
CAPSTONE PROJECT

RESEARCH AGENT

VYANA

Presented By:

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OUTLINE

- Problem Statement
- Technology used
- Wow factor
- End users
- Result
- Conclusion
- Git-hub Link
- Future scope
- IBM Certifications

PROBLEM STATEMENT

Researchers, students, and professionals often struggle to stay updated with the rapidly growing volume of academic publications, technical articles, datasets, and evolving research trends. Manually reviewing, filtering, and synthesizing information across multiple domains is time-consuming and inefficient.

Proposed Solution:

VYANA AI Research Agent that uses Natural Language Processing (NLP), Retrieval-Augmented Generation (RAG), to assist users in conducting efficient literature reviews, generating summaries, identifying research gaps, and recommending relevant papers, datasets, or collaborators.

TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

WOW FACTORS

VYANA – Spreading knowledge everywhere

A next-gen AI research assistant that reduces research time, enhances literature quality, and fosters collaboration.

Unique features:

- ✓ Semantic search
- ✓ Auto-summarization
- ✓ Citation and reference analysis
- ✓ Smart recommendation
- ✓ Trend tracking
- ✓ Collaboration mapping

END USERS

- Academic Researchers
- Research Institutions and Universities
- Industry R&D Teams
- Educators

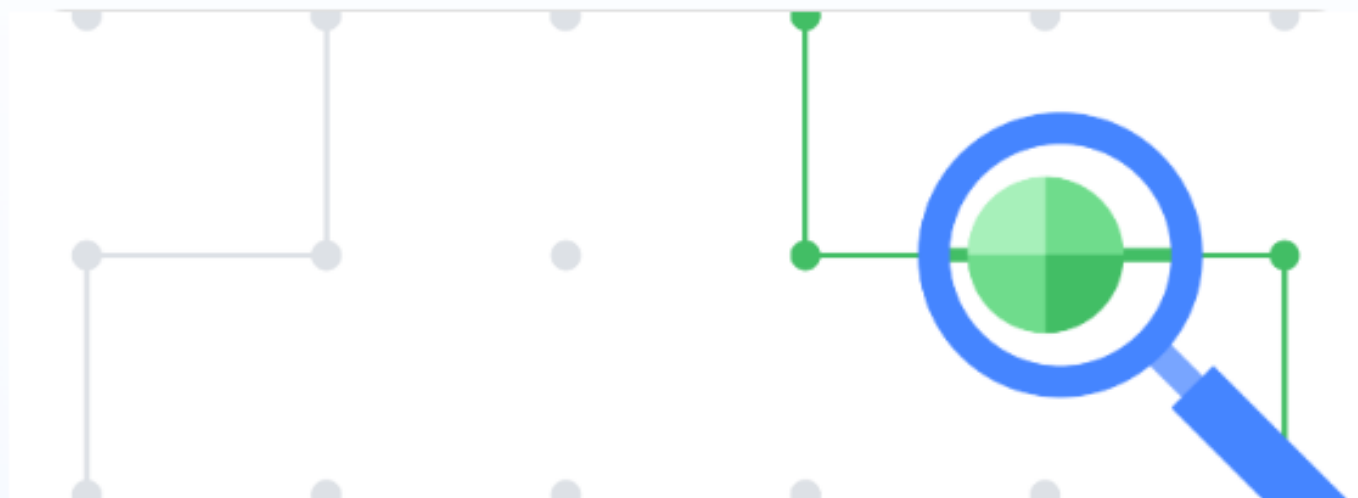
RESULTS



VYANA 02:23 PM

Welcome to VYANA

VYANA is your AI research brain—scanning, summarizing, and shaping knowledge in seconds



Type something...



RESULTS

Agent preview



You: 03:55 AM

What are the steps in writing research paper?



VYANA 03:55 AM

Here are some steps to write a research paper:

1. Understand the Assignment:

- **Description:** Before you start writing, make sure you understand the assignment requirements, including the topic, length, format, and citation style.
- **Source:** [How to Write a Research Paper: A Step-By-Step Guide | Grammarly](#)

2. Choose a Topic:

- **Description:** Select a topic that interests you and is relevant to your field of study. Ensure it is narrow enough to be manageable within the given time frame.

Type something...



RESULTS

Agent preview



You: 03:53 AM

Suggest me some recent research in Generative AI



VYANA 03:53 AM

Here are some recent research articles on Generative AI:

1. The Latest Research: Generative AI

- **Description:** This collection provides a wide selection of 21 research-based HBR articles that explore the effects that GenAI solutions are having today.
- **URL:** [The Latest Research: Generative AI](#)

2. What is generative AI? - IBM Research

- **Description:** This article explains generative AI at a high level, discussing how generative models encode a simplified representation of their training

Type something...



RESULTS

Deployed AI Agent

IBM watsonx

Upgrade ?

Chitra Ameta's Account

London

CA

Deployment spaces / VYANA-SPACE / VYANA /

VYANA Deployed Online

API reference Test Preview

New chat +

C You 03:49 AM

How do I write a strong research abstract?

VYANA 03:49 AM

How to Write a Strong Research Abstract
Writing a strong research abstract is crucial as it is often the first part of your paper that readers encounter. A well-crafted abstract can attract readers and provide a concise summary of your research. Here are some key points to consider:

Contents of an Abstract

1. **Context or Background Information:** Provide the necessary background for your research.
2. **General Topic Under Study:** Clearly state the general area of your research.
3. **Specific Topic of Your Research:** Narrow down to the specific focus of your study.

Type something...

CONCLUSION

- The agent can generate reports, suggest hypotheses, and even draft sections of research papers.
- It saves time by automating repetitive tasks like citation management and data extraction.
- Research Agents enhance efficiency, accuracy, and innovation in both academic and industrial R&D.

FUTURE SCOPE

- Multilingual Research Support
- Voice-Activated Research Assistant
- Real-Time Collaboration Features
- Research Gap and Novel Topic Identification
- Integration with Publishing Platforms
- AI-Assisted Paper Drafting
- Predictive Research Trends
- Integration with Citation Databases (Scopus, Web of Science)

IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Chitra Ameta

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: May 30, 2025
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/73bfe23e-2204-44eb-b908-a495c9a94bec>



7/17/25, 3:08 PM

Completion Certificate | SkillsBuild

IBM SkillsBuild

Completion Certificate



This certificate is presented to

Chitra Ameta

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

GITHUB LINK

- Github link -<https://github.com/chitra231025/VYANA--AI-Research-Agent>



THANK YOU