### **CAPSTONE PROJECT**

# RESEARCH AGENT

**Presented By:** 

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### **OUTLINE**

- Problem Statement
- Technology used
- IBM Cloud Services Used
- Wow factors
- End users
- Results
- Conclusion
- Git-hub Link
- Future scope
- IBM Certifications



# PROBLEM STATEMENT

Researchers often face challenges in managing vast academic literature, generating hypotheses, and organizing references efficiently. There is a need for an intelligent agent that can automate repetitive research tasks like summarization, citation management, and data extraction

# Proposed Solution:

**CiteMate**, an Al-powered research agent using **IBM Cloud Lite** and **Granite models**, will automate literature summarization, hypotheses generation, and citation management — helping researchers save time and focus on innovation.



# TECHNOLOGY USED

**IBM Cloud lite services** 

**IBM Cloud Object Storage** 

**IBM** Granite model

Natural Language Processing (NLP)



### **IBM CLOUD SERVICES USED**

- IBM Watsonx
- IBM Watsonx.ai
- IBM Cloud Watsonx Al runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model
- IBM Cloud Object Storage(COS)



### **WOW FACTORS**

This agent can autonomously search and summarize thousands of research papers in seconds, saving researchers days of manual work.

### **Unique features:**

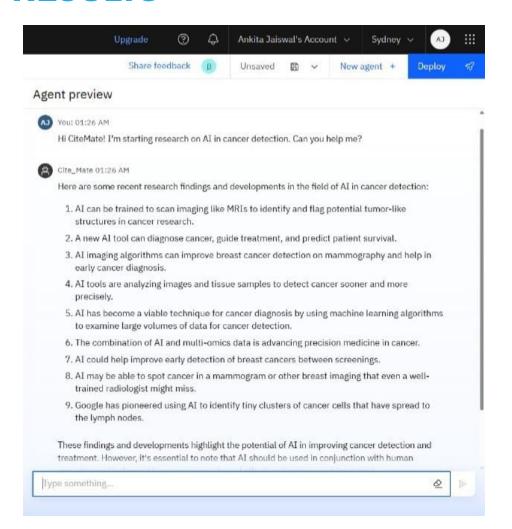
- Instant literature summarization.
- Automated report generation.
- Smart citation management.
- Key data extraction.
- Hypothesis suggestion engine.
- Interactive data visualization.

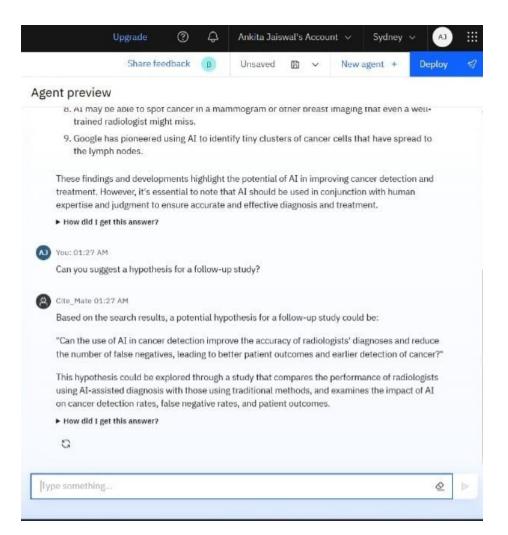


#### **END USERS**

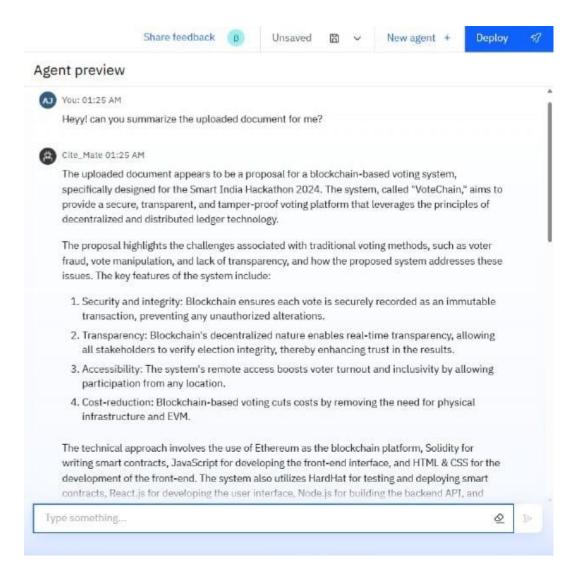
- Academic Researchers & Scientists
- Graduate and PhD students
- Corporate R&D Teams
- Research Institutions and Universities
- Data analysts working with scientific data
- Educational platforms and libraries





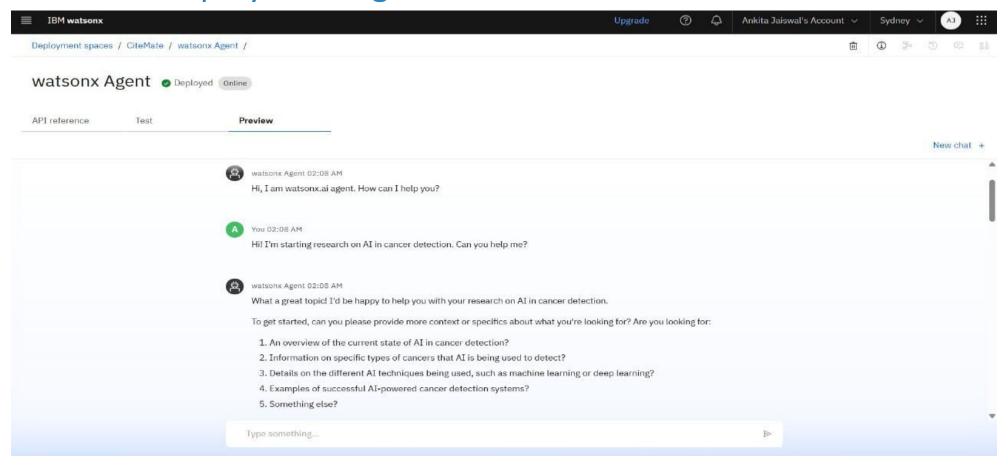




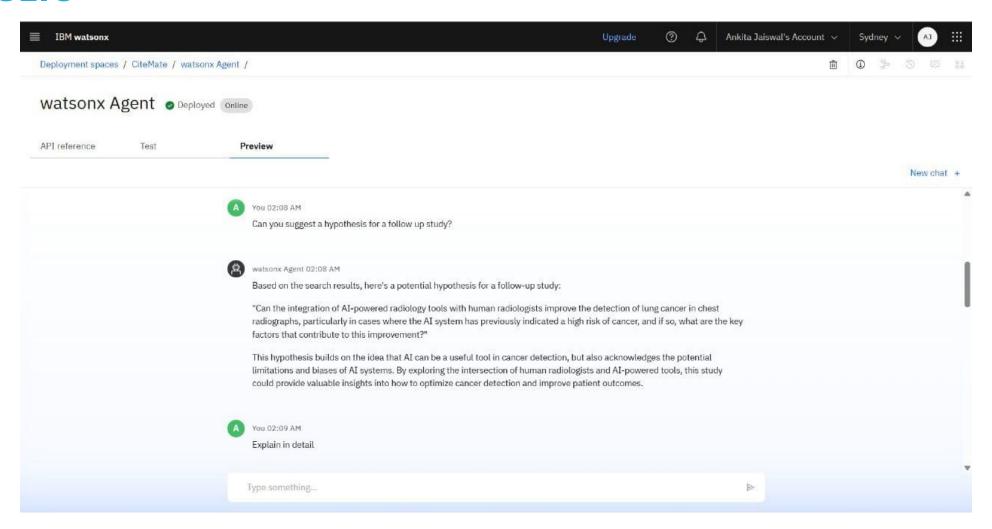




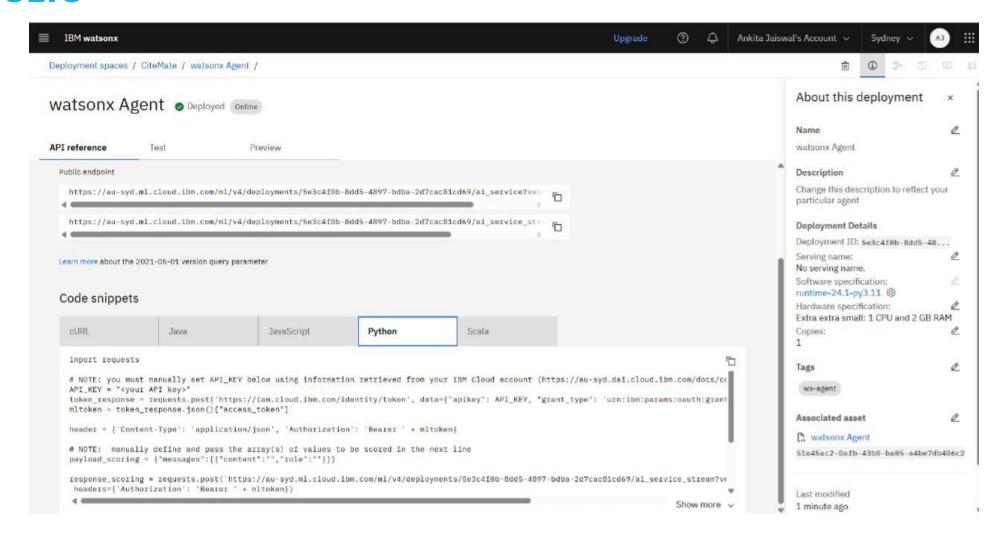
## Deployed AI Agent













#### CONCLUSION

The Research Agent leverages cutting-edge AI and natural language processing to revolutionize the academic research process. By automating literature search, summarization, citation management, and report generation, it significantly reduces time and effort for researchers. This intelligent assistant not only accelerates discovery but also enhances the quality and efficiency of scientific work, empowering researchers to focus on innovation and impactful insights.



Git hub link: <a href="https://github.com/ankitaaa086/Cite\_Mate">https://github.com/ankitaaa086/Cite\_Mate</a>



## **FUTURE SCOPE**

- Extended database integration
- Deeper semantic analysis
- Real-time collaboration tools
- Multilingual research support
- Advanced data visualization
- Automated experiment design
- Personalized recommendations engine



### **IBM CERTIFICATIONS**

In recognition of the commitment to achieve professional excellence



# Ankita Jaiswal

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 15, 2025 Issued by: IBM SkillsBuild

Verify: https://www.credly.com/badges/c79330f9-3830-4524-b659-d852d85ffa2b





#### **IBM CERTIFICATIONS**

IBM SkillsBuild

**Completion Certificate** 



This certificate is presented to

Ankita Jaiswal

for the completion of

# Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE\_3824998)

According to the Adobe Learning Manager system of record

Completion date: 17 Jul 2025 (GMT)

Learning hours: 20 mins



### **IBM CERTIFICATIONS**





# **THANK YOU**

