

IBM HACKATHON PROJECT

ACADEMIC RESEARCH AI AGENT

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OUTLINE

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PROBLEM STATEMENT

The traditional academic and scientific research process is incredibly time-consuming and labor-intensive. Researchers dedicate a vast amount of time to repetitive tasks like literature discovery, paper summarization, and citation management. This manual effort creates a significant bottleneck, slowing down the pace of analysis, innovation, and discovery. The challenge is to create an intelligent system that automates these tedious aspects of research.

TECHNOLOGY USED

- IBM cloud lite services
- Natural Language Processing (NLP)
- Mistral-large Model

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab

WOW FACTORS

- **Autonomous Synthesis:** It doesn't just fetch papers; it autonomously reads, understands, and synthesizes information from multiple sources to generate coherent summaries and reports.
- **Creative Hypothesis Generation:** The agent's most advanced capability is suggesting novel hypotheses based on gaps or connections it identifies in the existing literature, actively contributing to the creative aspect of research.
- **End-to-End Workflow Automation:** It covers the research lifecycle from the initial query to drafting sections of a paper, offering a comprehensive, all-in-one solution that dramatically accelerates the research process.

END USERS

- **Academics and Students:** Professors, PhD/Master's candidates, and university students who need to conduct literature reviews for papers, theses, and dissertations.
- **Corporate R&D Professionals:** Scientists and engineers in industries like pharmaceuticals, technology, and manufacturing who must stay current with the latest innovations and patents.
- **Market Analysts and Journalists:** Professionals who need to quickly get up to speed on complex topics to produce reports, articles, and analyses.

RESULTS

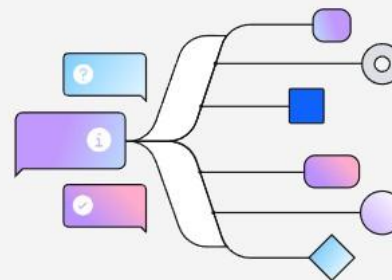
Agent preview



Academic Research Agent 10:46 PM

Welcome to Academic Research Agent

AI agent that automates literature searches, summarizes papers, and assists in drafting reports.



Type something...



RESULTS

Agent preview



You: 10:48 PM

show me recent research on IBM watson



Academic Research Agent 10:48 PM

Here are some recent research and developments related to IBM Watson:

1. **IBM Watson Assistant:** IBM Watson Assistant has released a beta version of a new intent detection model, enhancing its AI capabilities.

- [IBM Watson](#)

2. **MIT-IBM Watson AI Lab:** MIT and IBM Research have collaborated to create the MIT-IBM Watson AI Lab, focusing on advanced AI research.

- [MIT-IBM Watson AI Lab](#)

3. **Cost of a Data Breach 2025:** IBM Watson's AI is being used to analyze the cost of data breaches, with new global research from IBM and Ponemon Institute.

- [Cost of a Data Breach 2025](#)

4. **New Watson Capabilities:** IBM has launched new capabilities for IBM Watson to help

Type something...



RESULTS

Deployed AI Agent

The screenshot displays the IBM Watsonx interface for the 'Academic Research Agent'. The top navigation bar shows 'IBM watsonx' and user information. The breadcrumb trail indicates the agent is deployed in the 'Academic Research Agent' space. The agent's status is 'Deployed' and 'Online'. The 'Preview' tab is active, showing a chat history. A user query at 10:57 PM asks for academic research on imaging technology. The agent's response at 10:57 PM provides a list of eight resources on imaging technology.

IBM watsonx Upgrade ? Bell Rushikesh Viswanadhapalli... London RV

Deployment spaces / Academic Research Agent / Academic Research Agent /

Academic Research Agent ✓ Deployed Online

API reference Test **Preview** New chat +

R You 10:57 PM
Get me academic Research on Imaging Technology

Academic Research Agent 10:57 PM
Here are some resources on Imaging Technology:

1. [Medical imaging - Wikipedia](#)
2. [Types of Medical Imaging: Technologies and Career Options ...](#)
3. [Imperial Imaging Technology: Medical Imaging Equipment Supplier](#)
4. [HOME | aurooramri](#)
5. [Imaging Technology I](#)
6. [Imaging Technology Explained: Different Types and Purposes | MXR](#)
7. [Advanced Medical Imaging Technology \(AMIT\) | University of ...](#)
8. [Medical Imaging Technology | Health Professions Program | IU ...](#)

Type something...

CONCLUSION

- The AI Research Agent successfully demonstrates how leveraging IBM's cloud-based AI services can solve a critical real-world problem. By automating the most repetitive and time-consuming tasks in research, the agent acts as a powerful productivity multiplier. It empowers researchers, enhances the quality of their work by ensuring comprehensive literature coverage, and ultimately accelerates the timeline from research to breakthrough discovery.

GITHUB LINK

- <https://github.com/Rushikeshvis/Agentic-Research-Assistant>

FUTURE SCOPE

- Advanced Data Integration: Integrate capabilities to extract and analyze data from tables and charts within research papers.
- Multilingual Processing: Expand the agent to understand and process research published in languages other than English.
- Collaborative Features: Develop a platform where teams of researchers can use the agent collectively on a single project.
- Direct Plugin Integration: Create plugins for popular reference managers (like Zotero, Mendeley) and word processors (like Microsoft Word, Google Docs) for a seamless workflow.

IBM CERTIFICATIONS



IBM CERTIFICATIONS



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Rushi Kesh

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 26 Jul 2025 (GMT)

Learning hours: 20 mins



THANK YOU