CAPSTONE PROJECT

LEARN_MATE - AGENT

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OUTLINE

- Problem Statement Proposed System/Solution
- System Development Approach
- Algorithm & Deployment
- Result
- Conclusion
- Future Scope
- References

PROBLEM STATEMENT

- **Problem Statement No.12 - Agentic AI for Personalized Course Pathways**.
- **The Challenge** - Students often struggle to identify the right learning path that aligns with their interests and long-term goals due to the overwhelming number of online courses and a lack of personalized guidance. LearnMate aims to solve this by acting as an Agentic AI coach that interacts with students, understands their interests (like Frontend Development, Cybersecurity, UI/UX Design, etc.), assesses their current skill level, and dynamically builds a personalized course roadmap that adapts over time based on progress and preferences.

PROPOSED SOLUTION

- The proposed system aims to address the challenge of Making it easy for the students to choose which is the best suited course for them as we know sometimes students get confused upon their own interests. So, This Agentic Ai Agent will help those students.
- Data Collection:
- Data Collection here is very easy as we need to just attach the search engines like google search etc. and on the basis of that data it will give us the results and try to answer in detail to make the user satisfy.
- Data Preprocessing:
  - Clean and preprocess the collected data to handle.
  - Feature engineering to extract relevant features from the data .
- Deployment:
  - Develop a user-friendly interface or application that provides real-time information about the courses in detail.
- Evaluation:.
  - This agent is based on continuous monitoring of prediction accuracy.
  - Result:
  - When you will ask it a question it will try to provide you the answer with all the information.

SYSTEM APPROACH

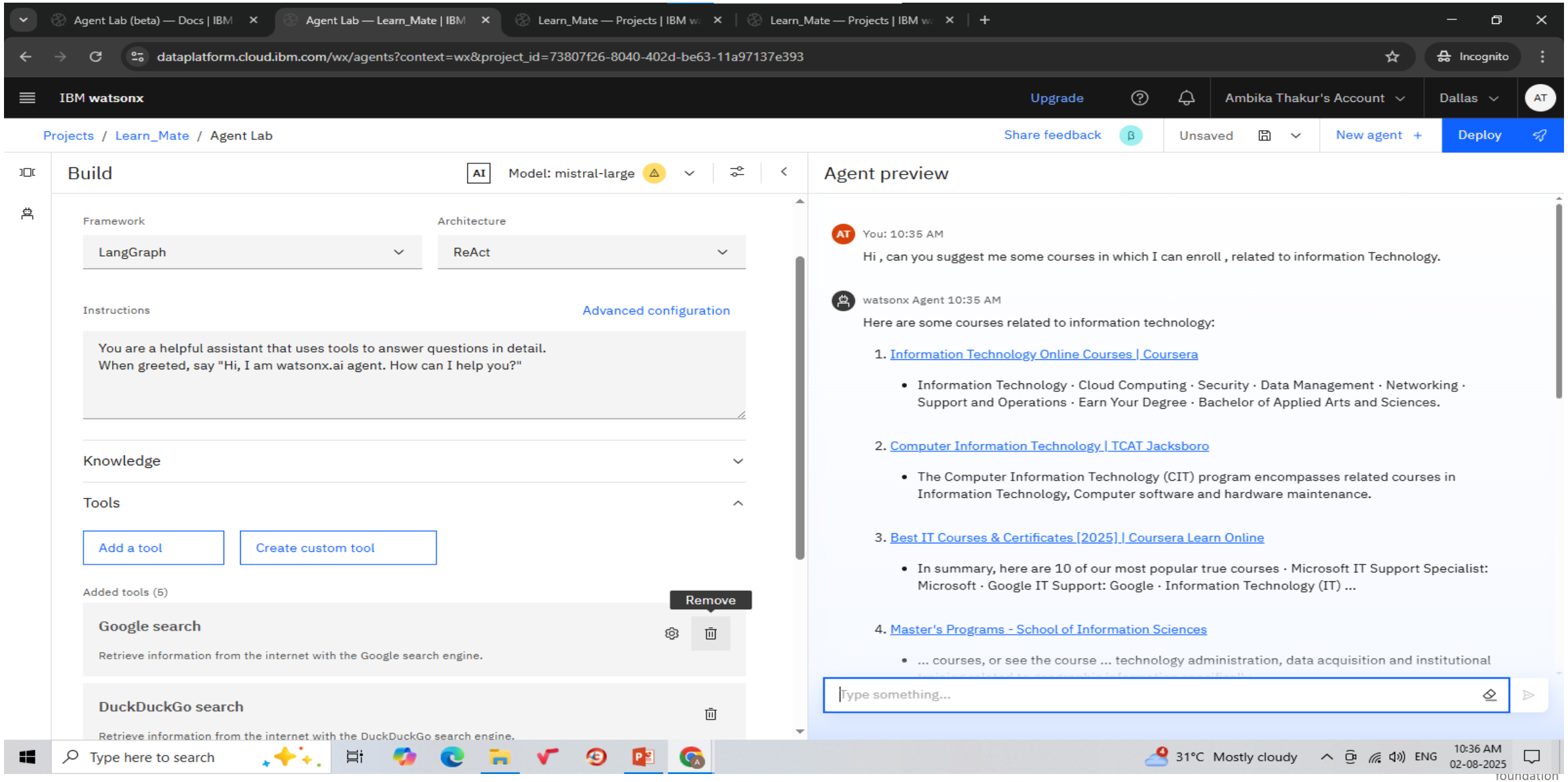
The "System Approach" section outlines the overall strategy and methodology for developing an agent which provides you the information you need from the data of all the platforms associated to it and with accuracy.:

- We need watsonx ai. Studio.
- We need watsonx ai. Runtime.
- Google . search etc.

ALGORITHM & DEPLOYMENT

- **Data Input:**
- Data input is vey easy as you just need to put a question to it and it will provide you the answer.
- **Training Process:**
- It trains itself of its own we just need to associate it to the search engines.
- **Prediction Process:**
- It also predicts but with the maximum accuracy.

RESULT


Agent Lab (beta) — Docs | IBM
Agent Lab — Learn_Mate | IBM
Learn_Mate — Projects | IBM
Learn_Mate — Projects | IBM
dataplatform.cloud.ibm.com/wx/agents?context=wx&project_id=73807f26-8040-402d-be63-11a97137e393
Incognito
IBM watsonx
Upgrade
Ambika Thakur's Account
Dallas
AT
Projects / Learn_Mate / Agent Lab
Share feedback
Unsaved
New agent +
Deploy
Build
AI
Model: mistral-large
Framework
LangGraph
Architecture
ReAct
Instructions
Advanced configuration
You are a helpful assistant that uses tools to answer questions in detail.
When greeted, say "Hi, I am watsonx.ai agent. How can I help you?"
Knowledge
Tools
Add a tool
Create custom tool
Added tools (5)
Remove
Google search
Retrieve information from the internet with the Google search engine.
DuckDuckGo search
Retrieve information from the internet with the DuckDuckGo search engine.
Agent preview
AT
You: 10:35 AM
Hi , can you suggest me some courses in which I can enroll , related to information Technology.
watsonx Agent 10:35 AM
Here are some courses related to information technology:
1. Information Technology Online Courses | Coursera
• Information Technology · Cloud Computing · Security · Data Management · Networking · Support and Operations · Earn Your Degree · Bachelor of Applied Arts and Sciences.
2. Computer Information Technology | TCAT Jacksboro
• The Computer Information Technology (CIT) program encompasses related courses in Information Technology, Computer software and hardware maintenance.
3. Best IT Courses & Certificates [2025] | Coursera Learn Online
• In summary, here are 10 of our most popular true courses · Microsoft IT Support Specialist: Microsoft · Google IT Support: Google · Information Technology (IT) ...
4. Master's Programs - School of Information Sciences
• ... courses, or see the course ... technology administration, data acquisition and institutional
Type something...
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31°C Mostly cloudy
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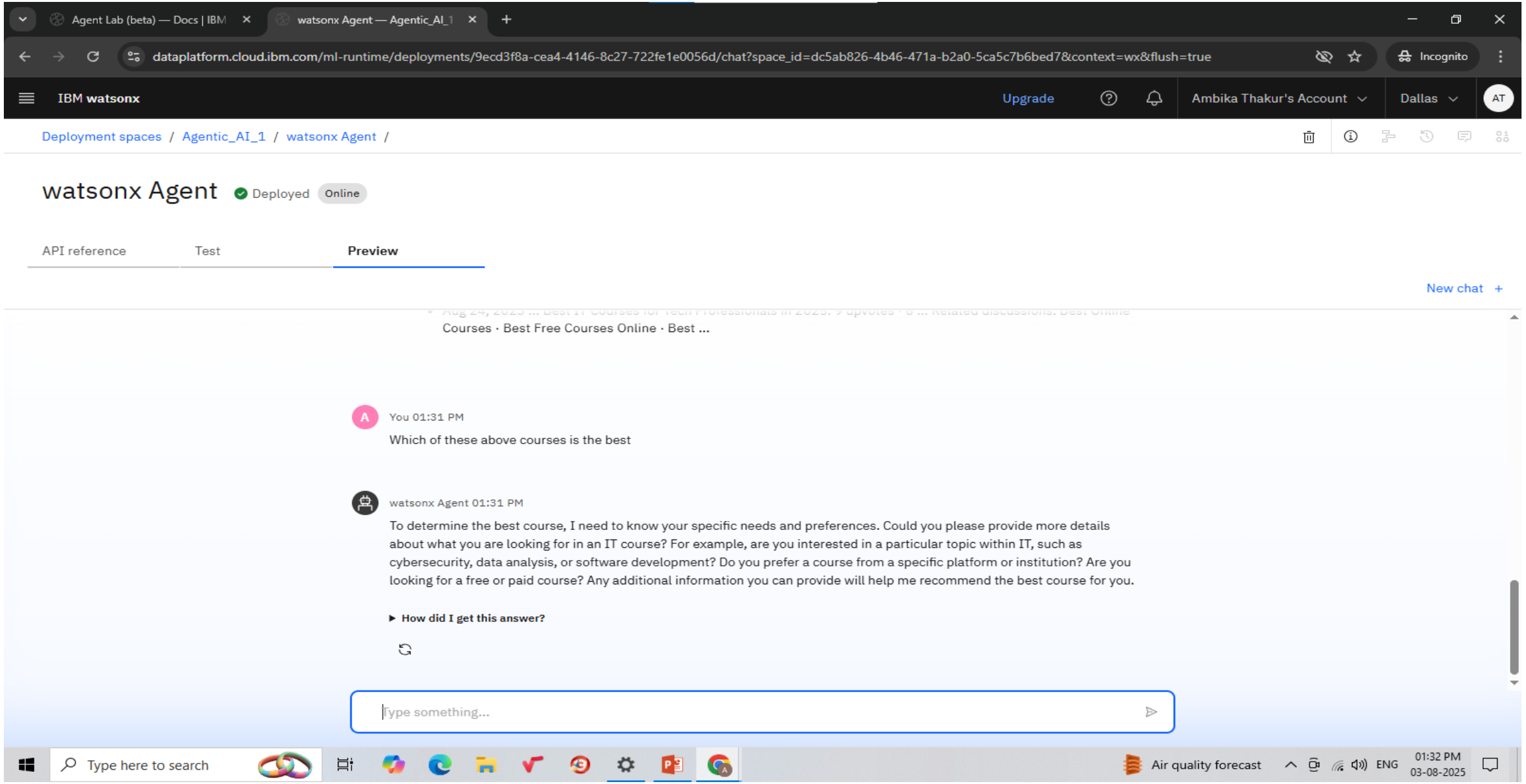

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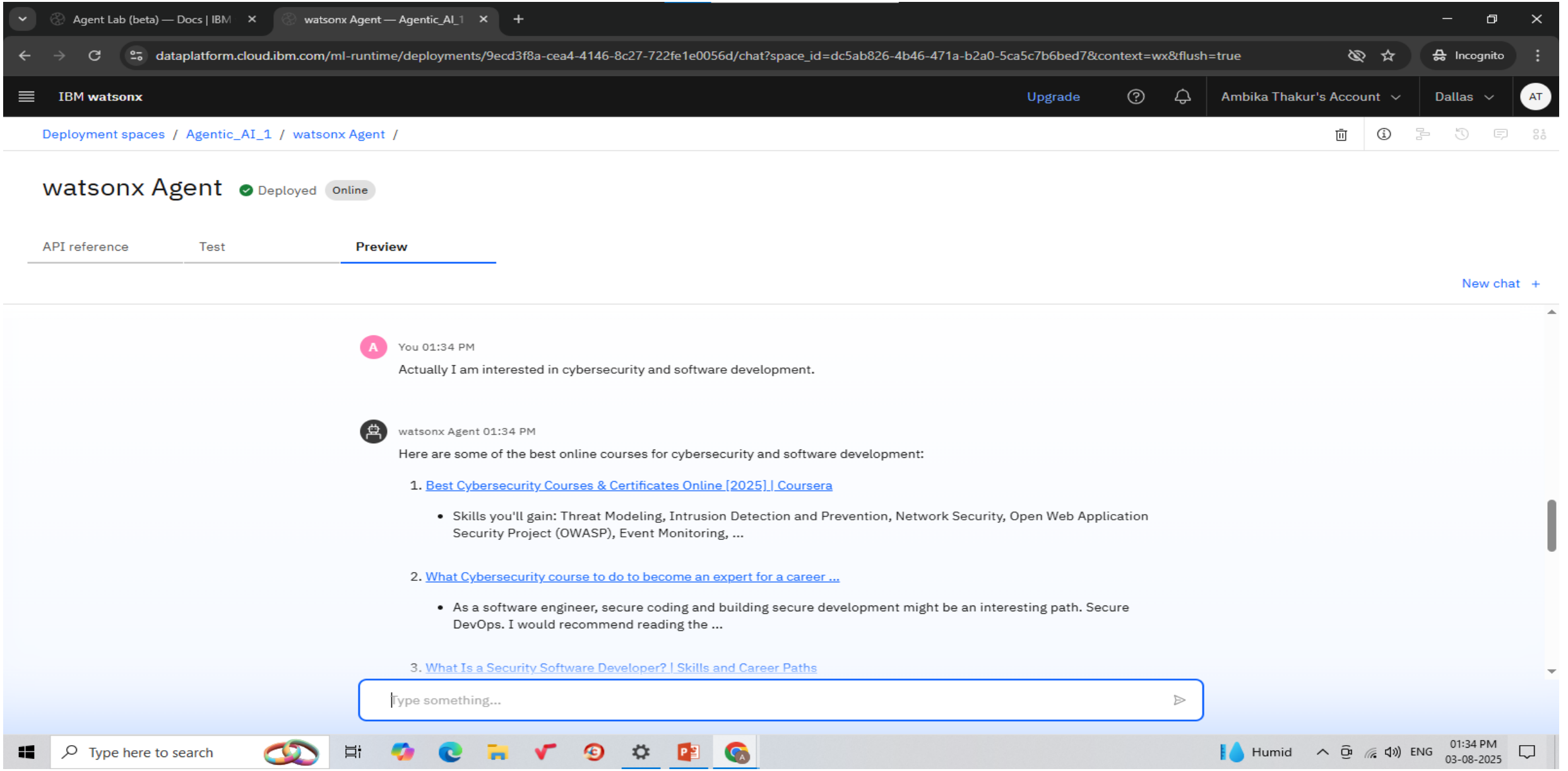

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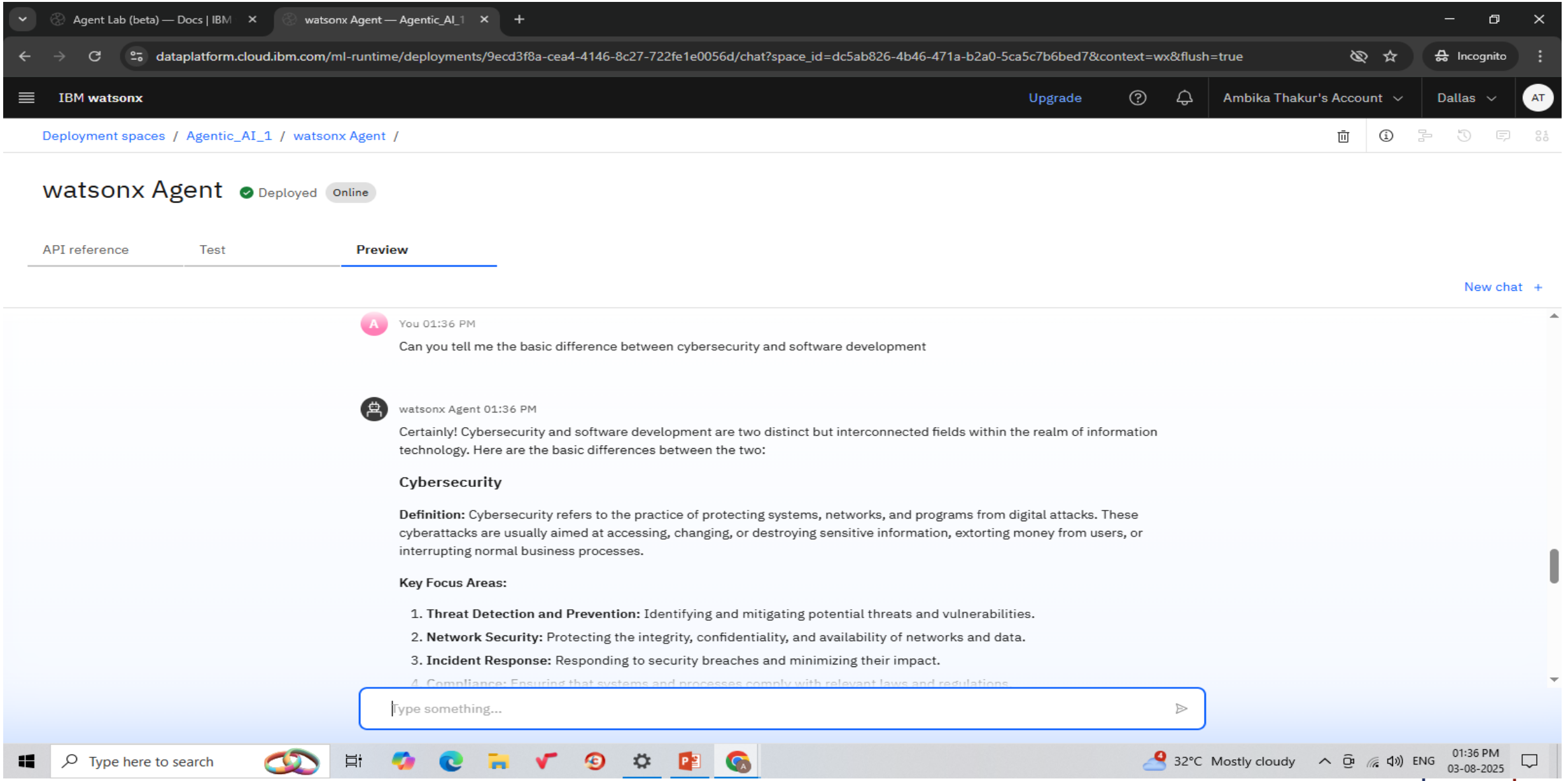

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CONCLUSION

- This Learn_Mate1 Agentic AI will make it easy for the students to understand their interests and will guide them to choose a right course to enhance their skills and will provide all the necessary details of that course.

FUTURE SCOPE

- The future scope is that as we know researches are been done on a parallel end so in future these agentic AI techniques or these agents will become more accurate providing us the right information and a person could get as much as knowledge he wants to take from the agent.

REFERENCES

- We just need watsonx.ai studio , watsonx.ai Runtime , search engines like google.search etc. from where the agent could gather the data analys it and answer as per the question.

IBM CERTIFICATIONS

In recognition of the commitment to achieve professional excellence

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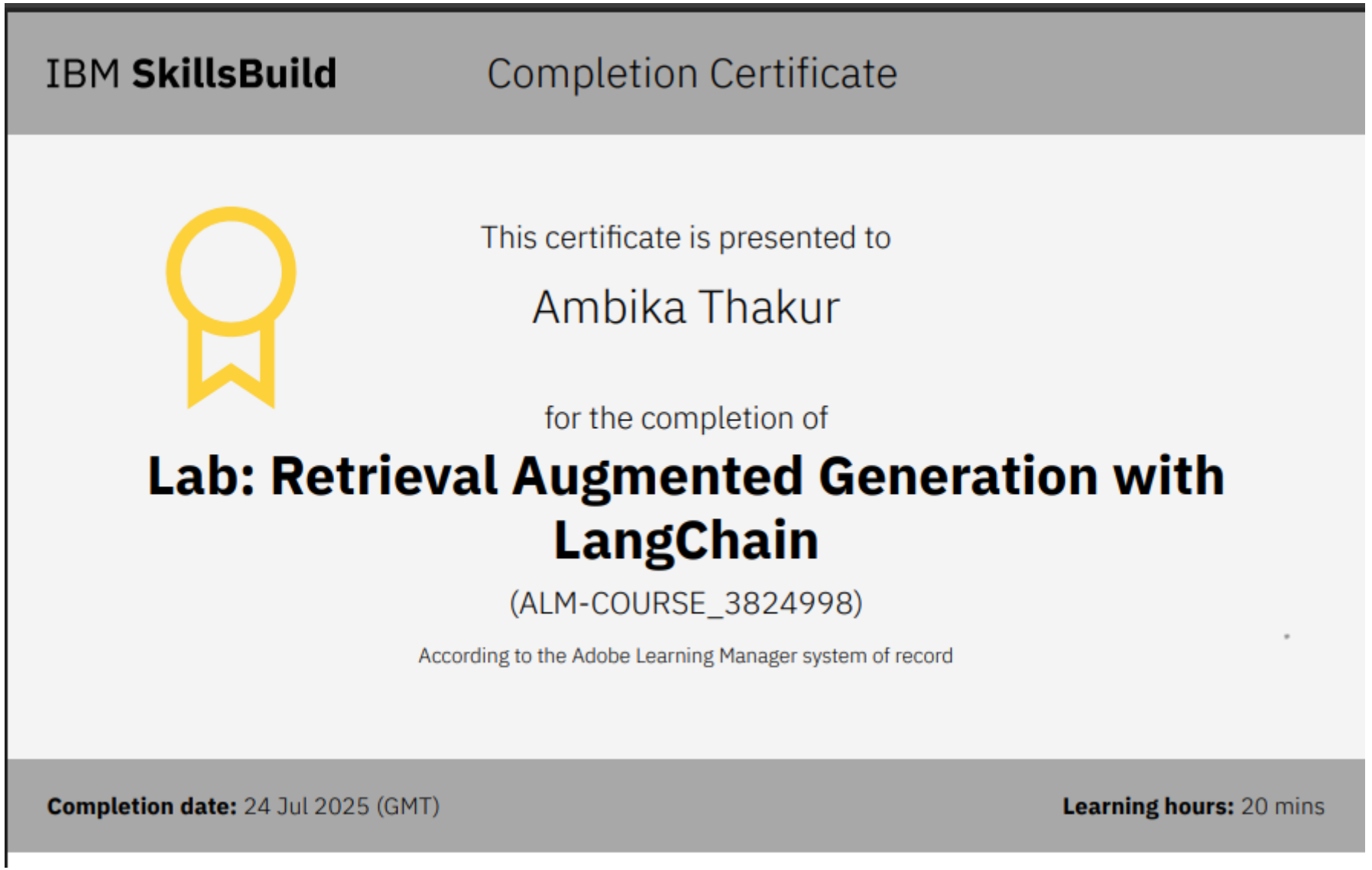

IBM **SkillsBuild** Completion Certificate

This certificate is presented to

Ambika Thakur

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

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THANK YOU

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