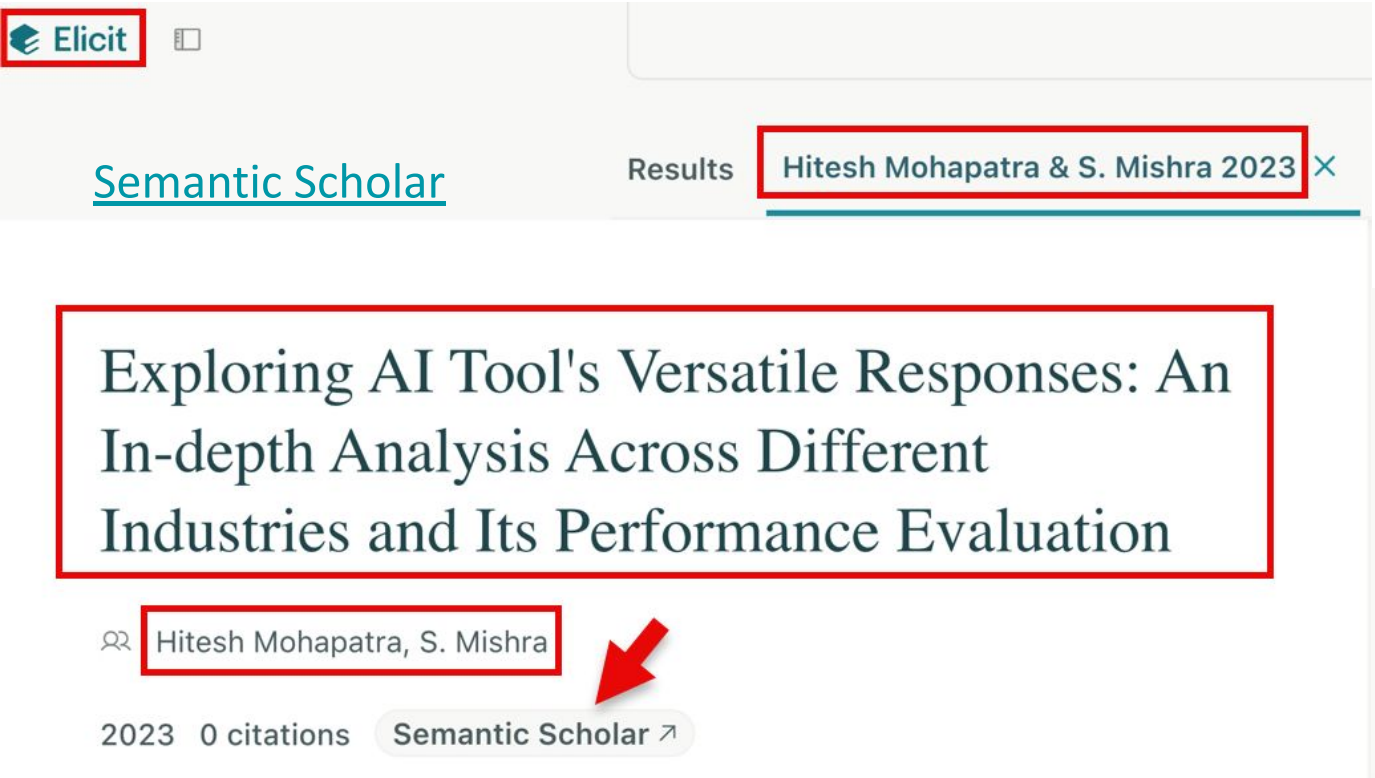




[Keenious]



Elicit and Semantic Scholar Database



Consensus on ChatGPT

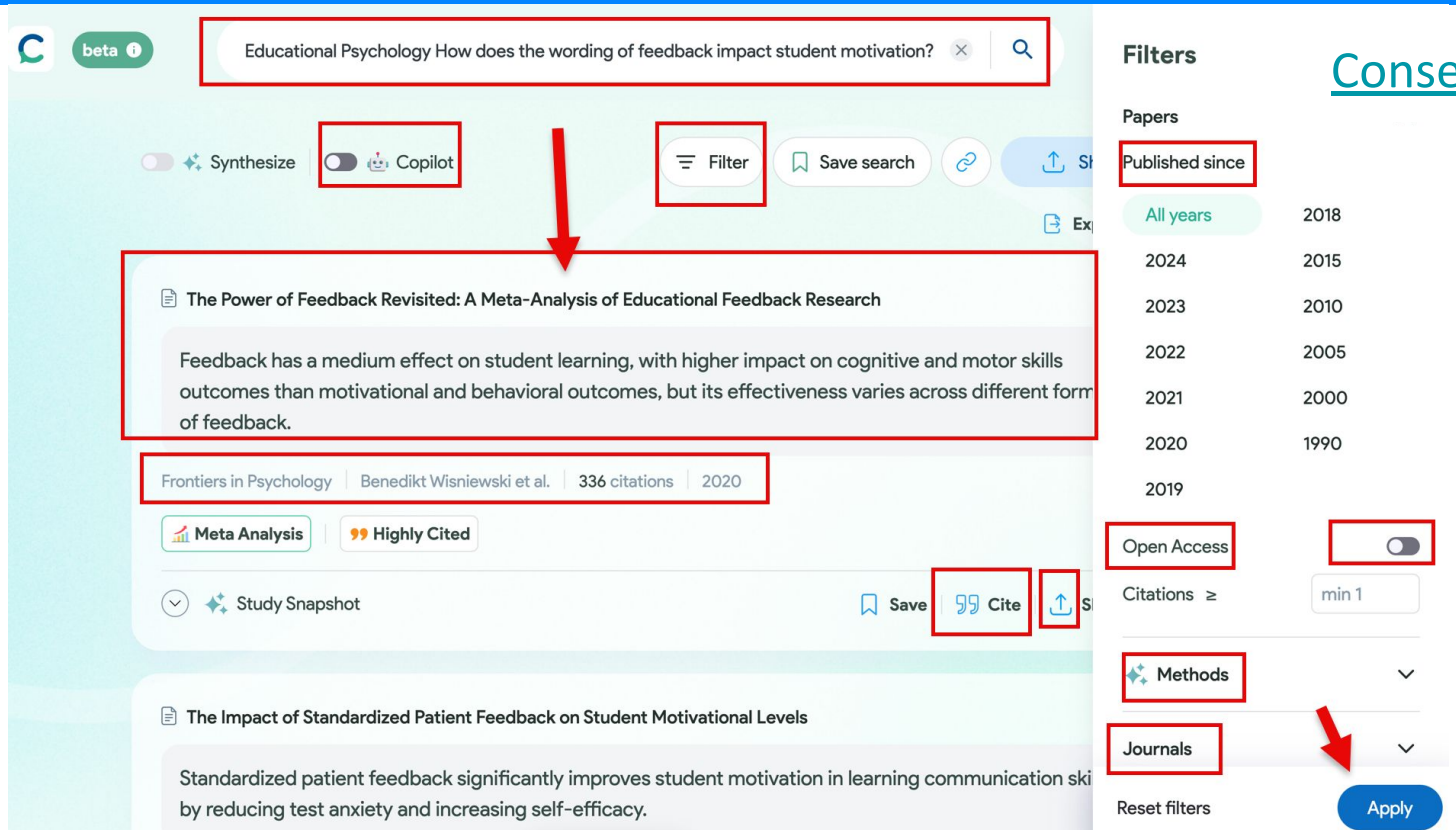
Consensus

Consensus

By consensus.app +1

Your AI Research Assistant. Search 200M academic papers from Consensus, get science-based answers, and draft content with accurate citations.

Consensus


beta
Educational Psychology How does the wording of feedback impact student motivation?
Synthesize
Copilot
Filter
Save search
The Power of Feedback Revisited: A Meta-Analysis of Educational Feedback Research
Feedback has a medium effect on student learning, with higher impact on cognitive and motor skills outcomes than motivational and behavioral outcomes, but its effectiveness varies across different form of feedback.
Frontiers in Psychology | Benedikt Wisniewski et al. | 336 citations | 2020
Meta Analysis
Highly Cited
Study Snapshot
Save
Cite
The Impact of Standardized Patient Feedback on Student Motivational Levels
Standardized patient feedback significantly improves student motivation in learning communication ski by reducing test anxiety and increasing self-efficacy.
Filters
Consensus
Papers
Published since
All years
2024
2023
2022
2021
2020
2019
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Open Access
Citations ≥
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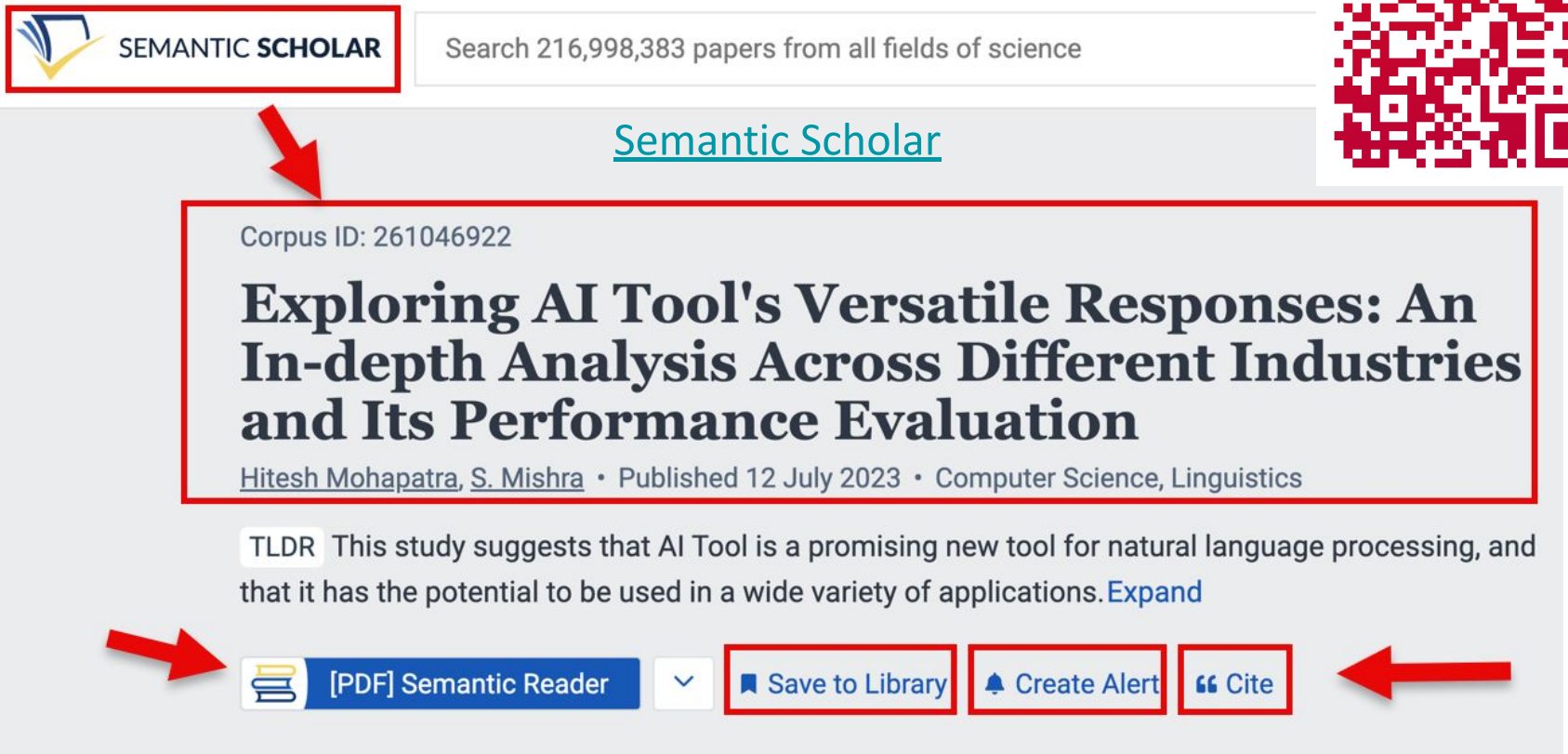
Semantic Scholar Database



ScholarAI on ChatGPT

ScholarAI

By scholarai.io

AI Scientist - search and analyze text, figures, and tables from 200M+ research papers and books to generate new hypotheses. Join 400K+ professionals in pursuit of science, scholar, and research to improve the world.

Scholarai

AI Research Assistants

Feature	Keenious	Elicit	Consensus	Semantic Scholar
Works directly inside your Word document	Yes	No	No	No
Asks you to type in a research question	Yes	Yes	Yes	Yes
Provides AI-generated summaries of papers	Yes	Yes	Yes	Yes
Suggests papers based on analyzing your existing writing	Yes	Yes	Yes	Yes

Unique Aspects of AI Research Assistants

Feature	Keenious	Elicit	Consensus	Semantic Scholar
Unique Approach	Analyzes your existing writing within Word for tailored research suggestions	Allows you to ask research questions in plain language	Aggregates and synthesizes research findings to present a consensus view	Utilizes semantic search for finding relevant papers and data

Unique Aspects of AI Research Assistants

Feature	Keenious	Elicit	Consensus	Semantic Scholar
Key Strength	In-depth contextual understanding of your research focus	Intuitive search experience and AI-generated summaries for quick insights	Provides a quick grasp of the general consensus on a topic	Advanced filtering options to refine search results

Unique Aspects of AI Research Assistants

Feature	Keenious	Elicit	Consensus	Semantic Scholar
Best Suited For	Researchers already drafting or writing with a defined topic	Researchers exploring a new topic or needing broad overviews of relevant research	Policy makers, researchers, and academicians looking for an overview of consensus in a field	Researchers and students looking for specific studies and data within a vast database

Unveiling Hidden Connections and Generating Hypotheses

Unveiling Hidden Connections and Generating Hypotheses

Aspect	Keenious	Elicit	Consensus	Semantic Scholar
Potential for Hidden Connections	Suggests papers from related fields based on your writing, potentially revealing unexpected links.	Broadens search results and provides summaries, making it easier to identify patterns and connections across different studies.	Aggregates studies to provide a synthesized view, which may reveal underlying connections not immediately obvious.	Leverages semantic search to uncover relevant but potentially overlooked studies across disciplines.

Unveiling Hidden Connections and Generating Hypotheses

Aspect	Keenious	Elicit	Consensus	Semantic Scholar
Hypothesis Generation	Exposure to a wider range of research might inspire new angles or questions.	Identifying gaps in the literature through search results may suggest novel hypotheses.	Synthesis of wide-ranging studies might highlight gaps or consensus areas ripe for new inquiry.	Direct access to a broad array of papers could inspire questions based on emerging or less explored themes.

Unveiling Hidden Connections and Generating Hypotheses

Aspect	Keenious	Elicit	Consensus	Semantic Scholar
Limitations	Requires the researcher to make the final connections and think critically about the suggestions	Relies on the quality and completeness of the databases the tool accesses. AI can't replace the researcher's critical thinking.	May oversimplify complex debates or underrepresent minority viewpoints due to focus on consensus.	Dependent on the accuracy of semantic analysis and the breadth of the database.

Harnessing AI to Supercharge Research Insights

AI technologies Designed to Index scholarly articles

AI Tool	Description	Link
Google's AI and Machine Learning Technologies	Google's AI includes ML and NLP technologies that power its search engine, **Google Scholar** “We believe that AI will assist, complement, empower, and inspire people in almost every field of human endeavor.“ (Manyika et al., 2023)	Google AI

AI Technologies Designed to Index Scholarly Articles

AI Tool	Description	Link
Semantic Scholar	AI-powered research tool using NLP and ML to index and provide relevant search results...	Semantic Scholar
ArXiv's AI Initiative	The preprint server explores AI and ML to improve search and discovery of academic papers...	ArXiv

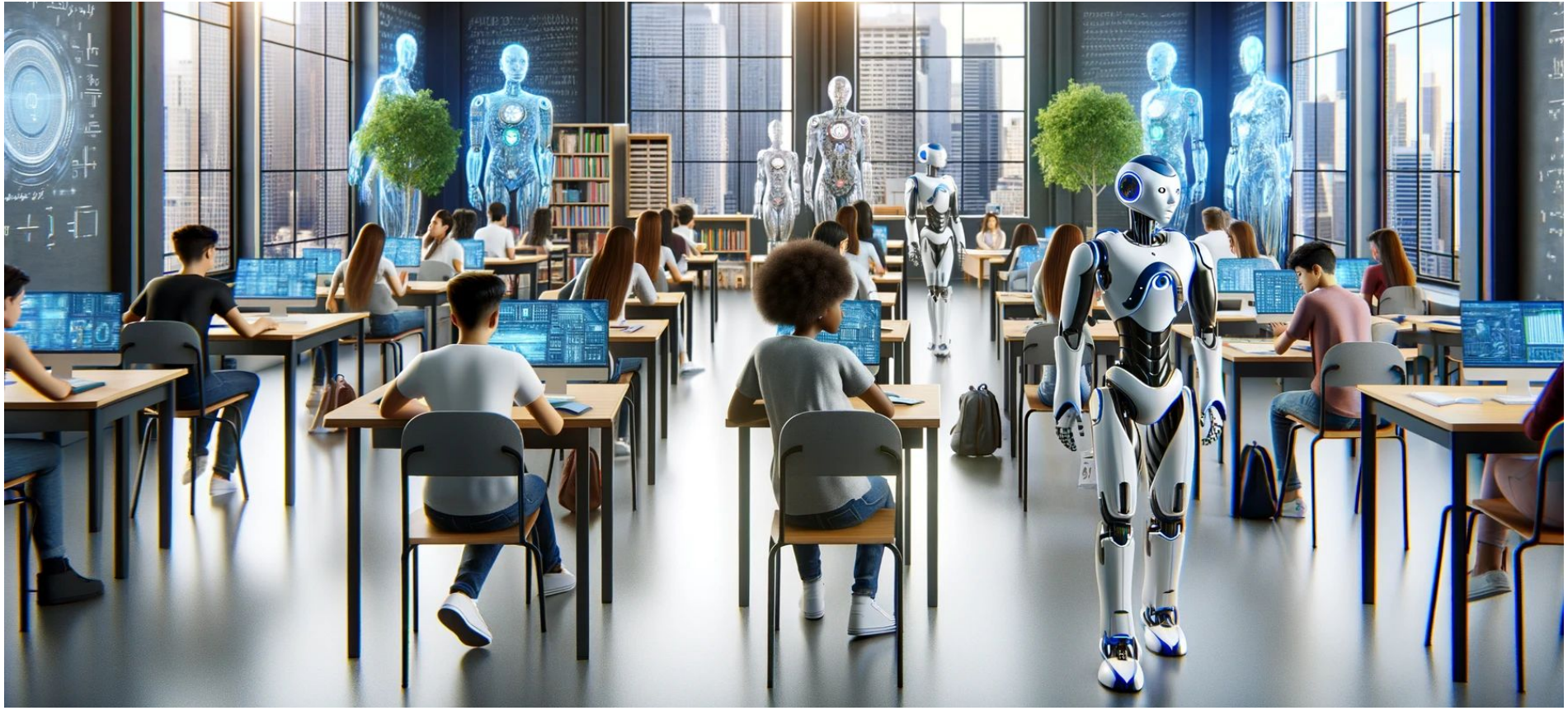
AI Technologies Designed to Index Scholarly Articles

AI Tool	Description	Link
CORE	Access to millions of open access research papers, using AI for text mining...	CORE
Dimensions	AI-based research and discovery platform that indexes documents and provides insights...	Dimensions

AI Technologies Designed to Index Scholarly Articles

AI Tool	Description	Link
Zotero	Reference management software utilizing AI for data extraction and management...	Zotero
ReadCube Papers	Offers AI-driven recommendations and discovery tools, analyzing academic papers...	ReadCube Papers

Case Studies: AI-Powered Research Breakthroughs



Case Studies: AI-Powered Research Breakthroughs

Case Study	Research Area	Research Question	AI Tool(s)	Breakthroughs
Example 1	Consumer Behavior	Why do people choose certain eco-friendly products over others? (Nava, et al., 2023)	Keenious (surveys, choice-based experiments), Elicit (sentiment analysis on reviews)	Discovery of previously unidentified factors influencing consumer decision-making (e.g., subtle emphasis on social impact vs. personal benefit)

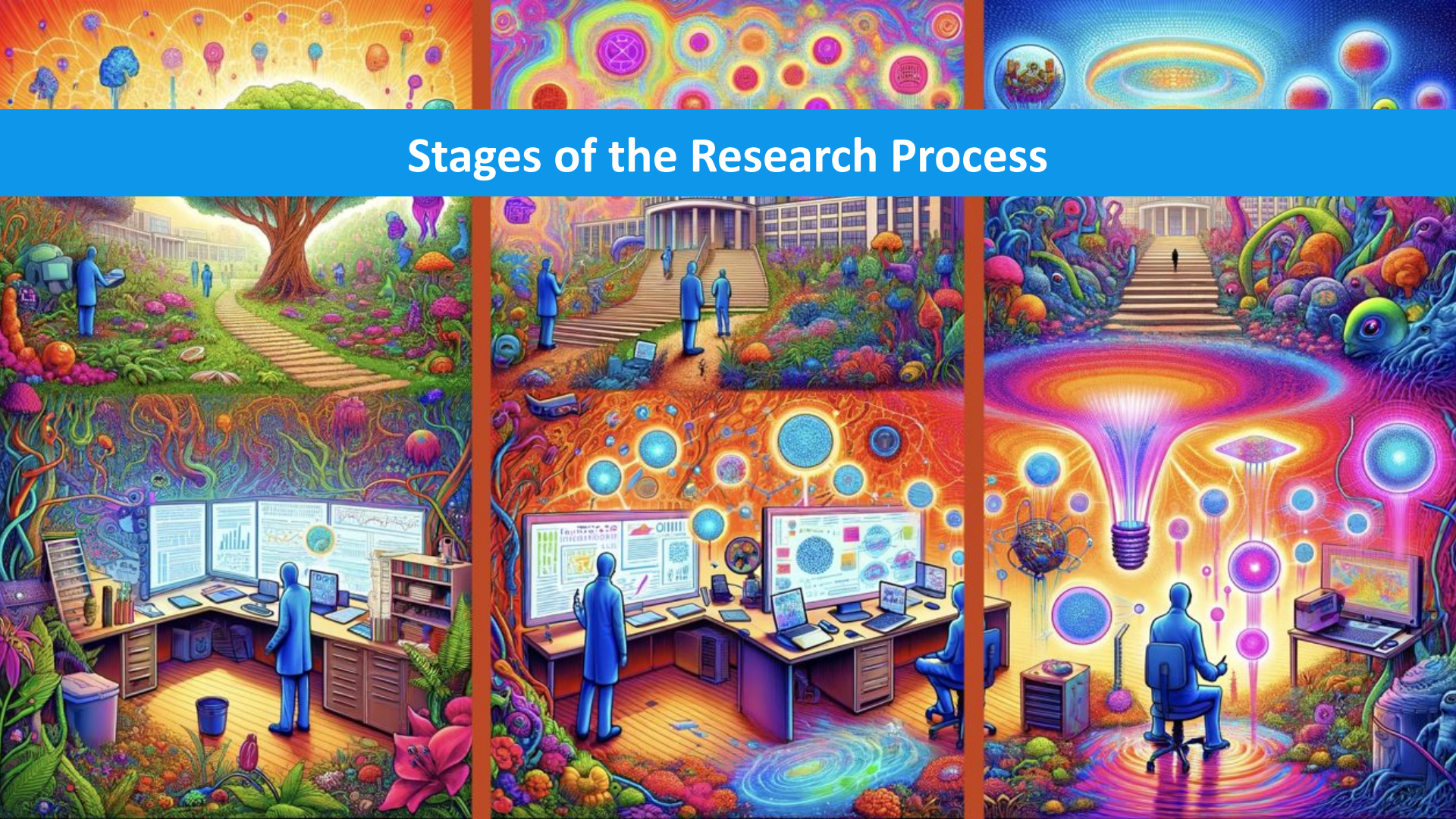
Case Studies: AI-Powered Research Breakthroughs

Case Study	Research Area	Research Question	AI Tool(s) Used	Breakthroughs
Example 2	Educational Psychology	How does the wording of feedback impact student motivation? (Abd-El-Khalick et al., 2023)	Consensus (+ Semantic Scholar) used to analyze student responses, potentially A/B testing of different feedback phrases.	Identification of specific language patterns that significantly boost student persistence and engagement.

Case Studies: AI-Powered Research Breakthroughs

Case Study	Research Area	Research Question	AI Tool(s) Used	Breakthrough
Example 3	Healthcare	Can social media trends predict outbreaks of certain illnesses?	Elicit (analyze large-scale social media data), potentially other AI tools for disease modeling	Early detection patterns found in social media language that precede spikes in specific illnesses. (Rostami, et al., 2023)

Stages of the Research Process



Stages of the Research Process

Stage	Tool	Description	ScholarAI's Role
Identify Research Topic	*Initial Thoughts*	Begin by defining a focused research question or topic for exploration.	ScholarAI can help refine research questions by suggesting key topics and questions based on current trends and gaps in research.
Initial Search and Exploration	Keenious, Elicit	Use these tools for initial literature searches and structured reviews.	ScholarAI complements these tools by providing additional insights and identifying relevant papers and resources that may have been overlooked.
Deep Dive and Analysis	Consensus, Semantic Scholar	Employ these tools for in-depth analysis and literature mapping.	ScholarAI can further analyze and synthesize information from articles, offering summaries, extracting data, and highlighting key findings in a more accessible format.

Stages of the Research Process

Stage	Tool	Description	ScholarAI's Role
Organization and Synthesis	Zotero	Use Zotero for literature organization and citation management.	ScholarAI can assist in identifying the most impactful studies to include, suggest organization schemas based on themes or methodologies, and automate the extraction of key data points for synthesis.
Drafting Research Paper	Grammarly	Use Grammarly to refine writing.	ScholarAI can support the drafting phase by providing background information, generating summaries of research findings, and suggesting sections or topics to include based on the synthesized literature.
Continuous Learning and Updating	Google Scholar Alerts	Stay updated with new developments via alerts.	ScholarAI can enhance this by offering tailored recommendations for papers and authors to follow, based on the evolving interests and focus areas of the researcher, beyond the capabilities of standard alert systems.

Enhancing Research Workflows with AI Research Assistants

Enhancing Research Workflows with AI Research Assistants

Research Task	How AI Tools Can Help	Example Tools
Literature	Summarize vast amounts of research papers quickly	Semantic Scholar
	Find connections across different disciplines	SciSpace (formerly known as Connected Papers)
	Recommend relevant articles based on your interests	Google Scholar with AI-powered features
	Discover and organize key insights from research papers	Keenious
	Extract structured knowledge from research papers	Elicit

Enhancing Research Workflows with AI Research Assistants

Research Task	How AI Tools Can Help	Example Tools
Data Collection	Structure and clean unstructured data	Diffbot
	Generate synthetic data for training models	Gretel.ai
	Develop predictive models	Dataiku
	Visualize complex data relationships	Tableau
	Help identify potential biases and blind spots in your research	Tools specifically designed for research brainstorming (examples later)

Enhancing Research Workflows with AI Research Assistants

Research Task	How AI Tools Can Help	Example Tools
Data Analysis	Uncover patterns and insights hard for humans to spot	Python libraries (Scikit-learn, TensorFlow, PyTorch)
	Develop predictive models	Dataiku
	Visualize complex data relationships	Tableau
	Help identify potential biases and blind spots in your research	Tools specifically designed for research brainstorming (examples later)

Enhancing Research Workflows with AI Research Assistants

Research Task	How AI Tools Can Help	Example Tools
	Develop predictive models	Dataiku
	Visualize complex data relationships	Tableau
Hypothesis Development	Aid in idea generation by surfacing unusual connections	GPT-3 (Generative language models can suggest new directions)
	Help identify potential biases and blind spots in your research	Tools specifically designed for research brainstorming (examples later)

Enhancing Research Workflows with AI Research Assistants

Research Task	How AI Tools Can Help	Example Tools
Experiment Design	Optimize experiment parameters	Design-Expert (software)
	Suggest novel experimental approaches	Specialized AI tools emerging in fields like drug discovery

Enhancing Research Workflows with AI Research Assistants

Research Task	How AI Tools Can Help	Example Tools
Writing	Improve grammar and style	Grammarly
	Suggest alternative word choices for clarity	ProWritingAid
	Help structure arguments	Jasper.ai
	ResearchGate (for finding collaborators)	

Enhancing Research Workflows with AI Research Assistants

Research Task	How AI Tools Can Help	Example Tools
Collaboration	Real-time co-authoring and editing	Google Docs
	Facilitate sharing of data and code	Overleaf
	AI-powered recommendations for potential collaborators	GitHub
	ResearchGate (for finding collaborators)	

Comparison of AI Research Assistants

Comparison of AI Research Assistants

Feature/Capability	GPT: ScholarAI	Keenious	Elicit	Consensus	Semantic Scholar
Uncover Hidden Connections	✅	✅	✅	✅	✅
Generate Novel Hypotheses	✅	✅	✅	✅	✅

Comparison of AI Research Assistants

Feature/Capability	GPT: ScholarAI	Keenious	Elicit	Consensus	Semantic Scholar
Simulate Experiments	❌	❌	❌	Limited	❌
Extract Key Insights	✅	✅	✅	✅	✅
Literature Review & Summarization	✅	✅	✅	✅	✅

Comparison of AI Research Assistants

Feature/Capability	GPT: ScholarAI	Keenious	Elicit	Consensus	Semantic Scholar
Data Analysis Assistance	Limited	Limited	Limited	✅	Limited
Predictive Modeling	Limited	Limited	Limited	✅	❌
Reference & Citation Help	✅	✅	✅	✅	✅

Additional AI Assistants

AI Research Assistants

Tool	How It Works	Features	Examples	Benefits
Elicit	Uploads and analyzes research papers (PDF format). Extracts key information, concepts, and the relationships between them from the text.	AI-Generated Summaries: Provides brief overviews of research papers. Relationship Mapping: Visualizes connections between concepts from different papers.	Analyze a set of neuroscience papers to see connections between brain regions and cognitive functions.	Saves time: Automates tedious tasks like literature review and information extraction. Reveals hidden connections:

AI Research Assistants

Tool	How It Works	Features	Examples	Benefits
Elicit	Presents findings in tables and visual network maps.	Search by Outcome: Lets you find papers relevant to specific research outcomes or measures. Table Creation: Organizes key details from papers into structured tables for easy comparison.	Map the landscape of research on climate change adaptation strategies. Identify gaps in the literature on a specific medical treatment.	Highlights patterns you might miss through manual reading. Improves Understanding: Provides clear summaries and visualizations of research landscapes. Sparks New Ideas: Can inspire novel research questions or hypotheses.

AI Research Assistants

Tool	How It Works	Features	Examples	Benefits
Keenious	Specializes in the analysis and visualization of scientific data and text.	Interactive Data Visualization: Creates dynamic charts, graphs, and visualizations. Network Analysis: Maps connections between concepts in research. Search and Filter: Powerful tools to query and explore the literature. Embeddable: Visualizations can be integrated into websites or presentations.	Explore the relationships between genes and diseases in a large dataset. Visualize the evolution of research trends on a topic over time. Identify potential collaborators based on shared research interests.	Saves time: Quickly uncover patterns and insights in complex data. Reveals hidden connections: Exposes trends or relationships that static tables might not. Improves Collaboration: Shareable visualizations enhance discussion and knowledge transfer. Enhanced Presentations: Makes complex research findings more engaging.

AI Research Assistants

Tool	How It Works	Features	Examples	Benefits
Semantic Scholar	Combines natural language processing and machine learning to analyze and index scientific literature. Supported by the Allen Institute for AI.	AI-Generated Summaries: Provides concise summaries of research papers. Citation Analysis: Shows how often a paper is cited, and highlights influential papers within a field. Related Paper Suggestions: Finds articles thematically similar to your query. Author Pages: Track an author's publications, citations, and research interests.	Understand a complex study without reading the whole paper. Discover key figures in a field and their most important work. Identify emerging trends or subfields by analyzing citation patterns.	Saves time: Quickly find and grasp the essence of relevant research. Improves understanding: Provides structured information on citations and relationships between papers. Sparks new ideas: Can suggest unexpected connections or relevant research outside your immediate area.

Additional AI Assistants

Headings	How to Use	Features	Examples	Benefits
Consensus 	Input research questions or data. Select relevant fields or datasets. Review AI-generated insights and connections.	Data analysis and interpretation, Predictive modeling, Literature review and summarization, Reference and citation help	Analyzing trends in climate change data, Predicting outcomes in financial markets, Summarizing recent findings in biomedical research	Saves time on literature reviews, Uncovers novel insights and hidden patterns, Supports evidence-based hypothesis generation, Facilitates easier preparation of manuscripts with citation assistance

Additional AI Assistants

Tool	How It Works	Features	Examples	Benefits
SciSpace	Users start by selecting a template from thousands of journal and university templates. They then write or import their text, format it according to the chosen template's guidelines, and can export their document in multiple formats like PDF, Word, or LaTeX.	Wide range of journal and university templates. Easy citation and bibliography management. Collaboration tools for co-authors. Plagiarism checks and grammar checks.	Writing a research paper for submission to a specific journal. Creating a thesis or dissertation according to university guidelines. Collaborating on a project paper with researchers from different institutions.	Simplifies the manuscript formatting process, saving time and effort. Ensures compliance with publication standards, increasing the likelihood of acceptance. Facilitates collaboration, improving research quality and efficiency. Enhances document integrity through plagiarism and grammar checks.

AI Research Assistants

Tool	How It Works	Features	Examples	Benefits
Iris.ai	Uses AI to analyze and understand a broad range of scientific text and data.	AI-Generated Summaries: Provides brief overviews of research papers. Keyword Extraction: Identifies important concepts and themes within text. Related Paper Suggestions: Finds research relevant to your topic or a specific paper. Topic Exploration: Helps you map a research landscape and identify key trends.	Quickly understand the main findings of a complex research paper. Explore a new research area and get up to speed on foundational papers. Find potential collaborators with similar research interests.	Saves Time: Reduces time spent on literature searches and review. Broadens Perspective: Helps you discover relevant work outside your immediate field. Sparks Inspiration: Surfaces connections and ideas you might otherwise miss.

AI Research Assistants

Tool	How It Works	Features	Examples	Benefits
Claude	Provide a clear and specific prompt or query related to your research or educational needs. Claude will use its knowledge and capabilities to provide relevant information, analysis, or assistance.	Broad knowledge base spanning multiple disciplines. Natural language processing and generation capabilities.	"Summarize the key findings and debates in the literature on climate change mitigation strategies." "Develop a machine learning model to predict student performance based on this dataset and explain the approach."	Access to a vast knowledge base and cross-disciplinary expertise to support diverse research and educational needs. Time-saving assistance with literature reviews, data analysis, writing, coding, and other research tasks.

AI Research Assistants

Tool	How It Works	Features	Examples	Benefits
Claude	Provide feedback or additional context to refine Claude's response if needed.	Analytical and reasoning abilities for tasks like literature review, data analysis, writing assistance, research ideation, coding, math, and tutoring.	"Draft an introduction section for a research paper on quantum computing, covering the background and significance of the topic."	Potential to spark new ideas and perspectives by combining knowledge in novel ways. Personalized learning support and tutoring across different subjects.

Additional AI Research Assistants

Tool	How It Works	Features	Examples	Benefits
Scite	Scite allows searching over 100M publications to see how research is being talked about, supporting or contrasting citations. It supports boolean search and filtering by citation range or metadata.	Citation context analysis, impact metrics	Evaluating research impact, identifying key studies	Critical thinking, evidence-based analysis

Additional AI Assistants

Tool	How It Works	Features	Examples	Benefits
Tableau	Tableau is used for creating data visualizations. Users connect to data, create views, build dashboards, and share findings. The process involves connecting to data, examining it, refining views, plotting data geographically, drilling down into details, and building dashboards and stories to present findings.	Data visualization, interactive dashboards	Creating visual data reports, analyzing datasets	Data literacy, analytical thinking

Additional AI Assistants

Tool	How It Works	Features	Examples	Benefits
Power BI 	Power BI Desktop is used for connecting to data, shaping it with queries, creating visualizations, and sharing reports. Users install the tool, connect to data sources, shape data, and build reports using various views and filters.	Business analytics, data visualization	Business case studies, market research	Business intelligence, real-world data application

Additional AI Assistants

Tool	How It Works	Features	Examples	Benefits
Google Data Studio	Google Data Studio involves connecting a data source, creating reports, and customizing them. Users sign in, choose a data source (like Google Sheets), authorize access, select and connect to a spreadsheet, and then create and customize reports with various visual aids.	Data reporting, visualization tools	Project presentations, data storytelling	Effective communication, data presentation skills

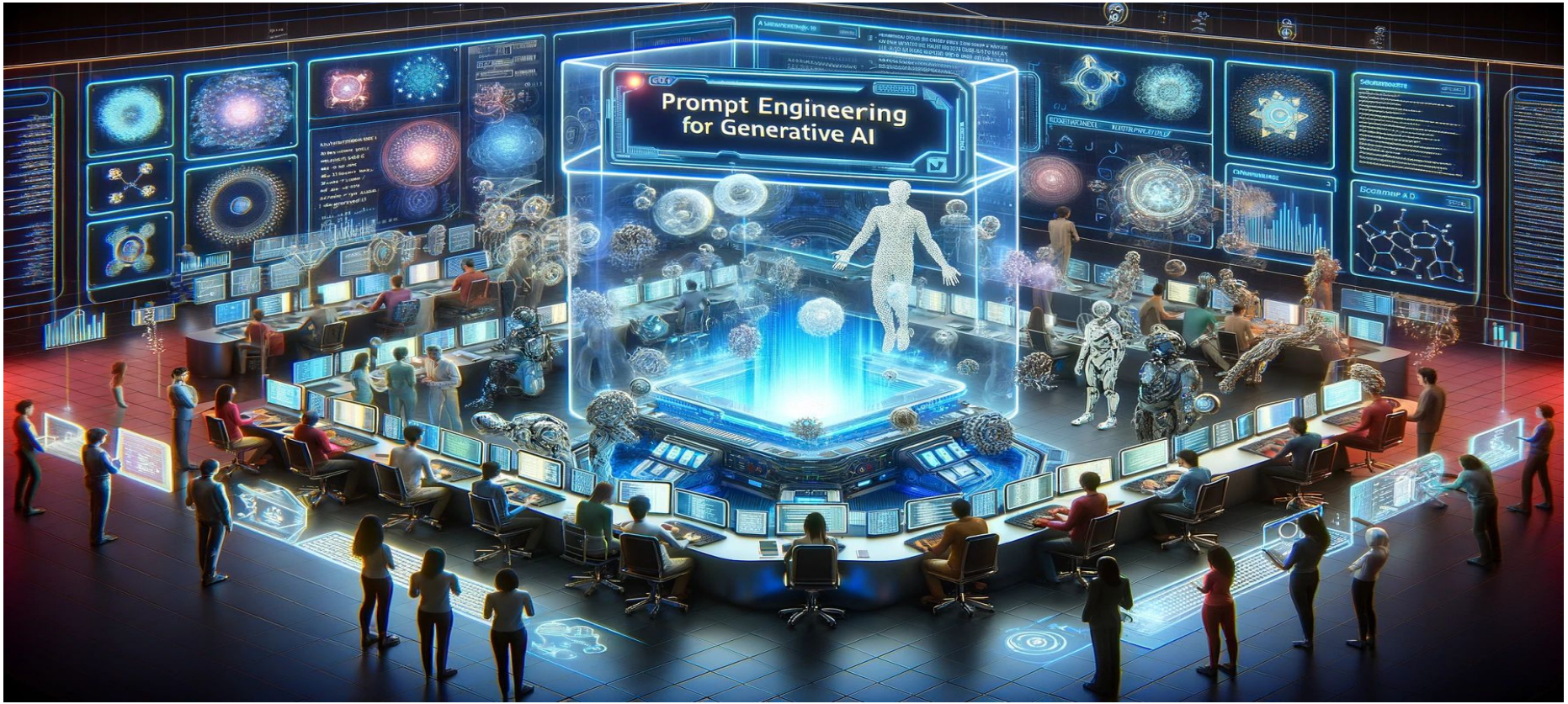
Additional AI Assistants

Tool	How to Use	Features	Examples	Benefits
QuillBot	QuillBot offers AI-powered tools for enhancing writing. Users access these tools through a web interface or extensions.	Paraphrasing Tool with multiple modes and thesaurus options, Plagiarism Checker, QuillBot Flow for integrated writing tasks, Summarizer, Citation Generator, Extensions for Microsoft Word and Google Docs, Support for 23 languages including English, Spanish, French, and more	Paraphrasing essays or articles, Checking academic work for plagiarism, Summarizing documents, Generating citations, Integrating writing tools into daily workflow	Improved writing skills, Ensured academic integrity, Efficient management of research and writing tasks

Check Imformation with Google Scholar

Tool	How to Use	Features	Examples	Benefits
Google Scholar	1. Visit the Google Scholar website. 2. Enter keywords related to your research topic in the search bar. 3. Use filters like publication date, author, and journals to refine your search.	1. Broad coverage of scholarly articles. 2. Citation analysis for identifying influential works. 3. Personalized research library. 4. Alerts for new publications.	1. Searching for articles on "climate change." 2. Finding the most cited papers in quantum computing. 3. Creating an alert for new publications by a specific researcher.	1. Access to a wide range of multidisciplinary academic work to support diverse research needs. 2. Identifies key literature and seminal works quickly, enhancing literature review quality. 3. Keeps researchers updated on the latest developments in their field, promoting continuous learning.

Harnessing AI to Supercharge Research Insights



Prompts for Scholarly Tasks

Task	ChatGPT	GPT: ScholarAI	Google Gemini	Keenious	Elicit
Uncovering Hidden Connections in Data	"Find any correlations between [variable X] and [variable Y] in this dataset."	Same as above, plus "Are there any statistically significant correlations in this dataset according to [specific statistical method]?" "Find connections between [concept A] and [concept B] across this literature database."	"Upload this dataset [.csv or similar]. Create an interactive visualization to explore potential relationships."	"Analyze these research papers [list or upload]. Are there any indirect connections between concepts that these papers don't explicitly discuss?"	

Prompts for Scholarly Tasks

Task	ChatGPT/Claude	GPT: ScholarAI	Google Gemini	Keenious	Elicit
Generating Novel Hypotheses	"Give me 3 unusual research questions related to [topic]."	"Suggest hypotheses related to [topic] that align with [research methodology]."	"What are some 'out-of-the-box' research questions on [topic] inspired by knowledge from a different field?"	"Visualize this dataset. Does it suggest any unexpected research directions or questions?" "Based on the research landscape, what are some gaps in knowledge around [topic] that could be explored?"	

Prompts for Scholarly Tasks

Task	ChatGPT/Claude	GPT ScholarAI	Google Gemini	Keenious	Elicit
Extracting Key Insights from Literature	"Summarize the key findings and arguments in this research paper."	"Summarize the major opposing viewpoints on [topic] from peer-reviewed literature."	"What are the key findings, methodologies, and open questions related to [topic] according to the latest research?"	"Create a visual timeline/summary of research progress on [topic] from these publications."	"Summarize the main themes and relationships emerging from these research papers on [topic]."

Concluding Remarks and Future Directions

Concluding Remarks and Future Directions

Aspect	Key Points
Motivation	Save time on literature review, data extraction, and knowledge organization, allowing researchers to focus on high-level analysis and insights
Resources	Keenious, Elicit, Consesus, Semantic Scholar, ScholarAI and other AI research assistants
Check Findings	Use Google Scholar to check findings (links, dates, citations)
Collaboration	What is the current state of AI research assistants in higher education?
	Share your experiences, questions, and learn from each other, fostering a collaborative approach to harnessing AI for research. Machines as teammates (Seeber et al., 2020)

Explore - Check - Share

Tool	Key Strengths	Use Cases
Keenious	Insight capture and organization Knowledge mapping Targeted searches within your research collection	Builds a comprehensive understanding of a topic Identifying connections and trends across disciplines Efficiently locating specific information after initial reading
Elicit	Extracting factual information as structured data Database creation from research papers Enhancing reproducibility	Meta-analyses Systematic reviews Data-heavy research fields where precise information extraction is crucial

Explore - Check - Share

Tool	Key Strengths	Use Cases in Academia
Consensus	Fast access to peer-reviewed research Ad-free and unbiased results Wide range of topics covered Evidence Scores for assessing research findings Utilizes machine learning for data analysis	Facilitates efficient literature reviews for academic researchers Assisting students in compiling evidence-based academic papers Supporting academics in evaluating the strength of research evidence Enabling non-experts, such as students or new researchers, to access and understand complex research findings
Semantic Scholar	AI-powered literature search, citation analysis, understanding scholarly papers.	Throughout the research process: Finding relevant studies, exploring a new field, summarizing research findings, visualizing connections between authors or concepts.

Explore - Check - Share

Tool	Key Strengths	Use Cases in Academia
Google Scholar	Broad coverage of academic literature (includes journals, conference papers, preprints, etc.) Citation tracking "Related Articles" feature Author profiles	Finding relevant research papers Exploring connections between research topics and authors Assessing the impact of publications or researchers Building bibliographies and streamlining the citation process. Keenious and Google Scholar (Johansen & Borlund, 2022)

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- **Have ideas for our next series?**

- **Contact:**

Gwen Nguyen
gnguyen@bccampuc.ca