CAPSTONE PROJECT

RESEARCH AGENT

Presented By: Manish Shukla
Student name : Manish Shukla
College Name & Department : Graphic Era Hill University, SOC Department

edunet
foundation

OUTLINE

- **Problem Statement**

- **Technology used**

- **Wow factor**

- **End users**

- **Result**

- **Conclusion**

- **Git-hub Link**

- **Future scope**

- **IBM Certifications**

edunet
foundation

PROBLEM STATEMENT

- A **Research Agent** is an AI system designed to assist with academic and scientific research tasks. It can autonomously search for literature, summarize papers, and organize references. Using natural language processing, it understands research questions and retrieves relevant information. 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.

TECHNOLOGY USED

- IBM cloud lite services

- 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

edunet
foundation

WOW FACTORS

The Research Agent impresses with its AI-powered ability to search, summarize, and organize academic content. It uses IBM Granite models for intelligent text generation and automation. This tool boosts research productivity by handling complex tasks like hypothesis generation, citation management, and report drafting—all within IBM Cloud Lite's free, scalable environment.

Key Highlights Factors Are:

- Smart, autonomous research powered by IBM Granite AI.
- Instant paper summarization and auto-generated citations.
- Fully deployable on IBM Cloud Lite.

edunet
foundation

END USERS

- Academic Researchers

- Students

- Data Scientists & AI Engineers

- Research Institutions and Universities

- Industry R&D Teams

- Educators

RESULTS

Share feedback β | Unsaved | New agent + | Deploy

Agent preview

MS You: 07:59 PM

what are the key difference bw java and python

watsonx Agent 07:59 PM

Hi, I am watsonx.ai agent. How can I help you?

Here are some key differences between Java and Python:

1. **Syntax**: Python's syntax is simpler and more readable compared to Java. Python uses indentation to define blocks of code, while Java uses curly braces.

2. **Typing**: Python is dynamically typed, meaning you don't have to declare the data type of a variable when you create one. Java, on the other hand, is statically typed, requiring explicit declaration of variable types.

3. **Speed**: Java is generally faster than Python because it's a compiled language, while Python is an interpreted language.

4. **Use Cases**: Java is often used for larger, more complex projects, including Android app development and enterprise-level applications. Python is popular for data analysis, machine learning, AI, and scripting.

Type something...

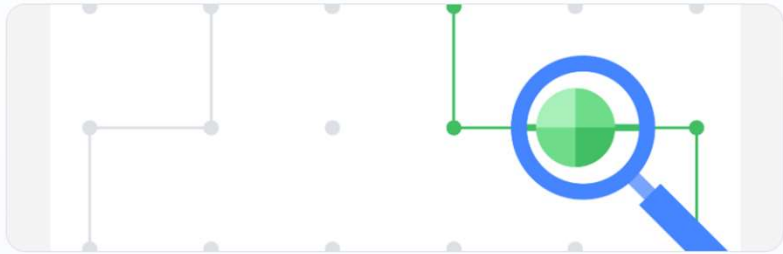Upgrade ⑦ 🔔 | manish shukla's Account ⌄ | Frankfurt ⌄ | MS

Share feedback β | Unsaved | New agent + | Deploy

Agent preview

watsonx Agent 07:58 PM

Welcome to watsonx Agent

Change this description to reflect your particular agent

Type something...

edunet
foundation

RESULTS

The space is being prepared...

The space "Gen_Ai" is being created.

◯ Step 1 of 1. Creating deployment space.

2/100

Go to space

Cancel

☰ IBM **watsonx**   Upgrade ⑦ ◻ manish shukla's Account ⌄   Frankfurt ⌄   MS

Deployment spaces /   ↥ ⌄   ⓘ ⅔ 🕘 💬 ⬚

Gen_Aiii

| Overview | Assets | **Deployments** | Jobs | Manage |

▽ ⚲ Search   ↻

Name	Type	Status	Asset	Asset type	Tags	Last modified	↓	
⦚•⦚ watsonx Agent	Online	◐ Initializing	watsonx Agent	Ai service	wx-agent ✎	6 seconds ago manish shukla (You)		⋮

Items per page: 20 ⌄   1–1 of 1 items   1 of 1 pages   ‹ ›

edunet
foundation

RESULTS

RESULTS

Deployed AI Agent

CONCLUSION

- Automates key research tasks like literature search, summarization, and citation management..

- Leverages IBM Granite AI for intelligent content generation and hypothesis creation..

- Cost-effective and scalable using IBM Cloud Lite's free-tier infrastructure.

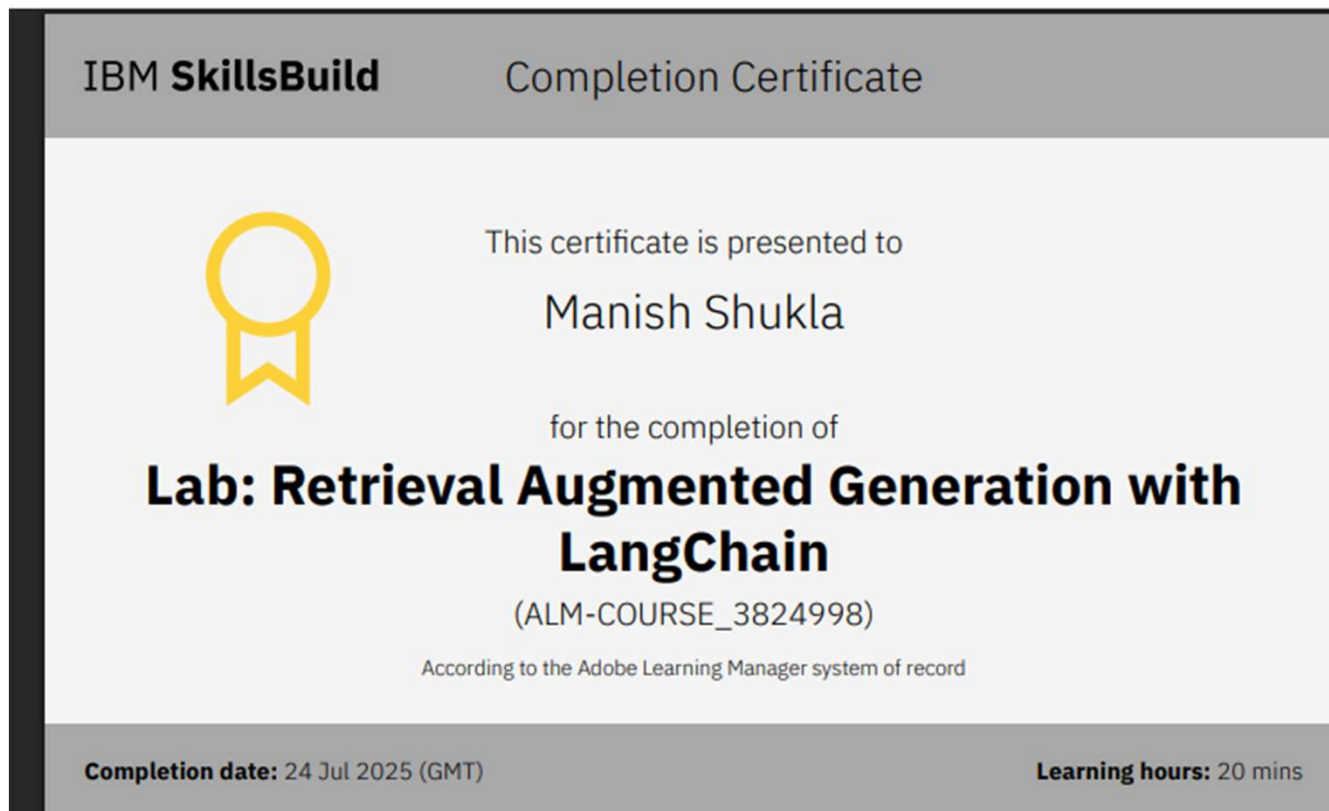- Empowers students, researchers, and professionals to work faster, smarter, and more efficiently

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

edunet
foundation

IBM CERTIFICATIONS

RAG CERTIFICATIONS

IBM **SkillsBuild**   Completion Certificate

This certificate is presented to

Manish Shukla

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT)   **Learning hours:** 20 mins

edunet foundation

Github Link: https://github.com/Manish3Shukla/project_ai

GITHUB LINK

- Make sure that there should be readme file

- Link: https://github.com/Manish3Shukla/project_ai/blob/main/README.md

edunet
foundation

THANK YOU